

**SUSTAINABLE DEVELOPMENT: A STUDY IN CHAME
RURAL MUNICIPALITY, MANANG**



**A Thesis Submitted to
APF Command and Staff College
Faculty of Humanities and Social Sciences, Tribhuvan University**

**In Partial Fulfillment of master Degree in
Security, Development and Peace Studies**

Submitted By

GOPAL ADHIKARI

Eighth Batch (2079-2081)

Roll No.: 28MSDPS40048

TU Regd. No.: 7-1-054-031-96

**APF Command and Staff College
Sanogaucharan, Kathmandu, Nepal**

May, 2024

**SUSTAINABLE DEVELOPMENT: A STUDY IN CHAME
RURAL MUNICIPALITY, MANANG**

**A Thesis Submitted to
APF Command and Staff College
Faculty of Humanities and Social Sciences, Tribhuvan University**

**In Partial Fulfillment of master Degree in
Security, Development and Peace Studies**

**Submitted By
GOPAL ADHIKARI
Eighth Batch (2079-2081)
Roll No.: 28MSDPS40048
TU Regd. No.: 7-1-054-031-96**

**APF Command and Staff College
Sanogaucharan, Kathmandu, Nepal**

May, 2024

DECLARATION

I, Gopal Adhikari, declare that this research paper entitled SUSTAINABLE DEVELOPMENT: A STUDY IN CHAME RURAL MUNICIPALITY, MANANG submitted to APF Command and Staff College is my own original work unless otherwise indicated or acknowledged in the Thesis. This Thesis does not contain materials which has been accepted or submitted for any other degree at the University or other institutions. All sources of information have been specifically acknowledged by reference to the author(s) or institution(s).

Signature:

Name: Gopal Adhikari

APF Command and Staff College

Date: May, 2024

LETTER OF RECOMMENDATION

This thesis entitled SUSTAINABLE DEVELOPMENT: A STUDY IN CHAME RURAL MUNICIPALITY, MANANG has been prepared by GOPAL ADHIKARI under my guidance and supervision. I hereby recommend it in partial fulfillment of the requirements for the Degree of MASTER of Security Development and Peace Studies for final examination.

.....

Thesis Supervisor

Professor Dr. DandaPani Adhikari

Date:, 2024



**Government of Nepal
Ministry of Home Affairs
APF Command and Staff College**

Ph. No.:- 01-4513159/9851072030

Email :- paacademic2015@gmail.com

Website:- <https://csc.apf.gov.np>

Ref. No.: - (080/081)/

**Academic
Section Sanogaucharan,
Kathmandu**

Date:- 2081/02/

LETTER OF APPROVAL

This Thesis entitle “SUSTAINABLE DEVELOPMENT: A STUDY IN CHAME RURAL MUNICIPALITY, MANANG” submitted by GOPAL ADHIKARI to APF Command and Staff College, Faculty of Humanities and Social Sciences, Tribhuvan University in partial fulfillment of Master Degree in Security, Development and Peace Studies has been approved by the undersigned members of the Evaluation Committee.

Evaluation Committee:

.....
Prof. Dr. Dandapani Adhikari
Thesis Supervisor

.....
Associate Prof. Dr.Chiranjivi Acharya
External Examiner

.....
Assistant Prof.Gaurav Bhattarai
External Examiner

.....
SP Yadav Bishwakarma
Internal Examiner

.....
SP Suresh Sapkota
Internal Examiner

24 May, 2024

ACKNOWLEDGEMENT

I am grateful to APF Command and Staff College for intending me to complete this research paper. This research paper entitled SUSTAINABLE DEVELOPMENT: A STUDY IN CHAME RURAL MUNICIPALITY, MANANG is prepared to fulfill requirements for master degree in security, development and peace studies.

For this, I would like to express my deepest gratitude to all who encouraged as well as helped me in completing this research work. I would like to extend my sincere gratitude to My Thesis supervisor professor Dr. Dandapani Adhikari sir, for his direct guidelines and relevant suggestions for preparing this research. Similarly I also like to express my sincere gratitude to Professor Dr. Ramesh Raj Kunwar sir, for his valuable directions for research writing.

I express my profound gratitude to the Commandant DIG Anjani Kumar Pokharel, SSP Narendra Sen, Chief Instructor SP Yadav Bishwakarma, Academic Coordinator SP Suresh Sapkota, Course Coordinator DSP Ram Krishna Maharjan and Directing Staffs for their continued support for the study and research worked. I am indebted to all senior officers, other ranks, library management and administration team for their assistance.

I would like to extend my sincere respect and gratitude to all participants of Chame rural Municipality, Manang. Without their cooperation and their active participation this research could not be complete in this form. Similarly I am thankful to APF, Nepal Coy Manang and also like to show respect to Chairman of Chame rural Municipality Lokendra Bahadur Ghale for his relevant information regarding this research paper.

Very special gratitude and appreciation to directing staffs for their intellectual support and guidance throughout the preparation of this research paper, at last I would like to thank all my colleagues of APF Command and Staff Course and all persons who have helped and support directly and indirectly to prepare this research paper. I am also thankful to my family members for their supports to complete this research paper.

ABSTRACT

The 2030 Agenda for Sustainable Development, with its 17 Sustainable Development Goals (SDGs), aims for "peace and prosperity for people and the planet." These goals encompass poverty eradication, improved health and education, reduced inequality, economic growth, climate action, and environmental preservation. Manang District in Nepal, renowned for its natural and cultural heritage, faces challenges including environmental degradation, socio-economic inequality, and inadequate infrastructure. In addition problem of deforestation, pollution by outsiders and increasing carbon emission by firewood are some of human made issues of sustainable development. This research focuses on sustainable development in Chame rural municipality, Manang, emphasizing environmental, social, and economic dimensions. Assessing the current scenario, recognizing the challenges and identifying the strategies for achieving the sustainable development concerning environmental, social and economic aspects are the objectives of this research.

Using a qualitative approach, data collection involves interviews, focus groups, and observations. Primary data collected from local residents and government authorities within the municipality form the basis of the findings. Various variables are analyzed within the three main pillars of sustainable development: environmental, social, and economic. Observations highlight concerns about environmental degradation, changing precipitation patterns, declining population, impacts of tourism, and socio-cultural changes influenced by outsiders. Economic aspects show a positive trend in tourism development and its impact on livelihoods.

Strategies proposed include improving infrastructure, promoting tourism diversification, enhancing education and healthcare, and involving local communities in decision-making. These findings aim to inform policy and development planning, contributing to sustainable development in Manang District and serving as a model for similar regions.

Key Words: Sustainable development, environmental degradation, socio-economic inequality, infrastructure, Sustainable Development Goals (SDGs),

TABLE OF CONTENTS

TITLE PAGE	i
DECLARATION	ii
LETTER OF RECOMMENDATION	iii
APPROVAL SHEET	iv
ACKNOWLEDGEMENT	v
ABSTRACT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ACRONYMS AND ABBREVIATIONS	xi
CHAPTER I INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem	5
1.3 Research Questions	6
1.4 Objectives of the Study	6
1.5 Significance of the Study	6
1.6 Limitations of the Study	7
CHAPTER II REVIEW OF THE LITERATURE	8
2.1 General Review	8
2.2 Conceptual Framework	13
CHAPTER III RESEARCH METHODOLOGY	14
3.1 Research Design	14
3.2 Study Area	14
3.3 Data Collection	15
3.4 Sampling	15
3.5 Data Processing, Analysis and Presentation	15

3.6	Ethical Consideration	15
CHAPTER IV FINDINGS AND DISCUSSION		16
4.1	Protected Areas and sustainability	16
4.2	Protected Areas and Eco system	20
4.3	Conservation Economy	21
4.4	Environment Education, Research and Knowledge Management	22
4.5	Annapurna Conservation Area Project (ACAP)	23
4.6	Major Findings of the Study	26
4.7	Local Institution	26
4.8	Tourist Entry in Manang	28
4.9	Chacterstics of Participants	31
4.10	Respodent's Perception	32
4.10.1	Current state of Sustainable Development	32
4.10.2	Major Challenges and Barriers	34
4.10.3	Strategies	37
4.11	Climate Change	40
CHAPTER V SUMMARY AND CONCLUSION		42
5.1	Summary	42
5.3	Conclusion	43
REFERENCES		45
APPENDICES		49-59

LIST OF TABLE

1.	Local Institutions Under ACAP, Manang	27
2.	Tourist Entry in Manang, 2023	29
3.	Characteristics of Respondents	31
4.	Present Scenario on Environmental, Social and Economic Aspects	33
5.	Challenges on Environmental, Social, and Economic well-being	35
6.	Strategies to Achieve Environmental Social and Economic wellbeing	38

LIST OF FIGURES

1.	The Global Goals for Sustainable Development	2
2.	Location of Manang District and Chame Rural Municipality	3
3.	Main Tourist Areas in Manang District	4
4.	Conceptual Framework of the Study	13
5.	Map of Chame Rural Municipality, Manang	14
6.	Average Precipitation Trends in Manang, District	40
7.	Rescue Operation by APF,Nepal Personnel	41

LIST OF ACRONYMS AND ABBREVIATIONS

ACAP	Annapurna Conservation Area Project
APF	Armed Police Force
CBD	Convention on Biological Diversity
CFs	Conservation Farmers
CEs	Conservation Education Schools
DS	Directing Staffs
FMSc	Forest Management Sub- Committee
GESI	Gender Equality and Social Inclusion
GFCs	Green Force Clubs
IMPECT	Inter- Mountain Peoples' Education of Culture in Thailand
IUCN	International Union for Conservation of Natural Resources
MFBs	Micro Financing Banks
MFI	Micro Financing Institutions
MMsC	Micro-Hydro Management Sub- Committee
NTFP	Non Timber Forest Products
NTNC	National Trust for Nature Conservation
PA	Protected Area
PCL	Proficiency Certificate Level
SAWTEE	South Asian Watch on Trade Economics and Environment
SDGs	Sustainable Development Goals
SDWs	Safe Drinking Water Stations
SLCSC	Snow Leopard Conservation Sub Committee
TMSc	Tourism Management Sub- Committee
UN	United Nations

UNCBD	United Nation Convention on Biological Diversity
UNEP	United Nations Environmental Program
VDC	Village Development Committee

CHAPTER I

INTRODUCTION

1.1 Background of the Study

The 2030 Agenda for Sustainable Development, which was unanimously adopted by all United Nations members in 2015, established a set of 17 global Sustainable Development Goals (SDGs). These goals were designed to promote "peace and prosperity for people and the planet" The SDGs highlight the importance of addressing poverty and other forms of deprivation through strategies that enhance healthcare and education, reduce inequality, and foster economic growth, all while tackling climate change and preserving our oceans and forests. By placing sustainability at the core, the SDGs underscore the interrelated nature of environmental, social, and economic aspects of sustainable development (United Nations, 2024).

Sustainable development is a comprehensive approach to planning that aims to reconcile the social and economic requirements of current and future generations while safeguarding the natural environment from excessive harm. It involves adopting a global outlook when formulating social, economic, and environmental policies, considering the needs of future generations. Sustainable development also acknowledges the intrinsic value of maintaining a healthy natural environment, which includes the preservation of biodiversity. It emphasizes the protection and respect for the needs of Indigenous cultures. Additionally, it promotes the promotion of economic and social fairness in societies worldwide. Lastly, sustainable development calls for the accountable and transparent implementation of government policies (Niaz, 2022).

Sustainable development in Nepal is the process of meeting the country's present needs for economic growth, social progress, and environmental protection preserving the needs of future generation. This involves promoting sustainable economic activities, ensuring equitable access to basic services, conserving natural resources through sustainable management practices, and building capable and accountable institutions to effectively implement and enforce sustainable development policies over the long-term, with the overarching goal of improving the quality of life for the Nepali people today while preserving the country's natural endowments for tomorrow.

Figure 1*The Global Goals for Sustainable Development*

Source: UN, (2024)

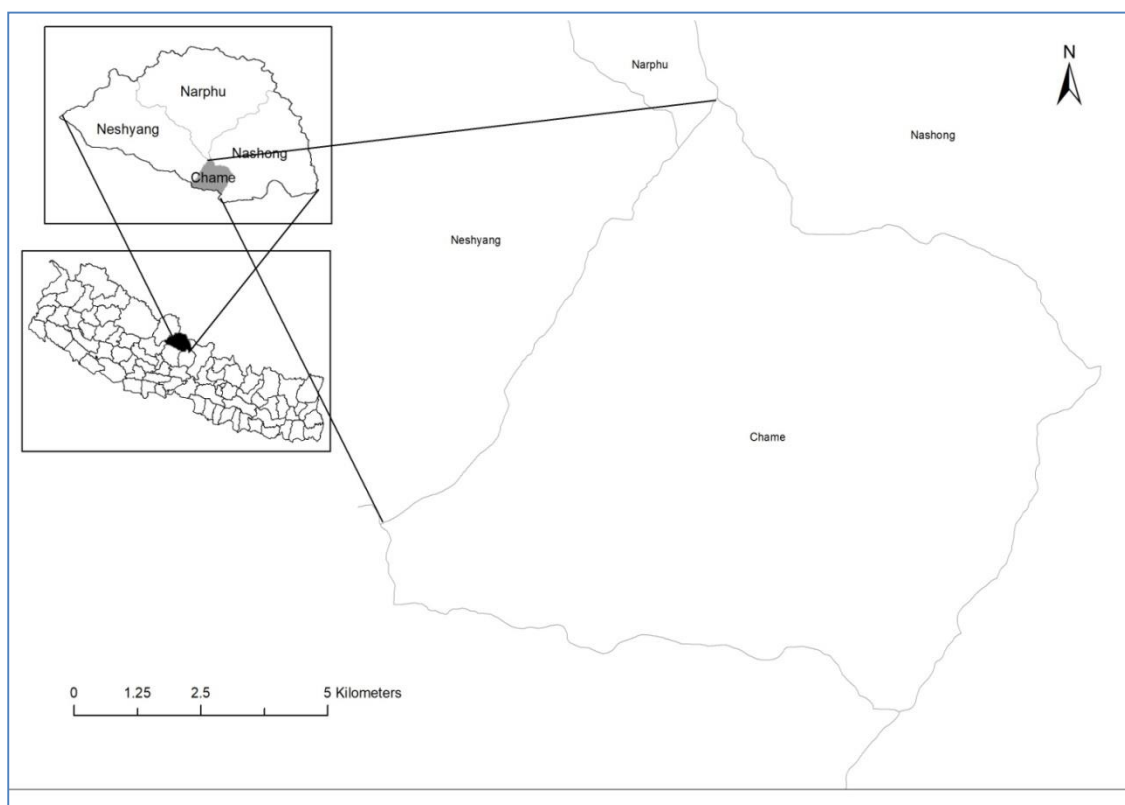
Figure 1 presents the 17 Sustainable Development Goals (SDGs) adopted by the United Nations to address global challenges and promote sustainable development. The goals of this initiative cover a wide-ranging and interconnected set of areas. These include the critical priorities of alleviating poverty, eradicating hunger, and promoting good health and well-being for all. Ensuring access to quality education and achieving gender equality are also key components. Providing clean water, sanitation, and affordable, clean energy are essential for improving living standards. Fostering decent work and economic growth, while also advancing industry, innovation, and infrastructure, can drive sustainable development. Reducing inequalities and building sustainable cities and communities are crucial for creating more inclusive and resilient societies. Responsible consumption and production patterns, as well as decisive climate action, are necessary to protect the environment. Safeguarding life below water and on land is equally vital. Underpinning these goals is the need to establish peace and justice through strong institutions, while developing robust global partnerships to collectively achieve this ambitious and comprehensive agenda for transformative change. This multifaceted approach

demonstrates the complexity and scale of the challenges, as well as the integrated solutions required to create a more equitable and sustainable future for all. The comprehensive nature of these SDGs highlights the multifaceted and integrated approach required to achieve sustainable development that balances economic, social, and environmental priorities for the betterment of people, planet, and prosperity. It emphasizes the global and collaborative nature of these goals, aiming to create a more equitable and sustainable future for all.

This research focus on Chame municipality of Manang District. Manang District is one of the 11th Districts under Gandaki province as a remote district i.e. "A" category. Figure shows the location of the Manang District and the chame Rural Municipality.

Figure 2

Location of Manang District and Chame Rural Municipality



Source: Nepal Archives, (2020)

In terms of geographical location. Manang district is located between $28^{\circ} 27'$ to $28^{\circ} 54'$ north latitude and $83^{\circ} 40'$ to $84^{\circ} 34'$ east longitude. In terms of altitude, Manang District has altitude variations from 1,680m and 8,163m above mean sea level. It has 4 rural municipalities and 28

wards and a total population 5658 (National Census, 2078). The district has a total area of 2,246 Km² square and it occupies 1.53 % of the total area of Nepal.

While describing the geographical beauty of this district, there are Tilicho Lake, which is the highest altitude (4919m) lake in the world, with very beautiful mountain views, and high snow covered mountain ranges. The district is known as a district beyond the mountains as it is bordered by Manaslu in the east, Damodar in the west, Annapurna and Lamjung mountains in the south. Marsyangdi River flows through the District headquarters Chame, Gangapurna Lake, in Manang Ngisyang Rural Municipality and Thorangla Pass which is known as the tenth best hiking destination in the world are the main assets that attract tourists in this district. Some of the main tourist areas are shown in figure 3.

Figure 3

Main Tourist Areas in Manang District



Source: Nepal Archives, (2020)

In this district, which has a majority of Buddhists, it is found that there are people of Lama, Sherpa, Gurung and other castes living there. In this district, rituals and customs based on Hinduism, Tibetan Buddhism is found since ancient times. The main festival celebrated by the bhote is Dhajyang. SonamLhosar, TamuLhosar and Gyalpo etc. festivals are mainly celebrated.

Manang District, located in the Annapurna Conservation Area of Nepal, is a region of immense ecological importance (Adhikari, 2018). Its diverse landscapes encompass high-altitude mountain ranges, pristine lakes, and unique flora and fauna. However, the district is increasingly threatened by environmental degradation, including deforestation, soil erosion, and water pollution (Paudel et al., 2019). These environmental challenges not only jeopardize the district's natural resources but also impact the livelihoods of local communities who rely on agriculture, tourism, and natural resource-based activities.

Apart from environmental issues, the Manang District encounters socio-economic obstacles as well. The district's isolated position, insufficient transportation infrastructure, and restricted availability of fundamental services all contribute to socio-economic disparities and impede the prospects for development (Shrestha & Bhandari, 2017). The local population predominantly engaged in subsistence farming and tourism-related activities, struggles with poverty, limited educational opportunities, and inadequate healthcare facilities (Gurung et al., 2016).

The preservation of cultural heritage is another significant aspect of sustainable development in Manang District. The district is home to diverse ethnic communities, including the Manangis, who have a rich cultural heritage that encompasses traditional practices, rituals, and architecture (Sherpa, 2019). However, the rapid pace of modernization and socio-economic changes pose challenges to the preservation of local cultural traditions and values.

By focusing on sustainable development, this research seeks to address these multifaceted challenges and contribute to the long-term well-being of Manang District Focusing the Chame rural municipality area. The research aims to explore innovative strategies and best practices that integrate environmental conservation, social equality and economic development.

1.2 Statement of the Problem

Manang District, faces significant challenges in achieving sustainable development. Despite its unique ecological and cultural heritage, the district is experiencing environmental degradation, social and economic inequalities. The rapid pace of change, including land cover change, tourism impacts, and climate change vulnerabilities, further exacerbates these challenges. There is a need to comprehensively assess the current state of sustainable development in Chame rural Municipality, Manang District and identify the major barriers hindering its progress, exploring potential solutions and strategies that integrate environmental

conservation, social equality and economic development, which are crucial for fostering sustainable development in the district. Addressing these issues requires a holistic understanding of the complex interactions between environmental, social, and economic dimensions in Manang District.

1.3 Research Questions

The study has been focused to answer the following research questions:

3.1 How can the current state of sustainable development in Chame Rural Municipality of Manang District be assessed taking into account of the environmental, social, and economic dimensions?

3.2 What are the major challenges and barriers that hinder sustainable development in aspects of environmental, social, and economic well-being?

3.3 How the environmental, social and economic wellbeing can be achieved by maintaining the sustainable development?

1.4 Objectives of the Study

The primary objectives of this research are as follows:

4.1. To assess the current state of sustainable development in Chame Rural Municipality in Manang District, in relation to environmental, social, and economic dimensions

4.2 .To identify the major challenges and barriers hindering sustainable development in aspects of environmental, social, and economic well-being

4.3. To identify the strategies to achieve environmental social and economic wellbeing maintaining the sustainable development

1.5 Significance of the Study

Manang District is known for its unique and fragile ecological environment, including high mountain peaks, glaciers, and diverse flora and fauna. The study is significant as it focuses on understanding the environmental changes and drivers of land cover change in the district. The findings inform conservation efforts, sustainable land management practices, and policies to protect the natural resources and biodiversity of Manang District.

Manang District faces socioeconomic challenges, including poverty, limited access to basic services, and unequal distribution of resources. The study holds significance in assessing the socioeconomic status and livelihood patterns of the local communities. By identifying barriers to socioeconomic development, the research can contribute to the design and implementation of targeted interventions for poverty reduction, income generation, and improving the overall well-being of the population and achieving the overall sustainable development goals.

Manang District is rich in cultural heritage, including traditional practices, architecture, and indigenous knowledge systems. The study's significance lies in exploring the local perception and practices in natural and cultural heritage conservation..

Manang District is vulnerable to climate change impacts, including glacial retreat, changing precipitation patterns, and increased risk of natural hazards. The study's significance lies in assessing the vulnerability and adaptation strategies of rural communities to climate change. The findings can contribute to enhancing community resilience, developing climate change adaptation plans, and advocating for climate-resilient infrastructure and practices in the district.

The significance of this study lies in providing evidence-based findings and guidelines to policymakers, local communities, and stakeholders. These findings inform policy decisions, development planning, and resource allocation for sustainable development initiatives in Manang District and serve as a model for other similar regions in Nepal and beyond.

Overall, the study's significance lies in its potential to contribute to the sustainable development of Manang District by addressing environmental conservation, socioeconomic development, cultural preservation, climate change adaptation, and informing policy and decision-making processes focusing in Chame rural municipality.

1.6 Limitations of the Study

Sustainable development covers wide range and there are various sectors to be study in sustainable development in Manang District. This research has been conducted only in Chame rural municipality of Manang District focusing to only three pillars: environmental, social and economic aspects of Sustainable development.

CHAPTER II

REVIEW OF THE LITERATURE

2.1 General Review

The Stockholm Conference on the Human Environment, held in Sweden in 1972, was the first world conference to exclusively address environmental issues. Representatives from 113 countries and 19 international organizations gathered at this conference. During the conference, a panel of 27 experts highlighted the interconnectedness between environment and development. They pointed out that although conflicts between environmental and economic priorities may arise in certain circumstances, the two areas are fundamentally interrelated and interdependent (Vogler, 2007, p. 432). Additionally, the Stockholm Conference led to the establishment of the United Nations Environment Programme (UNEP). The mission of the United Nations Environment Program (UNEP) is “to provide leadership and encourage partnerships in protecting the environment by inspiring, informing and empowering countries and people to improve the quality of life of future generations.” without compromising the quality of life.

The conference was crucial in paving the way for later international agreements on ocean dumping, ship pollution, and the illegal trade of endangered species. It also approved the "Stockholm Declaration on the Human Environment," which included forward-thinking principles such as Principle 13167, highlighting the need for integrated and coordinated development planning to ensure environmental protection. However, the conference's effectiveness was limited because environmental preservation and development, particularly in developing countries, were seen as conflicting priorities and were thus addressed separately and without coordination. Some critics argued that the conference emphasized the trade-offs between the environment and development rather than promoting their harmonious integration (Prizzia, 2007, p. 21). Even UN documents acknowledged that after the Stockholm conference, little progress was made in concretely integrating environmental concerns into development policies and plans. A more holistic approach, incorporating both economic development and environmental considerations, was clearly needed.

In 1983, the United Nations General Assembly established the World Commission on Environment and development later known as the Brundtland Commission.

The commission, named after its chairman, Gro Harlem Brundtland, then Prime Minister of Norway and later President of the World Health Organization (WHO), published the Brundtland Report in 1987, titled *Our Common Future*. This report builds on the outcomes of the Stockholm conference and contained a highly influential definition of sustainable development. "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition highlights two main concepts: This means recognizing the importance of prioritizing the basic needs of the world's poor and the limits that technology and social organization place on the ability of the environment to meet current and future needs.

A significant part of Nepal's commitment to the Sustainable Development Goals (SDGs) is integrating these goals into national policies. Shrestha and Pandey (2018) emphasize the government's efforts to mainstream the SDGs, stressing the need for policies that align with Nepal's specific socio-economic context.

During that period, the concept of sustainable development gained political traction due to increasing public concern in developed countries about the alarming issue of global environmental change. This concern, in some ways, eclipsed the fear of nuclear warfare that had been prevalent in the early 1980s (Vogler, 2007).

Some critics argue that the discussion of sustainability in the Brundtland Commission Report is overly optimistic and somewhat vague. They suggest the Commission adopted an optimistic tone to gain wider acceptance, despite the facts, by using ambiguous and sometimes contradictory statements to avoid a pessimistic outlook. Other critics are harsher, accusing Mrs. Brundtland of presenting a slogan designed to unify politicians in developed countries with environmentally conscious voters and politicians in developing countries facing economic challenges. This formula was intentionally left vague, with specific details to be addressed later (Benton, 1994).

The UN identifies poverty as a significant societal challenge. People living in poverty lack economic resources and access to external financial support, increasing their vulnerability (Samat et al., 2018). External financing, whether for building a home, starting or expanding a business, repaying debts, or managing economic crises, generally reduces this vulnerability (Noreen et al., 2011). However, formal financial institutions often neglect the needs of the impoverished. Consequently, Microfinance Institutions (MFIs) have been created and

supported by development agencies worldwide to provide financial services to those excluded from traditional banking (Noreen et al., 2011; Umar et al., 2021). MFIs have significantly contributed to establishing a self-reliant financial system for the poor, fostering micro-entrepreneurship (Khanam et al., 2018; Lopatta and Tchikov, 2017), raising income levels (Chowdhury & Mukhopadhaya, 2012), improving overall well-being (Mazumder & Lu, 2015), and enhancing socio-economic status, thereby ensuring dignity. Globally, regulatory authorities and central banks oversee MFIs, formally known as Microfinance Banks (MFBs), which provide various financial services to the poor using market-driven and commercial approaches.

Microfinance plays a vital role in empowering the impoverished to achieve economic independence and sustainability, thereby improving their challenging circumstances (Audu and Achegbulu, 2011; Bruton et al., 2015; Das, 2019; Lopatta and Tchikov, 2017; Samat et al., 2018). It enhances living standards, prioritizes children's education (Holvoet, 2004; Noreen et al., 2011), fosters prosperity (Hossain & Knight, 2008), promotes peace, encourages harmony, stimulates economic growth (Ocasio, 2012), and contributes to rural development (Agbaeze & Onwuka, 2014). Additionally, the educational level of borrowers aids in poverty alleviation (Awan et al., 2011). Ultimately, microfinance improves the overall well-being of the poor by increasing literacy rates, enhancing income opportunities, facilitating access to healthcare services, ensuring access to nutritious food and safe drinking water, improving housing, enabling asset acquisition, and increasing individual net worth (Atmadja et al., 2016).

Microfinance has had a significant positive impact on the lives of impoverished individuals across various countries, including Ghana (Valead et al., 2018), Nigeria (Agbaeze and Onwuka, 2014; Audu & Achegbulu, 2011), Solomon Islands and Vanuatu (Feeny & McDonald, 2016), Malaysia (Al-Shami et al., 2018; Samat et al., 2018), India (Das, 2019), Sri Lanka (Kumari et al., 2019), Bangladesh (Mazumder and Lu, 2015; Sheel et al., 2018), and Pakistan (Niaz & Iqbal, 2019). Specifically in the case of Pakistan, researchers (Akram & Hussain, 2011; Durrani et al., 2011) have observed that microfinance has been effective in increasing income levels and reducing poverty among its beneficiaries. The access to small-scale financial services and loans has enabled impoverished individuals in these countries to improve their economic well-being and lift themselves out of poverty.

Prior to the unification of Nepal under King Prithvi Narayan Shah in 1769 BS, indigenous peoples had self-governing states with collective land ownership. They maintained customary

practices, political systems, and administrative institutions to ensure the sustainable management of forests, land, and other natural resources, providing equal access and rights.

However, after the unification of Nepal, subsequent governments introduced discriminatory laws and policies regarding land and forests, ostensibly for equitable distribution. These measures ignored and undermined indigenous practices, leading to the weakening and, in some cases, the disappearance of ancient practices, traditional knowledge, skills, customary laws, and traditional institutions (Sherpa et al., 2013).

The transition from a decentralized, community-based approach to natural resource management to a centralized, state-centric model undermined the traditional stewardship and rights of indigenous communities over their ancestral lands and resources. This shift disrupted sustainable indigenous practices and eroded the traditional knowledge and institutions that had previously ensured the equitable and sustainable use of the environment.

Under Article 8 (J) of the Convention on Biological Diversity (CBD), governments worldwide are urged to respect, safeguard, and preserve the customary laws, skills, knowledge, and traditional lifestyles of indigenous peoples. This provision stresses the importance of national governments recognizing, protecting, and promoting indigenous knowledge and practices related to biodiversity conservation and management through domestic legislation. Similarly, Article 10-(C) of the CBD mandates national governments to protect and promote the enduring customs of indigenous peoples regarding biodiversity conservation and sustainable management (IMPECT, 2009).

Nepal's rich biodiversity and fragile ecosystems make environmental sustainability a critical issue. Research by Bhattarai et al. (2021) highlights the impacts of climate change on agriculture and biodiversity conservation, emphasizing the need for adaptive strategies.

Manang is divided into three distinct regions: Upper Manang, Lower Manang, and Nar-Phu. In Upper Manang, particularly in the Ngisyang Valley, there are four municipalities. The term "Ngisyang" is not widely understood by the valley's residents but is believed to derive from two local dialect words: "Ngi," meaning "we," and "Syang," meaning "village." This suggests that when people from Syang village migrated to the present-day Ngisyang valley, they saw it as their new homeland (Gurung and Neupane, 2012). Ghyalsumdo, or Lower Manang, means a convergence point of three routes or villages. The Nar-Phu region is located in the northeastern part of the Ngawal and Pisang Mountains (Manang VDC, 2010/11). Manang sits

at an average elevation of 3,600 meters above sea level, with average annual temperatures ranging from 10 °C to 15 °C, summer highs up to 21 °C, and winter lows below -5 °C, with significant snowfall (Chapagain, 2008).

For generations, the communities in Ngisyang Valley have adhered to a traditional legal system deeply rooted in their customs. This system has evolved to effectively manage, preserve, and support their traditional occupations of farming and animal husbandry. Sustainable customary laws and practices have been developed to ensure the longevity and success of these activities. The role of Dhawa Shyarpa has been crucial in overseeing and maintaining various aspects of community life, including social, economic, political, and religious affairs.

In recent times, the Mithewas have taken on the role of administering and managing various aspects of the communities in Ngisyang Valley. Similar to the Dhawa Shyarpa tradition, the Mithewas have been successful in conserving, promoting, and managing the forest, agricultural, and pasture lands within their communities.

While the principles of the Dhawa Shyarpa custom have been widely followed in the Ngisyang Valley, the exact origins of this tradition remain uncertain. Some speculate that the Dhawa Shyarpa custom may have originated approximately three hundred years ago in the Manang valley, as documented by Gurung (1977).

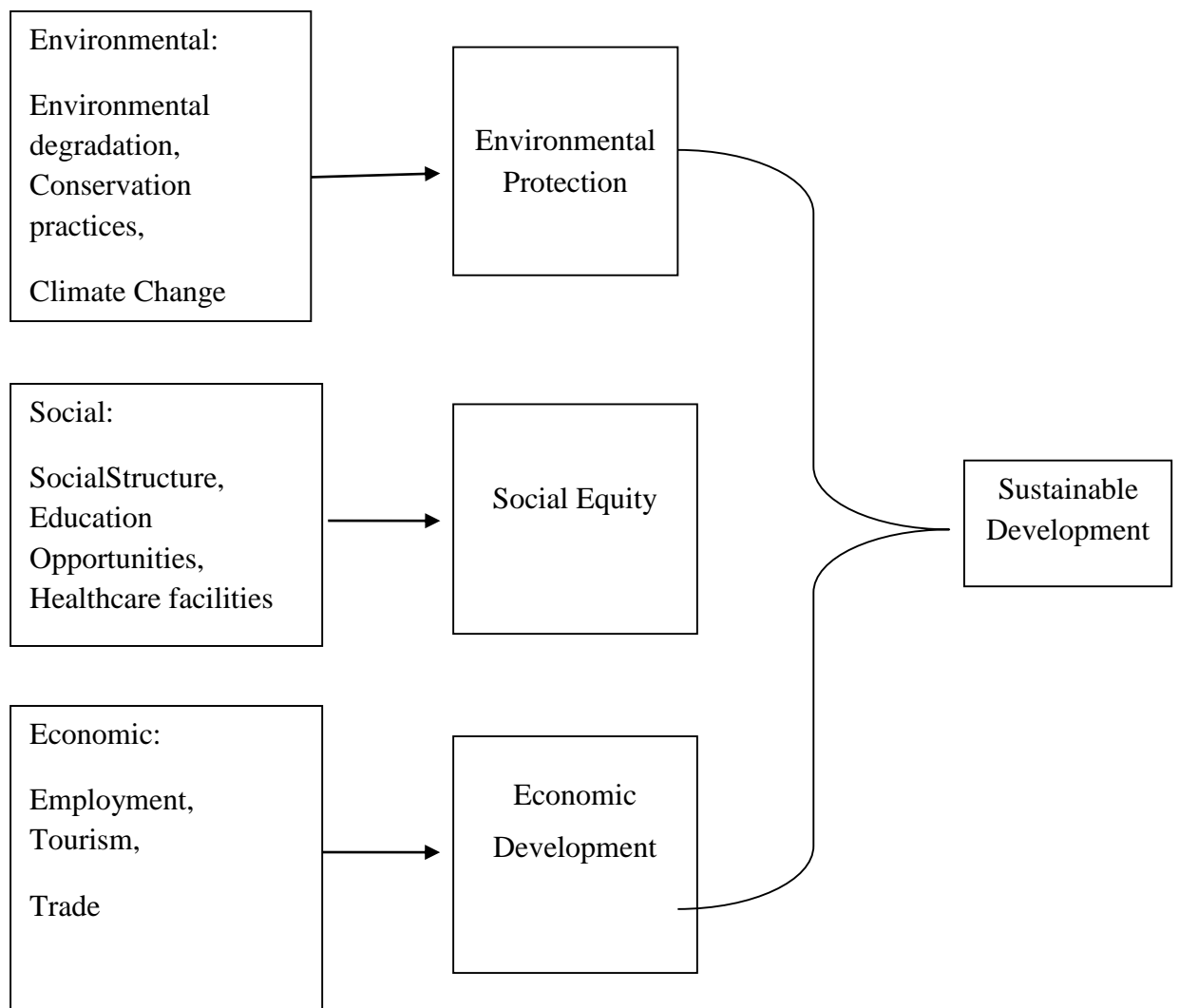
The Mithewas have assumed a pivotal role in overseeing the sustainable use and stewardship of the natural resources within their communities, mirroring the practices of the Dhawa Shyarpa. Despite the widespread adoption of this traditional system, the precise historical roots of the Dhawa Shyarpa custom in the Ngisyang Valley remain unclear, with suggestions that it may have emerged from the Manang region centuries ago.

2.2 Conceptual Framework

The conceptual framework can be organized around three main pillars: Environmental Protection, Social Equity and Economic Development as shown in Figure,4.

Figure 4

Conceptual Framework of the Study



Source: Modified after Van Meter and Van Hom, 1975

CHAPTER III

RESEARCH METHODOLOGY

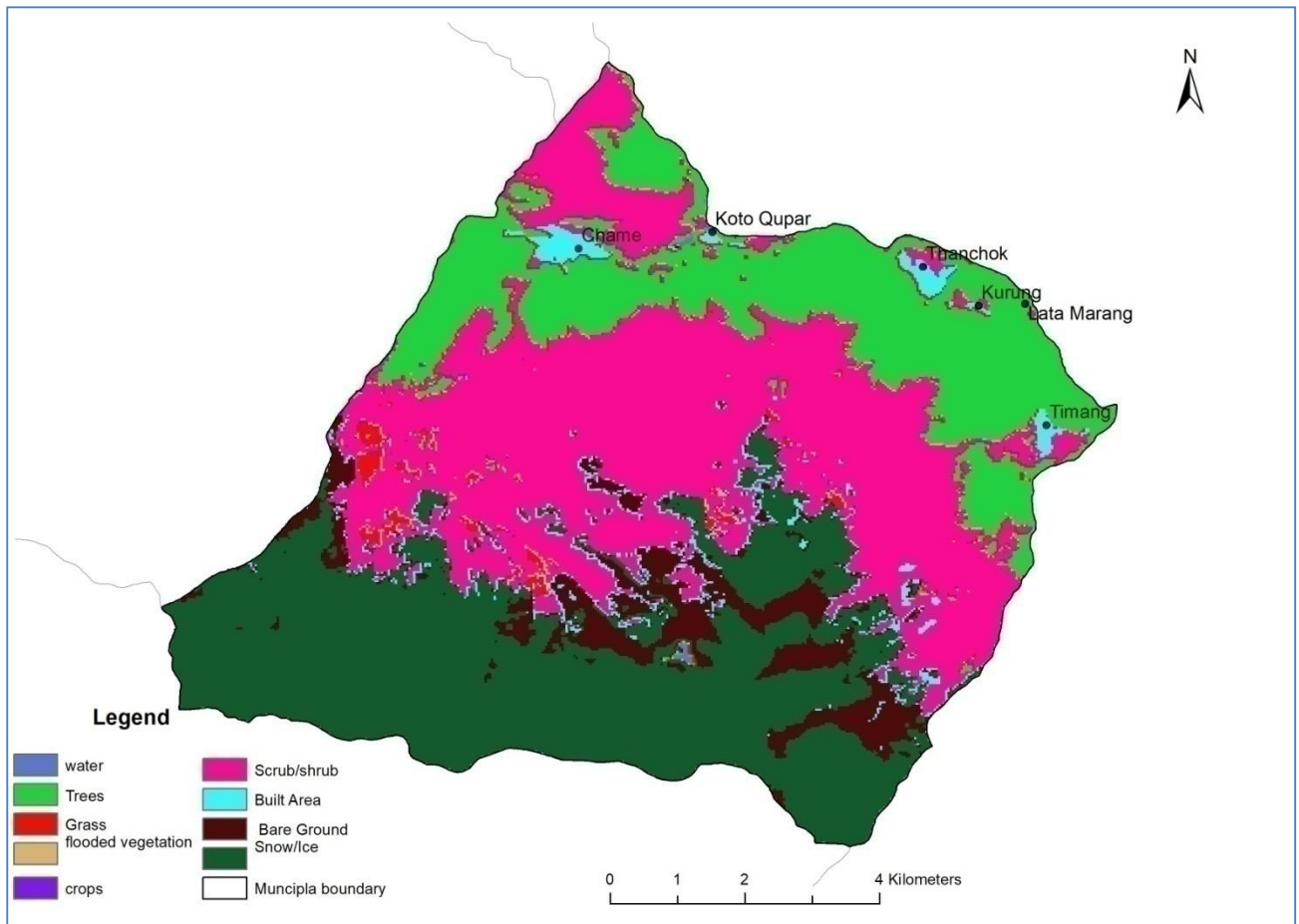
The research methodology used in this study are given below :

3.1 Research Design: The study adopted a qualitative method research design. This has allowed for a comprehensive understanding of the environmental and socio-economic dynamics of Chame Rural Municipality in Manang, District and their implications for sustainable development.

3.2 Study Area: The area of this study was Chame Rural Municipality in Manang District and it is shown in figures 2 and 5.

Figure 5

Map of Chame Rural Municipality, Manang



Source: Nepal Achieve, (2020)

Chame is the District Headquarters and center of developmental activities in Manang. This study was conducted in Chame Rural Municipality focusing on the three pillars of SD areas- Environmental Conservation, social equity, and economic development.

3.3 Data Collection

The study employed qualitative research approach and collected both primary and secondary data to achieve the objective of the study.

3.3.1 Primary Data: Qualitative data has been collected through in-depth interviews, focus group discussions, and field observations. It helped to capture nuanced perspectives, local knowledge, and cultural practices related to sustainable development in the District. Key informants, including policymakers, community leaders, and local people were engaged to gain insights into their experiences and perceptions.

3.3.2 Secondary Data: Secondary data were collected from various published books, papers, journals and internet websites. Published or unpublished documents from APF, Nepal Coy Manang, ACAP and Chame Rural Municipality of Manang were sources of the secondary data.

3.4 Sampling: A purposive sampling technique was employed to select participants for qualitative data collection. The sample included a diverse range of households, community members, and stakeholders representing different socioeconomic backgrounds, cultural groups, and geographical areas within Chame Rural Municipality in Manang District.

3.5 Data Analysis: Qualitative data has been analyzed using thematic analysis techniques. Transcribed interviews and focus group discussions have been categorized to identify recurring themes, patterns, and emerging concepts. The analysis follows a systematic process of data induction, organization, and interpretation to derive meaningful insights.

3.6 Ethical Considerations: Ethical considerations have been paramount throughout the research process. Informed consent has been obtained from all participants, and their privacy and confidentiality are well ensured. The research has complied with ethical guidelines and necessary approvals from relevant institutions and authorities. APA 7th edition has been followed for the citation and references for this research paper.

CHAPTER IV

FINDING AND DISCUSSION

4.1 Protected Areas and Sustainability

4.1.1 Sustainable Development Discourse

The Brundtland Commission's 1987 report was a highly influential global policy agenda that helped propel the concept of sustainability into the development field. However, the broader definition of sustainable development offered by the Commission has been subject to wide and varying interpretations (Estes 1993; Butler 1998). This reflects the multiple, often conflicting, values, moral positions, and belief systems underlying the concept (Robinson 2004).

At its core, sustainable development displays a dynamic tension between concerns over poverty and the environment. This stems from two contrasting environmental arguments - a utilitarian approach focused on conservation, versus one centered on preservation (Robinson 2004; Campbell 2005). These two strategies are rooted in opposing philosophies, namely neoliberalism and protectionism (Robinson 2004; Campbell 2005).

As a result, sustainable development presents a paradox. On one hand, it connotes economic growth and development. Yet on the other, it must contend with environmental limits, as well as issues of equity and justice (McKercher 1993; Estes 1993; Robinson 2004; Campbell 2005).

From a philosophical standpoint, conceptualizing nature either as an autonomous domain for protectionism or as utilitarian resources for material production has produced polarized narratives on human-environment relationships (Campbell, 2005). From a management perspective, this contestation has allowed individuals to gain benefits from it. As a result, the sustainability concept is often viewed as a panacea for solving development issues. Promoting sustainable development as a means of mitigating, but not challenging, continued economic growth is a classic example of this (Robinson, 2004).

Furthermore, the divergent perspectives highlight the interdependent reality of human and environmental relationships on one hand (Estes 1993; Robinson 2004), while also revealing the socially constructed nature of the concept on the other. These imperatives mean policymakers can gain by adopting sustainability principles within development and environmental fields, as a social process rather than an end state (Estes 1993; Robinson 2004).

Within protected areas, the fact that sustainability hinges on tradeoffs between conservation and development means the issue is not one versus the other, but how best to integrate these two opposing philosophies for sustainable management.

We need a broader outlook on sustainable development that integrates both the substantive (e.g. ecology, socio-economy) and political dimensions of sustainability (Robinson, 2004). The challenge of sustainability in protected areas should be discussed in the context of evolving conservation, development, and governance discourses.

4.1.2 Conservation and Development Discourse

Over the past 25 years, two major trends have impacted the sustainability of protected areas (PAs): the exponential growth in the number and area of PAs, and the effects of globalization.

Until recently, a key global conservation trend has been increasing the number of PAs (Science Daily 2013). However, the globalization of local economies and the resulting escalating global demand for food, energy, and water (Laurance & Balmford, 2013), combined with the need for developing countries to alleviate poverty for sustainable development (Ervin et al., 2010; UN 2013b), have put significant pressure on the limited resources within PAs (Leichenko and O'Brien 2002; Hogh-Jensen et al., 2010; Koensler & Papa 2013; Hajkowicz et al., 2012; UN, 2013a). These forces of change are among the greatest contemporary challenges facing PA sustainability.

From Kaziranga National Park (India) to Nairobi National Park (Kenya) and Serengeti National Park (Tanzania), PAs have been subjected to road construction projects promoted to facilitate resource extraction for market production (Jayaram, 2003; World Bank, 2004; Dobson et al., 2010; Job and Schmidt, 2011; Laurance & Balmford, 2013). These emerging globalization trends and development pressures, as described by Mowforth & Munt (1998), are responsible for affecting the ecology, socioeconomic aspects, and levels of governance (international, national, and local community) within PAs.

From an ecological perspective, roads have a profound influence on the footprint of human activities (Laurance & Balmford, 2013), such as the ecosystem changes caused by intensified land use (Foley et al., 2005; Müller et al., 2010). Land alteration is seen as one of the most visible indicators of human impact and a major driver of biodiversity loss (Foley et al., 2005; Nkonya et al., 2012). Biodiversity loss due to ecosystem changes results in the

destabilization of ecosystem services, which are the foundation of human welfare (Ervin et al., 2010).

Socioeconomically, the main arguments used by governments to justify road development are the promised reduction of poverty through maximizing economic opportunities and growth for the poor. However, Rammel & Van den Bergh (2003) counter this argument, stating that traditional economic theory actually facilitates unsustainable socioeconomic structures and development processes. Van de Walle (2002) also claims that road connectivity is just one of many constraints, and the intended socioeconomic benefits from road development depend on many factors, including prevailing equity, political economy, and social factors.

Thus, it can be argued that the contemporary debate on conservation and development should focus on the moral dimensions of sustainable development, as well as the political-economic divisions and power relations at play (Blaikie, & Jeanrenaud, 1997). The persistence of poverty, despite concerted efforts for sustainable development by governments and multilateral agencies (Ashley & Maxwell, 2001), is due to insufficient attention to these factors (Bostörm, 2012), perpetuating inequalities and disparities within rural regions of developing countries (Van de Walle, 2002). Road development, therefore, has sociopolitical and moral dimensions, and sustainability from this standpoint is primarily about good governance.

4.1.3 Governance Discourse

Discourses on sustainability have garnered significant global attention in terms of public policymaking and governance (Koensler & Papa, 2013). However, governance for protected area (PA) sustainability is a contentious issue due to the diverse, value-based perspectives of different stakeholders regarding PAs (CBD, 2008; Byrne & Wolch, 2009; Liechti et al., 2010; IUCN, 2013).

This pervasive notion of PA sustainability has not only led to contested meanings around resource use and management (Blaikie & Jeanrenaud, 1997), but has also represented the normative aspects of how PAs should be managed (Job et al. 2003; Vargas-Del-Rio 2014).

In other words, the governance of PA sustainability is a contentious issue because different groups have diverse, value-based perspectives on PAs, which has led to conflicting views on how PAs should be used and managed. This has resulted in a lack of consensus on the fundamental meaning and objectives of PA sustainability.

From a conservation standpoint, the evolution of protected area (PA) policymaking and governance contexts in the 1980s and 1990s, shifting from a strict protection philosophy to more participatory approaches (Müller et al., 2008; Rotich, 2012), is the result of these contested perspectives on PAs.

Participatory resource management became a crucial PA management strategy to meet the dual objectives of poverty alleviation and nature conservation (Bajracharya et al., 2007; Baral et al., 2007, 2010; NTNC, 2008, 2012; Ojha & Sarker, 2012; Becken and Job, 2014). This has led to two historical outcomes. A shift in PA governance approaches from hierarchical to multi-level contexts (Banner, 2002; Newman et al., 2004; Armitage, 2008) that encouraged inclusiveness and decentralized decision-making (Campbell, 2005). And the embedding of conservation policies within broader socio-political and economic changes for regional development (Thakali, 2012).

Nature-based tourism emerged as an important strategic tool to promote nature conservation through economic development that is less destructive than activities like logging, mining, and mass tourism (Job and Vogt, 2003; Honey, 2008; Mayer & Job, 2014). This has become a mainstay of the economy, with profound effects in rural regions (Job, 1996; Butler, 1998; Job & Paesler, 2013). This suggests that PAs have become sites for the practice of power, the negotiation of interests, and the contestation of values (Campbell, 2005).

In terms of development, the context of the 1990s was shaped by two key factors. The neo-liberalization process and poverty alleviation policies promoted by governments (Honey, 2008; Khanal et al., 2005; Shrestha, 2010), via major global sustainable development programs like the Millennium Development Goals and Poverty Reduction Strategy Papers. And another was globally, the emergence of the 'Washington Consensus' and the liberalized economic policies facilitated by multilateral development agencies (SAWTEE, 2007), and regionally, the rise of the economic and military power of capitalist India and its imposition of a trade and transit embargo on Nepal (Shrestha, 1992).

As a landlocked country, these forces of change not only weakened Nepal but also made it more dependent on multilateral development agencies (Shrestha, 1992). This changed the course of Nepal's development paths, including the rising influence of non-governmental organizations (NGOs) and multilateral development agencies in national development plans. The 1990s development context in Nepal was shaped by a combination of neo-liberal

policies, global sustainable development programs, and regional geopolitical dynamics, which altered the country's development trajectory and increased the role of external actors like NGOs and multilateral agencies.

The changes in the development context during the 1990s in Nepal contributed to a reorientation of development policies towards a more participatory and inclusive system. The Local Self Governance Act of 1999 legally endorsed the concept of self-governance and the devolution of authority to local government institutions (Rai and Paudel, 2011; Thakali, 2012).

Beyond the policy landscape, the changing political regimes were also important dimensions that influenced the governance contexts in Nepal. Key events included the 1990 democratic movement, the decade-long Maoist insurgency (1996-2006), and the existing political movement that shifted Nepal's political system from an absolute monarchy to a multi-party democratic system in the 1990s, and eventually to a federal republican state in 2007 (Berg, 2008).

These radical political shifts and governance processes have had a significant impact on Nepal's sustainable development trajectory, stifling the institutions and their capacities. The transition from centralized to decentralized governance, as well as the political upheavals, created challenges and uncertainties that affected the overall development landscape in the country.

In summary, the reorientation of development policies towards participation and inclusion, coupled with the profound political changes, reshaped the governance contexts in Nepal during this period, with both positive and disruptive effects on the country's sustainable development efforts.

4.2 Protected Areas and Ecosystem

Sustainable forest management involves the scientific utilization and conservation of forest resources like timber, water, wildlife, and non-timber products. This ensures forests remain healthy and productive while meeting the needs of present and future generations. Afforestation is the process of establishing forests on lands that have been deforested or have never been forested before. This helps combat climate change by sequestering carbon, restoring ecosystems, and providing wildlife habitats.

Fire ecology examines how different ecosystems adapt to fire, the ecological benefits of controlled burns, and the consequences of wildfires on biodiversity and ecosystem health.

Protected areas are designated for nature and biodiversity conservation. They provide visitor facilities and services like centers, trails, campgrounds, interpretation programs, and ranger services to enhance visitor experiences while minimizing environmental impacts.

Cultural heritage conservation in protected areas involves preserving and managing cultural and historical sites within natural landscapes, including archaeological sites, historic buildings, traditional practices, and indigenous heritage. This aims to protect these sites while promoting understanding and appreciation of cultural diversity.

Tourism operations in protected areas encompass a range of activities and amenities provided to visitors, such as guided tours, recreational activities, accommodations, transportation, and food services. Sustainable tourism practices are promoted to minimize environmental impacts and support local communities while providing enjoyable and educational experiences.

It has been emphasized on key aspects of sustainable forest management, a forestation, fire ecology, protected area management, cultural heritage conservation, and sustainable tourism operations, all of which are critical components of holistic environmental conservation efforts.

4.3 Conservation Economy

Check posts are stationed at entry points to protected areas to monitor visitor entry, provide information on park rules, safety guidelines, and wildlife sightings. Information centers offer educational resources, maps, and interpretive displays to enhance visitor experiences and promote conservation awareness. Signboards within protected areas guide visitors by providing information about trails, points of interest, safety precautions, and rules. Effective signboard management ensures clear and informative signage that helps visitors while minimizing environmental impact.

Trekking trails are essential infrastructure for nature-based tourism in mountainous regions like Manang district, Nepal, allowing visitors to explore natural landscapes with minimal ecological disturbance. Heritage villages are cultural attractions that offer insights into traditional lifestyles, crafts, and architecture. Promotion efforts aim to showcase these unique cultural experiences, attract visitors, and support local economies while preserving cultural heritage through different homestay programs.

Climate change adaptation in protected areas involves implementing strategies to minimize the impacts on ecosystems, communities, and infrastructure. This may include habitat restoration,

species conservation, water management, and community resilience measures. Waste management initiatives and cleanup campaigns aim to mitigate pollution and environmental degradation in and around protected areas, including waste collection, recycling, composting, and awareness campaigns to encourage responsible disposal and reduce littering.

4.4 Environment Education, Research and Knowledge Management

Research and development activities focus on generating new knowledge, innovations, and technologies to address environmental challenges, enhance conservation efforts, and promote sustainable development. This includes scientific studies, field research, experimentation, and technology development aimed at understanding ecosystems, biodiversity, and environmental processes.

Conservation education and outreach programs aim to raise awareness, foster appreciation, and promote stewardship of the environment among various stakeholders, such as local communities, tourists, and policymakers. These programs utilize educational tools and methods like workshops, seminars, nature camps, interpretive signage, and community events to engage people in conservation issues and encourage behavior change.

Youth mobilization initiatives involve empowering young people to become active participants in environmental conservation and sustainable development efforts. These programs provide opportunities for youth engagement through volunteering, youth-led projects, environmental clubs, and youth forums, fostering leadership skills, environmental literacy, and a sense of responsibility towards nature.

Capacity building training and workshops are designed to enhance the skills, knowledge, and competencies of individuals and organizations involved in environmental conservation and management. Training programs cover topics such as biodiversity monitoring, sustainable resource management, environmental policy, and community engagement, equipping participants with the tools and techniques needed to address environmental challenges effectively.

Knowledge sharing and documentation initiatives facilitate the exchange of information, experiences, and best practices among stakeholders involved in environmental conservation and management. This includes establishing knowledge platforms, databases, and networks, as well as organizing conferences, seminars, and study tours to promote learning, collaboration, and innovation in the field of environmental conservation. Coordination with relevant

ministries involves collaboration and communication with government agencies responsible for natural resource management, environmental protection, and sustainable development. This coordination ensures alignment of environmental education, research, and management efforts with national policies, priorities, and goals.

Gender equality and social inclusion (GESI) initiatives promote the participation and empowerment of women, marginalized groups, and indigenous communities in environmental conservation and decision-making processes. GESI trainings aim to address gender disparities, promote social equity, and ensure that conservation efforts benefit all members of society.

Biodiversity assessment focuses on documenting, monitoring, and analyzing the diversity of species, ecosystems, and genetic resources within a given area. These assessments provide valuable information for conservation planning, ecosystem management, and policy development aimed at protecting and preserving biodiversity.

Research on sustainable non-timber forest products (NTFPs) explores the ecological, social, and economic aspects of harvesting and utilizing natural resources such as medicinal plants, wild fruits, and fibers from forests. This research supports the sustainable use and management of forest resources.

4.5 Annapurna Conservation Area Project (ACAP)

The Annapurna Conservation Area Project (ACAP) is the largest undertaking of the National Trust for Nature Conservation (NTNC) in Nepal. Launched in 1986, ACAP is the first Conservation Area and largest Protected Area in Nepal, covering an area of 7,629 square kilometers.

ACAP is home to over 100,000 residents from diverse cultural and linguistic backgrounds. It is rich in biodiversity, serving as a treasure trove for a wide range of species, including,- 1,226 species of flowering plants,- 105 mammal species,- 518 bird species, 40 reptile species and 23 amphibian species.

As the first Conservation Area and the largest Protected Area in Nepal, ACAP represents a significant environmental conservation initiative undertaken by the NTNC. Its large geographic scope and biodiversity-rich ecosystems make it a critical conservation area in the country. The Annapurna region is home to several unique features that make it a one of a kind place in the world. The Kali Gandaki Gorge Considered the world's deepest river gorge, it is

3.4 km long and 2.41 km wide. This valley contains fossils from the Tethys Sea dating back 60 million years. The Ghorepani Rhododendron Forest region boasts some of the world's largest rhododendron forests. Tilicho Lake, located in Manang, north of the Annapurna massif, this is the world's highest altitude freshwater lake.

Beyond its impressive geological and ecological diversity, the Annapurna region is also renowned for its remarkable cultural diversity. The dominant ethnic groups include the Gurung and Magar in the south, and the Thakali, Manange, and Loba in the north. Each group has its own distinct dialect, culture, and traditions. Other communities, such as Brahmin and Chhetri, are also present, though in smaller numbers.

The religious landscape is equally diverse, with Hindu, Buddhist, and pre-Buddhist belief systems coexisting across the region. The local population resides in the 5 districts and 15 rural municipalities that make up the Annapurna Conservation Area (ACA).

The Annapurna Conservation Area (ACA) in Nepal is a highly popular trekking destination, attracting the majority of the country's trekkers due to its natural and cultural attractions. Over time, tourism has become a critical component of the local economy, with over 1,000 lodges, teahouses, and various other supporting services catering to the thousands of trekkers, pilgrims, and their support staff who visit the region annually. The ACA's natural beauty and rich cultural heritage have made it the premier trekking destination in Nepal, driving significant economic activity and development in the local communities through the tourism industry. However, the soaring number of visitors has exerted immense pressure on the region's forest resources. Trekkers' fuel wood consumption is twice that of the local population, and the non-biodegradable waste they generate, estimated at 15 kg per group of 15 people over a 10-day trek, is a major concern.

To address these multifaceted challenges, ACA has adopted an integrated, community-based conservation and development approach. This model, which was first piloted in the Ghandruk Village Development Committee in 1986, has been at the forefront of promoting the "Conservation Area" concept through an "Integrated Conservation and Development Programme" approach. It is the first protected area in Nepal that allows local residents to live within its boundaries, own private property, and maintain their traditional rights and access to natural resources. It refrains from using the military to protect the region's natural resources, instead investing its financial resources into community development and social capital building.

The National Trust for Nature Conservation (NTNC), which manages ACAP, receives no regular government funding but is granted the right to collect entry fees from trekkers, which are then reinvested into the region, its resources, and its communities. Additional funds are also raised from national and international donors to support conservation and development efforts. This innovative, community-focused approach to managing a significant portion of Nepal's protected area system is an exemplary achievement of a non-governmental institution.

To enhance the management of the Annapurna Conservation Area (ACA), it has been divided into seven unit conservation offices: Jomsom, Manang, and Lo-Manthang in the trans-Himalayan region, and Bhujung, Sikles, Ghandruk, and Lwang on the southern flank of the Annapurna mountain range. This decentralized administrative structure aims to improve the effective oversight and protection of the ACA's natural and cultural resources through localized conservation efforts and decision-making. The focus of the offices in the most popular trekking destinations (Jomsom, Manang, and Ghandruk) is on integrated tourism management and other development activities that benefit local communities and the environment. In contrast, the priorities in Bhujung, Sikles, and Lwang are on poverty alleviation and integrated agriculture development and agroforestry.

In Upper Mustang, which came under ACA's jurisdiction in 1992, the focus has been on managing tourism sustainably and promoting heritage conservation, as it is a major tourist attraction.

For over three decades, the National Trust for Nature Conservation (NTNC) has worked to fulfill its mandate of promoting the conservation and prosperity of the Annapurna region, its resources, and its people. NTNC believes that ultimately, the ACA must be managed by the local people themselves, so the focus is on building local capacity, both at the institutional and individual levels, to meet the conservation and development aspirations of the people. The goal of the Annapurna Conservation Area Project (ACAP) is to achieve a sustained balance between nature conservation and socio-economic improvement in the ACA, thereby assisting the NTNC. The objectives are to conserve the natural resources for present and future generations, bring sustainable social and economic development to the local people, and develop tourism in a way that minimizes negative impacts on the natural, socio-cultural, and economic environments. The guiding principles of ACAP include advocating for people's participation, ensuring the inclusion of socially excluded groups and women, building managerial, administrative, accounting, and technical capacity of the local community, linking with

external organizations, and ensuring technical, managerial, and financial sustainability. ACAP operates based on various acts, including the National Park and Wildlife Conservation Act 1973, Forest Act, Soil and Watershed Conservation Act, Environment Conservation Act, and Tourism Act.

4.6 Major Findings of the Study

This chapter deals with major findings about sustainable development of Chame Municipality of Manang district in relation with environmental, social and economic aspects through field study. The bases of findings are dependent on primary data collected from local people and government officials within Chame Municipality. Various different variables are presented to find sustainable development as in aspects of three main pillar: environmental, social and economic.

4.7 Local Institution

There are various local institutions, including Conservation Area Management Committee (CAMCs), which are responsible for the overall management and conservation of the ACA. They oversee various conservation initiatives, coordinate with stakeholders, and implement policies and plans for sustainable resource management. There are 13 CAMCs operating within ACAP. Women Development Sub-committees (Women Group) focus on empowering women within local communities by providing opportunities for skill development, income generation, and participation in decision-making processes. There are 24 Women Development Sub-committees or Women Groups operating within ACAP. Forest Management Sub-committees (FMSC) are responsible for the sustainable management and utilization of forest resources within the ACA.

Table 1*Local Institutions Under ACAP, in Manang District*

Conservation Area Management Committee (CAMCs)	13
Women Development Sub-committee (Women Group)	24
Forest Management Sub-committee (FMsC)	9
Tourism Management Sub-committee (TMsC)	7
Snow Leopard Conservation Sub-committee (SLCsC)	13
Micro-hydro Management Sub-committee (MMsC)	3
Safe Drinking Water Stations (SDWs)	7
Conservation Farmer (CFs)	16
Conservation Education School (CEs)	9

Source: (ACAP, Manang, 2023)

Table 1 shows different local institutions working various areas under ACAP. There are 9 Forest Management Sub-committees operating within ACAP. Tourism Management Sub-committees (TMsC) focus on managing tourism activities within the Annapurna Conservation Area to ensure sustainable tourism practices, minimize environmental impact, and maximize benefits for local communities. There are 7 Tourism Management Sub-committees operating within ACAP. Snow Leopard Conservation Sub-committees (SLCsC) focus specifically on the conservation of snow leopards and their habitats within the Annapurna Conservation Area. They conduct research, implement conservation measures, and raise awareness about snow leopard conservation. There are 13 Snow Leopard Conservation Sub-committees operating within ACAP. Micro-hydro Management Sub-committees (MMsCs) are responsible for the management and maintenance of micro-hydro power projects within the Annapurna Conservation Area. They ensure reliable access to electricity for local communities while

promoting renewable energy and sustainable development. There are 3 Micro-hydro Management Sub-committees operating within ACAP. Safe Drinking Water Stations (SDWs) provide access to clean and safe drinking water for local communities within the Annapurna Conservation Area. They are essential for improving public health, reducing waterborne diseases, and promoting hygiene and sanitation.

There are 7 Safe Drinking Water Stations operating within ACAP. Conservation Farmers are individuals or groups engaged in sustainable agricultural practices within the Annapurna Conservation Area. They promote soil conservation, organic farming, and agro ecological techniques to enhance food security and preserve biodiversity. There are 16 Conservation Farmers operating within ACAP. Conservation Education School (CEs) integrate environmental education and conservation principles into their curriculum to raise awareness and instill conservation values among students. They play a vital role in building future generations of environmental stewards. There are 9 Conservation Education Schools operating within ACAP. Green Force Clubs (GFCs) are youth-led clubs that promote environmental conservation and activism within local communities. They organize tree planting campaigns, waste management initiatives, and environmental education activities to foster a culture of sustainability.

4.8 Tourist Entry in Manang

Table 2 gives the detail of tourist regarding the number and their nationality. The total number of tourists from each country ranges from a few individuals to thousands making 21247 visitors in Manang. Countries like France, Israel, Germany, the United Kingdom, and the United States have highest number of tourists to Nepal, with thousands of visitors from each country. Other countries, including Russia, Australia, the Netherlands, India, and China, also contributed significantly with over a thousand tourists from each country. Some countries, such as small island nations or less populous countries, have small numbers of tourists, but still contribute to Nepal's overall tourism sector. Manang is one of the most attractive place for tourists. There is world's highest trekking route called Thorangala pass which attracts the trekking lover tourists from worldwide. Similarly snow covering mountains and Tilicho lake which is world's highest place situated lake, are also attractions for tourists in Manang

Table 2*No of Tourists Entered in Manang in 2023 as Recorded at Chame Police Checkpost.*

S.N	Country	Total	S.N	Country	Total
1	France	2533	41	Argentina	50
2	Israel	1889	42	Brazil	47
3	Germany	1858	43	Hongkong	47
4	United Kingdom	1498	44	Slovenia	46
5	United States	1238	45	Iran	41
6	Russia	1171	46	Belarus	40
7	Australia	1130	47	South Africa	31
8	Netherlands	993	48	Chile	30
9	India	946	49	Philippines	29
10	China	803	50	Kazakhstan	26
11	Spain	604	51	Malta	22
12	Korea	569	52	Iceland	19
13	Italy	517	53	Armenia	18
14	Canada	473	54	Bulgaria	17
15	Poland	433	55	UAE	17
16	Czech Republic	374	56	Greece	16
17	Switzerland	369	57	Colombia	16
18	Belgium	329	58	Taiwan	14
19	Austria	246	59	Albania	14
20	New Zealand	202	60	Croatia	14
21	Singapore	183	61	Estonia	13
22	Slovakia	161	62	Belize	12
23	Denmark	153	63	Turkey	11
24	Malaysia	152	64	Pakistan	10
25	Japan	145	65	Ecuador	10
26	Taiwan	144	67	Chad	9
27	Ireland	142	68	Luxembourg	9
28	Thailand	128	69	Philippines	8
29	Hungary	113	70	Morocco	8
30	Sweden	113	71	Barma	8
31	Indonesia	109	72	Uruguay	7
32	Norway	104	73	Egypt	7
33	Lithuania	90	74	Costa Rica	7
34	Latvia	78	75	Cambodia	6
35	Bangladesh	76	76	Tunisia	6
36	Portugal	75	77	Paraguay	6
37	Vietnam	72	78	Serbia and Montenegro	6
38	Romania	67	79	Peru	5
39	Finland	61	80	Swaziland	5
40	Mexico	59	81	Kenya	5

81	Ukraine	55
82	Hellenic	82
83	Montenegro	4
84	Guatemala	4
85	Mongolia	4
86	Georgia	4
87	Algeria	4
88	Brunei	3
89	Madagascar	3
90	Moldova	3
91	Sri Lanka	3
92	Macedonia	2
93	Andorra	2
94	Afghanistan	2
95	Jordan	2
96	Lebanon	2
97	Malawi	2
98	Liechtenstein	2
99	Namibia	2
100	Venezuela	2
101	Cyprus	2
102	Maldives	2
103	Saudi Arabia	2
104	Kosovo	1
105	Nauru	1
106	Sudan	1
107	Palestine	1
108	Azerbaijan	1
109	Oman	1
110	Bosnia and Herzegovina	1
111	Dominica	1
112	Honduras	1
113	Mali	1
114	Kyrgyz Republic	1
115	Kiribati	1
116	Palau	1
117	Cote d'Ivoire	1
118	Fiji	1
119	El Salvador	1
120	Nicaragua	1
121	Scotland	1
122	Kuwait	1
		21247

Note: ACAP, Manang, 2023

4.9 Characteristics of Respondents

Table 3 Shows the characteristics of respondents. Altogether 55 participants were involved in interview. Out of them, 32 were from local residents and 23 were from government officials. 18 participants were male and 14 participants were female from local residents. Out of the 18 participants of male, 9 belong to Hindu and 9 belong to Buddhist religion. They were 24 -59 years of age group. Out of them 7 males belong to under high school education (class 10) e background, 9 belong to PCL level and 2 belong to Bachelor level. As per their occupation 1 was tourist guide, 3 were labors and 14 were engaged in hotel business. Among 14 female participants, considering their Religion, 1 was Hindu and 13 were Buddhist. They belong 28 - 56 years age group. 10 female were less than grade 10 as education background and 4 were in PCL level. As per their occupation, 4 were farmer and 10 were Hotel entrepreneur.

Table 3

Characteristics of Respondents

Categories	Local Residents	Government Officials
Male	18	15
Female	14	8
Hindu	10 (1Female)	19
Buddhist	22 (13 Female)	3
Muslim	0	1
Under 10 Class	17 (10 female)	0
PCL Level	13 (4 female)	0
Bachelor Level	2	0
Tourist Guide	1	0
Labor	3	0
Hotel Business	24 (10 Female)	0
Farmer	4 Female	0

Note: Field work, 2024

Among the 23 government officials, 15 were male and 8 were female working in various government offices in district headquarter. Most of the government officials were out of district so as per their religion, 19 were belong from Hindu, 3 in Buddhist and 1 from Muslim religion.

4.10 Respondents' perception

It is tried to observe participant view about environmental, social and economic aspects within municipality. They were very much concern in such matter. They expressed their concern about changing pattern of rainfall and snow fall trend, increasing of temperature as environmental degradation. Local people from Manang district are leaving district for higher opportunities. This trend has impacted their traditional practices and also influenced from increasing outsider of district however it has increased economic activities. It can be clearly observed that socio-cultural practices have been gradually impacted through outsider's activities. People of Manang are living together with maintaining peace and social harmony.

On the economic aspects, they are happy that they are able to survive within district as good life. It is possible that development of tourism made this success and it can observed Manangies are getting success to upgrade their life standard.

4.10.1 Current Status of Sustainable Development in Chame Rural Municipality on Environmental, Social, and Economic Dimensions

Table 4 shows current state of sustainable development in Chame Rural Municipality in Manang District across the environmental, social, and economic dimensions. In environmental aspects, 91% reported an increase in rainfall, while 9% reported a decrease. This suggests that there has been a perceived increase in rainfall in the area. All respondents (100%) reported a decrease in snowfall. This indicates a perceived decline in snowfall patterns in Chame Rural Municipality. The majority of respondents (93%) reported an increase in temperature, while 7% reported a decrease. This implies that there is a perceived trend of rising temperatures in the area.

Table 4.*Present Scenario on Environmental, Social and Economic Aspects on the Basis of Respondents*

SN	Aspects	Variables	Increased		Decreased	
			No.out of 55	%	No.out of 55	%
1.	Environmental	Rain Falling	50	91	5	9
		Snow Falling	-	-	55	100
		Temperature	51	93	4	7
2.	Social	Demography size	-	-	55	100
		Education Opportunities	30	55	25	45
		Healthcare Services	51	93	4	7
3.	Economic	Tourist	55	100	-	-
		Employment	29	53	26	47
		Trade	25	45	30	55

Note: Field work, 2024

Based on the respondents' understanding, it appears that Chame Rural Municipality is experiencing changes in precipitation, snowfall, and temperature, with an increase in precipitation and temperature and a decrease in snowfall. They also reported that rainy days and high intensity precipitation events are increasing, resulting into higher erosion, more landslide and floods, all undermining the sustainable development.

In social aspects, all respondents reported a decrease in the demography size. This suggests that there has been a decline in the population of Chame Rural Municipality. Approximately 55% of the respondents reported an increase in education opportunities, while 45% reported a decrease. This indicates that there have been mixed perceptions regarding the availability of educational opportunities in the area. According to the respondents, 93% reported an increase in healthcare services, while 7% reported a decrease. This suggests that there has been a perceived improvement in healthcare services in Chame Rural Municipality. Based on the

respondents' understanding, there has been a decrease in the population size, mixed perceptions about education opportunities, and an overall improvement in healthcare services.

In economic aspects, all respondents reported an increase in tourist activities. This implies that there has been a perceived growth in tourism in Chame Rural Municipality. 53% of the respondents reported an increase in employment opportunities, while 47% reported a decrease. This suggests that there have been mixed perceptions regarding the availability of employment in the area. Similarly about 45% of the respondents reported an increase in trade, while 55% reported a decrease. This indicates that there have been mixed perceptions about the state of trade in Chame Rural Municipality. Based on the respondents' understanding, there has been an increase in tourist activities, mixed perceptions about employment opportunities, and mixed perceptions about the state of trade in the municipality.

Overall, based on the responses provided, it can be inferred that Chame Rural Municipality in Manang District is experiencing changes in various dimensions of sustainable development. There are perceived increases in precipitation, temperature, healthcare services, tourism, and employment opportunities. However, there are also perceived decreases in snowfall, demography size, education opportunities, and trade.

4.10.2 Major Challenges and Barriers Hindering Sustainable Development in Aspects of Environmental, Social, and Economic Well-being

Table 5 shows the major challenges and barriers hindering sustainable development in Chame Rural Municipality in Manang District across the environmental, social, and economic dimensions. In environmental challenges, the majority of participants (73%) identified pollution as a significant challenge. This suggests that there are concerns about pollution affecting the environmental well-being of the municipality. Approximately 82% of participants identified deforestation as a challenge. This highlights the importance of addressing deforestation to protect the local ecosystem and promote sustainable development. About 47% of participants identified weak land surface as a challenge. This could refer to issues such as soil erosion, degradation, or unsuitability for certain agricultural practices, which can impact environmental sustainability.

Table 5 shows the challenges on environmental, social and economic aspects within Chame rural Municipality on the base of respondents.

Table 5*Challenges on Environmental, Social, and Economic Well-being Based on Respondents*

SN	Aspects	Challenges	No. Out of 55	%
1.	Environmental	Pollution	40	73
		Deforestation	45	82
		Weak land surface	26	47
		Low awareness	30	55
		Carbon Emission by firewood	20	36
		Weak Implementation of Policies	21	38
2.	Social	Demography size	40	73
		Unqualified Manpower	35	64
		Influence of outsider	30	55
		Scattered Settlement	12	22
3.	Economic	Geography	44	80
		Insufficient Budget	40	73
		Scarcity of modern Technology	29	53
		Weak Coordination among stakeholders	12	21

Note: Field work, 2024

According to the 55% of participants (table 5), low environmental awareness is a challenge. This indicates a need for increased education and awareness campaigns to promote sustainable practices in the community. About 36% of participants identified carbon emissions from firewood as a challenge because the higher number of tourists burn more woods contributing to climate change. This suggests that the reliance on traditional cooking methods using firewood is contributing to carbon emissions and environmental degradation. About 38% of participants mentioned weak implementation of policies as a challenge. This indicates that

there may be a gap between policy formulation and effective implementation, hindering sustainable development efforts.

In social challenges, the majority of participants (73%) identified the degradation of the size of the population (table 5) as a challenge. This suggests that there may be issues related to population degradation and its impact on social well-being and resources in the municipality. About 64% of participants mentioned unqualified manpower as a challenge. This implies that there is a need for skill development and training programs to enhance the employability and capacity of the local workforce especially public service sectors. According to 55% of the participants (table 5), the influence of outsiders is a challenge. This may refer to issues such as cultural assimilation, displacement, or external control over local resources, which can affect social cohesion and community empowerment. Similarly about 22% of participants (table 5), mentioned scattered settlements as a challenge. This suggests that the distribution of settlements across the municipality may pose difficulties in providing adequate infrastructure, services, and social cohesion.

In economic challenges, the majority of the participants (80%) (table 5), identified geography as a challenge. Given the mountainous terrain of the region, the geographical constraints may hinder economic activities and infrastructure development. About 73% of the participants mentioned insufficient budget as a challenge. This indicates that there may be limitations in financial resources allocated for development projects, which can impede economic growth and sustainability. About 53% of participants identified the scarcity of modern technology as a challenge. This suggests that the lack of access to advanced technology may hinder economic development and productivity in the municipality. About 21% of the participants mentioned weak coordination among stakeholders as a challenge. This indicates that there may be a lack of collaboration and coordination between different actors involved in sustainable development, which can impede progress.

These challenges and barriers, as identified by the participants, provide insights into the key areas that need attention and action for promoting sustainable development in Chame Rural Municipality. Addressing these challenges would require comprehensive strategies, including policy reforms, awareness campaigns, capacity building, infrastructure development, and improved coordination among stakeholders.

4.10.3 Strategies to Achieve Environmental Social and Economic Well-being Maintaining the Sustainable Development

Table 6 shows the strategies to achieve environmental, social, and economic well-being while maintaining sustainable development and it is explained below: For environmental strategies, the strategy with the highest number of participants (76%) is to improve road condition and manage dust. This indicates that the participants consider the state of roads and dust management as crucial factors for environmental well-being. Likewise 60% of the participants focus on the management of reliable electricity supply and tree plantation. This suggests that participants recognize the importance of sustainable energy and tree planting for environmental sustainability. Avoiding over extraction of natural resources received support from 55% participants. This indicates a significant concern for preserving natural resources and promoting sustainable practices.

Conducting awareness programs was supported by 69% of the participants. This highlights the recognition of the importance of education and awareness in fostering environmental well-being. Only 9 out of the 55 participants (16%) agreed on the need of environmental study. While this had the lowest number of participants, it still signifies a recognition of the value of research and knowledge in addressing environmental challenges. Proper implementation of policies was supported by 53% of the participants. This indicates that participants believe effective policy implementation is essential for achieving environmental well-being.

Table 6 shows the strategies to achieve environmental social and economic wellbeing by addressing the prevailed challenges on environmental, social and economic aspects.

Table 6

Summary of the strategies to achieve environmental social and economic wellbeing

SN	Aspects	Strategies	No. Out of 55	%
1.	Environmental	Improve road condition and management of dust	42	76
		Management of reliable electricity supply and tree Plantation	33	60
		Avoid extraction of natural resources	30	55
		Conduct awareness program	38	69
		Need to environmental study	9	16
		proper implementation of policies	28	53
2.	Social	Policies of participation of local people in decision making process	16	29
		Deployment of qualified manpower in public service sector	45	82
		Provide grant/subsidies to marginalized people	36	65
		Enhance social security services	24	44
3.	Economic	Alternate route for tourist	44	80
		Development of infrastructure	29	53
		Policies to encourage agriculture and husbandry	25	45
		Abolish the policy of restriction to tourist for long stay in upper Manang	18	33
		Promotion of tourist landscapes	39	71
		Use of technology	16	29

Note: Field work, 2024

In social strategies, the highest number of participants (45 out of 55, 82%) suggested the need of deployment of qualified manpower in the public service sector. This suggests that participants prioritize the importance of having skilled personnel to improve social services and well-being. Policies of participation of local people in the decision-making process received support from (29%). While it has the lowest number of participants, it still signifies recognition of the significance of involving local communities in decision-making for social well-being. Providing grant/subsidies to marginalized people received support from 65% of participants. This indicates a concern for addressing social inequalities and supporting disadvantaged groups. Enhancing social security services was supported by 44% of the participant. This suggests that participants acknowledge the importance of robust social security systems for overall social well-being.

In economic strategies, the strategy with the highest number of participants (44 out of 55, 80%) (table 6) is the development of alternate hiking routes for tourists. This suggests that participants recognize the potential economic benefits of diversifying tourism routes and reducing congestion in specific areas. Promotion of tourist landscapes received support from 71% of the participants. This indicates that participants acknowledge the economic potential of promoting tourism and attracting visitors to scenic areas. Policies to encourage agriculture and husbandry were supported by 45% of the participants. This suggests that participants believe in the importance of supporting agricultural and husbandry practices for economic well-being.

Abolishing the policy of restriction on tourists for long stays in Upper Manang received support from 18 out of 55 participants (33%). This indicates a desire to stimulate tourism and economic growth by removing constraints on tourist stays. The use of technology was supported by 29% of the participants. This suggests recognition of the potential of technology in driving economic development and improving productivity.

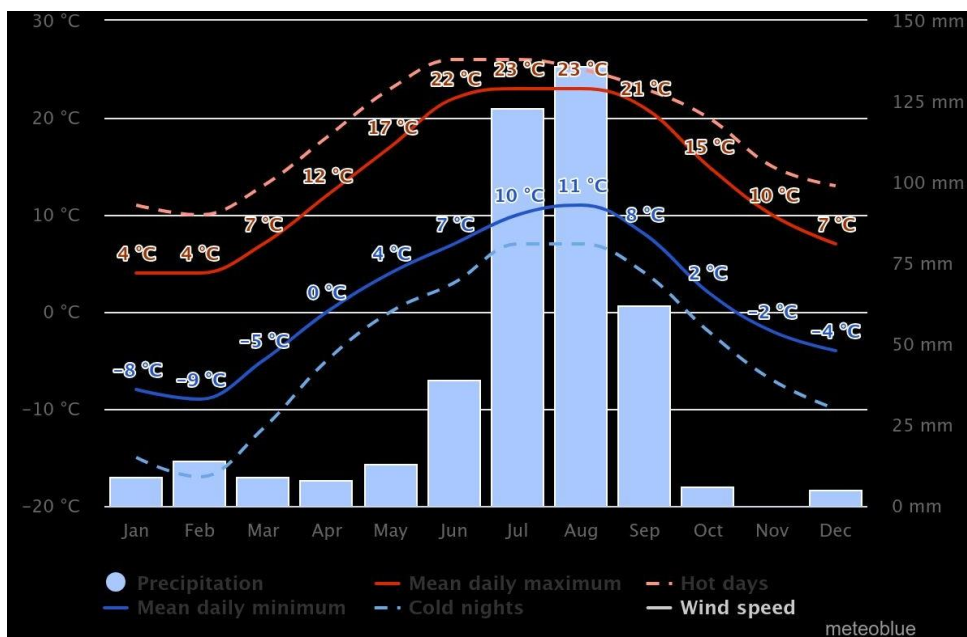
It is important to consider that the participant numbers and percentages represent the preferences and priorities of the individuals involved in the analysis. The varying levels of support for each strategy indicate different perspectives and priorities among the participants. The analysis provides insights into the strategies that received relatively higher support but does not imply the superiority or effectiveness of one strategy over another.

4.11 Climate Change

Climate change significantly impacts Manang district, Nepal, exacerbating existing environmental and socio-economic issues. Increased pollution and deforestation weaken the land surface, making the region more susceptible to erosion and landslides. The reliance on firewood for heating contributes to high carbon emissions, further accelerating climate change. Low awareness and weak policy implementation hinder effective climate action, while the small, scattered population and unqualified manpower limit local capacity to adapt to and mitigate these changes. External influences and insufficient budgets strain resources, preventing the adoption of modern technology necessary for climate resilience. Additionally, the district's challenging geography complicates infrastructure development, and weak coordination among stakeholders hampers cohesive efforts to address climate change's multifaceted impacts.

Figure 6

Average Precipitation Trends in Manang, District



Source: Meteoblue, 2024

This figure shows the average temperature for every month over 30 years in Manang District. "mean daily maximum" (solid red line) represents the average highest temperature recorded each day throughout the month for Manang District. Similarly, the "mean daily minimum" (solid blue line) indicates the average lowest temperature each day. The "hot days" and "cold

nights" (dashed red and blue lines) illustrate the average highest temperature of the hottest day and the lowest temperature of the coldest night for each month over the past 30 years.

There was massive floods in District headquarters Chame in Manang in 2078 B.S. It is the one relevant example of impact of climate change.

Figure 7

Rescue Operation by APF, Nepal Personnel After Massive Flood in Chame, Manang



Source: APF, Nepal Coy, Manang

This figure represents impact of climate change in Himalayan range causing huge floods and damaging the public settlement.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

The 2030 Agenda for Sustainable Development sets forth 17 Sustainable Development Goals (SDGs) aimed at fostering peace and prosperity worldwide. Manang District in Nepal, renowned for its natural and cultural heritage, confronts challenges like environmental degradation, socio-economic inequality, and infrastructure inadequacies. This research concentrates on sustainable development in Manang, emphasizing environmental, social, and economic dimensions. Utilizing qualitative methods like interviews and focus groups, the study explores perceived changes and challenges in sustainable development. Strategies proposed include infrastructure improvement, tourism diversification, education, and healthcare enhancement, and community involvement in decision-making. These recommendations aspire to guide policy and development initiatives, fostering sustainable development in Manang and potentially serving as a model for similar regions.

The findings from the study shed light on perceived changes and challenges in sustainable development within Chame Rural Municipality, Manang District. Environmental degradation, population decline, and economic constraints emerge as significant issues affecting the region's well-being. However, amidst these challenges, several strategies have been proposed to address the key concerns.

Improving infrastructure, particularly roads and dust management, is highlighted as crucial for environmental well-being and overall development. Additionally, promoting tourism diversification could help alleviate economic constraints by attracting visitors to new areas and reducing pressure on popular tourist sites. Enhancing education and healthcare services emerges as essential for social development, ensuring the well-being of residents and addressing disparities in access.

Furthermore, involving local communities in decision-making processes is emphasized as a means to foster social cohesion, empower marginalized groups, ensuring reliable electricity supply, promoting tree plantation, conducting awareness programs, implementing policies effectively, deploying qualified manpower, providing grants to marginalized groups, enhancing social security services, developing alternate tourist routes, promoting agricultural

practices, abolishing restrictive policies, and utilizing technology., and ensure that development initiatives are culturally and socially appropriate.

These recommendations are intended to inform policy and development planning efforts, providing a framework for promoting sustainable development in Manang District. By addressing the identified challenges and implementing the proposed strategies, the municipality can work towards achieving a balance between environmental conservation, social equity, and economic prosperity.

5.2 Conclusion

In conclusion, this research covers comprehensive examination of the sustainable development dynamics within Chame Rural Municipality of Manang district, covering environmental, social, and economic dimensions. Through primary data collected from local residents and government officials, a nuanced understanding of the current state of affairs has emerged.

The characteristics of participants shed light on the diverse demographic composition of the study, providing valuable insights into the perspectives of both local residents and government authorities. Observations underscore the community's concerns regarding environmental degradation, demographic shifts, and the socio-cultural impacts of external influences, juxtaposed with positive economic trends driven by tourism.

The assessment of the current state of sustainable development reveals a complex landscape marked by both positive and negative trends across environmental, social, and economic aspects. While there are perceived increases in certain indicators such as precipitation, healthcare services, tourism, and employment opportunities, there are also concerning declines in snowfall, population size, education opportunities, and trade.

Furthermore, the identification of major challenges and barriers hindering sustainable development highlights critical areas that require targeted interventions, ranging from environmental issues like pollution and deforestation to social challenges such as population decline and unqualified manpower, along with economic constraints like geographical limitations and insufficient budgets.

In response to these challenges, a set of strategies has been proposed to achieve environmental, social, and economic well-being while ensuring sustainable development. These strategies encompass a wide range of initiatives, including infrastructure development, policy reforms,

community participation, skill enhancement, and technological integration, reflecting the multifaceted nature of sustainable development efforts.

REFERENCES

- Adhikari, R. (2018). Environmental and Socioeconomic Changes in Manang District, Nepal. *Mountain Research and Development*, 38(3), 252-263.
- Annapurna Conservation Area Project (ACAP)*, (2023)
- Annapurna Conservation Area Project (ACAP)*. (2023, August 28).
<https://www.ntnc.org.np/project/annapurna-conservation-area-project-acap>
- Ashley, C and Maxwell, S. (2001): Rethinking rural development. In: *Development Policy Review* 19 (4), 395-425. DOI: 10.1111/1467-7679.00141
- Bajracharya, S. B.; Gurung, G. B. and Basnet, K. (2007): Learning from community participation in conservation area management. In: *Journal of Forest and Livelihood* 6 (2), 54–66
- Bartlett, Albert (2006) - Reflections on Sustainability, Population Growth, and the Environment, published in *The Future of Sustainability*, Springer, Dordrecht
- Bhattarai, S., et al. (2021). "Climate Change and Biodiversity Conservation in Nepal: Implications for Achieving SDGs." *Environmental Science & Policy*, 115, 93-101.
- Bostörm, M. (2012): A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue. In: *Sustainability: Science, Practice, and Policy* 8 (12), 3–14.
http://sspp.proquest.com/static_content/vol8iss1/introduction.bostrom.pdf
- Butler, R. (1998): Rural recreation and tourism. In: Ilbery, B. (ed.): *The geography of rural change*. Harlow, 210–232.
- Campbell, B. (2005): Nature's discontents in Nepal. In: *Conservation and Society* 3 (2), 323–353
- Chapagain, P. S. (2008). Land, labour and agricultural change in upper Manang valley: Understanding meaning and process (Unpublished PhD Dissertation). Tribhuvan University, the Faculty of Humanities and Social Sciences, Kirtipur, Kathmandu

- Estes, R. J. (1993): Towards sustainable development: From theory to practice. In: *Social Development Issues* 15 (3), 1-29.
- Gurung, N.J. (1976). An introduction to the socio-economic structure of Manang district. *Kailash*, 4(3)
- Gurung, D. B., Dhungana, H., & Bhattarai, D. (2016). Assessment of socioeconomic status and livelihood pattern of the people of Manang district, Nepal. *International Journal of Applied Sciences and Biotechnology*, 4(2), 234-238.
- Hajkowicz, S. A.; Cook, H. and Littleboy, A. (2012): *Our future world: global megatrends that will change the way we live*. CSIRO, Australia
- Hogh-Jensen, H.; Oelofse, M. and Egelyng, H. (2010): New challenges in the underprivileged regions call for people-centered research for development. In: *Society and Natural Resource* 23 (9), 1–8. DOI: 10.1002/soc.1000
- Laurance, W. F. and Bamford, A. (2013): A global map for road building. In: *Nature* 495, 308–309. DOI: 10.1038/495308a1080/08941921003671502
- IMPECT.(2006). *Indigenous knowledge, customary use of natural resources and sustainable biodiversity management. Case study of Hmong and Karen communities in Thailand*. Thailand: Highland Mapping Development and Biodiversity Management Project Inter– Mountain Peoples’ Education of Culture in Thailand Association
- Leichenko, R. B. and O’Brien, K. L. (2002): The dynamics of rural vulnerability to global change: the case of southern Africa. In: *Mitigation and Adaptation Strategies for Global Change* 7 (1), 1–18. DOI: 10.1023/A:1015860421954
- Mowforth, M. and Munt, I. (1998): *Tourism and sustainability: new tourism in the third world*. London
- Niaz, M. U. (2022). Socio-Economic development and sustainable development goals: A roadmap from vulnerability to sustainability through financial inclusion. *Economic Research-Ekonomska Istraživanja*, 35(1), 3243–3275. <https://doi.org/10.1080/1331677X.2021.1989319>

- Noreen, U., Imran, R., Zaheer, A., & Saif, M. I. (2011). Impact of microfinance on poverty: A case of Pakistan. *World Applied Sciences Journal*, 12(6), 877–883.
- Paudel, B., Paudel, S., & Paudel, K. (2019). Land cover change and its drivers in Manang district, Nepal. *Journal of Geographical Studies*, 1(1), 28-40.
- Prizzia Ross (2007) - Sustainable Development in an International Perspective, published in Handbook of Globalization and the Environment, CRC Press, Boca Raton
- Rai, J. K. and Paudel, N. S. (2011): Discourse of local governance in Nepal: an analysis of legislation, constitutional processes and civil society demands. ForestAction Discussion Paper Series 11:1. <http://www.forestation.org>.
- Rammel, C. and Van den Bergh, J. C. J. M. (2003): Evolutionary policies for sustainable development: adaptive flexibility and risk minimising. In: *Ecological Economics*, 47 (2–3), 121–133. DOI: 10.1016/S0921-8009(03)00193-9
- Samat, N., Rashid, S. M. R., & Elhadary, Y. A. (2018). Analyzing Spatial Distribution of Poverty Incidence in northern region of Peninsular Malaysia. *Asian Social Science*, 14(12), 86–96. <https://doi.org/10.5539/ass.v14n12p86>
- Sherpa, M. (2019). Local Perception and Practices in Natural and Cultural Heritage Conservation: A Case Study of Manang, Nepal. *Journal of Cultural Heritage Management and Sustainable Development*, 9(2), 223-237.
- Sherpa, P.D., Sherpa, G., Ghale, K., Lama, K., & Sherpa, P. (2013). Revitalizing customary governance & strengthening traditional knowledge on natural resource management in Nepal. In *Indigenous Peoples, Forest & REDD Plus: Sustaining & Enhancing Forests Through Traditional Resource Management (Vol 2, p. 195-267)*. Baguio City: Tebtebba Foundation.
- Shrestha, A., & Bhandari, D. (2017). Vulnerability and Adaptation of Rural Communities to Climate Change in Manang District, Nepal. *Journal of Mountain Science*, 14(9), 1793-1806.
- Shrestha, K., & Pandey, R. (2018). "Mainstreaming Sustainable Development Goals in National Policies: A Case Study of Nepal." *Journal of Sustainable Development Studies*, 5(2), 45-62.

Vogler, John (2007) - The International Politics of Sustainable Development, Published in Handbook of Sustainable Development, Edward Elgar Publishing Limited, Cheltenham.

Transforming our World: The 2030 Agenda for Sustainable Development / Department of Economic and Social Affairs. (n.d.). Retrieved March 27, 2024, from <https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981>

APPENDICES

Appendix “A”

(Refers to Page no. 16 para. 3)

चामे गाउँपालिका मनाङका स्थानीय बासिन्दाहरूसंगको अन्तर्वाताको नमुना फर्म

सर/म्याडम

यस अध्ययनको उद्देश्य जिल्ला मनाङ चामे गाउँपालिकाको दिगो विकासमा बातावरणीय, सामाजिक तथा आर्थिक पक्षमा बिद्यमान अवस्था, चुनौती तथा चुनौतीहरूको समाधानको उपायहरू पत्ता लगाई दिगो विकासमा टेवा पुर्याउनु हो । यस अन्तरवार्ताबाट लिएको सुचनाहरू यस अनुसन्धानको लागि मात्र प्रयोग गरिने छ र गोपनीयता कायम राखिने छ।

नाम :- (ऐच्छिक)

लिङ्ग:-

उमेर:-

बैवाहिक स्थिति :-

धर्म:-

शिक्षा:-

पेशा :-

१. हाल वर्षाको अवस्था कस्तो रहेको छ ? बातावरणीय ह्रासको कारण के हो तथा बातावरण बचाउको उपायहरू के हुन सक्छन् ?
२. हाल पहिलेको तुलनामा हिँउको अवस्था कस्तो रहेको छ तथा बातावरण संरक्षणमा के कस्ता समस्याहरू छन् ?

३. तापक्रमको अवस्था कस्तो रहेको छ तथा क्लाइमेट चेन्जको असर न्यून गर्न के कस्ता बाधाहरु छन् र उपायहरु के हुन सक्छन्?
४. क्लाइमेट चेन्जले जंगल, कृषि तथा अन्य प्राकृतिक स्रोतहरुमा के कस्तो असरहरु परेको छ ?
५. बिद्यमान सामाजिक संरचनाको कारणले सामाजिक सद्भावमा के कस्तो असर परेको छ ?
६. जिल्लामा शिक्षा तथा स्वास्थ्य सेवाको अवस्था कस्तो रहेको छ तथा थप प्रभावकारी बनाउनको लागि के कस्ता कार्यहरु जरुरी छ ?
७. बिद्यमान जनसंख्याको आकारले समग्र बिकासमा के कस्तो असर परेको छ ?
८. जिल्लामा ब्यापार तथा आर्थिक गतिविधिको अवस्था कस्तो रहेको छ तथा आर्थिक उन्नतिको लागि के कस्ता उपायहरु हुन सक्दछन्?
९. रोजगारीको अवस्था कस्तो रहेको छ ?
१०. जनताको जिवनस्तर उकास्नको लागि पर्यटनको भूमिका के छ तथा पर्यटन क्षेत्रको बिकासको लागि के कस्ता उपायहरु अपनाउन सकिन्छ ?
११. जिल्लाको समग्र बिकासको लागि सरकारी नीति नियमहरुमा के कस्तो परिमार्जन गर्न जरुरी छ ?
१२. बातावरणीय, सामाजिक तथा आर्थिक सुरक्षालाई ध्यान दिदै दिगो बिकासको लक्ष्य कसरी प्राप्त गर्न सकिन्छ ?

Appendix "B"**(Refers to Page no. 16 para. 3)**

Sample of interview questions for respondents of Chame rural municipality, Manang

Dear Sir/ Madam

The purpose of this study is to assess ongoing sustainable development activities in relation to environmental, social and economic aspects in Chame rural municipality, Manang. The information gathered from this interview will solely be used for the research purpose and is strictly confidential.

Name of Respondent (Optional):

Gender: Male/Female

Age:

Religion:

Education:

Occupation:

Environmental

1. What is current precipitation trend comparing to the previous days?
2. Tell your experience about changing snow containing period.
3. How you feel about high or low temperature?
4. What are effects of climate change on forest, agriculture and other natural resources?

Social

5. What is the traditional knowledge or indigenous practice which affects the social phenomena?
6. What is the role of education for social equity?
7. Are there efficient healthcare facilities for common people?
8. What are the major impacts of size of demography for sustainable development?

Economic

9. What is job opportunity situation?
10. How tourism has been playing to upgrade people's life standard?
11. What is present contribution of trade for people's economic well-being?
12. What are the major programmes to enhance the economic standard?

Appendix "C"**(Refers to Page no. 16 para. 3)**

Sample of interview questions for respondents of Chame rural municipality, Manang

Dear Sir/ Madam

The purpose of this study is to find out the prevailing Challenges on sustainable development in relation to environmental, social and economic aspects in Chame rural municipality, Manang. The information gathered from this interview will solely be used for the research purpose and is strictly confidential.

Name of Respondent (Optional):

Gender: Male/Female

Age:

Religion:

Education:

Occupation:

Environmental

1. What are the major cases for environmental degradation?
2. What are major hindrances on environment conservation?
3. What are the challenges to mitigate the impacts of climate change?

Social

4. What are the contributing factors for social inequality?

5. What are the challenges for delivering good education?

6. What are the factors as obstacles for delivering good health services?

Economic

7. What are the Challenges to get job opportunities?

8. What are the major obstacles for development of tourism?

9. What are the factors which obstruct the economic activities?

Appendix "D"**(Refers to Page no. 16 para. 3)**

Sample of interview questions for respondents of Chame rural municipality, Manang

Dear Sir/ Madam

The purpose of this study is to identifying the strategies to achieve environmental social and economic wellbeing maintaining the sustainable development inChame rural municipality, Manang. The information gathered from this interview will solely be used for the research purpose and is strictly confidential.

Name of Respondent (Optional):

Gender: Male/Female

Age:

Religion:

Education:

Occupation:

Environmental

1. What can be to measures to prevent environmental degradation?
2. How can be enhancing the conservation practices more effectively?
3. How can prevent, mitigate and adapt the impacts of climate change?

Social

4. What are the measures which can play vital role to enhance social harmony contributing towards social equity?
5. How can be ensuring standard education to all?
6. How can be assured access to common people for adequate health services?

Economic

7. How can be created multiple job opportunities for local people?
8. What might be the possible initiatives to attract more tourists for sustainable development?
9. How can enhance the economic activities for sustainable business?

Appendix "E"**(Refers to Page no. 16 para. 3)**

Key Information Interview (KII)

Sample of interview questions for Government officials, Manang

Dear Sir/ Madam

The purpose of this study is to assess present status, finding challenges and identifying the strategies to achieve environmental, social and economic wellbeing maintaining the sustainable development in Chame rural municipality, Manang. The information gathered from this interview will solely be used for the research purpose and is strictly confidential.

Name of Respondent (Optional):

Gender: Male/Female

Age:

Religion:

Education:

Occupation:

1. How do you measure and evaluate the environmental, social and economic impacts of sustainable development projects?
2. How would you describe the current environment conditions in Manang?
3. What is the level of socio-economic development?
4. How do you perceive the overall well-being and quality of life of the local communities?

5. What do you perceive as the most significant environment challenges facing?
6. What are the key socio-economic challenges that hinder sustainable development?
7. What are the main challenges you face in implementing sustainable development projects?
8. What are the constraints of governmental policies for development of tourism?
9. How your organization ensures the inclusion and participation of marginalized groups in sustainable development activities?
10. What may be the future plans and priorities for sustainable development?
11. How can socio-economic development be promoted while ensuring equity and inclusivity in the community?
12. How can government policies be transparently implemented to support the integration of environmental, social and economic aspects in sustainable development?

Appendix “F”

(Refers to Page no. 16 para. 3)



Picture with governmental officials



Picturte with Chairman of Chame Rural Municipality
Lokendra Bahadur Ghale



Picture with Interview respondent