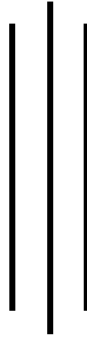
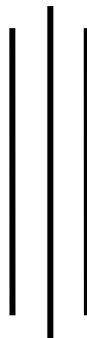


**Gender and Social Inclusion Related to the Sustainability
of Water and Sanitation Scheme of Devchuli Municipality
of Nawalparasi District**



A Thesis Submitted to
The Central Department of Rural Development,
Tribhuvan University,
in partial fulfillment of the requirements for the
Degree of the Master of Arts (M.A.)
in
Rural Development



By
Radhika K.C.
Central Department of Rural Development
Tribhuvan University, Kathmandu
TU Regd. No. 9-2-250-2-2005
Roll No: 26
Date: 2073-05-03

DECLARATION

I hereby declare that the thesis entitled "**Gender and Social Inclusion related to the Sustainability of Water and Sanitation Scheme of Devchuli Municipality of Nawalparasi District**" submitted to the Central Department of Rural Development, Tribhuvan University, is entirely my original work prepared under the guidance and supervision of my supervisor. I have made due acknowledgements to all ideas and information borrowed from different sources in the course of preparing this thesis. The results of this thesis have not been presented or submitted anywhere else for the award of any degree or for any other purposes. I assure that no part of the content of this thesis has been published in any form before.

Radhika K.C.

T.U. Reg. No.: 9-2-250-2-2005

Date : 08-19-2016 A.D.

03-05-2073 B.S.

LETTER OF RECOMMENDATION

The thesis entitled "**Gender and Social Inclusion related to the Sustainability of Water and Sanitation Scheme of Devchuli Municipality of Nawalparasi District**" has been prepared under my guidance and supervision. I hereby forward this thesis to the evaluation committee for final evaluation and approval.

.....
Prof. Dr. Chandra Lal Shrestha
Supervisor

Date : 08-19-2016 A.D.
03-05-2073 B.S.

APPROVAL LETTER

The thesis entitled "**Gender and Social Inclusion related to the Sustainability of Water and Sanitation Scheme of Devchuli Municipality of Nawalparasi District**" submitted by **Ms. Radhika K.C.** in partial fulfillment of the requirements for the Master's Degree (M.A.) in Rural Development has been approved by the evaluation committee.

Evaluation Committee

Prof. Dr. Prem Sharma
Head of Department

.....
External Examiner

Prof. Dr. Chandra Lal Shrestha
Supervisor

Date : 08-19-2016 A.D.
03-05-2073 B.S.

ACKNOWLEDGEMENT

This study has been a matter of immense importance and satisfaction in my life and I can't help expressing my hearty gratitude to a number of people and organizations who have contributed in making this study a grand success. It is for sure that this study would not have been possible without them. First of all I would like to express sincere thanks to my honorable supervisor, Prof. Dr. Chandra Lal Shrestha, Central Department of Rural Development, T.U. Kirtipur for his able guidance, continued encouragement and all-round support throughout the research process. I would like to thank the head of CDRD Prof.Dr. Prem Sharma and the staff for providing support for my thesis. My special thanks goes to Dr. Jiba Nath Prasai, Coordinator of CATN who has always been very kind and helpful with his suggestions, guidelines and encouragement. I would like to express my sincere gratitude to CATN who has sponsored and financed me to carry out my study.

I owe my gratitude and appreciation to my respected advisor Dr. Megha Raj Dhakal, for his consistent support, encouragement, valuable and practical suggestion and professional guidance in the whole study period. Although of his busy schedule, he took out his time for constant encouragement and suggested me in different ways to write this thesis.

I would like to express my deepest gratitude to my adored husband Mr. Hem Thami who has helped me with language while preparing the thesis and has always been very encouraging to me to do whatever I aim to do. I am also grateful to my co-researcher Ms. Mina Thapa who has been very helpful, considerate and friendly during the study.

Indeed, I am greatly indebted to various institutions, organizations and individuals; among which Water Users Committees, Devchuli (Part I and II); Chairman of Water Users Committee Part II, Mr. Krishna Bahadur Khatri); Chairman of Water Users Committee Part I, Mr. Dharma Bahadur Shrestha; NAPA WASH Field Co-ordinator, Ms. Samjhana Chaudhary; Social Worker Mr. Ghanalal Bhusal, Part I Committee Member and Mr. Raju Ranjan. The community leaders and water committee members of both Scheme I and Scheme II, where the survey was conducted are also acknowledged. I would also like to acknowledge the role of the households, key informants and focus group discussion participants who kindly spared their time and effort and responded tirelessly to the lengthy process of the interview and focus group discussion. Last but not the least, I offer my special thanks for all those involved in my study directly and indirectly.

ABSTRACT

The total renewable water resource of the country is estimated to be 237 km³ (ground water sources) and per capita water availability for 2001 was 9600 m³/capita/year (WEPA, n.d.). In spite of this immense water resource potential, sizable proportion of the country have faced uneven water distribution and inconsistency of its accessibility in terms of time and space.

The problem of sanitation and pure drinking water is severe throughout the country. Open defecation continues to be rampant in Nepal, more so in the Tarai. The poor, disadvantaged and high risk groups lie outside the sanitation mainstream, with little equity, ownership and participation. Women, children, old, disabled and socially excluded community are the major victims of the problems related to water and sanitation. And they are the people with no participation in the management and plan and policy making level. The patriarchal structure of the society has limited the females only within a household territory. The conventional division of labor where collecting water for household use is regarded as the responsibility of females. The situation is worse in Tarai as the gender discrimination is very prevalent. This has been one of the main factors hindering socio-economic development in Nepal.

The research questions to be assessed involve: the women and Socially Excluded Community (SEC) participation status in water supply and sanitation scheme's sustainability; the role of women and SEC in decision making level at the community level and the barriers and their corresponding measures of Gender and Social Inclusion (GESI) in Water Supply, Sanitation and Hygiene (WASH) schemes sustainability. The case study research method was employed to conduct the study. It involves individual interviews, focus group discussions and key informant interviews as quantitative and qualitative data collection instruments. The quality of drinking water as stated by the respondents was good and satisfactory with 40% and 60% respectively. None of the respondents stated the water quality as bad or poor. That did not necessarily mean that the water was safe. Instead they might not be aware of the meaning of safe water and were used to with the prevailing water situation. According to the study findings the issue of safe water supply system had still been a problem as the water source had been open/uncovered. It would be dirty during rainy season due to flooding and it has to be mixed with river water during summer season when water level decreases. Chances of

contamination are potential which might result to different health hazards due to water borne diseases. The question of safe water is not well addressed. Majority of the respondents (56.25%) reported direct drinking.

Since the study area had been declared Open Defecation Free (ODF) area, sanitation was not a big issue for the local community members. However no dumping site was designated. Land and air pollution was observed in different places.

The need for more beneficiary participation was felt. They should be given better opportunity to manage and decide on issues affecting their livelihood. The feeling of ownership, responsibility and right to decision making over any projects and programs in the society would bring in them the feeling of social inclusion. As revealed from the participants of the focus group discussion regarding community participation, it is just an occasional participation just to show their presence so that they would not be deprived of the facility provided by the scheme. Regarding the women participation in the WASH project activities the situation was found satisfactory as none of the respondents reported 0% participation. Similarly, the problem of untouchability and caste discrimination was also found to be highly minimized.

The respondents of the study area were aware of the fact that quality and sustainability of water should be maintained at the cost of pricing. 38.75% of the respondents were satisfied with how much they were paying for the water, 18% of them denied to pay more, 6% stated that they were ready to pay extra, 8% of them were ready to pay extra if the committee would optimize the overflowed water, 17% of the respondents were ready to pay more bill in case they would be provided with safe and better quality water.

For the sustainability of WASH scheme the respondents suggested for various activities like afforestation, reserve tanks construction, launching awareness trainings, management of VMW, well-management of water users' committee, etc.

TABLE OF CONTENTS

DECLARATION	I
LETTER OF RECOMMENDATION	II
APPROVAL LETTER	III

ACKNOWLEDGEMENT	IV
ABSTRACT	V
LIST OF TABLES	VI
LIST OF FIGURES	VII
LIST OF ACRONYMS/ABBREVIATIONS	VIII

CHAPTER 1

1.Introduction	1
1.1 Background	1
1.2 Statement of the Problem	4
1.3 Research Questions	5
1.4 Research Objectives	6
1.5 Limitation of the Study	6
1.6 Outline of Thesis	6

CHAPTER 2

2. Literature Review	7
2.1 Plan and Policy Review	16

CHAPTER 3

3. Research Methodology	18
3.1 Research Design	18
3.2 Case Selection	19
3.3 Data Collection	20
3.3.1 Individual Interviews (IDIs)	21
3.3.2 Focus Group Discussions (FGDs)	21
3.3.3 Key Informant Interviews (KIIs)	22
3.3.4 Interviews	22
3.3.5 Non-Participant Observation	22
3.3.6 Collection of Documents	23
3.3.7 Reflective Journal	23
3.3.8 Case Study	23
3.4 Data Analysis	24
3.5 Study Area	26

CHAPTER 4

4. Results and Findings	29
4.1 Households of Study Area	29
4.2 Demographic and Socio-Economic Situation	30
4.3 Devchuli Water Supply and Sanitation Scheme Part I & II	30
4.4 Gender and Age Range	31
4.5 Educational Status	32

4.6 Occupational Distribution	32
4.7 Benefits of Having Water	33
4.8 Wastage Management for Cleanliness	34
4.9 Practicing of the Methods of Water Treatment	35
4.10 Use of Saved Time	36
4.11 Measures for Sustainable Drinking Water Supply	37
4.12 Hindrances of Women Participation in Social Activities	37
4.13 Condition of Untouchability	38
4.14 Storing of Drinking Water at Homes	40
4.15 Utilization of Waste Water	40
4.16 Woman Participation in Household Decision Making	41
4.17 Role of Women Participation in Sector of WASH	42
4.18 Water Pricing	42
4.19 Condition of Water Tap Connection in the Study Area	43
4.20 Quality of Water	43
4.21 Water Borne Diseases	44
4.22 WASH Sustainability Activities	44
4.23 Deprived of Private Water Taps	45

CHAPTER 5

5. Summary, Conclusion and Recommendations/Suggestions	48
5.1 Summary	48
5.2 Conclusions	50
5.3 Recommendations	53
5.3.1 Community Participation	53
5.3.2 Women Participation	53
5.3.3 Water Committee	53
5.3.4 Ensuring Safe Water Access	54
5.3.5 Improved Sanitation Facilities	54
5.3.6 Environmental Protection	54
5.3.7 Capacity Building & Awareness Programs/Trainings	55
5.3.8 External Support	55
5.3.9 Monitoring and Evaluation	55

REFERENCES

ANNEXES

LIST OF TABLES

Table 1. Population Detail of Devchuli Municipality	27
Table 2. Total Number of Households of Study Area	29
Table 3. Caste Division of the Total Respondents	30

Table 4. Total Respondents of Study Area	31
Table 5. Gender and Age Range of the Total Respondents	31
Table 6. Educational Status of the total Respondents	32
Table 7. Occupational Distribution of Total Respondents	33
Table 8. Benefits of Having Water	34
Table 9. Wastage Management for Cleanliness	35
Table 10. Practicing of the Methods of Water Treatment	35
Table 11. Use of Saved Time	36
Table 12. Measures for Sustainable Drinking Water Supply	37
Table 13. Hindrances of women participation in social activities	38
Table 14. Condition of Untouchability	38
Table 15. Utilizing of waste water	41
Table 16. Woman participation in household decision making	41
Table 17. Woman participation in water supply and sanitation	42
Table 18. Opinion of Respondents regarding pricing of the water	43
Table 19. Condition of Water Tap Connection in the Study Area	43
Table 20. Respondents' Opinion on Water quality	44
Table 21. Activities of Drinking Water Committee for the WASH sustainability	45

LIST OF FIGURES

Figure 1. Water Supply Coverage Over the Years	15
Figure 2. Sanitation Coverage Over the Years	15
Figure 3. Map of Devchuli Municipality	28

Figure 4. Storing of Drinking Water at Homes	40
Figure 5. Diseases due to unsafe water prior to private water supply	44

LIST OF ACRONYMS/ABBREVIATIONS

ADB	Asian Development Bank
BM	Beneficiary Member
CATN	Center for Appropriate Technology Nepal
CBOs	Community-based Organizations
CDRD	Central Department of Rural Development

DAG	Disadvantaged Group
DPs	Development Partners
FEDWASUN	Federation of Drinking Water and Sanitation Users Nepal
FGD	Focus Group Discussion
GESI	Gender and Social Inclusion
GoNMWSSSEIU	Government of Nepal Ministry of Water Supply and Sanitation Sector Efficiency Improvement Unit
HH	Household
HRBA	Human Right Based Approach
IDI	Individual Interview
IRC	International Water and Sanitation Centre, the Netherlands
KII	Key Informant Interview
MDG	Millennium Development Goals
MOHP	Ministry of Health and Population
n.d.	no date
NAPA WASH	Nawalparasi and Palpa Districts Sustainable Water Supply and Sanitation Project
NGO	Non-Government Organization
NLSS	Nepal Living Standards Survey
NMIP	National Management Information Project
NPC	National Planning Commission
ODF	Open Defecation Free
RVWRMP	Rural Village Water Resources Management Project
RWSSP-WN	Rural Water Supply and Sanitation Project in Western Nepal
SEC	Socially Excluded Community
SODIS	Solar Water Disinfection System
T.U	Tribhuvan University
US	United States
UNDP	United Nations Development Programme
VDC	Village Development Committee
VMW	Village Maintenance Worker
VWASHCC	Village Development Committee Water Sanitation and Hygiene Coordination Committee
WEPA	Water Environment Partnership in Asia
WASH	Water, Sanitation and Hygiene
WF	Water Finns
WHO	World Health Organization
WSS	Water Supply and Sanitation
WUSCs	Water Users and Sanitation Committees

CHAPTER I

INTRODUCTION

1.1 Background

The Federal Democratic Republic of Nepal, is a landlocked country located in South Asia bordering with two neighbours-India and China. With 26.5 million population spread over the area of 147,181 Square Kilometres, it is stretched east to west extending between the southern Terai plains and northern Himalayan range. Nepal is a least developed country with a low Human Development Index (0.458) ranking 145th (Human Development Report, 2014) out of 187 countries in the world.

Every year 1594 children die from diarrhoea caused by unsafe water and poor sanitation in Nepal (World Health Statistics, 2005-2014). Water scarcity is acute not only in rural Nepal, but it is prevalent even in the capital city Kathmandu. The human deprivation of safe water and sanitation services is obviously holding back human development. (GoNMWSSSEIU, n.d.)

Nepalese WASH sector is generally characterized by fragmentation, non-standardized project approaches, overlapping responsibilities of government agencies, and weak institutional leadership. Rapid and haphazard urbanization is exacerbating water supply constraints as well as poor solid waste management and wastewater infrastructure in emerging towns, urban areas and the Kathmandu Valley. There is also a significant shortfall in available funds needed to address infrastructure and institutional requirements. It is estimated about half of existing water supply schemes are partly or totally dysfunctional. There are large regional disparities in coverage. Sanitation coverage lags in mid- and far-western development regions and Terai districts. The disparity on access to WASH services had considerably narrowed down with 87% and 80% in urban and 80% and 81% in rural in water supply and sanitation respectively. Open defecation was ubiquitous across rural Nepal and is a key focus of sanitation and hygiene master plan 2010-2017. (GoNMWSSSEIU, n.d.)

The WASH sector of Nepal not only has the gloomy picture; the sector also has unique strength to achieve its vision. The sector has strong community driven and demand based approaches in rural water supply and intensive involvement of Users' Committees. The involvement of users in the process had significantly increased the coverage from 6% (1990) to 81.95% (2015) in sanitation and similarly 46% (1990) to 86.45%(2015) in water supply. This involvement in one hand significantly reduced the burden on the national governments over-stretched resources in other hand brought

strong community cohesion. The sector became more inclusive with WUSCs representing more and more women and marginalized groups. The sanitation sector became more creative and innovative with the emerging concepts like ODF, CLTS, SLTS, Total Sanitation etc. The sector also offered the choice of technically simple, small schemes manageable at community levels. (GoNMWSSSEIU, n.d.)

History of Rural Water Supply and Sanitation Project in Nepal

According to the Department of Water Supply and Sewerage (n.d., para. 1) the history of piped water supply system development in Nepal dates back to 1895 A.D., when the first Bir Dhara system (1891-1893) was commissioned. The system also led to establishment of Pani Goshowara Adda and it provided limited private and community standpipes in few selected parts of Kathmandu only. The water service were then gradually extended to few other prominent places like Amalekhgunj, Birgunj, Palpa and Jajarkot. The sector received a fair priority in the First Five Year Development Plan- 1956, but the sector activities were placed under the Department of Irrigation for a long while until the Department of Water Supply and Sewerage (DWSS) was formally established in 1972 for providing lead inputs in the development of water supply and sanitation programs throughout the country.

In Nepal, hygiene and sanitation programmes began in the late 1990s. During the initial years, sanitation was combined with water supply projects. Only from the early 2000s were sanitation focused packages launched by different agencies with different names, approaches and modalities. The approaches and modalities were modified from time to time as they learnt lessons during implementation. (Sigdel, 2013)

History of Rural Water Supply and Sanitation Project in Western Nepal (RWSSP-WN)

Governments of Nepal and Finland have supported Rural Water Supply and Sanitation Sector in Nepal since 1989. The first two projects supported were the phases I and II of the Rural Water Supply and Sanitation Project (RWSSP) in Lumbini Zone; and the third one in the third phase of the same as the Rural Water Supply and Sanitation Support Programme (RWSSSP). The RWSSSP was phased out at the end of 2005. In order to transfer the experience of these districts and Lumbini zone to new districts, government

of Nepal (GoN) proposed to replicate the Programme. This was the initiation for Rural Water Supply and Sanitation Project in Western Nepal (RWSSP-WN).

Implementation of the RWSSP-WN was supposed to begin in 2005. Due to political situation in Nepal, Finland amongst many other cooperation partners of Nepal postponed her new development projects in Nepal. After the democratic transition started in April 2006, Finland decided to restart the postponed projects and thus the preparations for RWSSP-WN could continue. Agreement between the two governments on the Rural Water Supply and Sanitation Project was signed in May 22, 2008 and the project started in August 1, 2008. The project was planned to phase out by July 2012 (RWSSP-WN, 2012).

Nawalparasi and Palpa Districts Sustainable Water Supply and Sanitation Project (NAPA WASH), an NGO-project managed by a Finnish NGO Water Finns (WF) and implemented by a Nepalese partner organization Centre for Appropriate Technology Nepal Pvt. Ltd. (CATN). The project is funded by the Ministry of Foreign Affairs and has a 3-year life span from 2014 until the end of 2016. The project has three main components that support each other. Various experts and students have conducted assessments which add knowledge and understanding about long-term sustainability of rural water supply and sanitation schemes. The other two components focus on capacity building activities in village and district level to be able to maintain, operate and manage the existing water supply and sanitation schemes and to fulfill their obligations to provide services to communities.

This field assessment mainly provides information on factors related to Gender and Social Inclusion (GESI) affecting on success and failure of WASH schemes and its sustainability. The assessment was carried out in Devchuli, Nawalparasi district (belonging to Lumbini Zone) where Finland has had long term water sector interventions since 1990. Thus it will also contribute to knowledge on sustainability and impact of Finland's bilateral water-sector projects in Nepal. Nawalparasi and Palpa are two of the districts, in which Finland funded three Rural Water Supply and Sanitation projects (RWSSP I – III, referred as RWSSP). The scheme under which the reseracher conducted the research was Devchuli Water Supply Scheme Part I - 7, 8, 9

(Rambas, Sitabas) and Part II – 8, 9 (Aaptari) which is supplied from the main source Gomansingh Mul.

This study focuses on qualitative findings in order to gain an in-depth understanding of how the Gender and Social Inclusion (GESI) would help in the sustainability of water supply schemes (WASH). This study adds new knowledge to the water, sanitation and hygiene (WASH) sector, but it also provides information to social scientists, health care providers, educators, and policy makers to better understand the needs of GESI in the WASH sector. The study focuses on the designated Municipality of Devchuli and Water and Sanitation Users' Committee.

1.2 Statement of the Problem

Progress has been made significantly in Nepal's water supply and sanitation (WSS) sector in recent decades. The involvement of users in the process had significantly increased the coverage from 6% (1990) to 81.95% (2015) in sanitation and similarly 46% (1990) to 86.45% (2015) in water supply (Government of Nepal Ministry of Water Supply and Sanitation Sector Efficiency Improvement Unit, n.d.). Affirmative action policies and efforts by different projects/programs have helped women, the poor and the excluded in accessing the sector's services and benefits. Representation in Water Supply and Sanitation (WSS) user groups and committees, which provide access to project information and decision-making processes, has improved for women and excluded groups.

According to the Joint Monitoring Programme (JMP, 2013), Nepal has already achieved the Millennium Development Goals (MDGs) target for access to improved water supply (Actual = 85%, Target 2015 = 73%). Similarly, Nepal has come a long way in improving basic sanitation services, with coverage doubling to 62% in 2011 (Census 2011, CBS) compared to 30% in 2001. It has already surpassed MDGs target of 53%. Nepal has made significant progress in reducing under-five child mortality rate from 142 in 1990 to 39.7 in 2013, per 1,000 live births (World Health Statistics 2005, 2014). (GoNMWSSSEIU, n.d.)

However, the active involvement of GESI remains limited. To ensure more systematic and inclusive sectoral approaches, greater emphasis on gender and social inclusion are required. In this regard identifying the barriers vis-à-vis women, the poor and the socially excluded and marginalized group of people i.e., analysis of the existing access and decision-making in the formal and informal institutions that enforce and perpetuate social and economic inequalities. Until and unless the GESI perspectives are integrated into planning implementation, after completion phases – it is unlikely to obtain the community, national as well as sectoral goals/objectives.

This assessment depicts the condition of GESI in WASH sector of Devchuli municipality ward number 7, 8 and 9 of Nawalparasi district. Although most of the households have been availed with private water taps for over two decades, some of the community members still lack private taps due to some reasons. This study is an attempt to identify measures and challenges for the sustainability of water supply scheme in Devchuli municipality of Nawalparasi District.

1.3 Research Questions

The main thrust of the proposed research has been to find out the role of GESI in the realm of sustainability of water supply and sanitation intervention, considering their involvement in decision making at all levels of the scheme. Accordingly, the following research questions were treated:

- a. What is the participation status of women and socially excluded community (SEC) member in water supply system planning, implementation, operation and management?
- b. What is the role of women and SEC in decision making level at the community level (water and sanitation users' committee/s)?
- c. What are the barriers of women's and SEC's participation in water and sanitation users' committee/s and their corresponding adverse effects in their life?
- d. What are potential solutions from the perspective of gender and social inclusion in water supply schemes' sustainability?

1.4 Research Objective

General Objective:

The general objective of the study is to figure out prospects of GESI role in terms of sustainability of drinking water supply and sanitation in rural Nepal.

Specific objectives:

- To find out the women and SEC participation status in water supply and sanitation scheme's sustainability.
- To identify the role of women and SEC in decision making level at the community level.
- To analyze the barriers and their corresponding measures of GESI in WASH schemes sustainability.

1.5 Limitation of the Study

The study was limited to the people of Devchuli municipality, ward number 7, 8 and 9, Nawalparasi district, who were both availed and unavailed with private water taps. The study comprises of different case studies. The conclusions drawn from this study might not be generalized for the whole but might be valid to some extent to those areas, which have similar geographic, socio-economic and environmental settings. Similarly there are also other limitations like financial, time, resource, etc.

1.6 Outline of Thesis

This thesis is divided into five chapters, reference and an appendix section. The first chapter provides a brief introduction about the context of water and sanitation in Nepal, statement of the problem, and the research questions. The second chapter presents a comprehensive review of the literature and plan and policy review. The third chapter describes the research methods including how cases have been selected, the forms of data collection, how data have been analyzed. The fourth chapter presents and highlights the results of the analysis or the research findings. The fifth chapter presents the conclusion, discussion and the suggestions for the future research. Lastly there are references and appendix.

CHAPTER II

LITERATURE REVIEW

The global water and sanitation crisis is mainly rooted in poverty, power, and inequality. It is an issue of access rather than availability. Today, one in nine people still do not have access to safe drinking water and more than half of the diseases in the world are caused by unclean water. However, the World Health Organization (WHO) reports that over three percent of the global disease burden can be prevented simply by improving water supply, sanitation, and hygiene. Investing in clean water alone can reduce water-related deaths by 21 percent, and investing in sanitation alone can reduce water-related deaths by 37.5 percent. Additionally, every \$1 invested in improved water supply and sanitation can yield from \$4 to \$12 for the local economy, depending on the type of project. (Concern Worldwide US, Inc. n.d.)

According to the Nepal Living Standards Survey 2011 (NLSS), 41% of the rural population has access to improved safe drinking water. Despite the significant increase in national water supply and sanitation coverage over the past years in Nepal, disparities exist between the poor and better off households. NLSS found that 47% of households in the richest quintile have their drinking water piped to their housing units while only 7% among households in the poorest quintile had the same. The coverage figures are also unreliable as “access to an improved water source” does not factor in functionality, accessibility and water quality criterion (WaterAid Nepal, 2003).

Gender inequality and social exclusion (GESI) is one of the key development challenges for Nepal and it highly matters in WASH sector interventions both in urban and rural areas. The country's existing social and economic disparities, stemming from patriarchal and geographic and regional differences, a hierarchical caste-based and social structure, have affected the equitable access and use of infrastructure services, facilities and resources by the disadvantaged and marginalized groups, particularly women, poor and excluded groups. The socio-cultural and regional differences have created barriers to these groups to access to services and participate in decision making processes. The inclusion issues in WASH services are generally related to poor, women, *Dalit*, indigenous people/*Janajati*, physically challenged people, children and disadvantaged people living in remote areas.

Exclusion based barriers in relation to WASH sector intervention need to be addressed while moving towards more inclusive approach to service delivery. The Rural Water Supply and Sanitation Policy 2004, and the Urban Water Policy 2009 include provision for 50% women representation in water users and sanitation committees (WUSCs) and emphasize the participation of women and marginalized caste and ethnic groups in decision making processes. But the policies and plans are not clear on how the poor and landless can access to WASH services. There has been improvement in policies and plans for social inclusion but they still require review in order to address unattended issues of exclusion. Therefore the policy reform and the plans for its effective implementation is necessary to ensure equity in WASH services and to meet national targets and international commitments of the government. The WASH sector master plan which is under preparation provides an opportunity to have better inclusive measures for women, poor and the excluded. The master plan itself would be the effective means to address the issues of inclusion. The large number of stakeholders involved in the sector also needs to adapt a harmonized approach for gender and social inclusion, and a mechanism for monitoring and disaggregated data collection is must. (Ministry of Urban Development, Sector Efficiency Improvement Unit, 2014)

The findings coupled with the implementation experience and monitoring and evaluation data that women and disadvantaged groups do experience discriminatory practices on a daily basis which prevents them from fully exercising their rights and capabilities. These practices, which are created and perpetuated based on a cycle of fear, fate and power, keep women and disadvantaged groups in a subordinate position. As a result they lack access to educational, social and economic opportunities that can enable them to actively engage in their communities and pursue their livelihoods. (RWSSP-WN II RVWRMP II, 2015)

One of the first principles in sound water and sanitation management is that water should be managed as an economic as well as a social good. When analyzing water as an economic good, gender analysis can be informative. It is important to note the gender differentials in activities, resources, and benefits of household water use. As women and girls are often primary users of water facilities, determining what kinds of services they as well as men prefer will be essential. In parts of Ghana, for example, water is seen as the women's responsibility; in some families, women are expected to pay the

pump tariffs. Knowing what women's willingness to pay is, therefore, is crucial. Women's preferences regarding sanitation facilities need to be known as well, if projects are to be truly demand based.

When analyzing water as a social good, assessing benefits separately for women and men can be instructive. Because women and girls are so closely involved in household water supply, they often benefit the most when the village supply is improved. When water quality and quantity improves and water is available closer to home, many advantages exist for women: girls and women take shorter trips carrying heavy containers, women may have more time for income-generating activities and for leisure, and girls may be able to spend more time in school. Recognizing these differences in benefits can help ensure projects are designed to take full advantage of them.

A second principle involves management and decision making at the lowest appropriate level. Involving users in management and decision making helps systems meet consumer demand and, thus, are more likely to be used and maintained. Here again, listening to both men and women will improve design and implementation of projects. As women are often the direct users of water facilities, involving them along with the men in management and decision making helps ensure that systems meet women's needs. Women use systems on a frequent basis and are in a good position to provide accurate, up-to-date reporting on the functioning of a given system. If a system breaks down, women, not men, will most likely be the ones who must travel farther to get water; women, therefore, often have a greater incentive to keep systems functioning.

There has been increasing recognition in recent years that a participatory approach is related to improved project outcomes and sustainability. Yet, communities are rarely homogenous entities: they are composed of subgroups that differ in income, ethnicity, gender, or religion. This is why it is important to incorporate both social and gender analysis into the project preparation and implementation process. Breaking down information about preferences and water and sanitation practices by major social subgroups is useful.

A recent World Bank water and sanitation study concludes that gender is an issue not only of equity but of efficiency, because involving both women and men enhances

project results, increases cost recovery, and improves sustainability; thus, sectoral specialists, especially those interested in poverty and a community-based approach, must ensure the appropriate inclusion of both men and women. A World Bank review of 121 rural water supply projects found that women's participation is among the variables strongly associated with project effectiveness in the sector. Women's participation serves both practical and strategic gender needs. The practical gender needs of women are needs based on existing divisions of labor and authority, whereas their strategic gender needs are those that require redress of gender inequalities and redistributing power more equitably. Serving women's practical and strategic needs can do much to enhance project effectiveness (World Bank, n.d.).

In many cases, showing that water projects work better when women are involved has a greater impact on mobilizing finance for gender-biased projects than showing that access to water has an impact on gender equality. A study by the International Water and Sanitation Centre (IRC) of community water and sanitation projects in 88 communities in 15 countries found that projects designed and run with the full participation of women are more sustainable and effective than those that do not. This supports an earlier World Bank study that found that women's participation was strongly associated with water and sanitation project effectiveness. (UN Water, n.d.)

From the services perspectives, the key challenges lie in reaching the unreached, improving functionality and sustainability, and enhancing service levels. The distinctive coverage in water supply facilities in past few decades was mainly due to participatory approach and ownership from the part of beneficiaries. Notwithstanding gradual improvement in water and sanitation situation over the past decade, in reality the WASH sector is facing with structural and operational challenges. The key challenges include: Disparity in Access and Inequality: Census 2011 data shows considerable disparities in access to water with 34 districts mostly in the flat plains having more than 85% coverage, 38 districts with coverage between 60-85%, and 3 hill districts in Mid-western Region with less than 60% coverage. Disparity in sanitation is even more alarming as the 8 Terai districts bordering India have less than 30% coverage to basic sanitation while people in 29 districts have more than 62% coverage. The sector needs to focus on better targeting with equity and inclusion approaches to secure right of all citizens for sustainable and affordable WASH services. It is essential to ensure meaningful engagement of women and socially excluded groups in decision making

processes to identify WASH priorities so that their special needs can be addressed. **Functionality and Sustainability:** Ensuring functional water services is increasingly becoming a serious challenge for the sector. Only 25% of the existing water supply schemes are functioning well and 36% need minor repair. More than 39% of the schemes have been identified needing major repair, rehabilitation or complete reconstruction. This Figure seriously undermines functional access and sustainable use to safe water services. While access to safe water and sanitation can be measured by statistics but behind the coverage figures are almost half of Nepal's population deprived of opportunities for their full potential for development due to lack of functional access to water services. Absence of clear arrangements for ownership and management, alongside poor planning and maintenance, inadequate capacity, environmental challenges and lack of secure funding have caused many water services to become dysfunctional. Yet, sector focus has to put on ensuring systems' functionality and sustainability rather than increasing investment and coverage. (GoNMWSSEIU, n.d.)

WASH associated diseases remain among the top 10 causes of morbidity in Nepal, diarrhoea is the second biggest killer of under-fives. Contaminated water and unhygienic food cause diarrhoea especially in the monsoons. Water quality assessment is unsystematic and irregular. Water quality studies done in urban systems showed that most of the water treatment plants are in poor condition. Arsenic contamination in eight districts (Nawalparasi, Kapilvastu, Siraha, Rautahat, Parsa, Sarlahi, Kanchanpur and Saptari) continues to be a serious challenge. Water Safety Plan (WSP) was piloted in 2006, but remains to be institutionalized in water supply system planning, implementation and monitoring. Water Quality Surveillance Guideline, 2015 endorsed by Ministry of Health cannot be implemented properly without cross sector coordination and support.

Water systems are found to be dysfunctional mainly due to inadequate application of Water Safety principles, negligence, lack of institutional, technical and financial capacity of the users committee to undertake major repairs, and funding issues. Poor functionality of water supply and unsafe drinking water poses risks in sustaining results of improved sanitation & hygiene, and is undermining potential health benefits. The common tendency to use available resources only on new projects rather than on maintenance may be partly explained by the greater political visibility for the Government in the delivery of WASH and reluctance on the part of Development

Partners (DPs) to allocate sufficient resources to maintenance. In its quest for improving sustainability, the WaSH sector will henceforth give a serious attention to improving functionality of WaSH services by developing a dedicated national programme and institutional support mechanisms to address functionality and to thereby ensure sustainability of dysfunctional water systems.

The domains under the dimension of inclusion/exclusion may vary in different sectors. But the exclusion dimensions of GESI to WASH services are gender, caste/ethnic groups/religious minority (social), poverty and remoteness. Gender discrimination is one of the main features of Nepali society, where men continuing to dominate the socio-economic realm and exists every cast/ethnic groups and location. The social dimension includes the prejudice and verbal abuse associated with the concept of "untouchable" and to discriminatory practice that occur due to prevailing social values and norms. Despite the economic growth, there is still poverty concentration in caste/ethnic groups and location/regions. Remoteness is another dimension of exclusion of access to WASH services. All dimensions of exclusion mentioned above are equally important, relevant and interlinked to each other. (GoNMWSSSEIU, n.d.)

RVWRMP recognizes that gender equality is a central concern in water resources management and that adopting a gender-sensitive approach improves the project's impact, performance and sustainability. This is particularly important in the hills of Far West Nepal, where male work migration to urban centers and abroad (concerning 52% of working-age men, according to RVWRMP baseline data) leaves women in charge of many aspects of the production cycle. Like elsewhere in the developing world, women and girls are mainly responsible for fetching (in very challenging hill and mountain terrain) the water for domestic use. Giving a voice to women on water management is of key concern to the project.

To ensure that project activities also benefit the poorest and most marginalized populations, social inclusion is central to the project's intervention logic. The widespread caste-based discrimination patterns have a negative impact on development effectiveness, as they prevent equal access to natural resources and employment opportunities and results in economic marginalization of the disadvantaged groups (DAGs), such as Dalits and minority groups. The project enforces a strict quota policy

to ensure that these groups are included in all project activities as per their proportionate representation in the different communities. RVWRMP provides specific capacity building measures to empower these disadvantaged groups to actively participate in the various project activities (such as livelihood and income generating activities) and community-based organizations. Such groups include User Committees, Cooperatives and Credit Groups (Community Organizations). (RVWRMP, n.d.)

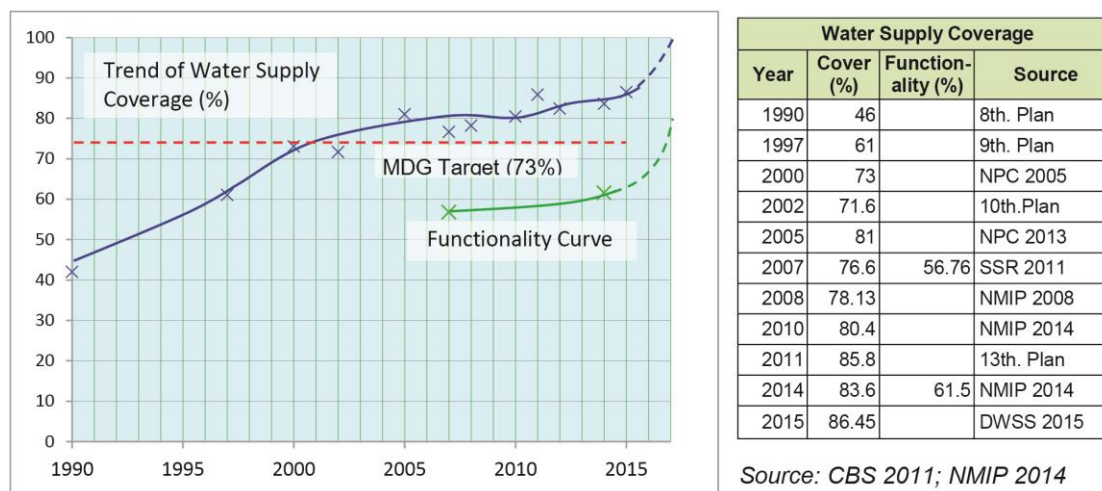
In Nepal, the existing patriarchal system accords women low position and power, thus limiting their agency to engage in and benefit from project resources and opportunities. In the initial phase of setting up a new Water Supply and Sanitation scheme, a mass information meeting is typically organized, but notification of the meeting is not always timely, and so many cannot represent their interests. Further, non-participants in meetings do not receive project information. Social norms generally restrict women's ability to request support and access project information, although there is growing evidence of women attempting to challenge this. It is usually the local elites and educated men who have connections with the supporting organizations—local NGOs and community-based organizations (CBOs)—setting up the meetings, and it is these groups which become “brokers” between the community and service providers. Eventually, many women decide not to take part in committee meetings. Household obligations and responsibilities can limit their active engagement in social and community work but many women argue that they are indeed interested in attending meetings and can manage their time, but social norms often prevent them from speaking out (WaterAid Nepal 2009b).

Dalits face exclusion in accessing drinking-water facilities due to the Hindu religious ideology directly linked with water. Particularly in rural areas, it is believed that Dalits are impure and will pollute a water source.¹⁸ While there has been a general decrease in discrimination in public places, it persists at water sources.¹⁹ Providing separate taps for Dalits is a contentious issue, with proponents arguing that even though this could perpetuate caste-based discrimination, it would ensure equal access to water for all. Even in cases where sources are installed in a non-discriminatory manner, communities often find ways to circumvent the system, and one survey found fewer taps constructed in Dalit communities (ADB/WaterAid Nepal 2005). Caste discrimination found within the Dalit castes also affects access to water.²⁰ Caste-based discrimination and

behavioral norms. The involvement of Dalits in project activities is constrained not only by social norms but also by their own feelings of inferiority and often by lack of education (WaterAid Nepal 2009c). In group discussions, Dalit women mentioned that they would like to speak up but must respect non-Dalits (WaterAid Nepal 2009c). Even when Dalits are informed of WSS-related (or other) meetings and invited to attend, they often decline, which non-Dalits perceive as a lack of interest. However, the real cause may be low self-confidence and resentment towards humiliating though unspoken social rules. (ADB, n.d.)

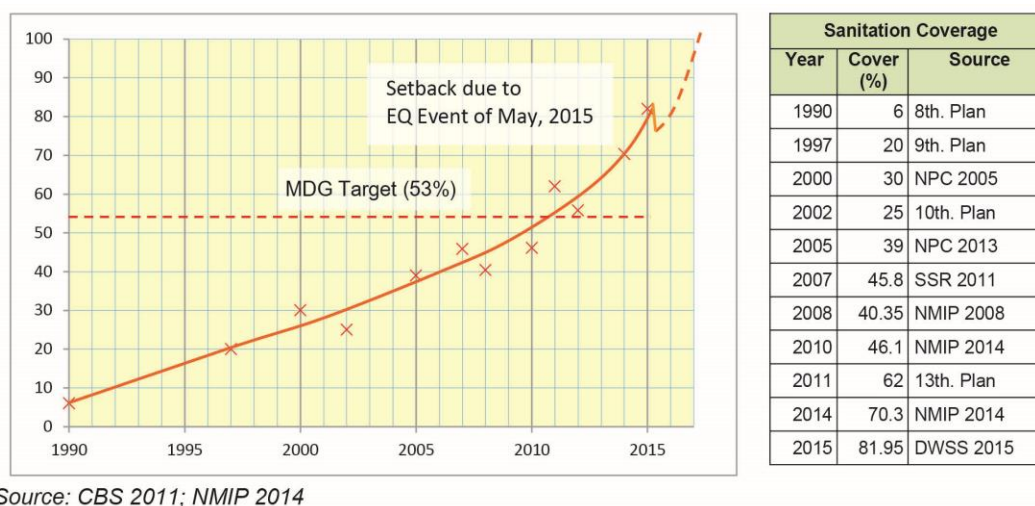
Access to safe drinking water and sanitation facilities has a significant impact on social and human development and poverty reduction. It is now recognized that the sector cannot be approached from a technical perspective alone, but requires an approach that considers the ways in which gender roles and relations influence access to resources and participation in decision making. In Nepal and most other developing countries, women are the main users and providers of domestic water. Women spend up to several hours a day to collect water. Girls also contribute, which has a negative impact on their education opportunities. However, the rights and access of women to water resources is defined by tradition, social relations, culture and customs, and legal frameworks. In addition to gender relations, other social factors such as caste, ethnicity, economic status, and disability influence an individual's access, control, and use of water. The concept of purity and pollution in the Hindu religion and ideology determine, along with caste-based hierarchies, the rights and access of women and certain other groups to water.¹⁰⁴ The sector has recognized the importance of considering gender relations in the provision and use of water, and policies and program interventions exist to address this. It is only more recently that other social issues are being addressed in the sector, particularly at the program level. (ADB, n.d.)

Figure 1. Water Supply Coverage Over the Years



While Nepal has commendably reduced the rural urban disparity in terms of access to basic water supply services. It still has to make progress in terms of quality of services. However, coverage has remained stagnant since 2011. These coverage figures do not truly reflect large differences in actual functionality and sustainable water services. Nepal WASH sector needs to significantly increase its performance to realize national target of functional access to basic water supply by 2017 for all as shown in Figure 1. (GoNMWSSSEIU, n.d.)

Figure 2: Sanitation Coverage over the years



Following the internalization of a National Sanitation and Hygiene Master Plan, 2011, Nepal has witnessed social momentum and transformation in the improvement of sanitation with several villages, municipalities and districts being declared open-defecation free Nepal has witnessed social momentum and transformation in the

improvement of sanitation with several villages, municipalities and districts being declared ODF. Coverage to basic sanitation facility has now reached 81% of the population (DWSS annual progress review, 2015). Figure 2 shows the trend of sanitation progress over the years. (GoNMWSSSEIU, n.d.)

2.1 Plan and Policy Review

According to HELVETAS, Swiss Incorporation (n.d.) the Government of Nepal has the goal of providing water and sanitation for all by 2017. It also recognizes that water and sanitation is one of the fundamental rights. Child mortality is very high due to poor water supply and sanitation, about 10,500 children die in Nepal each year due to water supply and sanitation related diseases.

According to a FEDWASUN (n.d.) study report there has been no special right or legal provision regarding the women rights in WASH sector in Nepal. However there are some indirect provisions in different laws on the basis of which we can understand the condition of the women rights in sanitation and identify what sorts of improvements are necessary. For the purpose of water resource management, Water Resource Act 2049, Water Resource Directive 2050 and Local Governance Act 2055 has been explicated. Among them according to Water Resource Act 2049 drinking water should be given the first priority. The majority of the women's day time is utilized in the management and use of water. This seems this act is indirectly women-oriented. However, in this law there are no any provisions for women participation in overall institutional structure of water resource management.

According to the Nepal MDGs Report 2010, Nepal was already on track to meeting its international commitment to the MDGs on access to improved water supply. Yet, the coverage varies significantly between the urban and rural areas and the recent figures do not take into account the functionality issues; many water supply schemes are in need of urgent repair, rehabilitation and/or reconstruction. In addition, achieving the target for halving the population without sustainable access to improved sanitation remains a challenge.

Water sector has focused primarily on gender issues including increasing the participation of women. More recently, particularly in Nepal, there has been a growing realization that not all women and men benefit equally. This is because deep rooted socio-cultural traditions, societal norms and values commonly limit the access of poor women and men, and DAGs to project services and the benefits that arise from them. Many people face multiple disadvantages. While many women have improved their participation and access, men and women belonging to DAGs are still not being reached effectively.

The National Water Plan (2002-2017) sets the target for providing access to water supply and sanitation for 100 percent of the population by 2017. Also the Rural Water Supply and Sanitation Sector Policy of 2004 stipulates that all water projects must aim for universal access for sanitation. It also notes the importance of GESI in project implementation and has provisions for enhancing the participation of women & disadvantaged groups. The National Sanitation and Hygiene Master Plan (2011) stresses the importance of gender and social inclusion and emphasizes the child-, gender and differently-abled features as well as poverty aspects in project implementation. It calls for fair balance of women (usually min. 33% in committees) at all implementation levels. However, meaningful female participation in decision-making roles continues to remain symbolic, due to, inter alia, illiteracy, lack of time and necessary skills. (RWSSP-WN and RVWRMP, 2014)

Nepal has very good policy on GESI but the field level implementation remains a challenge. The main issues, as discussed by the group, are unavailability of disaggregated data, deep rooted attitudes of policy makers/implementers, lack of meaningful participation of women who are able to influence decision making processes, lack of user friendly GESI compliant structural design of WASH facilities. The need of integrating right based approach in the WASH sector development plan has been very much felt, as the issue of HRBA in WASH sector. (Water Supply and Environment Division Sector Efficiency Improvement Unit, n.d.).

The Gender and Water Task Force established in 2003 has become a UN-Water Task Force and is taking responsibility for the gender component of International Water for Life Decade (2005-2015). The Task Force has also called for additional empirical data

regarding the issue, as "Neither the quality nor type of data currently collected are adequate to the task of supporting gender Millennium Development Goals in water and sanitation. (Wikipedia, n.d.,)

CHAPTER III

RESEARCH METHODOLOGY

As stated the purpose of this research has been to find out the role of GESI in the realm of sustainability of water supply and sanitation intervention, considering their involvement in decision making at all levels of the scheme. Accordingly, the study's purpose can be summarized in the following research questions:

- a. What is the participation status of women and socially excluded community (SEC) member in water supply system planning, implementation, operation and management?
- b. What is the role of women and SEC in decision making level at the community level (water and sanitation users' committee/s)?
- c. What are the barriers of women's and SEC's participation in water and sanitation users' committee/s and their corresponding adverse effects in their life?
- d. What are potential solutions from the perspective of gender and social inclusion in water supply schemes' sustainability?

This chapter introduces the research methodology that has been used in this particular evaluation study to find answers to the presented research questions.

3.1 Research Design

Kerlinger (1986: 279) defines research design as “the plan and structure of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or programme of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data.” (Ranjit Kumar, n.d.)

What is incorporated into a design can differ greatly according to the preference of the individual responsible. It should be confirmed to the minimum of information which is needed for planning. It must include at least the following basic elements:

- A clear statement of the research problem.
- Methods and techniques to be utilized for gathering information from the population to be researched.
- Approach to be utilized in processing and analyzing data.

The study utilized a descriptive research design; it was because the characteristics the study focused on how and in what respect the gender and social inclusion would help in making water supply systems/schemes sustainable. The chapter mainly focuses on qualitative research study design, however it was impossible to ignore the quantitative aspect of the fieldwork. On the other hand, this study tended to analyze between various factors that are influenced by the gender and social inclusion in a sustainable way of water supply system/schemes operation and maintenance. For that purpose different activities have been done like reviewed the literatures, drafted and finalized the questionnaire, prepared the checklist and so on. Secondly, the study approach is applied to appropriate participatory process and individual interview (IDI), focus group discussion (FGD), informal interview, key informant interview (KII), and case study were conducted to collect the information. Similarly, the detail information was collected through direct observation during the fieldwork. In summary the study covers both the quantitative and qualitative research study design, case selection, data collection and data analysis.

3.2 Case Selection.

In order to gain multiple perspectives in the area of GESI in relation to WASH sector, different families were included in the study. The families were selected based on two dimensions: gender and social inclusion. Thus, the first one revealed the condition of the gender participation in the WASH sector. Whereas the latter revealed the problems, participation and accessibility and ownership in the WASH of the socially excluded groups. These two dimensions allowed getting a gender and social inclusion perspectives in water supply and sanitation area. The researcher found more relevant if they could be further divided into families like, families without private water taps due to poverty, families without private water taps due to residing in squatter land, male interviews, female interviews, and so on.

This study includes 80 respondents out of whom 39 members were Brahmin/Chhetri, 28 were Janajati, 12 were Dalit and 1 Madhesi. The researcher had focused group discussion with 9 male and 9 female members, in-depth interview with 7 male and 7 female members except key informant interview from Part I (Ward No. 7, 8, 9). Similarly, the researcher had focused group discussion with 10 male and 9 female

members, in-depth interview with 5 male and 9 female members except key informant interview from Part II (Ward No. 8, 9). As for KII the researcher had interviewed 14 male and 1 female members both from Part I (Ward No. 7, 8, 9) and Part II (Ward No. 8, 9).

In addition to the above, formal/informal discussions were conducted with the various groups/individuals such as water users and sanitation committee (WUSC), women group, *Samajik Paricharak*, member of VDC WASH Coordinator, etc., while finding out the situation of GESI in the decision making at the entire phases of project cycles.

3.3 Data Collection.

Data were collected in their natural environment; the study followed the ethnographic study design which involved identifying categories related to a culture's economy, demographics, human life, particularly family, education, health care issues, and the environment. The researcher tried to collect information on the basis of the people's intellect, opinions, feelings, gratification, etc. of the research area to make it more descriptive analysis or the content analysis.

While entering into the community the purpose of the visit was well-briefed. Then the researcher closely observed, discussed and interviewed with different groups and individuals and took their consent for the purpose of the research; collected the data by using different checklists/ open-ended or less structured interview schedules. The data collection was also made by non-participant observation, collection of documents, and a reflective journal.

Since the research was more a qualitative one than quantitative the researcher had been open minded and without any pre-conceived ideas about what would be found, how many and what types of respondents to select; and what sort of questions to ask them to fulfill the aim of the study. The study was basically done in the natural setting as per the convenience of the researcher and in the presence of the interested respondents.

Both primary and secondary data were collected during the study. The primary data also known as the first hand data were collected by the researcher on her own by

different ways like IDI, FGD, KII, observations, reflective journal, case study etc. The secondary data were collected from different sources like:

- i. VDC Profile
- ii. Internet
- iii. Previous studies and reports.
- iv. Unpublished official records.

Following study tools and techniques were used for data collection:

3.3.1 Individual Interviews (IDIs):

Individual Interviews were undertaken with Water User and Sanitation Committees and users' families. The Individual Interviews seek to study the project effectiveness in sustainability of the project. It was felt to be more realistic experience knowing the interviewees in person and observing their problems by the researcher with her own eyes. The detailed information is in Annex-I.

3.3.2 Focus Group Discussions (FGDs):

The FGDs was undertaken with different groups. Altogether 4 FGDs were conducted in two schemes considering male and female groups. It emphasized on finding the strengths and weaknesses of schemes functionality of the schemes under study for long-term sustainability. The detailed information is in Annex-I.

3.3.3 Key Informant Interview (KIIs):

Key Informant Interviews was undertaken with knowledgeable persons from different groups, organizations including community Leaders, Partner NGOs, Project Staff and municipality officials. 26 KIIs were undertaken including 13 in each scheme. The detailed information is in Annex-I.

3.3.4 Interviews.

The focus of the discussion was completely geared towards finding out the sustainability of water supply scheme. The interview was partly semi-structured, partly unstructured. Both the quantitative as well as qualitative data was collected from the interviews. Before, actually conducting the interview, the researcher spent a considerable time building rapport, discussing informally with the help of generic

checklists among the study areas people (different groups). The interview with the respondents was taken one to two hours and conducted in settings convenient to them. Some of the interviews were audio-recorded some notes taken. The researcher reminded the participants of the breaks if they felt the need to do so.

Discussions were held with women group, individuals, male members, female members, intellectuals, member WUCS, VMW, member of VDC WASH Coordination Committee (VWASHCC), school principals, teachers, health workers, municipality mayor, forest committee members, etc in order to get different views in relation to GESI making water, sanitation and hygiene interventions sustainable.

3.3.5 Non-Participant Observation

The purpose of this observation was to gain key information about sustainability related to the participation and or non-participation of GESI in water supply and sanitation scheme. This primary data collection approach resulted in a detailed recording of the communication and provided with access to the contours of talk (e.g. intonation) as well as body behavior (e.g. facial expression, eye gaze). The observations were both overt and covert depending on condition with a different set of ethical considerations. It was carried out in the family's home in a very familiar behavior. The research team also visited different communities and villages to observe the condition of the environmental conditions related to water supply, sanitation and hygiene and their potential causes. Since the main aim of the research was to make a qualitative research inductive approach was made in the hope of exploring new phenomena and looking at previously researched phenomena from a different perspective. Notes and photographs were taken during the observation. Places like water sources, office of WUSCs, neighbouring villages and the locality were visited for the observations.

3.3.6 Collection of Documents. Information collected for this study includes all sorts of documents, papers related to water supply, sanitation and hygiene. The published and unpublished documents were collected from the concerned stakeholders, authorities, websites etc.

3.3.7 Reflective Journal

The researcher also kept reflective journal and field notes regularly. The journal allowed the researcher to describe her feelings about conducting research in the research area. It is completely subjective in nature. According to Morrow and Smith (2000), the use of a reflective journal adds rigor to qualitative inquiry as the investigator is able to record his/her reactions, assumptions, expectations, and biases about the research process. The field notes will provide additional data for the analysis.

3.3.8 Case Study

The researcher found case study an ideal methodology in case of holistic and in-depth investigation. Rather than using large samples and following a rigid protocol to examine a limited number of variables, case study methods involve an in-depth, longitudinal examination of a single instance or event: a case. Researcher Yin (1984) defines the case study research method as ‘an empirical inquiry that investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used’.

The case study helped to present findings in a narrative, phenomenological format. Hence it was a narrative, qualitative case study. Since the research was to be carried out in two different cases - gender and social inclusion to the sustainability of water supply and sanitation, multiple case study method was chosen. The case study was carried out in unstructured interviewing and direct observation. Three case studies were undertaken among which the first one was about the condition of caste-based discriminatory practice, second one about the households deprived of private water taps due to residing in squatter land and the third one about a household deprived of private water tap due to poverty.

3.4 Data Analysis

Thematic analysis approach was used to analyze the data as it is the most commonly used in qualitative analysis, because it is a simple, less time-consuming and flexible approach. Researchers often use thematic analysis as a first step to look for broader patterns in their work in order to conduct a more fine grained analysis using alternative approaches, if necessary. The main goal when using this approach is to provide a description and understanding of answers. It helps researchers move their analysis from a broad reading of the data towards discovering patterns and developing themes.

The first thing to consider when using thematic analysis is how the themes are identified. This can be deductively or inductively. However, inductive thematic analysis is preferred. In inductive thematic analysis, little or no predetermined theory, structure or framework is used to analyze data; instead the actual data itself is used to derive the structure of analysis. In this approach the themes are strongly linked to the data since they emerge from it. This approach is comprehensive and therefore time-consuming.

Usually, inductive thematic analysis involves 6 phases: familiarization with data; generation of initial codes; searching for themes among codes; reviewing themes; defining and naming themes; and producing the final report.

Phase	Description of the process	Result
Familiarization with the data	Read and re-read data in order to become familiar with what the data entails, paying specific attention to patterns that occur and noting down initial ideas/patterns.	Preliminary "start" codes and detailed notes.
Generation of initial codes	Generate the initial codes by identifying where and how patterns occur. This happens through data reduction where the researcher collapses data into labels in order to create categories for more efficient analysis. Data compilation is also completed here. This involves the researcher making inferences about what the codes mean.	Comprehensive codes of how data answers research question(s).
Searching for themes	Collate codes into themes that accurately depict the data. It is important in developing themes that the researcher describes exactly what the themes mean, what they include and exclude.	List of candidate themes for further analysis.

Phase	Description of the process	Result
Reviewing themes	Check if the themes make sense and account for all the coded extracts and the entire data set. If the analysis seems incomplete, the researcher needs to go back and find what is missing. Generate a thematic “map” of the analysis.	Coherent recognition of how themes are patterned to tell an accurate story about the data.
Defining and naming categories	Generate clear definitions and names for each theme. Describe which aspects of data are being captured in each theme, and what is interesting about the themes.	A comprehensive analysis of what the themes contribute to understanding the data.
Producing final report	Decide which themes make meaningful contributions to understanding what is going on within the data. Researchers should also conduct verification of the data to check if their description is an accurate representation.	Description of the findings

Braun and Clarke (2006)

With the help of the collected data like interviews, photographs, audio records, observations and secondary data from different offices the data analysis is done. Collected data are effectively categorized into different aspects under different topics. Data are analyzed by tabulation and classification so that they could be shortened and easily understood. They are sorted out to make them more specific. Microsoft Word and Excel is used to get this job done in more convenient way. The collected data are compared, classified and categorized in such a way in order to relate them to the aim of the study.

3.5 Study Area:

Devchuli was declared municipality since Baishakh 25, 2071(May 8, 2014). It lies in Nawalparasi district, Lumbini zone, Western Development Region. There are 15 wards in this municipality. Its area is 73.5 square km. It constitutes of hills and plains. There is Rajahar VDC to the east, Kawasoti municipality and Dhoubadi VDC to the west, Arkhala VDC and Bulintar VDC to the north and Chitwan National Park to the south and separated by Narayani river. There reside different castes of people like Brahmins, Chhetri, Magar, Newar, Gurung, Dalit community, Tharu, Tamang, Thakali, Muslim, Bote, Musahar, Kumal and others. The municipality is availed with the necessary infrastructures of development and health centres. There are two sub-health post and one primary health centre. Devchuli hill and Nikunja are the major source of tourist attractions. Keurali, Daldale, Pragatinagar and Munde are the major market places. The people celebrate festivals like Dashain, Tihar, Teej, Id, Lhosar, Chhath, Maghi and Chandipurnima. The total population is 34,912 out of which 17,169 are female and 17743 are male. The literacy rate is 98.4%. (Devchuli Municipality Office, 2015)

Table 1. Population Detail of Devchuli Municipality

Ward No.	Households	Female	Male	Total
1	506	1309	1161	2470
2	369	1038	1039	2077
3	255	696	654	1350
4	490	1104	1245	2349
5	382	1090	926	2016
6	280	960	1025	1985

CHAPTER- IV

RESULTS AND FINDINGS

In this chapter the researcher has interpreted the data collected during the research. Since all the data were not possible to be analyzed qualitatively some of the data and statistics needed to be interpreted qualitatively.

4.1 Households of Study Area

The total number of households under Part I and Part II, which is the study area is given below in the table below-

Table 2. Total Number of Households of Study Area

S.N	Name of the scheme	HH			Beneficiary Members			Remarks
		Dalit	Ethnic	other	Dalit	Ethnic	other	
1.	Devchuli Water Supply and Sanitation Scheme Part I (7, 8, 9)	75	173	212	405	1101	1149	HH -460 BM-2655
2.	Devchuli Water Supply and Sanitation Scheme Part II (8, 9)	49	223	72	273	1283	395	HH-344 BM-1951
	Total	124	396	284	678	2384	1544	HH- 804 BM- 4606

Source: Field Survey (July 2015)

Despite some households being deprived from the facility of private water tap facility due to poverty and some of them due to residing in squatter land, 804 households with 4606 members have been benefited from the private water tap connection with the help of drinking water schemes in the area, prior to which they were dependent on river, stream, pond and water spot for water. The households without private water taps depict the condition of social exclusion in water schemes. Five households have been deprived of private water taps.

4.2 Demographic and Socio-economic situation

As Nepal is a country of diversity in many aspects, it is also diverse in regard to the different castes of people living here. Nepal is said to be the country consisting of 4 castes and 36 sub-castes with their own identity, religion and cultures living in a complete harmony. I studied about the people living in my study area which is given in the table below-

Table 3. Caste Division of the Total Respondents

S.N	Particular	Respondents	%
1	Brahmin/Chhetri	39	49
2	Janajati	28	35
3	Dalit	12	15
4	Madhesi	1	1
5	Other	0	0
	Total	80	100

Source: Field Survey (July 2015)

According to the study the above table shows that among the total respondents 39 members are Brahmin/Chhetri, 28 are Janajati, 12 are Dalit and 1 Madhesi. It shows that the majority of the people are Brahmin and Chhetri which covers 49% of the population and Janajati in second position with 35%. Similarly Dalit and Madhesi are in minority with 15% and 1% respectively.

4.3 Devchuli Water Supply and Sanitation Scheme Part I & II

The researcher has studied Devchuli Water supply and sanitation scheme Part I and Part II, which the researcher has discussed above in study area. During the study period, FGD, KII and IDI were conducted with different male and female participants. Detail description of this is given in the Table 3.1 below.

Table 4. Total Respondents of Study Area

Particular	FGD		IDI		KII		Total	Remark
	M	F	M	F	M	F		
Part I (7,8,9)	9	9	7	7	-		32	except KII respondent
Part II (8,9)	10	9	5	9			33	except KII respondent
Grand Total	19	18	12	16	14	1	80	Grand total with KII respondent

Source: Field Survey (July 2015)

As can be seen from the table above, this study includes 80 respondents among which the researcher had focused group discussion with 9 male and 9 female members, in-depth interview with 7 male and 7 female members except key informant interview from Part I (Ward No. 7, 8, 9). Similarly, the researcher had focused group discussion with 10 male and 9 female members, in-depth interview with 5 male and 9 female members except key informant interview from Part II (Ward No. 8, 9). As for KII the researcher had interviewed 14 male and 1 female members both from Part I (Ward No. 7, 8, 9) and Part II (Ward No. 8, 9) including 4 people from outside.

4.4 Gender and Age Range

Regarding the gender and age range, the respondents fall under different age ranges viz, 20-30, 31-40, 41-50, 51-60 and above 60.

Table 5. Gender and Age Range of the Total Respondents

Gender	Age range of respondents					Total	%
	20-30	31-40	41-50	51-60	60<		
Male	1	11	15	10	10	47	58.75
Female	7	18	5	1	2	33	41.25
Total	8	29	20	11	12	80	100

Source: Field Survey (July 2015)

The above table shows the age range of the respondents in which there is 1 male and 7 female members between the age of 20-30, 11 male and 18 female between the age of 31-40, 15 male and 5 female between the age of 41-50, 10 male and 1 female between the age of 51-60 and 10 male and 2 female above the age of 60.

4.5 Educational Status

The educational status of the total respondents have been categorized under different titles like illiterate, literate, primary level, lower secondary level, secondary level, higher secondary level, bachelor's and master's degree. The number of people under these categories is shown in the table below-

Table 6. Educational Status of the total Respondents

S.N	Category	No.	%
-----	----------	-----	---

1	Illiterate	5	6
2	Literate	31	39
3	Primary Level	3	4
4	Lower Secondary Level	13	16
5	Secondary Level	17	21
6	Higher Secondary	4	5
7	Bachelor's Degree	4	5
8	Master's Degree	3	4
	Total	80	100

Source: Field Survey (July 2015)

The above table shows the education status of the respondents among which 5 are illiterate, 31 is literate, 3 from primary level, 13 from lower secondary level, 17 from secondary level, 4 from higher secondary level, 4 from bachelor's level and 3 from master's level.

4.6 Occupational Distribution

Regarding the occupational distribution of the respondents they have been categorized under different headings among which it was found that most people involved in agriculture and made this sector their way of livelihood. The details of the different occupation and their corresponding number of people is given in the table below:

Table 7. Occupational Distribution of Total Respondents

S.N.	Category	Number	%
1	Agriculture	25	31.25
2	Raising Livestock	13	16.25
3	Health Worker	1	1.25
4	Teaching	5	6.25
5	Business	11	13.75
6	Employment (Domestic/Foreign)	20	25
7	Labour	5	6.25

	Total	80	100
--	--------------	-----------	------------

Source: Field Survey (July 2015)

The above table shows that among the respondents 25 are involved in agriculture, 13 in raising livestock, 1 is a health worker, 5 in teaching, 11 in business, 20 in employment (domestic/foreign) and 5 in labour.

4.7 Benefits of Having Water

The researcher has come across different views of the respondents regarding the benefits of having easy access of water or having private taps at home. They seemed to be highly satisfied by having private water supply facility compared to the past of not having private taps. They seemed to be benefited according to their reactions. The details of the benefits are given in the table below:

Table 8. Benefits of Having Water

S.N.	Particulars	No. of Respondents	%
1	Time Saved in Water Fetching	14	17.5
2	Progress in Health	8	10
3	Personal Cleanliness	11	13.75
4	Toilet use	6	7.5
5	Hygienic Living	8	10
6	Offseason Vegetable Farming	7	8.75
7	Restaurant/Hotel Business	3	3.75
8	Increase in Income	7	8.75
9	Social Harmony	4	5
10	Enough Time for Rest	3	3.75

11	Increment in Woman Participation in Social Activities	4	5
12	Enough Time for Children for their study and education	5	6.25
	Total	80	100

Source: Field Survey (July 2015)

The above table shows that the respondents found that they had been benefited in different ways by having private water facility. Out of 80 respondents 14 found it time saving, for 8 of them it was progress in their health, 11 found it was a matter of cleanliness, 6 found it a proper use of toilet when having water, 8 said it was a hygienic living by having enough water, 7 thought they were benefitted by growing unseasonal vegetables, etc. Similarly the other benefits were helpful in running restaurants, increase in income, matter of social harmony, enough time for rest, increment in woman participation in social activities and enough time for children for their study.

4.8 Wastage Management for Cleanliness

The respondents had different views and practice regarding the wastage management for their cleanliness. Some of them were practicing what they thought while some of them seemed to be just having opinions and not implementing in practice. The different views of the respondents for wastage management is given in the table below:

Table 9. Wastage Management for Cleanliness

S.N.	Particulars	Marking	%	Remarks
1.	Burn	19	23.75	
2.	Burly	11	13.75	
3.	Dump into rivers	9	11.25	
4.	Designate a Dumping site	10	12.5	
5.	Covert organic waste into fertilizer	12	15	
6.	Send for Recycling	6	7.5	
7.	Careless Disposal	13	16.25	
	Total	80	100	

Source: Field Survey (July 2015)

4.9 Practicing of the Methods of Water Treatment

The respondents have been using the drinking water in their own ways according to their awareness and educational level. Some of them were health conscious and trying to manage to drink safe water while some of them were unaware of the condition and drinking it directly without any treatment. The detail fact is given in the table below:

Table 10. Practicing of the Methods of Water Treatment

S.N.	Particulars	Response	%	Remarks
1.	SODIS	3	3.75	
2.	Filter	13	16.25	
3.	Filter with a piece of cloth at tap spout	7	8.75	
4.	Boil	2	2.5	
5.	Usage of Water Purifiers	10	12.5	
6.	Sedimentation	0	0	
7	Direct drinking	45	56.25	
	Total	80	100	

Source: Field Survey (July 2015)

The respondents have been applying different methods of water treatment before drinking like SODIS, filter, filtering with a piece of cloth, boil, using water purifiers, sedimentation and direct drinking. Majority of the people have been drinking it directly which consists of 56.25%. Most of the people of my study area were really unaware of safe drinking water and water borne diseases.

4.10 Use of Saved Time

The respondents having private taps at home realized that their time was really saved and the same time had been invested in different productive activities, viz, farming, household work, extra income generating works, vegetable farming, business, education, taking care of the livestock, social activities, paying time for their children, etc. The detail is shown in the table below:

Table 11. Use of Saved Time

S.N.	Particulars	Response	%	Remarks
1.	Farming	15	18.75	
2.	Household work	10	12.5	
3.	Out work for income	6	7.5	
4.	Vegetable farming	10	12.5	
5.	Business/Job	6	7.5	
6.	Education	7	8.75	
7.	Taking care of live stocks	9	11.25	
8	Social work	4	5	
9	Enough time for children care	6	7.5	
10	Thread making for extra income	7	8.75	
	Total	80	100	

Source: Field Survey (July 2015)

Table number 3.10. shows that the time saved by having private water taps have been invested in different activities the majority of which was in agricultural activities. The people have been involved in different activities and benefited in different ways. They could give time for income generation activities, household activities, children caring, etc.

4.11 Measures for Sustainable Drinking Water Supply

Different respondents have different opinions for sustainable water supply in their place. The researcher asked for their personal opinions. Their ideas seemed to be helpful for the optimization of the water for overall purpose of the water in their daily life. Their opinions are given in the table below:

Table 12. Measures for Sustainable Drinking Water Supply

S.N.	Particulars	No. of Respondents	%	Remarks
1.	Explore alternative source and its conservation	14	17.5	
2.	Manage tanks with filter	9	11.25	
3.	Manage tanks big enough to meet the public demand	17	21.25	
4.	Focus on pure water distribution	7	8.75	

5.	Awareness programs on importance of water	5	6.25	
6.	Leakage management	9	11.25	
7.	Management of overflow	5	6.25	
8.	Boring water management	3	3.75	
9.	Plantation to prevent landslides	11	13.75	
	Total	80	100	

Source: Field Survey (July 2015)

The respondents in the study area had similar opinions regarding water sustainability. Most of them suggested about the proper utilization of water like storing the water and leakage and overflow management. To prevent landslides and drying of water sources they advised for tree plantation. They also opined about the alternative source of water like boring, etc.

4.12 Hindrances of women participation in social activities

Male participation outdoor is comparatively higher than female participation in patriarchal societies like ours. Similar trend has been observed in the study area. According to the discussions with the respondents some causes of the hindrances of women participation in social activities were found out (Table 3.12).

Table 13. Hindrances of women participation in social activities

S.N.	Particulars	No. of Participants	%
1.	Household Works	18	22.5
2.	Farming Activities	13	16.25
3.	Lack of education	11	13.75
4.	Family obstacles	10	12.5
5.	Poverty	9	11.25
6.	Lack of motivation	8	10
7.	Lack of awareness	11	13.75
	Total	80	100

Source: Field Survey (July 2015)

As shown in the above table some of the hindrances of women participation in different social activities are household works, farming activities, lack of education, family obstacles, poverty, lack of motivation and awareness.

4.13 Condition of Untouchability

Since the study includes the issues of social inclusion the researcher also had to discuss upon the issue of untouchability in the study area. Comparatively the condition has changed a lot at present. The discrimination has almost come to an end in public places.

Table 14. Condition of Untouchability

S.N.	Particulars	Response	%
1.	Critical/Extreme	5	6.25
2.	Minimized	64	80
3.	Abolished	11	13.75
	Total	80	100

Source: Field Survey (July 2015)

The above table shows that out of 80 respondents 5 said the problem of untouchability was still extreme, 64 thought it was minimized and 11 of them thought it was abolished. Abolition of untouchability and discrimination is a gradual process. The deeply rooted traditions cannot be abolished over night. The change in time, lifestyle, occupation, education, modernisation, etc. are some of the causes that have been observed playing vital role in the general conception of the people towards untouchability. The good news is that the people are prone to change and the change for a better society.

Case Study 1 : Cased-based discriminatory practices

In order to understand the real day to day life experiences of the *Dalits* regarding water problems the researcher went to their place. It was Devchuli, Ward No. 7. The researcher started the conversation with a respondent, Mrs. B.K., a *Dalit* woman.

Q : What is the general conception of untouchability at the time of water filling?

A : We were highly discriminated by the so-called high caste people like Chhetris and Brahmins. We had experiences of physical violence when the Chhetri and Brahmin women would jump the queue at the public taps and water spots. They

would not let us go near them to avoid touching them or their belongings before we had private taps. But in the present time the facility of private taps at our own homes have minimized such incidents. Nevertheless the discrimination has not come to an end completely.

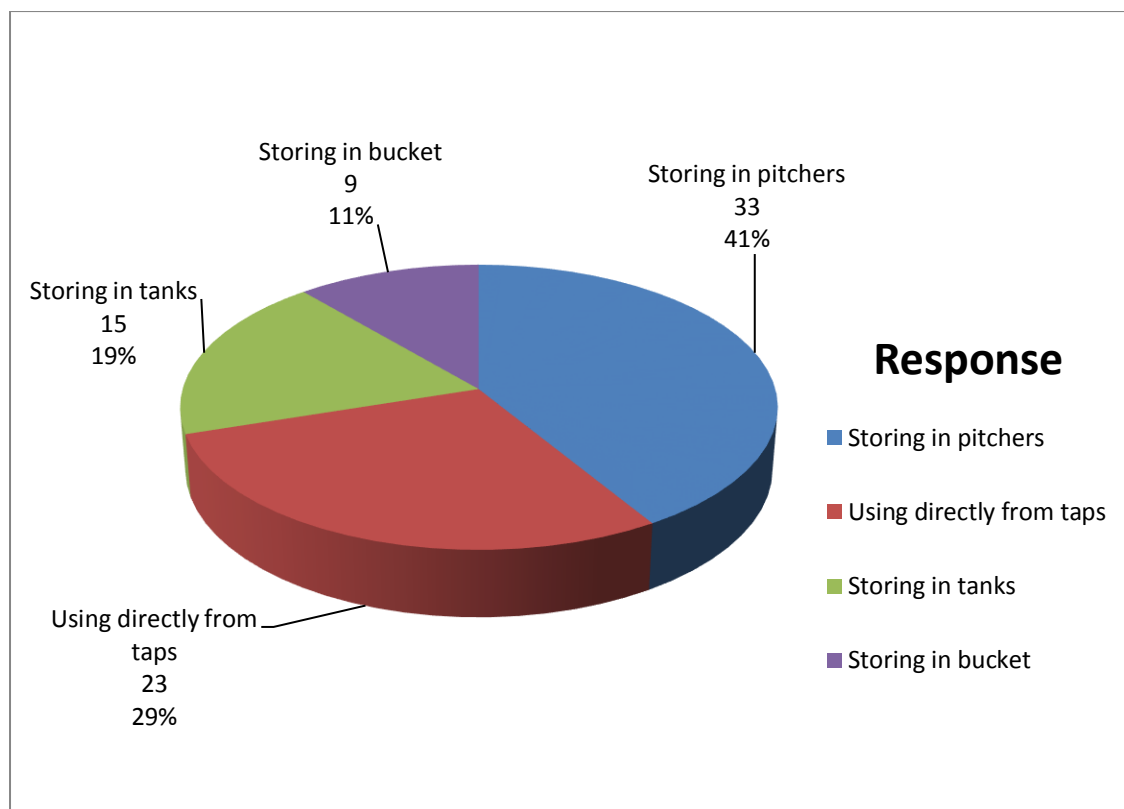
Q : What is the condition of untouchability in public places?

A : Compared to the past (two decades ago) there has been some changes. These days we see the high caste and low caste people sitting and eating together. In the past we had to wash the glasses after drinking tea by ourselves at restaurants/tea shops. Now we don't have to. There are two lady peons in the two primary schools, Milijuli Primary School and Manakamana Primary School in the village, where they prepare snacks and tea. Still some people eat from the hands of *Dalit* and some don't. We have realized that the untouchability has decreased but not come to an end completely. Distinct discrimination is seen when *Dalits* are not allowed to enter into the house of the Chhetris and Brahmins and the Chhetris and Brahmins willingly don't enter into the house of *Dalits*.

4.14 Storing of Drinking Water at Homes

There were different ways of storing water at homes in the study area. The Figure 4 below shows that 41.325% stored in pitchers, 28.75% never stored instead directly use the water after fetched, 18.75% stored in tanks and 11.25% stored in bucket.

Figure 4. Storing of Drinking Water at homes



Source: Field Survey(July 2015)

4.15 Utilization of waste water

As water is not so abundant the respondents were conscious enough to use the waste water in different purposes like storing in pits for vegetable irrigation, fishery, storing in ponds for various purposes, irrigation. 13% of the respondents had not been utilizing the waste water (Table 15).

Table 15. Utilizing of waste water

S.N.	Particulars	Marking	%
1.	Storing in pits for vegetables	34	42.5
2.	Unstored/Unused	13	16.25
3.	Fishery	3	3.75

4.	Storing in ponds for different purposes	19	23.75
5.	Irrigation	11	13.75
	Total	80	100

Source: Field Survey (July 2015)

4.16 Woman participation in household decision making

The position of women in Nepali society is less than the men regarding decision making. But in household decisions women also hold equal authority in decision making as men do. According to the study it was found that 25% of the respondents stated that the household decision were taken by wives, 14% authority by husbands, 3% authority by sons, 38% stated that the decision were made together by both husbands and wives. Nobody reported that women had been excluded from household decision making.

Table 16. Woman participation in household decision making

S.N.	Particulars	Response	%	Remarks
1.	Authority by wives	25	31.25	
2.	Authority by husbands	14	17.5	
3.	Authority by sons	3	3.75	
4.	Together	38	47.5	
5.	No Authority for women	0	0	
	Total	80	100	

Source: Field Survey (July 2015)

4.17 Role of Women Participation in sector of water supply and sanitation

Since women are the real users of water and sanitation they should be equally participated or more participated for better management. No participation of women is not reported in sector of water supply and sanitation. 20% stated about average

participation of women, 36% stated about good participation and 24% stated about active participation of women in water supply and sanitation.

Table 17. Woman participation in water supply and sanitation

S.N.	Particulars	Response	%
1.	No participation	0	0
2.	Average participation	20	25
3.	Good participation	36	45
4.	Active participation	24	30
	Total	80	100

Source: Field Survey (July 2015)

4.18 Water pricing

Pricing is very essential in case of sustainability, because absence of pricing doesn't support maintenance of the project and would come to end sooner or later. The respondents of the study area supported the concept of sustainability. They were aware of the fact that quality of water should be maintained at the cost of pricing. 38.75% of the respondents were satisfied with how much they were paying for the water, 18% of them denied to pay more, 6% stated that they were ready to pay extra, 8% of them were ready to pay extra if the committee would optimize the overflowed water, 17% of the respondents were ready to pay more bill in case they would be provided with safe and better quality water (Table 18).

Table 18. Opinion of Respondents regarding pricing of the water

S.N.	Particulars	Response	%
1.	Satisfied	31	38.75
2.	Bill shouldn't be increased	18	22.5
3.	Bill should increase	6	7.5

4.	Optimization of overflowed water and increase the bill	8	10
5.	Bill can increase if they are provided with safe and better water quality	17	21.25
	Total	80	100

Source: Field Survey (July 2015)

4.19 Condition of Water Tap Connection in the Study Area

Total 804 households were using the water of the project directly or indirectly among which 796 households were supplied with private taps, 5 of the households were using public taps and 3 households fetched water from the neighborhood (Table 3.20).

Table 19. Condition of Water Tap Connection in the Study Area

S.N.	Particulars	HH No.	%
1.	Private	796	99.005
2.	Public	5	0.62189
3.	Neighborhood	3	0.37313
	Total	804	100

Source: Field Survey (July 2015)

4.20 Quality of water

The respondents of the study area had different opinions regarding the quality of water. Out of 80 respondents 32 reported the water quality good, 48% said it was satisfactory and none of them reported the quality of water was bad (Table 20).

Table 20. Respondents' Opinion on Water quality

S.N.	Particulars	Response	%
1.	Good	32	40
2.	Satisfactory	48	60
3.	Bad	0	0

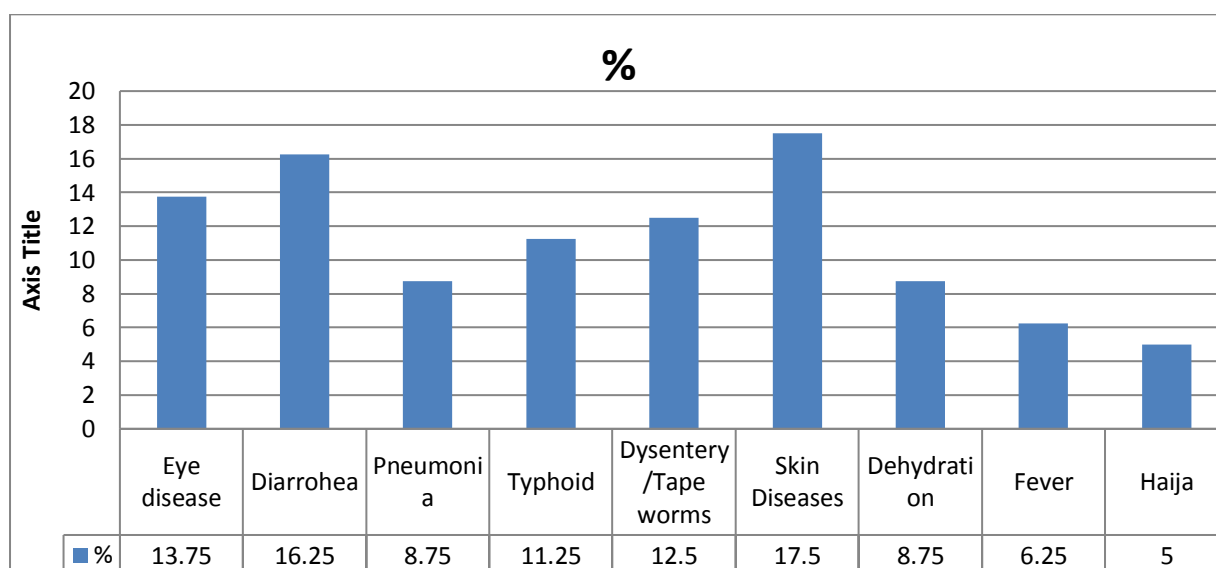
	Total	80	100
--	-------	----	-----

Source: Field Survey (July 2015)

4.21 Water Borne Diseases

Majority of human diseases are water borne but very less people realize this fact. Safe drinking water and proper sanitation can reduce these diseases considerably. Prior to private water supply facility different types of diseases had been observed by the respondents. Out of 80 respondents, 11 reported eye disease, 13 reported diarrhoea, 7 reported pneumonia, 10 reported dysentery/tape worms, 14 reported skin disease, 7 reported dehydration, 5 reported fever, 4 reported *haija*.

Figure 5. Diseases due to unsafe water prior to private water supply



Source: Field Survey (July 2015)

4.22 WASH Sustainability Activities

For the sustainability of WASH program in the study area the Drinking Water Committee was supposed to perform certain activities according to the respondents which is shown in the table below:

Table 21. Activities of Drinking Water Committee for the WASH sustainability.

S.N	Particular	Response Number	%
1	Tree plantation activities	10	12.5
2	Construction of bigger reserve tank.	15	18.75

3	Water tests in different intervals of time	4	5
4	Use of water purifier in tank for pure water	7	8.75
5	Establishing a team for water security and conservation and start the work	9	11.25
6	Training being done about drinking water	7	8.75
7	Management of trained VMW for maintenance	6	7.5
8	Well management of Drinking water Committee	4	5
9	Seeking help with different organizations for constructions	6	7.5
10	Knowing the importance of filter tank and planning for the same	12	15
	Total	80	100

Source: Field Survey(July 2015)

The respondents were aware enough of the situation of the water supply condition in their place. Majority of them felt the need of bigger water tank for reserving water and supply of safe drinking water. For sustainability they also thought of tree plantation and better management of the drinking water committee.

4.23 Deprived of Private Water Taps

All of the households in the study area have not been found to have availed with private water taps. The researcher found to two such cases. Case Study 2 is about one of the households that is deprived of private water tap accused of residing in squatter land and Case Study 3 is about one of the households that is unable to afford initial tap set up charge due to poverty and has been fetching water from the neighborhood paying as much as other members monthly.

Case Study 2 : Deprived of Private Water Taps Due to Residing in Squatter land

Despite enjoying other facilities in the society in their own ways the Water User Committee run under Drinking Water Supply Plan has not provided private taps for a group of five households. They have been using the public taps. Although they are able from other point of view they can still be called socially excluded community from the WASH point of view.

The researcher interviewed one of the male family members of the settlement, Mr. Jhedi Magar, he stated as follows:

Q : How long have you or your ancestors been living in this place?

A : Our grandfathers have been living here since 2027 B.S. (1970 AD). It has been more than four decades.

Q : Is the land registered in your name or your family member?

A: The land was registered in combine for our five households. The person who had the legal document went to the villagers' side and betrayed us and the land was converted into public land. We lost the case and were told to shift to some other places but we denied. I think they are taking advantage of our minority and low social status. Although they say that this land was designated to make it the center point of the VDC I think it's just their conspiracy to kick us out. When our grandfathers arrived here there was no VDC and almost nothing and nobody else had the legal documents of the land.

Q : What are the social facilities you have been enjoying?

A: We have been enjoying almost all facilities a citizen enjoys except private water. The public water is free of cost whereas people have to pay for the private one. We have been saying that we would pay for the private taps. But they don't provide us with one. We have our problems with us. They even look down on us telling that we are free users of public taps. When the nearby school students break the tap we have been repairing it in turns.

Q: What was the system of public taps assisted by FINIDA and it's present condition?

A: We had to pay Rs. 3,000 per tap, Rs. 500 from each household initially for set up and Rs. 10 monthly charge for the water assisted by FINIDA. One out of all the taps is still in condition for our use whereas other people have their private taps.

Q : What efforts have you made for private taps in the WUSC?

A: We applied for private connection. But we don't know what they have thought in this regard. We have applied all the useful measures to make it happen. We don't know if we have to leave this place any day in the future. Our only demand is to have the right to private water facility as long as we live here.

Q : Do you possess the Nepali citizenship?

A: We are Nepali and have all documents that a Nepali citizen should possess along with the certificates and consumer cards of forest, electricity, rivulet, etc.

Despite having those documents and cards they have been treated as outsiders. There are homeless and landless people who were settled by the government later than them

and have their own private taps whereas these people were deprived of private water taps being accused of living in the squatter land. The question is, despite of all facilities why are they deprived of private water taps only?

Case Study 3 : Deprived of Private Water Taps due to Poverty

Two households included by the drinking water project of Gomansingh Drinking Water Resource Project Part I, Rambas Sitabas or Devchuli Water and Sanitation Consumer Committee – 7, 8, 9, were found to be unable to set up private water taps due to poverty. They were unable to manage the initial full amount for the purpose. The researcher visited one of the *Dalit* households near Sitabas Chowk and had a conversation. They were living in a very poor condition. The family consisted of seven members – parents, four daughters and a son. They said they had got that number of children in the hope to have a son although they had known about family planning and had normal education, too. They settled the family in Sitabas 3 years ago purchasing 1 *kattha* land. The husband's original place was Pithauli VDC, Nawalparasi. Sitabas is his wife's birthplace. They had a major water problem. They had to send their children to their neighbor's house walking for 15 minutes. They needed about 60 liters for household purpose every day. They go to river or rivulet for other bathing and washing purposes. When rivers dry up in winter and summer they had to walk to far-off rivers. To earn their living and pay for their children's school the husband would work as a mechanic and the wife would work in neighbors' field in wage. The land they had purchased was not fertile enough and no irrigation possible to grow any sorts of crops or vegetables. Therefore they had to buy everything from the market. This is the conversation the researcher had with the male family head.

Q : Do you pay your neighbor for the water?

A : Yes, we do. We pay Rs. 30 monthly. It's been about a couple of years. It's the amount others pay for the WUC.

Q : What is the sanitary system of your house? Do you have toilet?

A. : We have been using a pit for that purpose. But we are thinking to build one with mud and stone.

Q : Did you ask WUC any help to set up the private tap?

A: A year ago we dropped an application but they didn't respond. Later we told them that we would manage the water pipes and other necessary items ourselves and would

pay the set up amount of Rs. 6300 in installment of 500 monthly but they didn't pay heed to our words.

Q : Have you contributed for the water management?

A: I wasn't here at that time but since my wife is from this place she went to dig. Her parents also requested the committee to help us but they didn't listen.

Q : Do you attend the meetings and general assembly of the committee and put your problems forward at times?

A: Since they neglect our request we also don't attend the meetings. They never bother to invite us, too.

Q : Is their electricity in your house?

A: No. It costs Rs. 5200 for meter which we can't afford. We use candles and torch.

The couple with their five children had been living under a tin-roofed shed with no walls, no rooms and no doors. The condition was really pathetic. Due to poverty they were obliged to live a life without private water, electricity and secured home. Poverty has been the curse to the family. It is not their mistake to be born poor. From social point of view there can be rich and poor in the society. But rest of the society members can consider on this issue and help them for their better living, making meaningful the term "society".

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION/ SUGGESTION

5.1 Summary

This study was conducted for the purpose of exploring gender and social inclusion in the sector of Water, Sanitation and Hygiene for its sustainability of Devchuli municipality 7, 8 and 9, Nawalparasi. It focuses much on the attitude of the local water users and concerned bodies towards water, sanitation and hygiene and its causes and effects, rather than data and statistics. The descriptive method of research was utilized and the normative survey technique was used for gathering data. IDI, FGD and KII served as the tools for collecting data. The people from different castes and community like Chhetri, Brahmins, Indigenous, *Dalit* and *Madhesi* and of different social and occupational status gender and age were the respondents that sum up to total 80 of them. The inquiry was conducted during the year Srawan, 2072 (July/Aug 2015).

Summary of the Findings

Based on the gathered, analyzed and interpreted data, the researcher came up with the following findings in accordance with the research questions formulated in the statement of the problem.

The participation status of women in water supply scheme Part II (8, 9) in system planning is nil, in operation and management 13 out of 34, and 3 out of 34 socially excluded community (SEC) members. Similarly the participation status of women in water supply scheme Part I (7, 8, 9) is 6 out of 23. The women participation in both inside and outside the committee in Part II was seen more active in comparison to Part I. Since the education level of females is lower than that of the males they were deprived in the planning committee. The involvement of different castes in the main water users' committee consists of 7 Chhetri/Brahmin, 10 Janajatis and 3 Dalits out of total 20 members in water supply scheme Part II (8, 9). Similarly in water scheme Part I (7, 8, 9) there were 12 Chhetri/Brahmins, 4 Janajatis and 1 Dalit out of total 17 members.

The role of women in water supply scheme Part II (8, 9) in decision making level at the community level (water and sanitation users' committee/s) was satisfactory in comparison to the water supply scheme Part I (7, 8, 9). It was found that only one female was an office secretary in water users' committee of Part I (7, 8, 9).

The barriers of women's participation in sustainability water supply scheme were found to be household works 22.5%, farming activities 16.25%, lack of education 13.75%, family obstacles 12.5%, poverty 11.25%, lack of motivation 10% and lack of awareness 13.75%. and their corresponding adverse effects in their life were lack of empowerment, lack of awareness about the importance of water, deprived of new ideas and concepts about water and sanitation programs, less effective management of water and sanitation related projects as women are the direct and main users, etc.

The potential solutions from the perspective of gender and social inclusion in water supply schemes' sustainability are to provide trainings about water and sanitation, awareness programs about gender equality and caste discrimination, encourage women education, compulsory provision of women SEC participation in water related programs and committee, etc.

Almost all of the households had private water tap connections and toilets at their homes and Devchuli municipality had been declared ODF area. Regarding the wastage and garbage management no particular dumping site was designated.

Five households residing in squatter land were deprived of private water taps and 2 households fetched water from the neighborhood due to poverty.

Untouchability in public seemed to decrease a lot. For instance there were two schools where they had appointed Dalit ladies for the task of cleaning and cooking purpose. Even the Chhetri and Brahmins were seen to be against this useless tradition. But it continued at their private homes.

5.2 Conclusions

According to the study a conclusion has been drawn that the beneficiary participation is the must for the efficient and sustainable water supply projects. Equity, ownership, responsibility, cost sharing are to be vested to the community. As they can better understand their problems, they can better decide what would be better for them. Therefore they should be given better opportunity to manage and decide on issues affecting their livelihood. The feeling of ownership, responsibility and right to decision making over any projects and programs in the society would bring in them the feeling

of social inclusion. As revealed from the participants of the focus group discussion regarding community participation, it is just an occasional participation just to show their presence so that they would not be deprived of the facility provided by the scheme. It seemed that it was not only *Dalits*, *Madhesis* or disadvantaged groups who were socially excluded, even the normal community members had been experiencing the feeling of exclusion. Untouchability had decreased a lot but not abolished.

Some issues were such that they had to be handled on the humanitarian ground and not by common rules and regulations of the society and the NGOs. For instance, the case of one of the respondents, Mr. Sher Bahadur B.K. who had not been able to fix private water tap as he was unable to manage the initial set up charge (but he was ready to pay the set up charge in installment) but had been paying his neighbor the same amount of regular charge as others. And for his neighbor it was like someone had been paying their cost and enjoying the private water facility free of cost with one time initial set up investment. The next case was the five households related to residential land disputes being deprived of private water connection only, while they had been enjoying all other facilities.

Keeping the community members aside the water committee, was not found as efficient as the beneficiaries had expected them to be. The beneficiaries had complaints in terms of operation & maintenance, new constructions to meet the demand of the growing population, leakage and overflow management, water purification and safety, etc. The committee was seen not well-managed internally and not able to provide better services according to time. The people were complaining about the political interference in organizational formation process. Women participation in Part I (7, 8, 9) was negligible. There were many economic and social reasons the women and SECs were deprived of their participation in water and sanitation users' committee although their participation in construction works had been found very vital and active. The level of their working conditions like the household environment, social co-operation, sufficiency of awareness as they perceived were to be very much present in the locality to enhance the water and sanitation related activities. Due to private water taps facility the time saved had been used in different income generating activities and care taking of the children. The school students also had enough time for their study.

In Part I (7, 8, 9) the minimum fee for 10,000 litre of water per month was Rs. 30. According to the water committee, the cost the community had been paying was not enough to fulfil all the demands of the community regarding better water service. The committee said they could supply 15,000 litre of purified water if the community members agreed to pay Rs. 50. When the committee suggested about increasing the charge the community members disagreed. This scenario depicted that the community members were demanding more than what they had been paying. Whereas in Part II (8, 9) the community members had been paying Rs. 50 per month and was comparatively well-managed with certain women participation in the committee. Unity and feeling of responsibility among the people and the committee could be seen clearly. There was good leadership and sincerity in the committee. The community members were more willing to contribute for the betterment of the water service. They had been holding regular meetings if any problems occurred. The committee and the community members were comparatively happier and were enjoying better and safer drinking water and had been constructing reserve tanks for the future.

On the whole it should be understood that the water distribution system was not as well managed as it could have been. The water tanks for water reservation was not big enough. There was water leakage, too. Prior to the intervention of different WASH programs in the study area the water problem was crucial but at present almost all of the households had their own private taps regardless of the safe drinking water. It had been a blessing to the local people there.

Studying these two cases, it can be concluded that for better and well-managed sustainable water schemes; leadership, active participation, inclusion, sense of responsibility, regular meetings and discussions, etc. play essential role.

Concerning the issue of safe water supply system there had still been problem as the water source had been open/uncovered. In the past it had been often polluted by humans and animals. At present the source had been fenced to keep them away. It was just a partial solution as it would be dirty during rainy season due to flooding and it has to be mixed with river water during summer season when water level decreases. Chances of contamination are potential which might result to different health hazards due to water borne diseases. The question of safe water is not well addressed.

Regarding sanitation and hygiene, except few households almost all of them had latrines. The ones without toilets also used pits for that purpose. The study area had been declared ODF not long time ago. However, some of the respondents were still complaining about coming across human wastes in open area. Open defecation was not a big issue anyway.

Finally, what has been assessed by the researcher regarding the issue of gender and social inclusion and sustainability has brought to light prevailing trends and concerns surrounding safe drinking water access in the context of Devchuli municipality, Nawalparasi. These involve the issue of community participation, water committee empowerment, community management and governance of water supply scheme, women participation, functional status of water supply scheme, WASH case, external support and monitoring system. These are areas identified as practical field research issues where further studies in the area need to investigate in depth as per rural water supply system sustainability.

5.3 Recommendations

5.3.1 Community participation

Community participation has to be encouraged more. They should be involved in overall mechanism of the water and sanitation scheme such as plan and policy making, decision making and operation and maintenance. This would only help the community to understand the core intention of the scheme and ensure the sustainability of the water supply projects.

5.3.2 Women participation

Women, the prime user of water at household level should have major participation in any WASH related schemes. Actually they should be given more preference than men. They are the ones who are directly affected by the daily problems related to water and sanitation and therefore can address the problems better. Participating women in the planning, operation and maintenance would help the well management of the water helping them to save their time and labour. That would directly indirectly help them to

invest their time in other productive activities like learning skills, generating income, care taking of the children, etc. That on the long run would help to improve the socio-economic condition of the country on the whole. Therefore, women should be trained prior to these participation.

5.3.3 Water committee

Since the committee is the heart of the scheme major concern is to be given for its overall well management. NGOs along with the government should pay heed to ensure both the technical as well as the managerial aspect of the water committee. An unmanaged committee might act as a handicap in the WASH schemes hindering the water system sustainability.

5.3.4 Ensuring safe water access

Although the community people have felt blessed after the intervention of the WASH scheme in the study area, safe drinking water has not been ensured. Open/uncovered water sources (although they have been fenced to keep away people and animals) could be exposed to any sort of contamination leading to different health hazards. Although there was a provision of treating the water with purifier the community people were in doubt whether the water they have been drinking was treated regularly and effectively. The problem is serious when the water level decreases during summer and had to be mixed up with the river water and during rainy season when the water sources were mixed up with the flooding. Under such a situation, the community people had no choice for safe drinking water. The need of a mechanism for purifying/filtering water on a regular basis has been felt to avoid any sort of water borne diseases. Partners and the stakeholders involved in the water supply system need to give due consideration for sufficiency of safe drinking water. This may involve expanding the existing safe water supply schemes, leakage management, constructing reserve tanks and looking for other alternative sources.

5.3.5 Improved sanitation facilities

Although the study area has already been declared ODF area (majority of the households have had toilets) and a municipality there has been no drainage system for the disposal of sewage and waste. That might lead to unmanaged drainage problem in future along with the growing population. Dumping sites had not been designated for

the disposal of the wastes and garbage. Inorganic wastes were burnt which was leading to land and air pollution. Some of the neighbouring villages those rearing pigs were seen in worst sanitary condition.

5.3.6 Environmental protection

Environmental sustainability should be ensured for the sustainable water supply system and proper sanitation. Sustainable water supply is out of question by neglecting the environment. Environment should be kept clean and pollution free. Foreseeing the potential environmental challenges different measures should be taken like afforestation, conservation of the forest, constructing dams in the places of regular landslides to protect the water pipes and so on.

5.3.7 Capacity building & Awareness Programs/Trainings

Regular trainings related to capacity building, technical skills development, management and leadership should be provided to the water in order to scale up the capacity of the water committee to better operation and maintain the water supply scheme. In addition to this the community also have to be provided with different trainings to raise their financial condition in order to enjoy the facilities in the society and awareness programs so that they could be mentally aware of the importance of safe drinking water to protect their health.

Different awareness programs related to gender and social inclusion and untouchability should be conducted time to time for more social participation and for the sustainability of WASH schemes.

5.3.8 External Support

According to the findings of the study, constant external support should be availed to the community until and unless the community itself is fully sufficient and efficient for the sustainable water system. External support might be technical, financial, physical, etc. Regular support from the government and the NGOs would only help in establishing a sustainable water supply system.

5.3.9 Monitoring and Evaluation

Studying the condition of the water supply scheme effective monitoring and evaluation could not be found. As disclosed by some community members who participated in the focus group discussion, there appears to be political intervention in one of the committees' formation that has led to the inappropriate persons in authority the result of which has caused the ineffective leadership. The committee has been acting on its own will being unresponsive to the complaints of the community members. This is due to the absence of monitoring mechanism in place in order to make sure that the problems of the community members are well addressed by the committee. Operation and maintenance has not also been effectively considered.

The evaluation of NAPA WASH can be done from three different angles – firstly from NAPA WASH itself, secondly from the view point of the beneficiaries and thirdly from the researcher point of view. Keeping aside the self evaluation of NAPA WASH the evaluation of the beneficiaries and the researcher can be presented here. In reference with the study it can be said that there is a positive impact of the service provided by NAPA WASH on the beneficiaries. On the whole they are found to be satisfied regarding the case of water and sanitation situation in the project area in spite of some complaints/suggestions, which is very common and is important for the betterment of the project and community itself. Some of the community members have even stated that they have been blessed to enjoy the water facility after the intervention of the project of NAPA WASH as their life was really cursed prior to the existence of the project. Although the study area has been declared ODF dumping site of household wastes and garbage is still a problem. Although the comprehensive evaluation is not possible with the available data and short period research the researcher has come to a conclusion that the role of NAPA WASH has really been praiseworthy. It has at least been successful to provide the community with daily water supply regardless of the safety and consistency. Speaking of the gender and social inclusion issues it has played a vital role. The *Dalits* nowadays don't have to fight for water with the other so-called high caste people as they have their own private taps fixed at their homes. Besides, the other castes have consideration on Dalits in public although most of them don't let them enter their houses. Change is all a matter of time.

References

- ADB, (n.d.), Sectoral Perspectives on Gender and Social Inclusion, *Water Supply and Sanitation*. Retrieved from <http://www.adb.org/sites/default/files/publication/30357/spgsi-monograph-7-water-supply-sanitation.pdf> on March 31, 2015.
- ADB, (n.d.), Overview of Gender Equality and Social Inclusion in Nepal. Retrieved from <http://www.adb.org/sites/default/files/institutional-document/32237/cga-nep-2010.pdf> on August 12, 2015.
- Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3 (2): 93.

- CBS, (n.d.), District Profile. Retrieved from http://cbs.gov.np/wp-content/uploads/2012/District%20Profiles/District%20profile_48.pdf, pp. 1 on 31 March, 2015.
- Concern Worldwide US, Inc. (n.d.). *Water: A Global Perspective*. Retrieved from <http://www.concernusa.org/programs/water-and-sanitation> on March 27, 2015.
- Department of Water Supply and Sewerage (n.d.). Retrieved from <http://www.dwss.gov.np/content/1/Welcome> on Jan 10, 2015.
- Devchuli Municipality Office, (2015)
- FEDWASUN, (n.d.), *Nepalma Khanepani Ra Sarsafaima Balabalika, Mahila Tatha Samajik Bahiskaranma Pareka Byaktiharuko Adhikar*, study report, Retrieved from <http://www.fedwasun.org/files/uploads/Study%20Report%20.pdf> on Feb 7, 2015.
- Government of Nepal Ministry of Water Supply and Sanitation Sector Efficiency Improvement Unit (SEIU), (n.d.). *Nepal Water Supply, Sanitation and Hygiene Sector Development Plan (2016–2030)*. Retrieved from <http://www.seiu.gov.np/index.php/documents> on August 3, 2016.
- HELVETAS Swiss Incorporation, (n.d.), Water Resources Management Programme, Retrieved from https://nepal.helvetas.org/en/programmes___projects/warm.cfm on August 7, 2015.
- Ministry of Urban Development, Sector Efficiency Improvement Unit, 2014, (2014). *Water Sanitation and Hygiene (WASH) Second Joint Sector Review (Technical Report)*
- MOHP, New ERA, and Macro International. (2007). *Nepal Demographic And Health Survey 2006*
- Morrow, S.L., & Smith, M.L. (2000). Qualitative research methods in counseling psychology. In S.D. Brown & R.W. Lent (Eds.), *Handbook of Counseling Psychology* (3rd ed.) (pp.199-230). NY: Wiley
- UNESCO. (n.d.). Nepal Millennium Development Goals Progress Report 2010, Retrieved from http://planipolis.iiep.unesco.org/upload/Nepal/Nepal_MDG_2010.pdf on Feb 6, 2015.
- NMIP/DWSS. (2010). A Survey Report on *Nation-Wide Coverage and Functionality Status of Water Supply and Sanitation*. Kathmandu
- NMIP/DWSS. (2014). *National Coverage and Functionality Status of Water Supply and Sanitation in Nepal*. Kathmandu

- Ranjit Kumar (n.d.). *Research Methodology: A Step-by-Step Guide for Beginners*. Retrieved from [https://books.google.com.np/books?id=a3PwLukoFIMC&pg=PA94&lpg=PA94&dq=Kerlinger+\(1986:+279\)&source=bl&ots=YuzFrOjsOz&sig=5PQb0x0_98btwKce_SKqqBL325A&hl=en&sa=X&ved=0ahUKEwi22ajAtL7OAhXJNY8KHbk-B-cQ6AEIIDAB#v=onepage&q=Kerlinger%20\(1986%3A%20279\)&f=false](https://books.google.com.np/books?id=a3PwLukoFIMC&pg=PA94&lpg=PA94&dq=Kerlinger+(1986:+279)&source=bl&ots=YuzFrOjsOz&sig=5PQb0x0_98btwKce_SKqqBL325A&hl=en&sa=X&ved=0ahUKEwi22ajAtL7OAhXJNY8KHbk-B-cQ6AEIIDAB#v=onepage&q=Kerlinger%20(1986%3A%20279)&f=false) on August 13, 2016.
- RVWRMP. (n.d.). Gender Equality and Social Inclusion(GESI), Retrieved from <http://www.rvwrmp.org.np/gender-and-social-inclusion.html> on Aug 30, 2015.
- RWSSP-WN, and RVWRMP. (2014). Final Draft: HRBA & GESI STRATEGY AND ACTION PLAN: Operationalizing Human Rights Based Approach and Gender Equality & Social Inclusion Principles in the Water Sector, 201
- RWSSP-WN, and RVWRMP. (2015). HRBA & GESI STRATEGY & ACTION PLAN *Operationalizing Human Rights Based Approach (HRBA) and Gender Equality & Social Inclusion (GESI) Principles in the Water and Sanitation Sector*
- RWSSP-WN Phase II. (2015). *Semi-Annual Progress Report (2071/072 - CY2014/15)*, pp. 13 & 24
- RWSSP-WN. (August 2008-July 2012). Retrieved from <http://www.rwsspwn.org.np/wp-content/uploads/2012/05/RWSSP-WN-Project-Document-With-Annexes.pdf> on Feb 20, 2015.
- Sigdel, Krishna Prasad. (2013). Sanitation, Hygiene And Nepal's Scenario. *The Rising Nepal*, (October 19, 2013).
- UN Water. (n.d.) *Gender, Water and Sanitation: A Policy Brief*, Retrieved from http://www.un.org/waterforlifedecade/pdf/un_water_policy_brief_2_gender.pdf on Jan 15, 2015.
- Water Supply and Environment Division Sector Efficiency Improvement Unit. (n.d.). *Sharing experiences and working together to make WASH sector more gender and socially inclusive*, para. 6
- WaterAid Nepal. (2003). *Drinking Water Coverage in Nepal: A Joint Department of Water Supply and Sewerage/ WaterAid Nepal Study*, Kathmandu.
- Wikipedia. (n.d.). Water supply and women in developing countries, Retrieved from http://en.wikipedia.org/wiki/Water_supply_and_women_in_developing_countries on Feb10, 2015.
- WEPA. (n.d.). *State of Water Resources*, Retrieved from <http://www.wepa-db.net/policies/state/nepal/state.htm> on January 15, 2015.

World Bank. (n.d.). Retrieved from
<http://siteresources.worldbank.org/INTGENDER/Resources/toolkit.pdf> on
September 13, 2015.

Yin, R. K. (1984). *Case study research: Design and methods*. Newbury Park, CA: Sage.

Annex I

List Details of IDI (In-Depth Interview)

Devchuli Drinking Water User committee 7,8,9 (Rambas Sitabas) Part I - First Construction from Gomansing Mool

S.N	Full Name	Municipality	Ward	Age	Education	Remark
1	Lila bahadur Jhedi Magar	Devchuli	7	50	S.L.C	
2	Khum Bahadur Rai Magar	Devchuli	7	44	Literate	
3	Sunita B.K.	Devchuli	7	29	Literate	
4	Bhim Bahadur Faal	Devchuli	7	36	6 class	

5	Sita Thapa	Devchuli	7	46	Literate	
6	Churikala Sharma	Devchuli	7	41	S.L.C	
7	Khum Kumari Paudel	Devchuli	8	35	S.L.C	
8	Uni Maya Jhedi Magar	Devchuli	7	29	8 class	
9	Shova Paudel	Devchuli	7	49	Literate	
10	Lila Bhusal	Devchuli	8	38	Literate	
11	Renuka Subedi	Devchuli	7	70	Illiterate	
12	Sher Bahadur B.K.	Devchuli	7	33	8 class	
13	Chakra Bahadur Chhetri	Devchuli	7	63	Literate	
14	Lal Bir Aslami	Devchuli	7	72	Illiterate	

List Details of IDI(In Depth Interview)

Devchuli Drinking Water User committee 8,9 (Aaptari) Part II - Second Construction from Same Gomansing Mool

S.N	Full Name	Municipality	Ward	Age	Education	Remark
1	Dhan Bahadur Rana	Devchuli	9	45	S.L.C	
2	Om Kumari Lungeli	Devchuli	8	20	BBS Running	
3	Mina Adhikari	Devchuli	8	32	9 class	
4	Bhim Bahadur Shrestha	Devchuli	9	42	8 class	
5	Omraj Adhikari	Devchuli	9	39	S.L.C	
6	Sita Bhusal	Devchuli	8	40	Literate	

7	Kamala Soti	Devchuli	8	36	Literate	
8	Dilmaya Baraghare	Devchuli	8	40	Literate	
9	Dilli Maya B.K.	Devchuli	8	66	Illiterate	
10	Sita Nepali	Devchuli	8	37	Literate	
11	Samjhana B.K.	Devchuli	8	34	Illiterate	
12	Nandalal Ontanki	Devchuli	9	51	Literate	
13	Mekh Bahadur Saru Magar	Devchuli	9	50	S.L.C	
14	Utisara Chhetri	Devchuli	9	48	Literate	

List Details of FGD(Focus Group Discussion) Male

Devchuli Drinking Water User committee 7,8,9 (Rambas Sitabas) Part I -First construction from Gomansing Mool

S.N	Full Name	Municipality	Ward	Age	Education	Remark
1	Gunakar Pandey	Devchuli	7	64	8 class	
2	Gyanlal Pandey	Devchuli	7	47	5 class	
3	Ganga Bhattarai	Devchuli	7	38	8 class	
4	Khem Bahadur Soti	Devchuli	7	32	8 class	
5	Devilal Bhattarai	Devchuli	7	71	Literate	
6	Raju Ranjan	Devchuli	7	40	S.L.C	
7	Lal Bahadur Aale	Devchuli	7	49	8 class	
8	Deviram Bhusal	Devchuli	7	74	Literate	
9	Parsuram Lamichhane	Devchuli	8	71	8 class	

List Details of FGD (Focus Group Discussion) Male

Devchuli Drinking Water User committee 8, 9 (Aaptari) Part II - Second Construction from Same Gomansing Mool

S.N	Full Name	Municipality	Ward	Age	Education	Remark
1	Kul Bahadur Lungeli	Devchuli	9	20	12 class	
2	Dil Bahadur Tamang	Devchuli	9	60	Literate	
3	Mekh Bahadur Saru	Devchuli	9	50	S.L.C	
4	Brihaspati Paudel	Devchuli	9	53	Literate	
5	Tara Bahadur Sunar	Devchuli	8	67	Literate	

6	Bir Bahadur Sinjali	Devchuli	8	54	Literate	
7	Dhan Bahadur Jhedi	Devchuli	8	72	Literate	
8	Bedahari Timalisina	Devchuli	8	50	Literate	
9	Panchalal Gurung	Devchuli	8	56	Literate	
10	Ishwori Pageni	Devchuli	8	48	S.L.C	

List Details of FGD(Focus Group Discussion) Female

Devchuli Drinking Water User committee 7,8,9 (Rambas Sitabas) Part I- First Construction From Gomansing Mool

S.N	Full Name	Municipality	Ward	Age	Education	Remark
1	Dilmaya Adhikari	Devchuli	7	45	7class	
2	Usha Paudel	Devchuli	7	32	10 class	
3	Januka B.K	Devchuli	7	31	4 class	
4	Kamala B.K	Devchuli	7	38	Literate	
5	Dhana Kumari Gaha	Devchuli	7	28	4 class	
6	Bishnu Lamichhane	Devchuli	7	22	12 class	
7	Junmaya Baral	Devchuli	7	40	Illiterate	
8	Aaita Kumari Tamang	Devchuli	7	32	6 class	
9	Laxmi Paudel	Devchuli	7	45	Literate	

List Details of FGD(Focus Group Discussion)Female

Devchuli Drinking Water User committee 8,9 (Aaptari) Part II-Second Construction from same Gomansing Mool

S.N	Full Name	Municipality	Ward	Age	Education	Remark
1	Anju Bache Magar	Devchuli	8	28	S.L.C	
2	Renu Gurung	Devchuli	9	36	10 class	
3	Maina Thapa	Devchuli	8	35	Literate	
4	Parbati Baral	Devchuli	8	52	Literate	

5	Jasmaya B.K.	Devchuli	8	36	Literate	
6	Punam Thapa Chhetri	Devchuli	8	32	8 class	
7	Santosi Thapa Chhetri	Devchuli	8	24	8 class	
8	Unimaya Pariyar	Devchuli	9	36	Literate	
9	Chanamaya Barhaghare	Devchuli	8	37	Literate	

List Details of KII (Key Informant Interview)

Devchuli Drinking Water User committee 7,8,9 (Rambas Sitabas) Part I & 8, 9 (Aaptari) Part II from all over Gomansing Mool

S.N	Full Name	Municipality/VDC	Ward	Age	Education	Remark
1	Shiva Parajuli	Devchuli	8	40	M.Ed	
2	Krishna Pd. Sharma	Devchuli	11	57	I.Ed	
3	Tulsiram Kandel	Devchuli	7	43	B.com	
4	Balananda Aryal	Devchuli	9	59	10 class	
5	Nardev Naupane	Devchuli	13	47	M.A	
6	Tilprasad Kafle	Devchuli	12	47	B.A	
7	Satyanarayan Bhusal	Devchuli	12	43	I.com	
8	Hari Pd. Chapagain	Devchuli	14	50	M.A	
9	Ghana Lal Bhusal	Devchuli	9	62	Literate	
10	Krishna Bahadur Aale	Devchuli	9	35	I.com	
11	Krishna Bahadur Chhetri	Devchuli	9	34	S.L.C	
12	Dharma Bahadur Shrestha	Devchuli	7	57	S.L.C	
13	Kham Lal Paudel	Devchuli	7	63	Literate	
14	Samjhana Chaudhari	Manari VDC	7	38	B.A	
15	Bhekh Raj Pathak	Devchuli	7	54	S.L.C	

Annex II

Questionnaire for FGD (Men)

1. Did you drink any water from other different projects prior to the WASH project of Finnish government? If yes from which projects if no, how did you manage the water?

2. After the intervention of the WASH scheme the water committee has been formed. How was the committee formed including men, women, *Janajatis* and *Dalits* or was it formed with no such parameters?
3. What do you feel about the inclusion of all castes in the committee? Is it done fairly?
4. Did you make any financial contribution in the first water supply project? Besides that what other contributions did you make in that project to make it a success?
5. Was that contribution done equally by all or were the poor, Dalits, backward class given some considerations?
6. What were the unforgettable adverse condition prior to the intervention of water supply schemes?
7. Do you think the water and sanitation related activities should be limited to women alone or should be practiced by men, too? Do you engage in such activities?
8. There are women who have been handling both the indoor as well as outdoor activities. Whereas men are often found to be doing outdoor activities only leaving the indoor activities to women? What have you got to say in this regard and what is the general concept of the society?
9. Are all the committee members participating actively? What is the level of women participation? Do they put their views forward or just agree to what the male members say and decide?
10. If there is no active participation of women in the committee? What do you think are the major causes? Is the male society one of the causes?
11. What is the curiosity and interest level of women in the committee? Are there any instances that they have not been interested?
12. Since the initiation of the water supply scheme what are the extra actions and investments made by the committee and community for its sustainability?
13. What were the general conception of the society regarding water consumption and untouchability? What are the changes regarding the same so far?
14. What was the environmental condition prior to WASH schemes in the community? What was the condition of open defecation and other environmental pollutions?

15. Are all of your houses supplied with private water tap at present? Are there any households without it? What are the reasons behind that?
16. Have there been any WASH related trainings so far? What types of trainings were launched?
17. Have there been any trainings for the water consumers?
18. Is the water well-utilized in the community? Is the water wasted or insufficient?
19. How important is it to maintain the safe drinking water, personal hygiene, household and your surrounding cleanliness and environmental conservation? Have any trainings launched regarding the same?
20. Is the water for drinking, cooking and cleaning same or different? What are the different sources?
21. How was the water pricing determined? Was that the sole decision of the committee or decided with the consent of the water users? Do the water users have any complains?
22. What is the minimum charge of the water?
23. What is the maximum charge paid by any household?
24. Is the revenue collected from the water users invested in other important purposes or just used in regular management expenses, or regular saving or used for some emergency use?
25. What is the attendance in the general assembly? How are the community members informed?
26. Are there any very poor, backward families in the community? How are they supplied with drinking water?
27. Are there any female VMW in the community?
28. What are the positive actions taken by this WUC?
29. What are the weaknesses of the WUC?
30. What are the plans and programs to run this committee effectively?
31. Do you expect the sustainable distribution of water now onwards? Do you think the coming generation wouldn't be facing the problem of water?
32. What are the positive and negative aspects of this scheme? How can it be improved? What are your expectations?
33. What are your suggestions to make this scheme more efficient and sustainable?

Indepth Interview (IDI) for women

Scheme name

Name:..... Age:..... District:.....

Municipality:..... VDC Ward

No.:..... Academic Qualification: Occupation:

..... Income Status: Family Type:

Household Type: Interview Date:

1. What was the condition of water prior to different water schemes?
2. What was your participation during the scheme initiation? If yes, how was your participation? If no, why didn't you participate? Give some reasons.
 - a.
 - b.
 - c.
 - d.
3. What are the male participation in water fetching and household cleanliness?
Do they help or not? If not what are the reasons behind that?
4. What are your views on the equality of men and women in every aspects?
5. Do you have private water tap or how far do you go for water fetching?
6. If you have private water tap whose name is it issued to? If it is not issued to your name why not?
7. Is there any contribution of yours in the construction of the drinking water project? If yes how much financial contribution have you made?
8. Are you satisfied with the water pricing? What is the degree of your satisfaction?
9. What do you do to filter or purify the drinking water at home? For example:
 - i) Drink directly
 - ii) Filter the water with a piece of cloth
 - iii) Boil
 - iv) Heat in the sun
 - v) Others

10. Do you know that the water from the source must not be used directly? Do you think the water should be purified? Give reasons.
11. What is the water condition of the source of water you have been drinking from? Is it clean or not? Have you found any pollutants? Do you think it is necessary to purify?
12. Do you collect rain water in rainy season? What do you collect it in?
13. Do you have different containers for water collection for different purposes? Do you clean the containers time to time?
14. What do you do to the waste water from the household?
15. Do you have toilet at home? How do you manage the drainage system?
16. How do you spend your day at home? Could you tell us your normal schedule?
17. How many other female members are there in your family? What do they do?
18. Is there untouchability issues while water fetching? If yes what are your views on it?
19. While setting up water taps at home or public places do women participate in decision making? Do the male members appreciate your decision? If no, why? Give reasons.
20. What is your position in your family? Have you been treated as a normal member for household chores or given some special value/preference?

If yes what sort of preferences/responsibilities?	If no why not?
1.	1.
2.	2.
3.	3.

21. Do you think the water that you have been enjoying will be sustainable? What is your opinion?

If yes why?	If no why not?	What can be done for it?
1.	1.	1.
2.	2.	2.

3.	3.	3.
----	----	----

22. Have you been in the committee or just a consumer? What do you think it feels like to work in the committee and just a consumer?
23. What is the woman participation in the WUC? How much active are they? Is their decision making rights limited to documents or in practice? Are their voice heard?
24. How can women contribute in water and sanitation schemes? Tell us their roles in details.
25. What are the hindrances that have been preventing women from participating in the WASH schemes for its sustainability?
26. Have you been given any types of trainings regarding WASH?
27. How much do you care about your personal cleanliness and your family cleanliness?
28. What are the differences in environmental cleanliness compared to the condition prior to WASH intervention?

Condition Prior to WASH intervention	Condition at Present
1.	1.
2.	2.
3.	3.

29. How have you been managing the household wastes? Do you classify the wastes before they are disposed? If yes how?
30. What do you think are the good aspects of this project?
31. What do you think are the negative aspects of this project?
32. What are your future expectations? What are your suggestions to make this project efficient and sustainable?

Questionnaire for Committee Members

1. Is the committee formation based on gender and caste?
2. Are the consumers satisfied with the activities of the committee?

3. How is the impression of the committee upon the consumers? Is the committee able to bear the allotted responsibilities?
4. Have the sub-committees been formed and the tasks divided? If no, why not?
5. What are the roles of the committee for the effective supply and sustainability of the water in the community?
6. Besides general assembly have you organized meetings involving the consumers, too? If yes what types of meetings?
7. Is there active participation of women in the regular meetings?
8. What is the condition of income expenditure in the committee? How much revenue is collected and on what time basis?
9. What is your opinion on the gender and social inclusion?
10. What are the positive changes in the village after the intervention of the WASH schemes?
11. Are there any other similar schemes following this project? If yes what are they?
12. What is the condition of untouchability? Have there been any changes? If yes what are they?
13. What can be done for the active participation of the women and make them forward in these schemes?
14. What problems have you seen that have been preventing women to be equal to men?
15. How much capable are the indigenous and Dalit community socially, economically and academically?
16. What steps can be taken to improve their condition by themselves and by the able community members?
17. Do you think that your community environment is clean? What improvement have you found in the environment after the intervention of the scheme?
18. What are the positive aspects of this schemes?
19. What are the negative aspects of this schemes?
20. What do you think can be done to make this scheme sustainable?
21. What steps and future plans have been made for the sustainability of the scheme?
22. Do you have any personal comments towards this scheme?

Questionnaire for Municipality Mayor

1. Could you tell us about the WASH schemes initiated by the help of Finida in Devchuli municipality?
2. What sort of participation have you found in this scheme on the basis of gender and social inclusion?
3. What is the general concept of the people in this community regarding untouchability?
4. How much active are the women of this community in any social activities and sectors?
5. What is the degree of gender, social, class inequality in the community? In what issues?
6. What sort of water related plans come from the community level?
7. What are the plans and programs from the municipality to make the water supply more well-managed and safe?
8. What have you been doing for the gender and social inclusion for the sustainability of the schemes?

Annex III



Gomansing Main Source



Source Water Tank



Main Source Pipe Line



Treating the Water in Tank



Tank Visit



Female Group Discussion (Devchuli 7, 8, 9)



Female Group Discussion (Devchuli 8, 9)



Mahila Samuha



IDI



Female Group Discussion (Devchuli 8, 9)



IDI



Women in Tank Construction



Consumer Committee (8, 9)



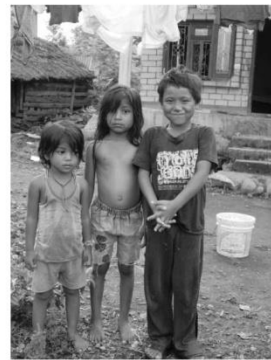
Public Taps Users



Locals in Tank Construction



Disabled Woman
Working



Uncared Children



Thread Making



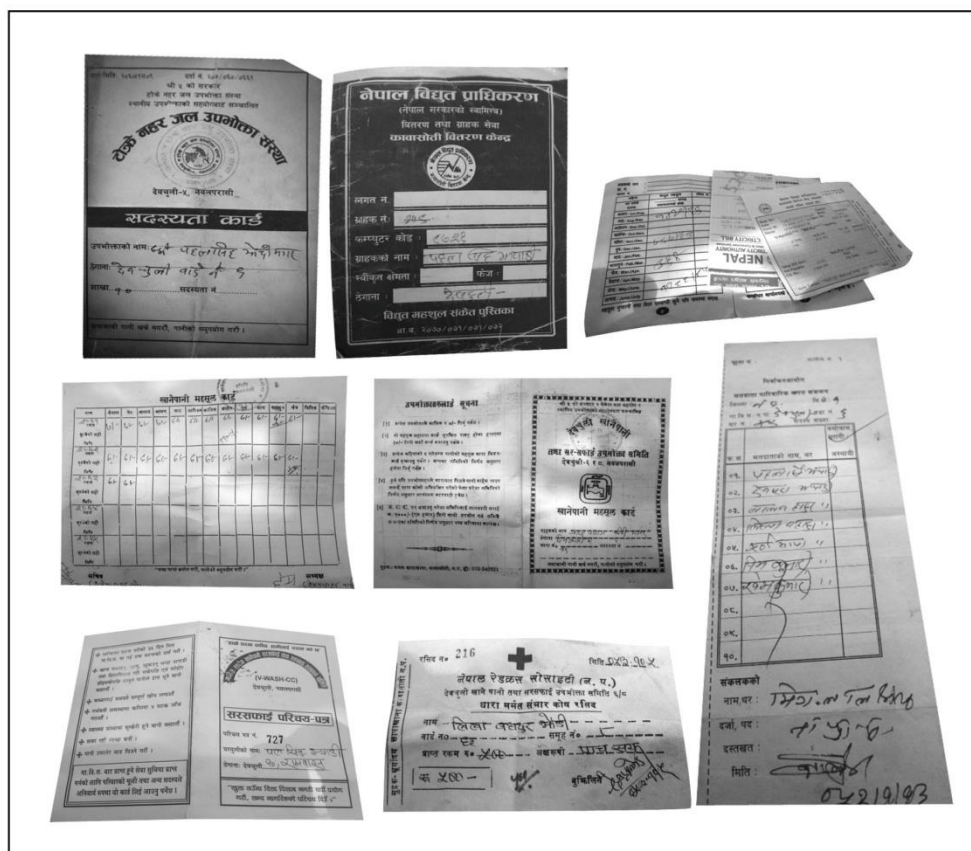
Burning the Wastages



Pollution in the Surroundings



Boy Swimming in the Rivulet



Documents of the Members Deprived of Private Water Taps