ATTITUDE OF PEOPLE RELATED TO SUSTAINABLE OPERATION AND MAINTENANCE OF WATER SUPPLY SCHEME

(A Case of Devchuli Municipality of Nawalparasi District)

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

This Thesis entitled **Attitude of people related to sustainable operation and maintenance of water supply scheme** (A Case of Devchuli Municipality of Nawalparasi District) has been prepared by **Meena Thapa** under my guidance and supervision. I here by forward this thesis to the evaluation committee for final evaluation and approval.

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Date: 2016-04-03

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Approval Letter

This Thesis entitled **Attitude of people related to sustainable operation and maintenance of water supply scheme** (A Case of Devchuli Municipality of Nawalparasi District) submitted by **Meena Thapa** in partial fulfillment of the requirements for the Master's Degree (M.A) in Rural Development has been approved by the evaluation committee.

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Declaration

I hereby declare that the thesis entitled "**Attitude of people related to sustainable operation and maintenance of water supply scheme"** (A Case of Devchuli Municipality of Nawalparasi District) submitted to the Central Department of Rural Development, Trubhuvan 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.

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ABSTRACT

Water is the fundamental requirement for the human being as well as other living being. Water required for drinking and sanitation is the human right and the state should have the responsibility for providing the sufficient and good quality water. But the developing countries like ours are not capable of supplying the fundamental amenities. Drinking water facility was made available in the ward number 7, 8 and 9 of Devchuli Municipality of Nawalparasi district had started 17 years earlier. Prior to this scheme, people were dependent on river/stream/well and *Kuwa* for fulfilling their need of drinking water. Now, they have tap water facility in their house. This study explores the **attitude of people related to sustainable operation and maintenance of water supply scheme** (A Case of Devachuli Municipality of Nawalparasi District). It was conducted with following objectives:

- To understand the users' attitude and practices which are the strengths for scheme's sustainable on operation and maintenance,
- To recognize the users' attitudinal limiting factors (weaknesses) affecting the scheme's operation and maintenance,
- To find out the institutional support mechanism so far carrying out the scheme sustainable.

During the study period, group discussion with 4 different groups with 2 female and 2 male each from both the scheme (Part I & Part II) were conducted. KII was taken with 13/13 respondent of each Part. IDI was taken with 10 respondent of Part I & with 7 respondent of Part II. In this study including 72 respondents were included. During the field study formal, informal interaction, sight visits, users daily work, users habit and behavior, a vast difference has been found before 17 years (when for drinking water people used to go river and ponds) earlier and now. Due to the lack of drinking water personal cleanliness and family cleanliness was not possible before but after the drinking water scheme came, 90.28 % people have said that cleanliness is done.

It has been found that the waste water is also mobilized in a right way. It has been found that non decomposable garbage's like tin, bottles are difficult to manage but 100% of people burn the plastics. For decomposing garbage, Municipality has shown the positive

response and is searching for the appropriate dumping site. After the drinking water scheme has came, mostly women's are using the water fetching time in income generating activities and have become self dependent, managing household works effectively, doing vegetation and giving efficient time to their children for study.

As the students also don't have to go to fetch water, so their study has improved and come neat and tidy in school. As all the users have understood the importance of drinking water, all the users are involved in conserving water source activates. With the help of FINNIDA, 17 years earlier drinking water scheme was constructed and public taps were constructed and used. Seeing the present use and to make the scheme sustainable user have registered the drinking water scheme, constructed own building, searched other water sources and registered it, are constructing more reserve tanks and from past two years they connected private tap and are paying bill from meter system. Almost of the households have connected the private tap but 0.62% are using public taps and 0.49% are using drinking water from neighbor's house. After the drinking water has become connected private tap, it has been found that water has been used effectively and waste water is being used for vegetation and fruits. Before the drinking water scheme came, diseases like Diarrhea, Dysentery, Fever, Tape worm, Abdominal, Skin disease, Typhoid, Jaundice, Eye disease used to occur and children also used to born abnormal. But now this problem has been solved. User have united themselves for making the drinking water scheme private and for making it sustainable they are searching other water source, for conserving water source doing afforestation programs, and are also coordinating with donor agency and other organizations. After 17 years also, donor agency is conducting different awareness programs to make the scheme sustainable.

According to the respondent's views, there are many positive aspects of the drinking water project rather than negative aspects and to make the organization sustainable the working committee is doing all it can. If program help and advice in right direction, program can get better than this in a short period of time and program can be sustainable. Due to the environmental change water source are depleting day by day so to provide water without any disturbance different study should be conducted and sufficient attention towards increasing water source should be given.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS/ACRONYMS

BM: Beneficiary Member
CATN: Centre for Appropriate Technology Nepal
CBOs: Community Based Organizations
CDRD: Central Department of Rural Development
DWS: Drinking Water Schemes
FGD: Focus Group Discussion
HH: Household
IDI: In Depth Interview
II: Informal Interview
KII: Key informant interview
NAPA WASH: Nawalparasi and Palpa District Sustainable Water and Supply Sanitation Project
ODF- Open Defection Free
O&M: Operation and Maintenance
Pvt. Ltd: Private Limited
RWSSP: Rural Water Supply and Sanitation Project
SAs: Service Agencies
TMS: Total Management Services
WECD: World Commission on Environment and Development
WF: Water Finns
WUC: Water User Community
WUSC: Water User and Sanitation Committee
VMW: Village Maintenance Worker

In this report**, Part I** means, Devchuli Water Supply and Sanitation Scheme 7, 8, 9 and **Part II** means Devchuli Water Supply and Sanitation Scheme 7&8.

CHAPTER- I
INTRODUCTION

1.1- Introduction

Majority of the Nepalese residing in the rural areas of the country lie below the poverty line and are very far away from the basic minimum requirements. Drinking water is one of the basic minimum needs of all human beings and provision of convenient, safe, clean and adequate drinking water is the declared commitment of Government of Nepal. Most of the people have the opinion that government should provide free water supplies because water is freely gifted by nature. But, it should be remembered that everything has a cost for production. Supply of water also incurs cost. It has been realized that the development of Water Supply and Sanitation Sector brings in enhanced socio-economic benefits and public health improvement. Population growth, rapid urbanization and industrialization are imposing rapid growth on demands of water supply and it pressurizes the government for the development of water resources. The growing imbalance between the demand and supply of safe drinking water has brought about several problems like shortage of drinking water, population and environmental degradation. As a result a high incidence of water related diseases causes significantly low productivity in many parts of this country.

Nepal is often said to be a rich country in terms of water resources with immense potentiality of hydropower generation, but there is scarcity of safe drinking water to serve the majority of the population. Different approaches and modalities have been experimented at different times in implementing projects to provide the safe drinking water. Particularly prior to 1997, water supply projects were generally selected, designed and implemented by central government agencies without adequate consultation and participation of beneficiaries, which resulted to less effectiveness of the projects in terms of its longevity, operation and maintenance. Realizing this fact, water supply projects were designed and implemented with the consultation and participation of beneficiary groups linking with other activities such as sanitation, income generating and institutional capacity building. Such demand driven participatory approach has been considered as a potential way to provide long term service which often called as sustainable approach.

Water and sanitation are like two eyes for the development of any country and they are imperative. Like it is important for every citizen to have food, shelter and clothing, it is equally mandatory for any government to provide the basic need of clean water and sanitation facilities to the public. Also safe water and good sanitation are basic needs of human being. They influence health, economic development, food absorption and the living standard of people.

Some national and international governmental and non-governmental agencies are being involved to deliver safe drinking water and sanitation in both urban and rural areas. These NGOs and INGOs have been playing and effective role in the drinking water and sanitation sector through the implementation of water supplies projects which are usually integrative in nature and incorporate with the high level of people's participation. One of the most active providers of services in Nawalparasi and Palpa District Sustainable Water and Supply Project (NAPA WASH) is a -project supported by 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 Ministry of Foreign, Affairs Finland and WF for three Years (2014-2016). This water supply scheme is a gravity type, located in ward numbers 7, 8 and 9 of Devachuli Municipality of Nawalparasi district. The scheme provides water supply facility to 804 households.

Water and sanitation related problems of communities could be minimized by implementation of drinking water and sanitation projects. Once water ensured, the time saved is used for the activities such as income generation, childcare, and agriculture production. The effect is also increased in children's number in schools, community's participation in development activities improved in sanitation conditions and other social works. The collective effect enhances the quality of life, which helps to increase their life expectancy. In effect, economic and social development of the country could be lifted.

The concept of sustainability has taken its root from the debate on sustainable development during the early 70's. It becomes a concept that is found out to be more 'complex and contested' (Pretty, 1995). As per the United Nations document entitled "Our Common Future" (1987), "sustainable development is development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs." This being the case, different organizations used to produce their own version of definition in line with addressing their intended objective. Accordingly,

various studies conducted pertaining to water supply services have produced scores of definitions concerning the essence of sustainability in the context of water supply projects. Most of these definitions capitalize on financing of regular operation and maintenance costs by users, minimal external assistance in the long term, and continued flow of benefits over a long period (Parry-Jones S. et al 2001).

It is widely realized that community managed demand driven participatory approach needs to understand the factors affecting for smooth operation of the project. It is often mentioned that policy makers and planners should take into account the social structure, level of awareness and geo-physical structure of the particular project site in order to understand the possible problems arising for the smooth operation of such projects. This study, therefore, attempts to explore the attitude of people related to sustainable operation and maintenance of water supply scheme in Devachuli municipality of Nawalparasi District.

1.2- Statement of the Problems

Nepal is one among the poorest countries in the world with an estimated population of about 27.7 million in 2006 (http://devdata.worldbank.org/AAG/npl_aag.pdf). Though, the country is small with an area of about 147 thousand Sq. Km., it has significant human and geographical diversities. Two-third of the country is Hilly and mountains and one-third is plain. Nepal has poor transport and communication facilities and social infrastructures including water and sanitation.

It is estimated that in 2010 about 80 percent of the rural and 90 percent of the urban population have access to safe water supplies, whereas the sanitation facility is estimated about 29.4 percent and 77 percent in rural and urban population respectively. Its main goal is to attain sustained improvement in the health status and productivity of the Nepali people as a whole with particular emphasis on lower-income groups through the provision of adequate, locally managed and sustainable water supply and appropriate sanitation facilities in association with improved personal, household and community hygiene behavior. In line with this objective, the DWSS aims to provide access to safe water supply and sanitation facilities for all by 2017. (Nationwide Coverage and Functionality Status of Water Supply and Sanitation in Nepal) Sanitation is still lacking and water is

also not pure enough to drink which need to be improved for the sustainability of the scheme.

During the past years, the selection and implementation of projects were considered as responsibility of central government. Projects were designed according to government's guidelines without adequate review of local needs and resources. Less attention had been given to financial and institutional requirements for the sustainable operation of the built facilities. The government expectation seemed that communities had to maintain systems built by it, which were faultily designed and poorly constructed. Adequate efforts were not made to enable communities to undertake maintenance and operation of the system.

Many development projects are now implementing with higher emphasis giving to the broader or mass participation of beneficiaries from project planning to implementation and operation, in which drinking water supply and sanitation projects implemented under various programs are few examples in Nepal. It is obviously a matter of interest about the sustainability of these water supply and sanitation projects built under the participatory approach. It is also realized that attitude of people can play significant role to make more success of such projects. Because community managed projects are primarily guided by the motive of welfare of the particularly community rather than business perspective. In this regard, cooperation, trust, coordination and reciprocity among the beneficiary groups which are significant parts of attitude of people are important in order to operate and deliver public services.

Drinking water facility was made available in the ward number 7, 8 and 9 of Devchuli Municipality of Nawalparasi district before 17 years. Prior to this scheme, people were dependent on river/stream/well and *Kuwa* for fulfilling their need of drinking water. Now, they have tap water facility in their house compound. This study is an attempt to explore the attitude of people related to sustainable operation and maintenance of water supply scheme in Devchuli Municipality of Nawalparasi District. Including the above subjects, the study will be focused on the following research questions:

- What are the effects to the sustainability of scheme due to the attitude of the users?
- What are strength and weakness of the scheme?
- What role should institutional support mechanism play in order to make the scheme sustainable?

- How is the practice for making the scheme sustainable? And what other should be done?
- How the maintenance work of the scheme carried out and what is should be done for sustainability?
- What are the changes before and after the scheme?
- What are the changes in the attitude of the users after the arrival of the scheme?

1.3 Objectives of the study

The overall objectives of the study are to assess different factors affecting the long-term sustainability of the water supply schemes focusing on operation and maintenance and to identify successful community practices and strategies to ensure scheme functionality and/overcome difficulties/threats to the scheme. The specific objectives of the study are as follows:

- To understand the users' attitude and practices which are the strengths for scheme's sustainability on operation and maintenance,
- To recognize the users' attitudinal limiting factors (weaknesses) affecting the scheme's operation and maintenance,
- To find out the institutional support mechanism in order to carry out to make the scheme sustainable.

1.4 Significance of the Study

Water is recognized as one of the most important basic needs of the people. Provision of safe drinking water in adequate quantities is the present requirement of the people. Public water supplies are in operation to meet the increasing requirement of the consumers. Subsequently the quality of drinking water has become a prominent issue in these days. The government policies are to ensure sustainability and ownership by the users groups in the community.

Regarding the significance of the study, the study has identified the degree of the people's participation in the scheme, benefits so far received by the local people after the completion of the scheme, willingness to pay for the operation and maintenance of the water schemes, and the probable attitude of people impact evaluation of drinking water scheme in Devchuli Municipality of Nawalparasi District**.** This study also identified the

people's attitudes and impact of the water supply and sanitation program in the community. It is hoped that the results are helpful for formulation of strategies and policies while constructing water supply scheme in other areas. This study will also be helpful to researchers, students and interested persons who are willing to carry out further research in the same area or other area of similar characteristics.

1.5 Limitations of the Study

- The present study is based on and limited to the drinking water beneficiaries of ward number 7, 8 and 9 of Devchuli Municipality of Nawalparasi District.
- The study is very specific like that of case studies. So the conclusions drawn from it is more indicative rather than conclusive.
- The conclusions may not be generalized for the whole. But, the inference might be valid to some extent to those areas, which have similar geographic socio-economic and environmental settings.
- Moreover there are also other constraints like financial constraint, time constraint, resource constraint etc.

1.6 Organization of the Study

The first chapter is the introductory chapter, which discusses about the background information, statement of the problem objectives etc. Literatures related to drinking water and development has been reviewed in the second chapter under the heading of literature review. Third chapter is all about the research methodology applied for this research. Chapter four is the data analysis and findings. Chapter five is the summary, conclusions and recommendations.

CHAPTER- II
LITERATURE REVIEW

In Nepal, particularly prior to 1990, the social dimension in development scheme was neglected. More emphasis was given to the technical and financial aspect of the scheme with less priority on social aspects and local participation, which adversely affected the success of the scheme. The development approach has been changing over time. The past experiences have revealed that the development activities under the conventional models, which were basically designed and implemented by central authority, could not properly address the local context. Realizing this fact, development approach has now been shifted from top-down to bottom-up as well as from purely economic and technical concept to multidimensional concept including social component. Drinking water supply projects implemented by different agencies adopting the participatory approach, particularly onward 1990, in Nepal illustrate the shifting paradigm of development approach.

Finnish assistance to Nepal in the WASH sector began with a mission requested by government in 1988 to formulate a long-term cooperation program focused on drinking water. As a result, the Rural Water Supply and Sanitation Project (RWSSP) began in 1990. By the end of Phase I in 1996, it had introduced 110 drinking water and sanitation schemes in six districts of the Lumbini Zone of Western Nepal, serving an estimated 237,000 people in 54 VDCs. Phase II was implemented from 1996 to 1999 in the same districts. Its immediate aims were: (a) to strengthen the capability of the district-level and VDC decision-makers to plan for, coordinate, monitor and evaluate water supply and sanitation issues in their areas; (b) to strengthen the capacity of the sector agencies, and private-sector actors, to support water user groups in water supply and sanitation development; and (c) to complete the Phase I activities. In trying to decentralize rural water supply and administration, funds were channeled through the DDCs and LDOs. A 'step-by-step' approach was used, in which beneficiaries participated in each step together with support organizations. Gender-related content was incorporated in the training of groups such as support organizations, water user committees, and women community health volunteers. Most of the baseline questionnaires, monitoring and reporting formats of different training events were subsequently disaggregated to account for gender as well. By the end of Phase II, water supply schemes for more than 100,000 people had been completed, with 68 gravity flow schemes for over 39,000 people, 27

shallow tube wells and dug wells for more than 50,000 people and 18 rainwater schemes for nearly 13,000 people along with sanitation facilities for more than 18,000. Key differences between Phase I and Phase II of the RWSSP included the establishment of a district water supply and sanitation fund, the channeling of funds through the accounts of water user committees, the size and composition of the budget, and the involvement of support organizations. Also distinctive in Phase II, in the context of the wider domestic water sector in Nepal, were elements of decentralization, private- sector mobilization, and the involvement of a new set of partners. The partner in Phase I had been the Ministry of Housing and Physical Planning at the national level and the District Water Supply Officer at the district level, but in Phase II it was the Ministry of Local Development (MLD) nationally and the DDC and the LDO 63 in the districts. Phase II transitioned into Phase III (1999 2005), which incorporated many of the same features in six or more district-based projects. Activities were integrated into existing organizations, but separate district support units were abolished and technical assistance was given directly to the DDCs. The latter were now expected to contribute at least 8% of their own revenues to water supply and sanitation measures. The MLD was still the main partner, thus reinforcing continued support to an on-going decentralization process. The overall objective was in line with the government's ninth development plan (1998-2003), and Phase III improved water supplies for an estimated 216,000 people and sanitation for about 52,000. The main strategy developments in Phase III were: (a) adoption of a holistic program approach; (b) involvement of all ethnic groups/castes and particularly women in scheme identification and planning; (c) enhanced financial contributions from the beneficiaries; and (d) more efficient targeting to the most disadvantaged groups. These approaches enabled different methods to be used in the Hill and Terai districts. In Phase I an impressive extension of water coverage was achieved using contractors to construct wells, while Phases II and III had greater user participation and achieved more community mobilization, local ownership and the building of local capacity to plan and manage the schemes. Shifting the responsibility for planning and management to the local level slowed implementation, and in some cases the release of funds to user groups by the DDC, but communities were able to raise money to a greater extent than anticipated, and this led to greater local self-reliance in Phase III (MFAF, 2012).

This scheme has been completed in second phase. After it's completion. It has been found that any type of study hasn't been carried. Before this field study it has been found that CATN has carried out Quantitative Field Assessment in 2015. In the Quantitative Field Assessment NAPA WASH's scheme name, location, coverage household, which phase of the scheme, VMW is present or not etc. Study was carried out. Beyond this study other study has not been carried out after the completion the scheme. This study completes the gap after the completion of the scheme and supports for the sustainability of the scheme. This is the first topic and this is the first study related to the scheme. This study has carried out on the status of the scheme before and after the completion of the scheme, changes in the attitude of the users, how is the maintenance and repair of the scheme going on, what are the efforts for making the scheme sustainable, what should be done for sustainability. Various studies on thesis similar to this topics has also been studied which are mentioned below.

The World Commission on Environment and Development (Bruntland, WECD, 1987) defines sustainability as “development that meets the needs of the present generation without compromising the ability of the future generation to meet their own needs”. In context of DWS schemes, sustainability refers to the ability to maintain efforts and derived benefits both at community and agency level even after the assistance (managerial, financial and technical) is withdrawn. Furthermore, sustainability of drinking water supply depends on various factors: (1) Continued delivery of services (2) Regular maintenance of the physical infrastructure through the participation of users (Watanabe, 2007).

According to UNDP -World Bank Water and Sanitation Program many communities were not well organized to operate and maintain their water system. Only 62 percent of communities had a system operator, 64 percent of the system operators were hired based on ability and 64 percent received training to operate the system. Even where communities had system operators, many lacked the necessary tools to operate and maintain their system. Only 50 percent of communities claimed to have access tools or spare parts and 45 percent claimed to have access to system manuals or blueprints. Only 30 percent of system operators have ever performed a major repair, raising questions about their ability to maintain the system over the long-term. However, 84 percent claimed to know where to get help if necessary.

Research-inspired Policy and Practice Learning in Ethiopia and the Nile region (RiPPLE) aims to advance evidence-based learning on water supply and sanitation (WSS) focusing specifically on issues of planning, financing, delivery and sustainability and the links between sector improvements and poor economic growth (Deneke and Hawassa, 2008).

The weak institutional capacity is a prime obstacle in the provision of drinking water in the rural villages while technicalities such as insufficient water quality and inconvenient water-point locations are the major issues in the rural market centers (Bhandari & Grant, 2007).

Bhandari, Watanabe and Manandhar (2007) have researched about the sustainability of community managed rural drinking water supply systems in the mid hill of Nepal. Their research paper has focused on the important sustainability indicators of rural drinking water supply schemes. The management level has been analyzed for the effectiveness of WUC, which has the responsibility of overall maintenance and operation of the scheme. Similarly, accessibility indicator has been included for the schemes, which has water-fetching time within five to fifteen minutes. Participation, performance level, ownership, efficiency, effectiveness and gender involvement have been taken to compare the schemes installed by different agencies.

Where communities are expected to maintain the scheme, user participation should be maximum, with users getting the chance to lead the project intervention and to gain the required experience and skills and resources to maintain the scheme. The relative success of do-it-yourself schemes is an indicator for this. Projects should be designed to avoid development of patronage relations or domination by agencies and local support organizations. Users' participation and ownership is important for sustainability and continued functionality of the projects. The study results showed that WUSC registration, involvement in procurement and continued WUSC activity after the project period lead to better than average functionality and service level. This indicates that promoting active user participation at all stages of project planning and implementation is important for sustainable results (World Bank 2013).

Rural Water Supply and Sanitation Projects (RWSSP). The project focuses on community-managed water and sanitation projects and gives communities control over decisions on subprojects and resources. Communities are empowered to make decisions

about their own water and sanitation schemes, different from traditional water supply and sanitation projects. The higher sustainability is attributed to strong community ownership and community operation and maintenance of the subprojects after construction. The project is being run by a Fund Board (Rural Water Supply and Sanitation Fund Development Board, RWSSFDB), a semi-independent entity under the Ministry of Physical Planning and Works. To bring fundamental changes in rural water and sanitation service delivery mechanism, a demand driven participatory approach was introduced by the RWSSFDB in 1996. Water supply and sanitation (WATSAN) projects undertaken by the Board are executed with the institutional, technical and operational support of its public sector partners namely: community based organizations (CBOs), non-governmental organizations (NGOs) and engaging private sector consultancy firms known as service agencies (SAs) (Fund Board, 2005).

The project aims to complement the past and ongoing water sector support of Finland to Nepal. Finnish water projects have supported GON in developing decentralized community based water and sanitation approach and working modalities since 1990. However, the now proposed project is focusing on management and operation and maintenance of wash facilities and services to ensure long-term sustainability based on self-reliance of the communities (MFAF, 2014).

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 (http://www.concernusa.org/programs/water-and-sanitation).

RWSSP-WN implements activities which contribute to the Domestic water supply Health, hygiene and sanitation, inclusive local governance in WASH, local WASH Policy and Guidelines through which it is expected that the work carried out will result in well-functioning domestic water schemes that provide safe domestic water to all users and that are managed by inclusive Water Users' and Sanitation Committees, changed sanitation and hygienic practices and behavior of people and institutions, strengthened institutional capacity of local bodies to facilitate the implementation, operation and maintenance of water, sanitation and hygiene sector (DWS, 2009).

According to government policy, the operation and maintenance costs of drinking water supply (DWS) projects in rural areas of Nepal should be covered by the community itself while the investment cost for such projects should be financed by the government or donor agencies (NPC, 1998). Communities may also contribute to project investment by providing labor, land, and local materials. Individual house connections or meter systems are not used in the rural water-supply system; therefore, grain or small amounts of cash can be raised from beneficiary households to cover the scheme's maintenance and operation expenses.

CHAPTER-III
RESEARCH METHODOLOGY

3.1 Research Design:

Research design is a plan of the study regarding how to find answers to the research question. It serves as a framework for the study, guiding the collection and analysis of the data, the research instruments to be utilized and the sampling plan to be followed. This study is mainly based on upon qualitative data and it is also based on analytical, descriptive and explanatory mode of data collected from the study area. This study is based on the qualitative research method, spending considerable time at the field level in order to find out in-depth information on factors affecting the scheme's sustainability emphasizing on operation and maintenance. First, review literatures, drafted and finalized questionnaire and prepared checklist to collect the information. Questionnaires were developed with the view to quantify the qualitative data and the subjective judgment of the respondents. Secondly, the study approach is applied appropriate participatory process and Individual interview (IDIs), 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.

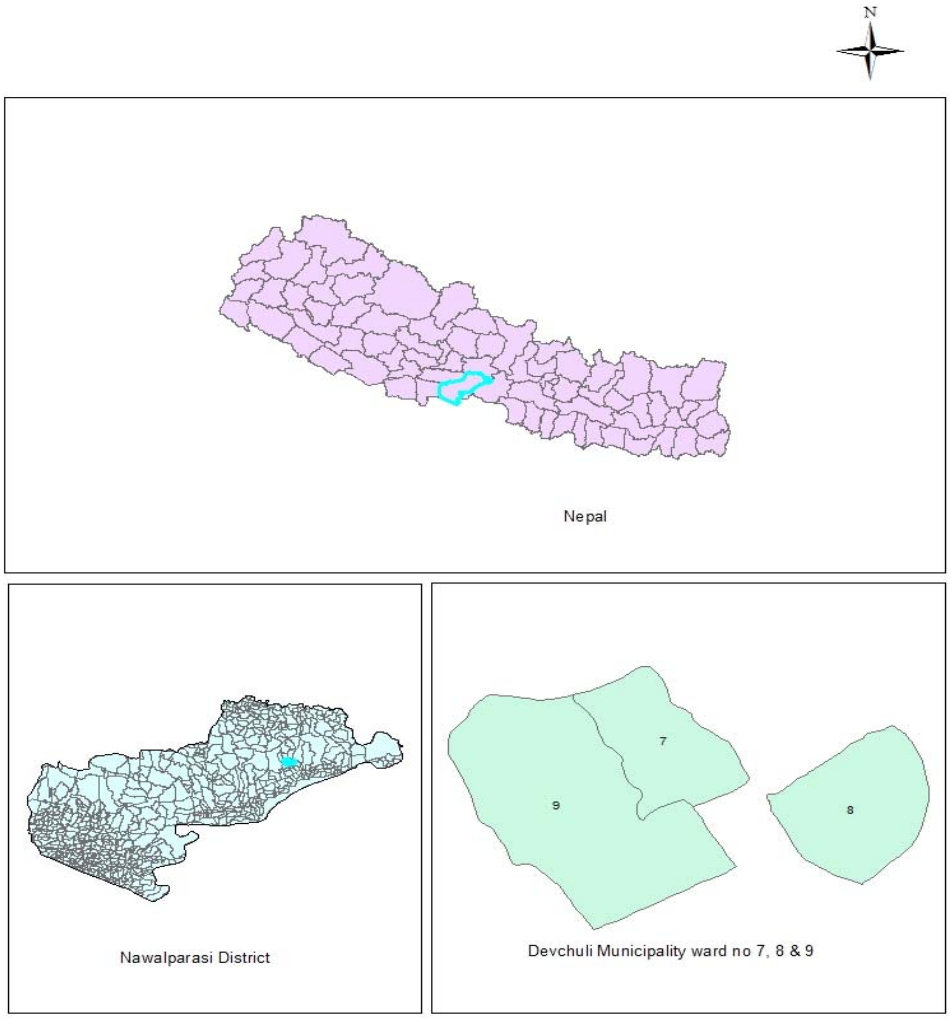
3.2 Data Collection:

The data was collected during the period from the duration of Shrawan to Bhadra 2072 BS from two schemes. Data collection was carried out in 49 days. During the field visit direct and indirect way data collection was carried out. In the indirect way data was collected during the indirect talk with users, during the site visit, talk while walking with the users. And in direct way data was collected by doing FDG, KII, IDI, Case Study etc. which is mentioned briefly in 3.5.

3.3 Study Area:

The study was conducted on Devchuli Water Supply and Sanitation Scheme part I and Devchuli Water Supply and Sanitation Scheme part II Devachuli Municipality of Nawalparasi District.

Figure: 3.1 Map of the Study area



Map of the study area: Devchuli Municipality ward no 7,8 & 9, Nawalparasi district, Nepal

3.4 Selection of Respondents:

Knowledgeable Individuals was selected for FGD, KII, Case study, informal interviews, VMW and responsible personnel of the Devchuli Municipality of Nawalparasi District . Focus Group Discussions was undertaken with member of Water User and Sanitation Committee.

3.5 Use of Study Tools: Following study tools were used for data collection:

3.5.1 Individual Interviews (IDIs):

The Individual Interviews was undertaken with Water User and Sanitation Committees and users' families. The Individual Interviews seek to study the project effectiveness in sustainability of the project. 17 IDI were undertaken in two different schemes. The detailed information is in the annex-1

3.5.2 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 the annex-1.

3.5.3 Key Informant Interview (KIIs):

Key Informant Interviews was undertaken with knowledgeable persons from different groups, organizations including community Leaders, Partner NGOs, Project Staffs and municipality officials. 26 KIIs were undertaken including 13 in each scheme. The detailed information is in the annex- 1.

3.5.4 Case Studies:

Case study of seven different thematic areas was also prepared. Case studies highlighted the rosy and gloomy sides of attitudinal factors and practices of the concern entities (individual, groups, organizations, etc) affecting the functionality of the selected scheme. These case studies represent the scenario of the functionality at the particular Municipality under study.

3.5.5 Field Observation:

Field observation was conducted to collect the necessary information for the research. Direct observation is another tool that was used during the field visit. Information related to physical condition of major structures/components of water supply scheme. During the field stay, Researcher observed user's habits and users daily activities like cleanliness, waste management, how they use the water, user's involvement in the construction of water tank, water user and sanitation committee's member participation in regular meeting etc. In this study period, researcher had stay 39 days in the community.

4. Data Analysis: All the collected information was transcribed and translated. The collected information was compiled, collected and analyzed against the study objectives. All the collected qualitative and quantitative information has been stored out and tabulated and analyzed using simple statistical tools and techniques. Few simple statistical tools such as frequency and percentage were used. Likewise, tabulations were also made to present data. Much more qualitative data, which was not quantifiable manually managed and descriptively analyzed. Moreover, figures and diagrams were used to present qualitative data. Maps and diagrams have also been used to clarify the study and make it more descriptive. After analyzing the necessary information, Case Study, conclusion and recommendations has been made. Also an effort was made to maintain the objectivity and avoid data error by comparing them with different data collected from various sources.

CHAPTER- IV
DATA ANALYSIS AND INTERPRETATIONS

This chapter discusses and tries to interpret the data collected by using the data collection methodology mentioned in Chapter III. Analysis of the data of both types: qualitative has been made on this process. Diagrams and simple statistical tools such as percentage and mean have been used to interpret the data.

- **Qualitative Data Analysis:**

  Qualitative data consist of words and observation, not number. They are example of human meaningful communication. Hence they are very varied. For reasons of convenience, most such data are converted to written tests. As with all data, analysis and interpretation are required to bring order and understanding even in qualitative data. This requires creativity discipline and a systematic approach. There are different approaches to analyze data in qualitative research.

  It should also be kept in mind that data analysis approaches to qualitative and quantitative research differ. In quantitative research, all the data are collected before starting analysis. But in qualitative research, there is no separation of data collection and data analysis. In fact, analysis can, and should start in the field. As data are collected, analysis can, and should start in the field.

  Unlike the large amount of data which are often collected for quantitative analysis, which can easily be managed with available standard statistical procedures, there are no such standard procedures for codifying and analyzing qualitative data. However, there are some common steps which have to be made in all qualitative analysis.

- **Quantitative Data Analysis:** Quantitative analysis implies mathematical operations to investigate the properties of data. Such examination of data relies on a range of statistical theory as well as mathematical calculations. One form of analysis is summarizing large quantities of raw data so the results can be interpreted in a meaningful way. Hence knowledge of quantitative analysis helps at each step of the research process. Statistics is generally defined as the science of

collecting and analyzing numerical data. Such data plays an important role in the analysis of quantitative data in a number of ways. (Baskota Suman , 2009)

4.1 Devchuli Water Supply and Sanitation Scheme part I&II

Devchuli water supply and sanitation scheme 7, 8 9 (part 1) and Devchuli water supply and sanitation scheme 8 9 (part II) both schemes are funded 17 years ago by FINNIDA. Now (from 2014-2016) in Nawalparasi and Palpa Districts Sustainable Water Supply and Sanitation Project (NAPA WASH) program is running. NGO project is managed by Finnish NGO Water Finns (WF) and implemented by a Nepalese partner organization Centre for Appropriate Technology Nepal Pvt. Ltd. (CATN) which is funded by the Ministry of Foreign Affairs, the Government of Finland. As both water schemes have the same water source, so they have good coordination for conservation of the water source and other work like they have formed a committee between Part I and II which is actively engaged in searching new water source and adding it to the old one for making the scheme sustainable, while connecting the private tap in every household they have replaced old pipelines from intake to distribution tank and they have asked help with different organization, which is used for saving the tanks and so on. At first, both water schemes built public tap in every locality. But, two years earlier a drinking water and sanitation schemes registered and private tap was connected to every household and a meter system bill is being used. Except 9 houses almost all the houses have private connections. Part II have constructed its own building and have office in it. And Part I office in Deusatkhola community forest's building and is constructing three rooms on the same building.

Among the 40 drinking water scheme supported projects by Finnish government which are located in Nawalparasi and Palpa district. This study covers Devchuli water supply and sanitation scheme Part I & part II. During the study period, group discussion was conducted with 4 different groups, 2 female and 2 male each from both the scheme (Part I & Part II). KII was taken with 13/13 respondent of each Part. IDI was taken with 10 respondent of Part I & with 7 respondent of Part II. In this study including 72 people were included. Detail description of this is given in the table 4.1 below.

Table: 4.1 Total Numbers of Participants in FDG, KII & IDI

S.N	Name of the scheme	FDG (Male)	FDG (Female)	KII	IDI	Total	Remarks
1.	Devchuli Water Supply and Sanitation Scheme part 1	6	7	13	10	36	
2.	Devchuli Water Supply and Sanitation Scheme part 2	9	7	13	7	36	
	Total	15	14	26	17	72	

Source: Field Survey, 2015

In this study including 72 respondents were included. The formal interaction with 72 respondents of Part I and Part II, informal interaction, field visit, users daily work observation, all the system, impacts, problems, etc, were found almost similar in both schemes. From both scheme, 8 hundred and 4 household of Devchuli Municipality 7, 8 & 9, From which 4 thousand 6 hundred and six peoples (Beneficiary Member) are benefitted. The information is given in table below.

Note: During the interaction with respondents of both scheme with different group/user, a small difference were found which are mentioned using note.

Tab.4. 2 Total Number of household in Part I & II

S. N	Name of the scheme	Location	HH			Beneficiary Member			Remarks
			Dalit	Ethnic	other	Dalit	Ethnic	other	
1.	Devchuli Water Supply and Sanitation Scheme part 1	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, 2015

Before drinking water scheme implemented in the study areas peoples used to use water from river, stream, pond e.t.c, but now every household has private connection. This study includes strength and weakness of the project, repair and maintenance, how the scheme is running etc and the affect of people's attitude to make the scheme sustainable. The maintenance and operation of the drinking water now is being taken by the VMW. Drinking water scheme had also carried out various trainings related to health and sanitation, water security; some of them include importance of sanitation, information on transmittable diseases, importance of toilet etc.

4.2 Demographic Structure of the Respondents

The social composition of any place is prime factor for the development of that particular place. In Nepal, there are many places where people of different caste and ethnicity live together and share their happiness and sorrows. The caste/ethnicity distribution of the respondent is shown below.

Table4.3: Caste Distribution of the respondents

S.N	Category	Number	Percentage	Tools
1.	Brahman/ Chettri	37	51.39	FDG, KII, IDI
2.	Janajati	27	37.5	do
3.	Dalit	4	5.55	do
4.	Other	4	5.55	do
	Total	72	100	

Source: Field Survey, 2015

Caste diversity is clear in the area, 4 castes (Brahman/chettri, janajati, dalit and other castes) are found among the respondents. Brahman/Chettri is the castes which have the larger number (51.39 percent) of the households. and janajati is the second largest number (37.5 percent) of the households.

Mostly, janajati caste people live in Devchuli Municipallty. People are migrating in this place from other places so the population is increasing day by day. Among the total households from the both scheme 15.42 percent are dalit, 49.25 percent are janajati and 35.32 percent are other castes. The population seems to be increasing in this place. In few years there seems to be lack of water, so while constructing the new program this drinking water scheme should also be taken care of.

4.3 Educational Status

Education is a source of consciousness paving the way for development. While conducting the study for educational status of the respondent, the level of education was divided as MA, BA, Intermediate, S.L.C, literate and illiterate. Those who can read and write but hasn’t has not gone to school is described here as literate and those who can’t even read and write and hasn't gone to school has been considered as illiterate. The educational status of the people is shown in the table below.

Table 4.4: Educational Status of the Respondents

S.N	Category	Number	Percentage	Tools
1.	Literate	14	19.44	FDG, KII, IDI
2.	Illiterate	5	6.94	do
3.	1-10 grade	19	26.39	do
4.	SLC	14	19.44	do
5.	IA	11	15.28	do
6.	BA	6	8.33	do
7.	MA	3	4.17	do
	Total	72	100	

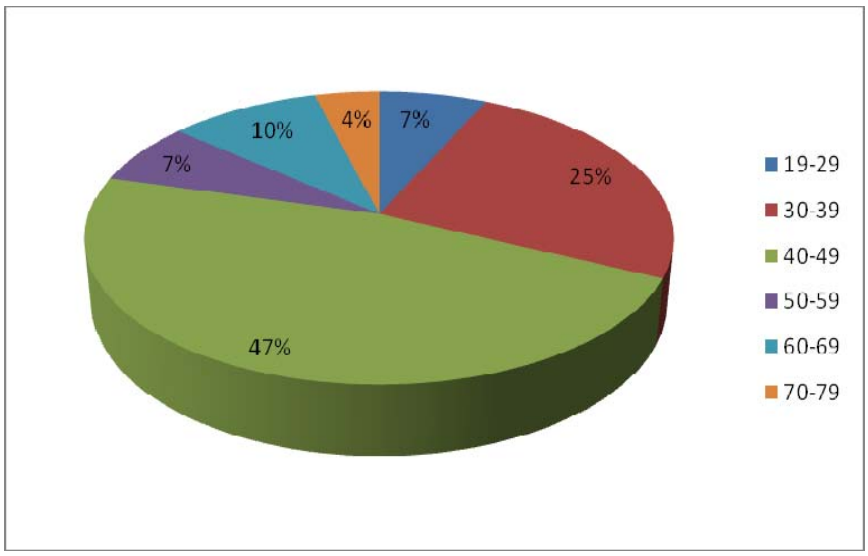
Source: Field Survey, 2015

Table 4.4 shows 1-10 grade population in the respondent is very high, with more than 26.39 Percent of the total population being 1-10 grades. However only 1.2 percent of the total population has gained the MA level of education while there are 15.28 percent and 8.33 percent have passed Intermediate and Bachelor level of education respectively.

4.4 Age Composition

While conducting the field survey, interaction with 6 different aged respondents(19-29,30-39,40-49,50-59,60-69,70-79) was carried out. Detail information is given in the table below.

Figure 4.2: Age Composition of the Respondents



Source: Field survey, 2015

This field survey was conducted with 6.94 percent of respondents in 19-29 age group, 25 percent respondents in 30-39 age group, 47.22 percent respondents in 40-49 age groups which was the majority, 6.94 percent respondents in 50-59 age group, 9.72 percent respondents in 60-69 age group and 4.17 percent respondents in 70-79 age groups.

4.5 Occupational Distribution

Occupation is one of the major factors to find out the status of the inhabitant. Six different categories agriculture, business, government & non-government services, teacher and wages kind of occupation has been taken to find out the level of occupation of the respondents. This is shown in the table below.

Table 4.5: Occupational Distribution of the Respondents

S.N	Category	Number	Percentage	Tools
1.	Agricultural	31	43.05	FDG, KII, IDI
2.	Business	16	22.22	do
3.	Government Service	5	6.94	do
4.	Non-governments Service	8	11.11	do
5.	Teacher	7	9.72	do
6.	Labor	5	6.94	do
	Total	72	100	

Source: Field Survey, 2015

While calculating the occupational structure of the respondent, the active part of the population has been taken in to account. Among the respondents, 43.05 percent of the people are involved in agriculture, 22.22 percent of the people are involved in business and 11.11 percent of people are involved in non-government services. Users are actively engaged in agriculture and then they are engaged in business. After the drinking water has came new business has also emerged. The case study below gives the detail about it.

Case Study-1: Extension of business due to drinking water

There are many changes in the community after the drinking water project. The rest time of fetching drinking water is used in many income generating activities. Life has become very easier. Business man Shree Tek Bahadur Dahal from Goreghumti initially did his business of thread making in Pragati Nagar. After the drinking water project has come in Devchuli Municipality, the numbers of his customers has increased. Viewing the number of customer, he has started another shop also.

Mr.Dahal has been involved in this occupation since twenty years. Initially, the locals had given training on thread making. UNDP had also supported people through the distribution of Charka. The business of thread Making expanded after the drinking water facility came to village. However, the business is little bit slowly due to foreign employment. In recent days also, there are about 250 customers in Mr. Dahals business. Local people prepare thread through coordination with Mr. Dahal. People are taking benefit from thread making due to their free time.

This community has been totally changed with drinking water supply facility. Mostly women time has been saved. It has been found that saved time has been fruitful in using in house hold works and also in different earning works. Women of this area are using their spare time for making thread. Because of which unemployed women have got employment and spare time has been used in a good manner. Those people who could not go out of house, economically weak, handicapped, hated old aged peoples from family, people who had to depend on others for buying a soap, women who had to depend on other for buying cosmetics for them, for buying copy and pencil they had to search loan etc status peoples have been highly benefited. Nobody is unemployed because of not getting any employment opportunities, from which living standard of people have been significantly increased.

Mostly in the time of festivals and cooperative saving, if the don't have money they come make threads fast, earn money, celebrate festivals and deposit money in cooperative. When

we say that you are very old to 75 to 84 years aged men and women, they say that it's better to make threads than ask money to others.

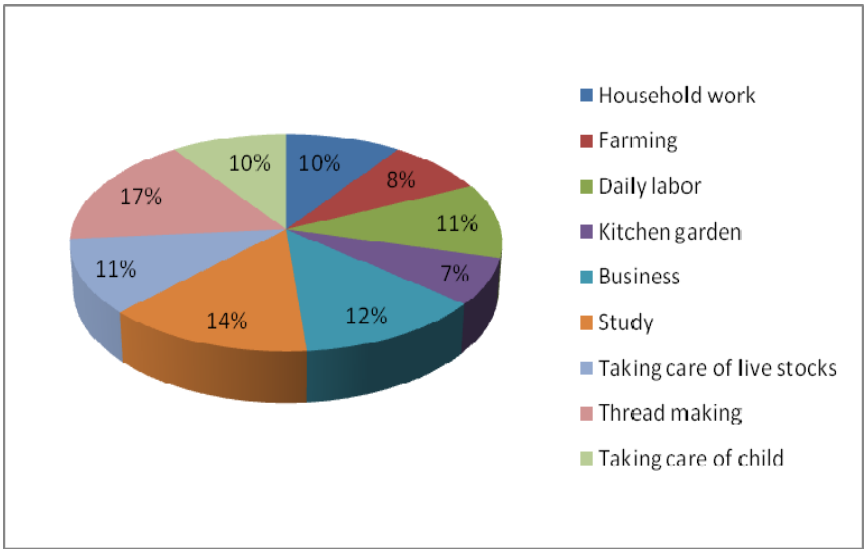
Researcher looking dhago at Mr. Dahal's shop made by users.

After the drinking water has come to the village, mostly making thread from sheep's wool and shops has also increased. Earlier for buying sheep's wool they had to go to Daldale, but now people can buy sheep's wool from their own village. It has been found that making thread from sheep's wool, hotel, retailer shop, poultry farm, and cosmetics shops e.t.c. has increased from which people getting new source of income and unemployed are getting employment in their own locality.

4.6 Use of Surplus Time

Use of surplus time from any development endeavor is important to analyze. The project like drinking water project definitely helps to save the local people's time to fetch water. This drinking water project in Devchuli Municipality also has also sufficiently contributed for the decreased time to fetch water.

Figure 4.3: Use of Saved Time of respondents



Source: Field Survey, 2015

Figure 4.3 shows most of the households (16.67 percent) have been using the saved time for daily thread making. This is possible because the households do not have to allocate responsibility of drinking water to a member of the family. Others (6.94 percent) have started to work more for the kitchen garden located in their house. This has been more eased with the availability of water for the kitchen garden. Case study below gives brief information in this matter.

Case *Study*-2: Community Livelihood Improvement through Safe Drinking Water

After the completion of drinking water project in Devchuli Municipality ward no. 7, 8 & 9, the lifestyle of community people has increased. More specifically, female time for taking drinking water has been saved. Before FINNIDA drinking water project, people had to spend time in search of drinking water. But now the scenario has changed. People can use their saved time in agricultural works, household and other purposes i.e income generating activates.

The livelihood status of Devchuli Municipality has highly improved due to drinking water project. Female's daily life has been totally changed. Their time has been saved. In recent

days, females are using their saved time in income generating activity. Females buy the Sheep wool from local business man and prepare thread (Dhago) from Charkha. The saying of one female engaged in thread making is given below:

Surplus Time Utilization in Thread Making

Ms. Chanmaya Soti is a 37 years old women living in Devchuli Municipality ward no. 8. She has a husband, two daughters and one son in her family. She is very happy with the FINNIDA drinking water project. She says, "*Earlier the days were hard, we had to take water in the morning from river, cleaning was difficult, and time consuming*". But nowadays, the situation has changed. The saved time is being used in making the *thread* from *Charka*, from which she gets Rs 115 for One kilogram thread as a making charge. Ms. Chanamaya is now a self dependent through this activity. After finishing her household works and in spare time, she prepares at least 20 kg thread per month. During Saturday her daughter also helps her.

Researcher Interaction with Ms. Chan Maya Soti.

Her drinking water costs Rs 70-115 per month. She spends her earning from thread in children school fee, stationery and other expenses. She is saving her money in Devchuli Cooperative since last five years per Rs 100 a month. Family life is very easy after this drinking water project. Ms. Chanmaya says, *others spend their earning in buying ornaments but I don't have any other source of income, from the earning I am paying all the home expenses, school fees & electricity/water bills and from past 5*

years I am saving Rs 100 per month in cooperative.

Similarly, Ms. Gaumati Saru, a 66 years old women lifestyle has also changed after the drinking water project and is making thread in her spare time. She prepares about 15 kg thread a month. The earning has made her livelihood easier for home expenses of her family which contains seven family members.

Ms. Gaumati Saru making thread infront of reascher.

Also, Ms. Bhimmaya Saru 55 years old is preparing a thread from Sheep's wool past 10 years. Previously, she used to prepare 1 kg thread per day but now she prepares 15 to 20 kg a month. She is using the earning in her family expenditures i.e. school dress, clothes for family etc. Hence, the livelihood of people is easier nowadays due to easier availability of drinking water.

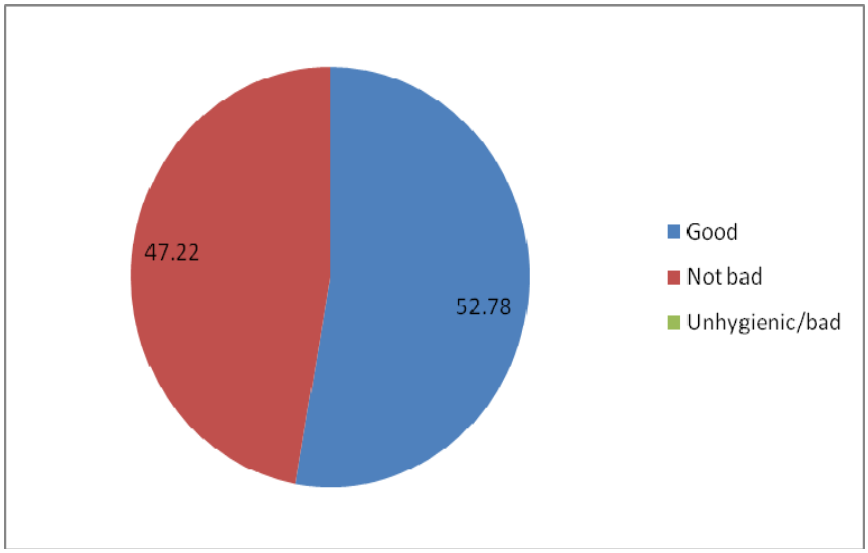
Ms.Bhimmaya Saru showing thread made by her.

For bringing drinking water it used to take half an hour to reach to the river and forty five minutes for bringing water from the river. They had to go to river 4 to 5 times alone if there weren't any other family members in the house. Small family like Chanmaya Soti used to spend 6 to 7 hrs for fetching the drinking water but for bigger family one family member must spend whole day for fetching drinking water. After the drinking water scheme has came to village with the help of FINNIDA, 70 percent of the time has been saved. The saved time has been used in different productive works like business, vegetation, families caring etc. Most people have been found engaged in making thread from which they have become self dependent. The money earned from making thread has been used for family expenses, buying copy and pencil for children, buying clothes, celebrating festivals, saving in cooperatives and buying ornaments etc. willing also they could not give their time for cleaning as they had lack of awareness and time was also limited as they had to spend time for fetching the water from the river. after the drinking water has came sufficiently to the houses and all the time, it has been possible to conduct different awareness training like drinking water and cleanliness training, agricultural training, management of drinking water for long period of time, security of drinking water training, training of awareness of saving water source from landslide and awareness has been developed in people. These training were conduct by NAPA WASH and other different organizations. After the drinking water scheme has been made, drinking water has become easier and living standard of people has also been raised.

4.7 Quality of Water

The quality of water is very important from health and hygienic point of view. The drinking water projects aim at providing the safe drinking water to the community. This is one of the major objectives of drinking water project to provide and sincere to safe drinking water and not only the tap water available in their neighbor.

Figure 4.4: Quality of Water



Source: Field Survey, 2015

Figure 4.4 shows 38 percent of the total respondents experienced that the present drinking water is healthy and safe. While 34 percent of the households think the water is not bad. Earlier very dirty water was used; comparing to previous it is very good. But while testing the quality of water it was not found much good so all the users have felt the necessity of filter tank, which they are expecting from the program.

Question asked to respondent is the purity check of water has been done and when the purity check of water was carried out and who did it, they said that purity check was done in 6th Baishak 2070 by Amrapuri Drinking Water Organization and in 17th Falgul 2071 by a Amrapuri Drinking Water Organization's technician under the NAPA WASH program. During that test it was found that water not pure enough to drink and after that to purify the water potash is used but it is not found easily in the market so it cannot be kept in a regular basis. Also test was carried out by calling a technician during the Water Day and

during the time technician reported that water was not pure, said by the health post incharge Mr. Shiva Parajuli. So it would be nice if technician is appointment so that he would do the entire test of quality of water and other works also.

4.8 Diseases Prior to the Project

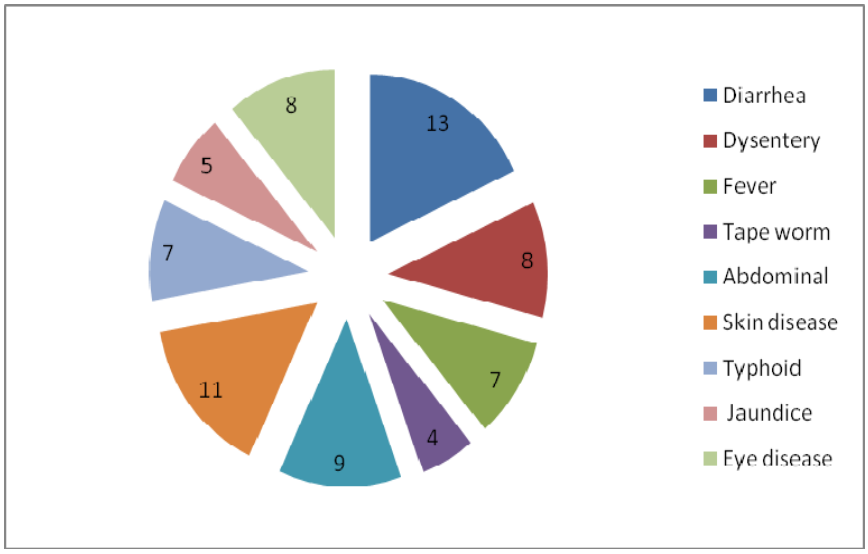
Because of the unavailability of the safe drinking water, there are numerous diseases that people are victimized. Many Nepalese have to loss their life due to the diseases caused by the unsafe drinking water. Before the drinking water scheme came, the diseases listed in figure 4.5 used to occur frequently. After the drinking water scheme, the diseases due to water have become significantly less. Health post incharge Mr. Shiva Parajuli also says that people suffering from polluted water has not came for treatment. Question asked to him about the diseases that used to occur before the drinking water scheme and after the drinking water scheme says due to the change in weather simple diseases occur but not like the before. The diseases that used to occur before are listed below.

Table 4.6: Diseases Prior to the Project

S.N	Disease	Number of respondent	Percentage	Tools
1.	Diarrhea	13	18.05	FDG, KII, IDI
2.	Dysentery	8	11.11	do
3.	Fever	7	9.72	do
4.	Tape worm	4	5.55	do
5.	Abdominal	9	12.5	do
6.	Skin disease	11	52.27	do
7.	Typhoid	7	9.72	do
8.	Jaundice	5	6.94	do
9.	Eye disease	8	11.11	do
	Total	72	100	

Source: Field Survey, 2015

Figure 4.5: Diseases Prior to the Project



Source: Field Survey, 2015

Diarrhea was the disease that killed many lives of people and mainly caused by the unsafe drinking water and unhygienic practices in the households. But still, the reason for Diarrhea is basically attributed for the unsafe drinking water 18.05 percent of the total response is diarrhea that was the major disease in the village prior to the project. But following the project, the respondents said that they have not got any health problems to the extent that was prior to the project**.** More additional, some people said baby was also born disabled/ abnormal by birth.

4.9 Type of Toilet in the Households

The project also has the toilet construction activity in the community. The project worked for awareness rising for the use and construction of toilet. Some very poor household are provided subsidy also.

Table 4.7 Type of toilet in the Households of respondents

S.N	Category	Number	Percentage	Tools
1.	Permanent	64	88.89	O, FDG, KII, IDI
2.	Temporary	8	11.11	do
	Total	72	100	

Source: Field Survey, 2015

This is good to see that 88.89 percent of the total households have permanent toilet built in their house. And only 11.11 percent have temporary toilet. Before project there weren't any toilet in these household. At first it was very difficult to make habit to go to toilet. Mostly children did not used to go to toilet but now they refuse to use toilet in open field. More information is given on the case study below.

Case Study-3: Change in Users Behavior due to Drinking Water

The behavior of Devchuli Municipality ward no 7, 8 &9 have been changed due to safe drinking water. The dialogue between researcher and respondent (user) upon the change in their habit and other changes during the field visit is presented below:

Researcher: Your introduction?

Respondent (User): My name is Laxmi Poudyal. I live in Devchuli Municipality ward no. 7.

Researcher: How many members are there in your family?

Respondent: We are five, including me, my Husband, 2 sons and 1 daughter.

Researcher: What is your drinking water project name?

Respondent: Devchuli Drinking Water and Sanitation User Organization -7,8,9.

Researcher: What type of tap do you have?

Respondent: I have a private tap.

Researcher: When was it connected?

Respondent: Two years ago.

Researcher: Which drinking water do you use before private tap?

Respondent: We had a problem of drinking water previously. We had to go to river for fetching water. Then FINNIDA made a tap in our locality. In a tap of our locality we six household used to use it.

Researcher: How do you feel after the drinking water project in your village?

Respondent: Drinking water has made our life easy. River water fetching was difficult. FINNIDA's drinking water project is easier than bringing water from river. It has reduced time for fetching water. After private tap connection, our live has become very much easier.

Researcher: How much time did it take to reach river?

Respondent: It used to take half an hour. But when there used to be crowd, it would take up to 2 hour.

Researcher: What changes do you have after drinking water tap in your house?

Respondent: We have now saving of time. Previously, we have to wake up early in the morning around 4 am to fetch water. Cooking food, taking children to school etc was very difficult. But now we can utilize our time in other activities. So life is easier now.

Researcher: As you said, you had to wake up early in the morning. Can you explain any moments?

Respondent: There are so many moments. While explaining one moment, I remember the time during 2050 B.S. I had to wake up early in the morning as I had to go to river, bath and bring water, clean house & if I went late I didn't used to get turn. One day my mother in law called me early in the morning saying that I was late, i woke up without any delaying, I went to river bathed and brought water, cleaned house, gave water to buffalo. But buffalo did not drink water; I was shocked that why buffalo did not drink water at the same time I looked at my watch, I was shocked. It was 1 am in the morning.

Researcher: What did you do after that?

Respondent: Nothing didn't need to clean house again. So, I did my household works.

Researcher: Do you have toilet in your house?

Respondent: Yes, I have.

Researcher: When did you made and what type of toilet ?

Respondent: 15 years ago and it is of permanent type.

Researcher Previously where did you use your toilet?

Respondent We had use in barren land, streams and other areas for toilet. At first children used to hesitate to use toilet, but now they hesitate to use toilet in open field.

Researcher: How may time do the problem occur in drinking water tap nowadays?

Respondent: Our water intake area is in very difficult area (remote). Once due to landslide it was in problem for two days. But there is no any problem nowadays, if there is any problem the problem is sorted out within the same day if possible.

Researcher interacting with Ms. Laxmi Poudyal

Researcher: Who makes when its get damaged?

Respondent: VMW makes it. If it is a big problem then, committee calls user, we go and work to sort out the problem.

Researcher: How many times did the tap used to get damage?

Respondent: As we used it collectively, there was problem in tap head. But it used to

take time to repair. We used to use cone shape stick to block the water, later we used to collect money for its repair. After private tap installation problem does not come so often but if sometimes problem comes we call VMW for its repair.

Researcher: Does VMW come as you call?

Respondent: If they are working at any other place, they give us the time when they are coming. If they are free they come without any delaying as they work on the phone calls.

Researcher: What measures do you have done to conserve drinking water?

Respondent: We are searching other water sources also. We are collecting source water in a main tank and we are also conducting water source conservation works.

Researcher: What works you have done to conserve water source?

Respondent: We are doing reforestation/ afforestation works, fencing etc.

Researcher: Last question, what are the changes of your habits after availability of drinking water?

Respondent: Mainly change is in cleanness, Self cleanliness and surrounding around the house should also be kept clean, the food that we should also be hygienic, we should use toilet, after using toilet we should wash hand with soap water, involving in different social works, earlier mostly females used to be engaged in fetching the drinking water so there used to be superstation believe that females should not be come out of house are the changes. Nowadays we go in meeting and say our points too. Earlier we did not know that we should eat vegetables but now we grow in our own field. In past we had not done work that we can do because of consciousness. Earlier we did not used to sleep well in the fear that we might sleep late in the morning but now our sleeping habit is changed and other many habits has also changed.

Before Project, to bring water users had to go to river and ponds, users did not have much knowledge of sanitation and it is very much difficult to bring water from river and use that water for cleaning, cattle rearing and vegetation. After having the facility

of drinking water at their own house, user's behaviors and attitude have changed and there has been change in environment also. Everybody has made their toilet in their houses so we cannot see stool in the roads. Everybody have done vegetation on their own house, users who used to bathe in a month have started to bathe daily. Users have started to stay neat and clean. Women's who did not used to sleep well due to the tension of drinking water can now sleep without any tension. They have well managed the house hold works and are using the free time for income generating activities. And participate the meeting and involve in the community work.

4.10 Use of Drinking Water Except for Drinking

Although it is said that the water project is mainly purposed to meet the drinking water requirement of the village, it is apparent that the water available is used in various purposes. And thus the community is benefiting from other aspects of the water availability.

Table 4.8: Other Use of Drinking Water Except for Drinking

S.N	Category	Number	Percentage	Tools
1.	Showering	16	22.22	FGD, KII, IDI
2.	Washing cloths	16	22.22	do
3.	Drinking for Cattle	10	13.88	do
4.	Vegetable Farming	12	16.66	do
5.	Poultry Farming	7	9.72	do
6.	Plant paddy	11	15.27	do
	Total	72	100	

Source: Field Survey, 2015

This analysis has been made on the basis of preference ranking. Among all the responses, 22.22 percent of the responded for they use the water for showering beside drinking water. This also means that their other priority for water in the village is for shower together with the major objective of drinking. Similar percentage of responses falls under the washing cloths and 22.22 percent of the response fall under the drinking water for

poultry Farming. After the drinking water scheme has came to the Devchuli Municipality, users behavior has completely changed.

4.11 Benefits of having Drinking Water Facility

An opinion and experience soliciting question on benefits of drinking water facility in the village in general was asked.

Table 4.9: Benefits of having Drinking Water Facility

S.N	Category	Number	Percentage	Tools
1.	Time saving	11	15.27	FGD, KII, IDI
2.	Sanitation improved	10	13.89	do
3.	Income through Business	6	8.33	do
4.	Improved health conditions	5	6.94	do
5.	Improved in study/Education	5	6.94	do
6.	Improved living Stander	4	5.55	do
7.	Income through IG activities	3	4.17	do
8.	Improved consciousness	4	5.55	do
9.	Involvement in social developmental works	3	4.17	do
10.	Participation of females in social works	4	5.55	do
11.	Easier for males to go abroad	5	6.94	do
12.	Easier for construction of buildings	8	11.11	do
13.	Collected bill used in emergency purpose	4	5.55	do
	Total	72	100	

Source: Field Survey, 2015

Table 4.9 shows 15.27 percent of the total response ranked the time saving part of drinking water facility in the village to the top priority. 13.89 percent of total responses ranked the health part to be second prioritized area among the various benefits of drinking water facility. Earlier due to the drinking water problems users had been facing mental and physical problems but after the arrival of drinking water their living standard has

changed. As they don't have to carry water from river anymore, the saved had been used in income generating works which have helped them to be self dependent. Construction of house has been easier so houses are increasing day by day. Mostly women's used to engage for bringing the drinking water but now their time has been saved which they are household works and community works. Students have started to go to school neat and clean and in time. Water carrying time of students has also been saved which they are using in their studies so their study has also improved. The fund collected from the charge of using water is being used to solve the daily problems faced by the users and also in emergency condition like during the snake bite.

4.12 Frequency of bathing

When clean water facility is easily accessible and people are aware of the health and hygiene issues, it is expected that their bathing habit also go changes.

Table 4.10: Frequency of Shower

S.N	Category	Daily	2 times of week	Weekly	15 days	once a month	Total	Tools
1.	Before DW		10 (15.15%)	22 (33.33%)	27 (40.90%)	7 (10.60%)	66	FDG, KII, IDI
2.	After DW	10 (15.15%	19 (28.98%)	29 (43.94%)	7 (10.60%)	1 (1.52%)		

Source: Field Survey, 2015

Prior to the project, 29 percent of the total respondents used to shower half of a month, while following the project, 28.98 percent of the total respondents get shower weekly. This is a great impact of the easy access and sanitation awareness activities carried out in the village. 15.15 percent shower daily but in summer season 90 percent. Fetching water from river and using it for bathing is impossible thing to do. Although it is easy during the rainy season as the water flows in canal but in summer season peoples had to search water as river used to dry up. When water scarcity becomes the problem people cannot willing also stay neat and clean. With the time change mostly due to availability of water and different awareness programs like training, radio, television etc. there has been a change in bathing behavior of users.

4.13: Responsibility of Maintenance

The sustainable development issues not only discuss about the environmental aspects of development but also the sustainability part of the development initiatives. The villagers take part in maintenance of damaged system, until the project and NGO are in the village and the system has to continue by the locals after they are gone from the village. After the handing over to the local peoples most of the schemes do not pay attention to repair and maintenance but here both schemes are paying attention to repair and maintenance and are also paying attention for making the scheme sustainable. But the work is not done according to its priority. Like in Part II filter tank is much important than the reserve tank and in Part I after the construction of building water security team have not been formed. So the related organization should pay attention on these things.

Table 4.11: Responsibility of Maintenance

S.N	Category	Number	Percentage	Tools
1.	Drinking water committee	26	36.11	FGD, KII, IDI
2.	VMW	34	47.22	do
3.	All users	12	16.67	do
4.	Total	72	100	

Source: Field Survey, 2015

Table 4.11 shows 47.22 percent of the respondents think that the maintenance responsibility lies with the VMW and 16.67 percent of the think all users. But in the real field, most of the work is done by VMW. For more clear, during the field visit, talk with Mr. Kham Lal Paudel (VMW) about the drinking water scheme repairs and maintenance. The case study makes more clear which is given below.

Case Study-4: Repair & Maintenance Practice in Drinking Water Scheme

Question asked to the Respondents about the maintenance and repair of drinking water said that the VMW is kept for maintenance. Talk with VMW about the repair and maintenance of drinking water scheme is given below.

Researcher: How many years have you worked as a VMW?

Respondent (VMW): It has been 20 yrs.

Researcher: Project time has only been 17 years, how is your experience for 20 yrs?

Respondent: I had started to work in the project from the beginning as a volunteer.

Researcher: Who gave you the training?

Respondent: FINNISH Government gave me the training.

Researcher: What was the duration of your training?

Respondent: It was for one month.

Researcher: What do you do in the scheme?

Respondent: Repair and maintenance, cleaning of tanks, problems with pipeline, clean intake and DC etc.

Researcher: What is the time duration for cleaning the water tank?

Respondent: In rainy season clean at every 3 month and in summer season clean at every 6 months.

Researcher: How many water tanks are there in 2 schemes?

Respondent: In part one there are 6 water tanks. In part II there are 2 water tank and one is under construction.

Researcher: Beside this what are the other duties that you do?

Respondent: I do monitoring of the water source area daily, repair of damaged taps in homes, solving the blocking of water in homes, sorting out the problems with the main pipe lines.

Researcher: How many taps get damaged in houses in average in a day?

Respondent: Sometime 2 to 3, sometimes 10 to 12.

Researcher: How do you know?

Respondent: Earlier I had to go and find out the problem but nowadays I get phone call when somebody has the problem.

Researcher: How do you know that main line has got the problem?

Respondent: Monitoring is also done by the committee, those main line having the problem do not supply the water and will surely get the information, if the problem is small I sort out it alone and if I need support committee calls for the necessary support.

Researcher: Has any problem come which you were unable to solve and taken help of others?

Respondent: No until now, the problems that have come are solved by me.

Researcher: Do you need any other training?

Respondent: I can solve all the problems so I don’t think I need any other training as I am old too.

Researcher: As there was only one scheme earlier, how are you planning to work in two schemes?

Respondent: Earlier as I was told to work in intake only but I used to work for repair the taps of private homes. If committee recruits a support staff and I will train him myself who will help me to solve out the minor problems where as major problems will be solved by me.

Researcher: Are you satisfied with your job?

Respondent: Yes, I am satisfied with my job. My friends who had taken the training with me have gone to foreign country. I had also got the opportunity but I refused to go. I like to work here so I stayed here. I worked as a volunteer for 1 ½ year then for each house I used to collect Rs.10. It has been 2 years that we have connected private tap in houses and they have started to pay according to their usage of water. Now little fund has been collected. So they are giving many facilities than others but it is not sufficient for living. I have worked here from 20 yrs; it's my old age now so I will work till I can.

VMW is the second from right side and third from left.

Researcher: Is this scheme water good to drink?

Respondent: It is little polluted. Earlier we had done much struggle for the water so it very good water compare to the previous days.

Researcher: Have you done anything to clean water?

Respondent: We use potash to clean water.

Researcher: What might be the difficulties that you will be facing in repair and maintenance in coming times?

Respondent: Due to the increasing households on our village maintenance staffs are

needed to be added, water source area lies in the landslide area it must be taken care so that it might not damage the water source and pipelines coming through it.

Researcher: What should be done to make this scheme sustainable?

Respondent: Protecting the water source area, searching the other water source area as population is increasing and doing afforestation programs.

VMW MR. Kham Lal Poudel is working continuously from the starting of the scheme. He works full time in Part I drinking water scheme. Right now, he has joined in Part II for part time. As VMW of Part II has left the job, so he has kept a person as a helper, is giving training to him by himself and asks him to solve small problems but bigger problems are being solved by himself. I asked him, if you had any problems yet which you were unable to solve and taken help from others? He said to me, "*I am able to solve all the problems and haven't required others help to solve the problems but if it is not possible to do alone I ask for help from users*". Till now, water user and sanitation committee is also helping him when he needs more manpower. But household members are increasing day by day and VMW is also old and he is also looking both schemes, so it seems that training should be provided to each person on both schemes. While selecting the person to give training different terms and conditions should be made like he should have the feeling of doing service to the village, not too much aged, after training he should do certain year etc. So that, there will be no difficulty like in Part II and people like VMW Mr. Kham Lal Paudel can also be found. If possible, training should be provided to technician.

4.14: Type of Tap in Study area

Among 804 house hold 785 houses have private taps, 1 tap is in public which is used by 5 house hold & 4 house hold have very poor economic condition to afford a private tap. So they use water from the neighbors for drinking but use river water for bathing and cleaning clothes.

Table 4.12: Type of tap in Study area

S.N	Category	Household	Percentage	Tools
1.	Private	795	98.88	FGD, KII, IDI, O
2.	Public	5	0.62	do
3.	Other	4	0.49	do
4.	Total	804	100	

Source: Field Survey, 2015

On comparison between part I and Part II, Part II have 98.88 percent are the majority private taps 0.62 percent are the public & 0.49 percent are the other. All private taps but in Part I 5 house hold use private taps and 4 house hold use from neighbors.

Although most of the household have connected private taps in their house but some of the households are using water from public taps and some of the house hold are using water from their neighbor's house. It is not a good thing that although all have worked equally and funded equally but during the time of using it they are not treated equally. Question asked to key person, leaders and water sanitation and user committee why this happened, except those most of the people did not knew this problem existed. They said that they will help the economically poor household to connect the private taps in their house.

It has been difference in doing and saying so the problem should be understood that why people who have connected government electricity are not able to connect a private tap in their house, what is condition of economically poor household's, what kind of help would make it possible to connect a private tap in their house and it would be possible if NAPAWASH staff do the necessary talk with respective organization to help the economically poor to connect tap in their houses and every people get equal facility. Those household who have connected private tap in their house pay Rs. 30 and use 10000 liters of water but people using water from neighbors house hardly use 1000 liters of water for drinking and forced to go to river for bathing and washing clothes.

Case Study 5: Difficulties due to not having private tap

For drinking water people of Devchuli 7, 8 and 9 had sometimes go to river, sometimes

well, sometimes canal, sometimes rain water. After the drinking water has come to their own house people of Devchuli 7, 8 & 9 are very happy. But some of the household are using public taps and from neighbors, although it has been 17 years since the scheme has came to their locality.

In Part II of drinking water and sanitation scheme, all houses have private taps but in Part I from one public taps five household are using it and these household people are staying in government land and four household are using water from their neighborhood because of the poverty.

Interaction with Ms. Dilmaya Somai

Ms. Dilmaya Somai using water from neighbor says:- *I have 6 sons and one daughter; presently I have daughter's daughter and a sick son with me who cannot work. It has been 25 yrs my husband has lived in other's house with whom I haven't met in a while. At first I used to ask for water from neighbor's house but they said that their bill amount was raised so now I am using water from neighbor's house paying RS 30 per month. But for washing clothes and bathing I go to river. My sick son cannot work and other son are living separately with their own family, my daughter is also not so rich and she paying all my expenses. Although she is saying that she will send money for connecting private tap for now I am using water from neighbors.*

Due to the poverty Ms. Sunita Bk says*: - I have four daughters, one son and a husband in my family. Children are small, husband income is very less and he drinks too. In the name of poverty we have this house only in which we are unable to put doors and windows.*

Although working committee have said to pay in installment and connect private tap but due to less income I am unable to do it so I am using water from neighbor's house. Earlier I used to bring water from a neighbor house where I had to do many of their household work which was very and I could not give time to my family. Now I have started to bring water from next house and I am paying Rs 30 per month for using water. In rainy season water comes in the canal and it is very easy for washing clothes and bathing but in summer season, I have to go to river for bathing and washing clothes which is very difficult as I have very small children's.

Ms. Sunita's elder daughter ready to go for bring water

Due to the poverty like Ms. Dilmaya somai and Ms. Sunita b.k, Mr. Bhim Phal and Mr. Sher Bahadur Bk are also using water from neighbors' house. People who have connected private taps are paying Rs. 30 per month and are using ten thousand liters but people who are unable to connect private tap in their house are fulfilling their needs by only one gallon of water.

People using water from public tap also have their own problems. Mr. Chakra bahadur kc using water from public tap says, *it has been 33 years I have came to this village. It was all jungle and houses were very few. As the FINNIDA water scheme came to this village, we were the one who worked for it but people in the working committee are the people who came later. All worked equally, when it was public we all paid Rs. 10 per month, for making private we all paid 6300 to working committee, after 16 days working committee*

said that we did not have the necessary documents and returned our money. We have connected the government electricity and paid the bill but for water they say that we don't have necessary document, there is political and other issues for not providing us the private tap. Ms. Preeti maya aslami using water from public tap says: *all worked equally, other users who came later made lalpurja and connected private tap but we weak people are always backward. Public tap is located in road so it is difficult for us to bathe than for males. All users do vegetation but we need to bring water for cattle, drinking water and for toilet. In rainy season it is easier for bathing and washing clothes but in summer season we have to wait for turn. For bigger clothes we have to go to river. We should also get to connect private tap as we have also worked equally for the scheme.*

Ms. Preeti Maya Aslami making thread after interaction

With the help of FINNIDA drinking water scheme is made in Devchuli Municipality. At first, they used drinking water from public taps but now they are using water from the taps connected in their own house. In Part II all the users have connected private taps in their house but in Part I five households are using water from public taps and four households are using water from neighbors house although it has been 2 years that the drinking water was allowed to connect in own house. Peoples using water from public taps from past 17 years are also willing to connect private taps in their own house. Due to technical problems, peoples who are unable to connect private taps in their house are forced to bring water from public taps for their daily uses like for drinking water, for cattle's, for toilets and mostly women's are facing problems while bathing in public taps.

Users using water from neighbor's house are paying Rs. 3o per month for using the water but they have to go to river for bathing and washing clothes. Although users who have connected taps in their own house are paying Rs. 30 for 10 thousand liters water in a month. But peoples using water from neighbor's house take barely 1 to 2 gallon of water per days which estimates to be around 1000 liters of water only. While talking to president and other key personnel about the problem, they seem to be positive to help them to connect private tap in users using water from the neighbor's house. Together with making the scheme sustainable problems like this should also be understood and proper suggestion should be given to proper person/organization. If NAPA WASH' staff's help users can connect private tap in their own house.

4.15: Community Practice for Sustainability

Although it has been 17 years that the project has been completed and they have private taps which is continuously working since 2 years. Water user and sanitation committee is performing different activities to make the scheme sustainable.

Table 4.13: Community Practice for Sustainability

S.N	Category	Number	Percentage	Tools
1.	Home visit and for checking leakage & sanitation	8	11.11	O, FGD, KII, IDI,
2.	Conservation of water source	15	20.83	do
3.	Addition of more water source	10	13.89	do
4.	Construction of reservoir tank	7	9.72	do
5.	Formation of water security team	5	6.94	do
6.	Availability of VMW for maintenance	9	12.5	do
7.	Registration of water project and construction of building	6	6.94	do
8.	Saving used in users benefit	8	11.11	do
9.	Coordination with different other organizations	4	5.55	do
	Total	72	100	

Source: Field Survey, 2015

8 people said that home visit is carried out once in a 3 month or in 6 month for checking the leakage of water and sanitation, 15 people said that other different water sources are searched and if found they are being added to the existing project & they also said that different conservation programs like afforestation, building dam etc is also being conducted, 5 people said that a security team is being formed for checking the water leakage and theft also, 4 people said that coordination with other organization is done for economic and technical support. Giving the continuity to the works are done previously by the committee, feedback given by the users directly/indirectly should be taken as a suggestion and work towards implementing it. Question asked to users about the works of the committee members while home visits says that 60 percent of the users gave the positive answer, 30 percent said to complete the formality and to get money also and 10 % said that there is no regularity in the committee work and many people come for home visits which can be decreased to few number. Committee should think about this matter and while forming committee one person should be in one committee only. Responsibility should be given to the related committee member. Coordination should be done not only during the problem but also on other time which could be more effective.

Note: While comparing the coordination work between Part I and Part II, Part I seem to be ahead of Part II.

4.16: Respondent's Feeling of bill

In Part I, during the connection of private tap 6300 was collected from user (minimum for 10000 liters per month Rs 30) but in Part II during the connection of private tap 3000 only was collected from user (minimum for 10000 liters per month Rs. 55). In average collected money from Part I & Part II seems to be same.

Table 4.14: Respondent's feeling of bill

S.N	Category	Number	Percentage	Tools
1.	All right	41	56.94	FGD, KII, IDI
2.	Need to decrease	12	16.67	do
3.	Need to increase	19	26.39	do
	Total	72	100	

Source: Field Survey, 2015

Table 4.14 shows 56.94 percent feel it is good, 16.67 percent feel that rate is high and 26.39 percent feel that price need to be increased. People who are economically weak and paying Rs 10 from long time for unlimited water are feeling high for this rate. Comparing to the cost of water Rs. 30 for 10000 liters of water, which is equal to the one liter of mineral water. Question asked to water user and sanitation committee why is the rate is low says that users saying Rs 10 is also more and users have themselves worked and invested economically to the scheme. So for few years it is not planned to increase the rate for using water. It would be better if different grading is made among the users on the basis on usage of water and charged accordingly. But the grading should be done in an effective manner. If it is done like this way, it will help them i.e economically which will aid in their future planning works.

4.17: Future Planning of Drinking Water Scheme

Both water user and sanitation committee of Part I & Part II are working to make the drinking water program sustainable. For which they perform different interaction with the literate peoples of village about the sustainability, need of users and according to the need of time they are making the plan. Below is the future planning of program said by Respondents.

Table 4.15: Future planning of Drinking Water Program

S.N	Category	Numbers	Percentage	Tools
1.	Replacement of old tanks	14	19.44	FGD, KII, IDI
2.	Extension of pipe lines	10	13.89	do
3.	Construction of filter tank by coordination of part I and part II	7	9.72	do
4.	Exercising more works for conservation of water source	6	8.33	do
5.	Maintenance relief fund	5	6.94	do
6.	Maintenance committee	7	9.72	do
7.	Water security team formation(Part I)	3	4.17	do
8.	Regularity of afforestation programs	8	11.11	do
9.	Training for effective Accountability	12	16.67	do
	Total	72	100	

Source: Field Survey, 2015

Table shows 19.44 percent are planning to replace the old tanks, 13.89 percent are planning to extend the pipe lines, 11.11 percent are working for the conservation of the water source, and 16.67 percent are planning for training for effective accountability.

In Part I among four tanks there is two 20000 liters reservoirs tank, one 10000 liters reservoir tank and one 50000 liters reservoir tank. These tanks are done simple maintenance timely. Four reservoir tanks a 72000 liters tank, one 20000 liters tank, one 10000 liters tank and a 5000 liters tank are newly constructed. For the construction of new reservoir tank, planning is being made for collection of fund.

In part II among two tanks there is a 16000 liters reservoir tanks and a 20000 liters reservoir tanks are done maintenance according to the need. A 120000 liters reservoir tank is under construction. The pipe line is still to be replace for which a fund collection is being done from government and non government offices. For conservation of water source afforestaion program are done and for making the account effective training program are being planned Along with the above planned works, new water sources need to be searched and conserved. Although users are using the used water for other works but they are also misusing the water. Like they waste water while washing the hand i.e they open more water from tap where a small amount could work. If they could save water while using could help other to use so there should be an awareness program for people about the proper using of water.

Note: Although NAPA wash had given water security training to Part I & Part II together. In Part II the team has been formed and has started to work but in Part I, they are still planning to form water security team. Water is sufficient in the present time so they should focus on constructing filter tank rather than reservoir tank.

4.18: Feeling of Respondent's towards the Water User and Sanitation Committee's (WUSC) Work

Works done by water user and sanitation committee is being watched by the users. To make the work effective WUSC should work on the basis of needs and users interest. During the field study, the respondent's view on work of working committee is given below on the table.

Table 4.16: Feeling of respondent's towards the Working Committee's Work

S.N	Category	Number	Percentage	Tools
1.	Very good	2	4.65	KII, IDI
2.	Good	22	51.16	do
3.	Satisfied	17	39.53	do
4.	Not satisfied	2	4.65	do
	Total	43	100	

Source: Field Survey, 2015

Table 4.16 shows 51.16 percent feel good on committee work, 4.65 percent fell very good on committee work which is majority, 39.53 percent are satisfied on committee work & 4.65 percent are only unsatisfied. Unsatisfied users say that they are not being informed before doing anything and they are also not called in meeting. Money is invested without asking to anybody by committee members and expenses are too much high than it takes in actual. Satisfied users say that working committee members are doing more expenses than they need like many people go for a work which can be done by a single person which increases the expenses. They also say that it would be better if committee provides all the material for the taps as the users do not know the quality of the product which they are buying and it would cost less for committee as they buy in bulk and it will be easy for users also. Good and very good users say that working committee is doing very well in their absence also as they cannot give their time for community works.

4.19: Respondent's Practice

While studying the changes after the implementation of the water supply scheme, vast changes have been noticed such as- personal hygiene, sanitation, awareness, education e.t.c. While interacting with respondents, their daily practices on how they use water for drinking i.e. filtered, boiled and direct are given below on the table.

Table 4.17: Respondent's Practice

S.N	Category	Number	Percentage	Tools
1.	Filtered	3	4.55	FGD, KII, IDI
2.	Boiled	0	0	do
3.	Direct	63	95.45	do
4.	Total	66	100	

Source: Field Survey, 2015

Mostly (95.45 percent) the respondents reported that they used direct tap water for drinking purpose. From above view of respondent, awareness program is still lacking because none of the people use boiled and filtered water as most of the people use direct water.

As people are much aware than past, but different awareness programs should be conducted to raise awareness in people. Less people know about the quality of water that they are using for their daily works. Those people who know that the water is not pure are also doing anything for purifying the water before using it. Although potassium is poured in water tank for purification of water but it is not carried out in a regular basis. Users use hot water when they are sick but in that condition also they do not use the completely boiled water, they drink mild hot water only. So awareness should be conducted to all users differently like conducting a act which contains the adverse effect of using dirty drinking water. And it would be better if a filter tank could be constructed in the source.

4.20: Challenges for the sustainability

To make the program sustainable, challenges should be studies and planning should be done. If nothing is done on coming problems, the program cannot be sustainable. If the problems related to sustainability are not solved timely, it cannot be long lasting. The future challenges of drinking water project in the view of respondents.

Table 4.18: Challenges for the sustainability

S.N	Category	Number	Percentage	Tools
1.	Location of pipelines in landslide area	18	25	FGD, KII, IDI
2.	Growing population and depletion of water source	15	20.83	do
3.	Extension of pipe lines	12	16.67	do
4.	Construction of reservoir tanks	8	11.11	do
5.	Conservation of water source	10	13.89	do
6.	Coordination for economic help with other organizations	5	6.94	do
7.	Construction of filter tank	4	5.56	do
	Total	72	100	

Source: Field Survey, 2015

25 percent think that it might be the problem of pipe lines as it passes through the landslide area 16.67 percent think that extension of pipelines should be done, 13.89 percent think that conservation of water source should be done.

This scheme has gone through many ups and down from the time it has been started as user's using drinking water from rivers are being able to use water from the private tap connected in their own house .With the time different new problems are also coming. At first, it was a problem to bring the river water to each house after they have brought the water to each house, they are facing problem for the purification of the water. Water source is depleting day by day but the number of household and users are increasing. In some places they are unable to replace the old pipe line used for public taps due to lack of fund. To solve the problem users point to the committee and committee member point to the key person. To make the scheme sustainable program staff, water user and sanitation committee and users should sit together to find the present and future problems. They should make the list of problems and separate the problems according to their priority level. They should allocate a suitable person for the each type of problem and solve the problem in time. Like for collection of fund a person able to cooperate with different organization should be selected, for work a experienced and a person capable of mobilizing the users, for monitoring and evaluation a person capable of this type should be selected so that the program can be effective and sustaina

4.21: Feeling of respondent's towards the Transparency of management

For the sustainability of program, transparency is most essential. Earlier, when the user used water from public tap, per household Rs. 10 was collected monthly for maintenance and salary of VMW. After the private tap has been connected to every household, meter has been installed. In past II years, fund has been collected as they charge for using amount of water. For maintenance, construction of reserve tank, construction of buildings, salary View of respondents on transparency of program is given below on the table.

Table 4.19: Transparency of Management

S.N	Category	Number	Percentage	Tools
1.	Very Good	0	0	
2.	Good	13	30.23	KII, IDI
3.	Satisfied	14	32.59	do
4.	Not Satisfied	4	8.88	do
5.	Don't Know	12	27.91	do
	Total	43	100	

Source: Field Survey, 2015

A 30.23 percent thought that it is good, 32.59 percent are satisfied, 8.88 percent are not satisfied and 27.91 percent don't know anything about transparency.

Question for transparency and management were asked to the users who were not in the water user and sanitation committee. User's who said they don't know, were head of different organizations that were not connected to program. Users who said they were not satisfied said that committee is doing its work but it is expensing more money in a place where fewer funds would work, the solution for the problem which should be done last is started first and the problem which should be started at first is started at last. Users who said they were satisfied and good said that they were unable to attend the program, drinking water has reached to every house hold and if it gets damaged it is repaired within a short period of time.

During the field stay, during the formal and informal interaction I asked whether they go for mass meeting most of the user said they are not being informed about the mass meeting. When it was asked to the committee, they said all are being informed by ghok (a

person who informs about the mass meeting to users by using loud speaker in the midpoint of the households) and they could not force anybody to attend the mass meeting. So they say that users who are interested come to mass meeting. For making this effective a letter should be distributed to all users by the staff so that all the users get the information about the date and time of mass meeting. Due to the lack of knowledge of accountancy committee members are unable to show the small expenses like phone expenses, transportation etc. So it would be better if training is provided to the accountant.

4.22 Garbage Management

Garbage management has been worldwide problem. In Devchuli Municipality compared to previous much development has been made on cleanliness but awareness is still lacking in people. Municipality has recently been announced so also management of garbage has not been done. Municipality head Mr. Hari Prasad Chapagai said that there are many works to be done in different fields and all cannot be done at the same time but for the garbage management landside area is being searched, plan is being made for garbage management as soon as possible. While interacting with people about the waste management people saying is being listed in table below.

Table 4.20: Garbage Management

Burn				Not Burn		
S.N	Category	No	Percentage	Category	No.	Percentage
1.	Collection in dustbin	18	27.27	Throwing of garage in river, cannels etc	66	100%
2.	Collection of garbage in Malkhat(animal dung collection area)	26	39.39	-	-	-
3.	Throwing of garbage in canals, in open field	4	6.06	-	-	-
4.	Collection of garbage in the pit	8	12.12	-	-	-
5.	Burning of garbage	10	15.15	-	-	-
	Total	66	100			

Note: The (-) sign in the table is for not applicable.

Source: Field Survey, 2015

Table 4.20 shows 39.39 percent throw garbage in malkhat, 27.27 percent collect garbage in dustbin, especially plastic are being burned and non burning material like tins, metals are being thrown on the river banks and open field.

To manage the garbage Municipality is also looking for a suitable place. Due to lack of awareness few users are throwing garbage in open field. Question asked to them why they were throwing the garbage in open field said that they were throwing from past, in rainy season canal water will carry all the garbage. This shows they are lacking in awareness about the garbage management. The main problem is plastic management which all of the users burn the plastic. Mostly children burn the plastic and stay around while it is burning. The picture below also shows the involvement of children for burning of plastic. While talking to Mr. Nara Dev Neupane, Principal of Bhimsen Higher Secondary School about the solution of the problem says: *this is the biggest issue to us. I had talked to person who collects plastics in Gaidakot which is 28 km from here, he said that he would come to get the collected plastic but the amount of plastic should be more which we tried to collect but all the users did not help us to collect the plastic so it has not been successful.* For solving this problem recently awareness problem should be carried out which contain the information regarding the long term and short side effects of burning plastic, a separate place for collection of plastic should be made at different locality and a fine for the users who burns plastic could be made. Below picture shows the management of garbage's.

Burning of garbage after it is collected.

Children are burning garbage in the evening.

A woman is burning garbage outside of house.

4.23 Sanitation Situation

Respondents were asked to solicit their view on the existing sanitation situation of the village following the project which has carried out number of activities on this matter.

Table 4.21: Répondants Perception on Satiation Situation

S.N	Category	Number	Percentage	Tools
1.	Yes	65	90.28	O, FGD, KII, IDI
2.	No	7	9.72	do
3.	Total	72	100	

Source: Field Survey, 2015

Not surprisingly, about 90.28 percent of the total respondents feel that the sanitation situation of the village has been sufficiently improved following the project activities while 9.72 percent still think that there has not been much improvement. For this matter Case Study make more clear which is given below.

Case Study-6: Improved sanitation

Interaction was carried out with a group of female teachers of Manakamana Primary School, they expressed that water connections at the house provided for much more convenience than the public tap. They had to go to Lokaha and Baulaha khola for bathing, washing clothes etc. Before drinking water came to their village, different diseases like diarrhea, skin allergy, eyes diseases etc used to break in as epidemic but after the scheme there is no problem of diseases caused by water. In our school we used filtered water but it would be nice if we filter water from the source.

Researcher taking photo after interaction with Manakamana Primary School's staff

Drinking water scheme Part II president Mr. Krishna Chattri says, due to drinking water it has been a great change in sanitation. *After the arrival of drinking water also one of our relative was staying dirty as she did not have the habit of bathing. We said that now water is sufficient so you have to bathe but she did not agree. One day, she had come to bring water and we were also there to bring water so at that time we forcefully coughed her and bathed her. But now she is neat and clean than us.*

Permanent toilet in Sita Nepali's house

Next user Mr. Mekha Bahadur Saru says, *before drinking water scheme implemented in the village nobody had permanent toilet in their house, to use open place as toilet people used to wait till dark. Road used to be very dirty, due to stool of people and pigs it used to be very difficult to walk. With the drinking waters scheme programs for making permanent toilet and other awareness programs were conducted, so everybody have permanent toilet in their house. Roads are very clean. Dustbins are placed in different places by club and Aama Samuha.*

Next user Ms. Sita Paudel says: *we had checked surrounding of house, dish washing place, toilet and kitchen of users and user who has kept clean among all was prized. So all of the users now pay attention for sanitation and the change in village came fast.*

President of Mother's group (Aama Samuha) Ms. Parbati Baral said, *FINNIDA government is helping in drinking water project and other projects like sanitation, what is mothers group, how it works and what are the benefits of this group are made us understand. After we understood, FINNDA staff helps for formation of mothers group. Our present situation is all because of them. We used to sit at home doing household works only but now we have became literate after the FINNDA provided us the informal education after we engaged in mother group. We collect fund by doing different activities like going to peoples house who have came from abroad and doing musical program, going to peoples house who have given birth to a child and doing musical program. We invest the money so that we can fulfill our needs and also the fund amount also increases. From which we have helped to different organization like schools, drinking water scheme, temples, health post etc. and we have also bought different things like chairs, cooking utensil, tents, plates etc. For which we give on rent and charge for it. For own members*

we charge 5000 and for outsiders we charge 8000 for using our equipments.

Interaction with President of Mother's group

Which have made easier in different programs like marriage, pooja, bratabandha etc. We used to depend on other for a small amount of money also but now we are able do a small help to the community which has made us very happy. Altogether we have helped around one lakhs and we have saving of around one lakhs in our fund. We cannot forget this help in our lifetime.

It has been 17 years than drinking water has came with the help of FINNIDA. But users haven't forgotten their past. They still remember the past when they used to go to sometime river, sometimes from canal, work done in scheme and knowledge they have got from different programs. Although different program has come to Devchuli Municipality, this program done by FINNIDA has its own importance in Devhculi Municipality. It has been a great change in cleanliness. Water user and sanitation committee is doing its work regularly. They are collaborating with different organization and with times need and the work they can from their level are done very well. Home visit is carried out once in a year for raising awareness in people and they point out the weakness if they are found. Although there has been a vast improvement than past but there is still many things to do. Purity test of water is being done by different organization in certain time of duration. Although it has been found that water is not pure enough to drink, but it has been found that users are using water without doing any purification. Question asked to user that why do you use water directly was answered, *we used very dirty water earlier, now water comes directly from tap which seems to be fine and we have to get out of house very often so it is not possible but it would be nice if FINNIDA government constructs a filter tank.* It would be beneficial if training is provided for

sanitation and sustainability of water to team leader. Team leader should provide to the entire user by mobilizing the field staff in different locality and choosing suitable time for one day. And it would be nice to help the users to build filter tank.

4.24: Difference between public taps and private connection

During the interaction with respondents, differences between private and public taps are being mentioned in the table given below.

Table 4.22: Difference between Public taps and Private taps

S/N	**PRIVATE TAPS**	**PUBLIC TAPS**
1	Saving of time	Wastage of time for waiting turn.
2	Especially bathing is easier for females	It used to be difficult to bath in public.
3	Cooperation between each other	Used to fight for turns.
4	Bill is being paid according to the usage so over use is being controlled	Misuse of water used to maximum as they had to pay just Rs 10 for unlimited
5	Waste water is being collected and used for unseasonal vegetables	They had to buy vegetables.
6	Wastage of water is being controlled as it is being repaired as soon as possible after it is being damaged	Wastage of water used to be maximum as they had to wait for money to collect and being repaired.
7	Don't need to get up early in the morning to go to fetch water	Had to get up early in the morning for fetching water from river which used to be far from house.
8	Easy to provide water for cattle's	Had to provide limited as they had to bring water from far.
9	Women's work load decreased as the time has been saved which is used for family	Mostly women's used to go for fetching water so could not give enough time for family
10	Improve in sanitation	Due to lack of water sanitation was very poor
11	Easier to use toilet	Use to use toilet in open field
12	Washing clothes is easier	Washing clothes was very difficult as crowd used to be on the tap every time.
13	Collected money is enough for further investment	Collected money was very little, which was not enough for VMW salary also.

4.25 Good aspects of drinking water scheme

While interacting with respondent about the good aspects of drinking water and sanitation scheme the respondents' responses are being listed in below.

- Place where water wasn't available, this project made this possible.
- According to the rules and regulation of Nepal government, registering the drinking water project and has constructed its own building.
- Drinking water program has changed the personal cleanliness with the road sides which have changed the environment of the community.
- Need for education and drinking water has been fulfilled, so it has been a drastic change in cleanliness.
- Earlier people used to did cattle rearing less; if some people did output was very low but now cattle rearing have been a source of income.
- Earlier diseases like diarrhea, typhoid, dysentery etc used to break as an epidemic disease but now due to drinking water program people suffer less from them diseases which are caused by poor drinking water.
- Work load of females has been significantly decreased so they are getting opportunity to actively participating in different organizations.
- Using the saved time in income generating activities, females have been self dependent.
- Before drinking water project, there wasn't any permanent toilet's in any house but now ODF has been declared to the community.
- With the drinking water project FINNIDA has brought different programs like educating illiterate peoples and other programs which have raised awareness.
- Peoples have started growing Seasonal /off seasonal vegetable and fruits.
- Participating in different organizations and doing trainings has made people aware of many things like personal hygiene, sanitation, education e.t.c.
- Mother's Group has been formed and is doing many good things and has a good impact in the society. For e.g. organize the program and collect money for social work, providing economic help to the drinking water scheme, schools, temples and health post, providing chairs and other materials in marriage, pooja etc.
- People's involvement has increased, earlier water source has depleted but has found 2 other water source which has fulfilled the present need for drinking water.

- People have timely cultivated their grains and don't have to wait for rain.
- Although present drinking water is not pure enough but it is very good comparing to the earlier.

4.26 Weak aspects of drinking water scheme

While interacting with respondent about the weak aspects of drinking water and sanitation project the respondents saying is being listed in below.

- Drinking water is not pure enough as it should be to drink.
- Bleaching powder is not kept in regular basis.
- If there is problem in drinking water they call users for help although they are paying for using water.
- Area near the water source lies at the area of landslide which is not conserved.
- Due to the weak economic condition they are not able to construct filter tank, appoint employee, buy computer for organization.

According to the respondent's views, there are many good aspects (which is listed in 4.25) of the drinking water project rather than bad aspects and to make the organization sustainable water user and sanitation committee is doing all it can. If program help and advice in right direction, program can get better than this in a short period of time and program can be sustainable. Due to the environmental change water source are depleting day by day so to provide water without any disturbance different study should be carried attention towards increasing water source should be given.

Case Study-7: Heaven is this place through Drinking water supply

My name is Sunita Bhusal. I live in Devchuli Municipality ward no 8. In my family we are seven including two son and three daughter. 'Past, we had to go to Lokaha Khola which used take 30 minutes. I had to fetch water 8 to 9 times a day for farm and for household works. Although I used to woke up at Three am, finish all the household work till five am, when I used to reach the river there used to be queue for bringing drinking water. If sometimes I got late I had to wait for hours. I used to be afraid for bringing water in the river, early in the morning alone. So my husband used to help me for bringing water as I had to go for agricultural works in the day time.

After bringing water, waiting for two hours to home, sometimes pot used to break while keeping in house, sometimes pots(made from mud) upper portion used to break while taking it out from doko (a vessel made from bamboo which is used to carry things inside it), sometimes pot used to break in river so had to return empty handed.

In summer season, mostly in Falgun, Chaitra and Baishak there was more difficulty in drinking water supply. After one had filled the pot, water used to finish so had to wait for long time until the pot used to fill with water. After the water used to collect, we used to take it out with sand in it, later we used to separate using a cloth but sometimes half pot only used to be filled. Due to the scarcity of drinking water, cleanliness was not the priority. In rainy season there used not to be problem for drinking water but in summer season there used to be always tension of drinking water.

When it used to rain, we used to be happy because we did not had to go to bring water. We used to use water collected from the roof for animals and cleaning. We also used to wash clothes and bathe from the dirty water but for drinking, we used to dig four poles and lay a plastic over it, and used to collect water by tilting it. During the rainy season, water used to come in the cannel but sometimes disha (used toilet) used to come with it. We used to fill the same water waking up at night and in the morning we used to drink the same water.

We used to think that at mid night nobody wills dirty the water, so we used to think that water was pure. Sometimes after returning late from field children used to dirty the water. So leaving all the household work, searching a man and going to fetch water, make food, the children used to sleep. I had to wake them up for feeding them, at the same time, animals used to make sound which used to be very difficult.

In 2053 B.S, Bishaltar wada number nine, FINNISH supported drinking water scheme complete then after drinking water came. During that time a survey had been carried out for drinking water in our area. To bring water, we had to go through the same way. In summer water used to dry up and after drinking water came in Bishaltar, consumer of Bishaltar used to collect Rs. Ten per person for repair and maintenance and salary of VMW but we used to pay Rs, twenty five and used it almost for one year. After paying the money also we did not used to get to fill water in our turn.

After the people of Bishaltar we used to get turn. If there weren't anybody and we were filling the pot and at the time if user of Bishaltar arrived to fetch water, they did wait until our pot was filled. They used to fill their pot.

Sometimes if we were in a hurry and ask them to fill the pot before them, they used to say that we had to fill the pot after they had finished. In the summer season, we used to wait whole day for filling our pots but in rainy season we used to go in the river. For washing clothes, we had made a pond below the area of water filling area where we used to wash our clothes turn by turn. For cleaning, it was very difficult so in 1 week to 15 days we used to go to river carrying clothes in doko.

On 2053 our drinking water scheme started and completed in 2054 and water started to come in our area also. After monitoring the locality and no of people's residing in it, including 6 to eleven/twelve household's water tank were made.

Researcher interacting with Ms. Sunita Bhusal.

In early days it used to be very difficult to keep 1 buffalo and 1 goat but nowadays I have 3 buffaloes and 4 goats. For home vegetables are grown in the land side of the house and it has been very easy for working in the field. Due to increase in customers and time need, nowadays water has been connected to every people's house. After the private tap has been connected, it has become easier. Water used in washing dishes, clothes etc is collected in a pond which is used for unseasonal vegetables, for seeding of rice we don’t have to wait for the rain. Cleaning has also become very much easier.

Due to scarcity of water it used to be difficult to bath in fifteen days to one month. But now, we have twenty four hours water so in summer we bath two times a day compulsorily. We don't have to go to river for washing clothes carrying clothes in doko. While waiting turn it used to be late and children did not used to get to go school. Now they wash their clothes themselves. Due to the ding of ping and stool of humans it used to be difficult while walking in road but now everyone has permanent toilet in their own house. We don't have to hire other to work in field, mostly we do it ourselves. It has been seventeen years this drinking water has come. Remembering the past days feels like a dream. After this drinking water facility has come to our village, our village has got new lifestyle. We worked but FINNISH has brought the heaven to our village.

Sunita Bhusal had to go to lokha khola to bring water, it used to take thirty minutes to go to river and forty five minutes while returning from the river. In a day she had to travel eight to nine times to bring water from river on which she used to spend almost eleven hours. After the drinking water scheme came to her locality with the help of FINNIDA, it took only 4½ hours to collect same amount of water. After the drinking water scheme has come she has saved 6½ hours time in a day, which she is using in caring of children's, vegetable farming, cattle rearing, agriculture e.t.c. From which, it has become easier to manage the household works. After the private tap is connected to every household, it has become more easier as she can fill the water whenever she needs and health conditions has also been improved. It has been found that the waste water from cleaning dishes and clothes is being used for vegetables. Sunita Bhusal is feeling like she is living in heaven as drinking water has made her life very much easier. Mostly school children's used to help while fetching water from the river, after the drinking water scheme has came to their locality the children's time has been save which they are using in their studies. Children's have started to go to school in a regular manner, have started paying attention on their studies and started paying attention in cleanliness.

CHAPTER V
SUMMARY Of THE MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1: Summary

The present study is related with the community drinking water supply scheme of the Nawalparasi district. The study has focused on the Drinking Water and Sanitation program in ward no 7, 8 and 9 of Devchuli Municipality. This study basically analyzes attitude of people related to sustainable operation and maintenance of water supply and sanitation scheme. The summary of the major findings of the study are as follows.

- Before the construction of this drinking water and sanitation scheme, drinking water supply was an acute problem in this study area. But after the implementation of this drinking Water and Sanitation Project, people have easy access to safe, clean drinking water.
- Majority of the households do not need now to use other sources of drinking water. The present drinking water source has been sufficiently meeting the local demand of water.
- The water available in the village is sustainable and sufficient to meet the local demand. There have been no irregularities cases experienced until now for smooth functioning on the drinking water scheme in the village.
- The existing DWS had provided safe and clean drinking water in this project area. So, it had good impact on health and sanitation.
- Most of the active people working in the community are in range from 40-49 i.e. 47 percent.
- The majority of the respondents had agriculture as their prime occupation i.e. 43 percent and 22 percent of the respondents have business.
- The time saved in fetching water from the water source is being used mainly in making thread i.e. 16 percent which has become a source of income and increased the living standard of the people. Mostly women's are engaged in thread making.
- Children's time has been saved as they don't have to go to fetch water which they are using it for studying.

- After the project, mostly women's time is saved which they are using for family, income generating and different household works. They are also starting to actively participate in different social works.
- Livelihood and sanitation of people has been significantly increased after the drinking water project has come to the community.
- Majority of the respondents i.e. 52 percent feel that the quality of drinking water is good.
- After the drinking water project has come to the community most of the diseases i.e. diarrhea, typhoid, dysentery e.t.c have been significantly decreased.
- It has been possible to build the permanent toilet after the drinking water project has come to the locality. 87.5 percent of the respondents have permanent toilet in their house. The Devchuli Municipality has also been announced as the ODF.
- Other than using water for drinking it has been used for other works like for washing clothes, showering, drinking water for cattle, water for vegetable field etc.
- Majority of the households have used the waste water for the irrigation purpose. The water has motivated the local people to start kitchen garden in their house surrounding. The villagers have realized the other use value such as showering, washing cloth, and water for livestock, of drinking water being very helpful to them. Their showering frequency has also been increased.
- Peoples are using the monthly revenue as an emergency fund in case the emergency and provide load to the users which has been sorted out the problem of money in the case of emergency and need.
- VMW is looking after the maintenance under the supervision of working committee.
- 785 household out of 804 totals have private taps in their house, 5 taps are in the public place and 4 household are using drinking water from neighbor's house.
- Working committee is actively participating on the conservation of water source with different program like afforestation, raising awareness, formation of security team etc.
- Transparency of management was found satisfactory.
- To keep the community clean dustbin are placed in different place and a separate place for dumping the garbage is being searched by the Municipality.
- Working committee is doing good coordination with other government and non-government organizations, local clubs etc.

- With the time duration water tanks and pipelines are deteriorating so the working committee is making plan to replace them with the new serviceable items.
- Operation and maintenance responsibility is still given to Village Maintenance Worker. This would not be a sustainable solution for the drinking water operation in the village. Local people themselves have to take the responsibility.
- Thus the existing drinking water scheme has improved the lives of local people in comparison to the time before the implementation of the scheme. The project also provided the sanitation related training is crucial.

5.2 Conclusion

Devchuli drinking water sanitation project has brought significant change in living standard of peoples. Much of the time has been saved so peoples are using that time in income generating activities, cattle rearing, vegetation, agricultural works, domestic and social works, and developmental works. After the drinking water and sanitation project permanent toilet was possible so most of the people have made permanent toilet in their house and the community has been announced as the ODF. People's sanitation has also increased in a dramatic way, as people used to bathe in a week or a month but now people bathe daily. Children's education has also increased as their time has also saved as they also don't have to go to bring water. Mostly women empowerment has become possible after the drinking water project has come to Devchuli community. Women are now using the saved time in making thread from which they can get earnings which has made their livelihood easier as they can buy anything they like and don't have to depend on others. Business has also been possible after the drinking water project has come to the community. The face of the village has also changed as sanitation has been come the primary thing of the villagers. At different places dustbin are being kept and a separate place for decomposing garbage is being searched. Peoples are actively participating in the development of the drinking water scheme and the community. Different other water sources are also searched and the water sources which are found are merged to the main water tank. Although work done by the VMW is good but daily household number's are increasing and tank no are also increasing so in near future it might be difficult for VMW to solve all the problems alone.

The Devchuli Drinking Water and Sanitation Organization part I and part II has brought good change in the people of Devchuli Municipality.

5.3 RECOMMENDATIONS

5.3.1 For water user and sanitation committee

- Mostly work load is given to the head of the committee, rest other members don't take the responsibility and are inactive. Accountant role is active and is taking the responsibility in a good way. So suggested to take responsibility by all the members of committee. If all of the members take their own responsibility head of the committee would get less work load and the work which is done would be effective and long lasting. Although female member is present in the water user and sanitation committee but her role is not present anywhere. So it would be better to increase the number of female member in the working committee and increasing their role for effective management. It has been found that a single account is being used so during the time of maintenance lack of fund is being noticed. So it would be better to open a different bank account for saving for the purpose of maintenance only which would help in need and need not to go to users to ask for money at the time of maintenance.

- It was found that a different responsible repair and maintenance committee is missing and main committee was taking all the responsibility. So it would be better to form a repair and maintenance committee which will work for the repair and maintenance of the scheme only.

- Pre-Planning is missing in this scheme. For example in part II without pre-plan the construction of reservoir tank was carried out and fund was finished in the mid of construction, so they have to search for fund for continuing the construction work. So, it would be better to plan before work.

Note: Comparing to Part I and Part II, a single water user and sanitation committee is formed in Part I and is doing all the works. So suggested forming different committee for different works and giving power to the committee for which it was formed. In Part II giving different name many committees are formed but the members are from the main water user and sanitation committee so in one meeting all other committee work is also discussed. Monitoring committee and water security team don't sit meeting separately but are reporting to main committee in a regular basis. So suggested having meeting separately for each committee and giving power to the committee for which they were

formed. If different committee is formed workload is shared and the work is effective and sustainable.

5.3.2 For users

- Although users have devoted their time and money for the drinking water scheme but users don't have the feeling of ownership. So it would be better them to know about their rights on the program which would make the scheme sustainable. Although there was good participation of people in the construction of scheme but their participation was only because they got fined if they did not went to work by working committee. User's should have the feeling of their own towards the project and participate in the developmental works of scheme which would make scheme effective and sustainable. Besides working in drinking water scheme and paying for it, people are unaware about annual meeting, project fund and they have the feeling that the water user and sanitation committee is only responsible for this. So it would be better if committee works in raising awareness on peoples about the scheme i.e. program is ours and we should actively participate in each and every activity and take responsibility also. Which helps in raising feeling of own scheme in the users and in case of need everybody would gather for maintenance.

- Users should appreciate the good works of water user and sanitation committee but should indicate the bad works of water user and sanitation committee, which helps in effectiveness and sustainability of program. And if committee members have done any mistakes they get chance for rethinking and do appropriate correction.

5.3.3 For NAPA WASH program

- Most of the users are unaware about the purpose, works and why the NAPA WASH program has came to their locality. So NAPA WASH should be better conduct different programs for giving information to all users about them. If above awareness is raised among the users, it would be better to fulfill the goal of the program.

- Although the training conducted was very fruitful but NAPA WASH should check that the purpose of training has been fulfilled and should also help to fulfill the purpose of training.

- NAPA WASH program community mobilize work was found influencing but it may not reach to every users. Community mobilizer herself isn't aware of her role and isn't clear on the output in the time frame she should provide. So I suggest searching a different method of reaching to all the users in a short period of time which will help to increase the awareness and sanitation in users. Increasing the awareness of users is the key factor for sustainability of the program.

- Regular meeting is conducted by the water user and sanitation committee but involvement of NAPA WASH staff was found very low for giving suggestion and different idea to working committee. So it would be better, NAPA WASH to participate in committee meeting in a certain period of time and provide suggestion to water user and sanitation committee to make their work effective if possible. For example in Part II construction of reservoir tank is under construction which is not essential right now. Construction of filter tank seems to be the main need and committee people and users seem to have lack of knowledge on the construction of reservoir tank which have been a problem. If filter tank would have been constructed then users would get chance to drink pure water.

- Most of the users don't have the feeling of own towards the program. It would be better if NAPA WASH plans on conducting the same program in an effective way or start another program for raising awareness.

5.3.4 Overall suggestion

- In overall view it seems that until FINNIDA handle the program users thought that it was of FINNIDA and after FINNIDA handed to water user and sanitation committee, users think it is of water user and sanitation committee only. It would be better if awareness program is conducted in user for raising awareness regarding the feeling of own towards the program and is for them.

- While formation of water user and sanitation committee involvement of politics was not seen directly but indirectly there seems to have influence of it. It would be better if right person is in the right post for successful operation of the program.

- Due to the feeling he/she have to do something during the time they are in as a committee member some works are done very good which should be given continuity

and also feeling of ours should develop rather that feeling of own. If ours feelings can be generated among the users it would help for the sustainability of the scheme.

- Literate people and respected people of the locality are not appraising the work of water user and sanitation committee rather they are seeing who is working in the committee in that period. For the sustainability of program all should don't decimate on the work of any committee and work in a combine for the better of the program and community.

- Viewing the rules and regulation and status of the program, both charges (tariff) should be made same and if possible charge should be increased so that economic condition of program will be good. For the poor people a criteria should be made and provide some concession which would help to include the poor users in the scheme.

REFERENCES

Baskota, S. (2009). *Research Methodology*: Kirtipur: New Hira Books Enterprises.

Bhandari, B. & Grant M. (2007): *User satisfaction and sustainability of drinking water schemes in rural communities of Nepal* Volume 3/Issue 1, Sustainability: Science, Practice, & Policy | http://ejournal.nbii.org

Caldecott, J., Hawkes M., Bajracharya B. & Lounela A. (2012). *The Country Programme between Finland and Nepal,* https://www.oecd.org/countries/nepal/4975525.pdf Deneke, I. & Hawassa, H.A. (2008). The Sustainability of Water Supply Schemes: A case study in Alaba Special woreda, *Research-inspired Policy and Practice Learning in Ethiopia and the Nile region,* http://r4d.dfid.gov.uk/PDF/Outputs/RIPPLE/wp5-sustainability-alaba.pdf

DWS (2009). Rural Water Support and Sanitation Project Western Nepal, www.rwsspwn.org.np

DWSS (2011). *Nationwide Coverage and Functionality Status of Water Supply and sanitation in Nepal,* National management information project Kathmandu, *panipokhari*

FCG, TMS, (2013). Nepal Rural Water Supply and sanitation Sector Study Modalities, *Nepal Rural water supply and sanitation sector modalities of service delivery and their features/ options to efficiently increase access and sustainability,*http://www.codefnepal.org/uploaded/FCG%20Int%20_%20Nepal%20RWSS%20Study%20_%20Modality%20Analysis%20Report%20_Final%20Draft%2028%20May%202013.pdf

Fund Board (2005). *Policy of Fund Board*, MHPP, Kathmandu HMG Nepal.

GON (2009). *National Urban Water Supply and Sanitation Sector Policy*, http://opmcm.gov.np/userfiles/npolicy/Urban/Urban_WSSPolicy.pdf

MFAF (2014). *Nawalparasi and Palpa Districts Sustainable Water Support and Sanitation Project Nepal Project Document.* Available Kathmandu, CATN. http://dwss.gov.np/file/file_down/UBDryoNMIP_WatSan_Survey_2010_Report.pdf.

NPC (1998): *The Ninth Plan (1997-2002),* HMG, Nepal.

Prasain, J.N. & Gautam, H. P. (2011). Water Supply and Sanitation Service Facilities in Nepal. *The Journal of Development and Administrative Studies*, volume 20/21, Tribhuvan University

Sara & Katz*: Making Rural Water Supply Sustainable:* UNDP -World Bank Water and Sanitation Program, Recommendations from a Global Study

Sugden, Steven (2003), *Indicators for the water sector: examples from Malawi, WaTeraid Field Work Report (part of the Water and Poverty Dialogue Initiative at the 3rd World Water Forum,* 2003, Japan, www.waTeraid.org)

Watanabe S., Bhandari, B.S. & Manandhar, D. (2007): *Sustainability of Community Managed Rural Drinking Water Supply Systems in the Mid Hill of Nepal*. Department of Drinking Water and Sewerage, Nepal (2007).WCED (1987): *Our Common Future*, Oxford University Press, Oxford.

http://devdata.worldbank.org/AAG/npl_aag.pdf

http://www.concernusa.org/programs/*water-and-sanitation*

ANNEXE-1

NAME OF RESPONDENTS

FDG- Part II Female

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Sita Bhusal	Nawalparsi	Devchuli	8	40	literate
2.	Kamala Soti	,,	,,	8	37	literate
3.	Mina Limechane	,,	,,	8	22	BBS
4.	Mina Adhikari	,,	,,	8	32	10
5.	Til Maya Adhikari	,,	,,	8	30	literate
6.	Man Maya Paudel	,,	,,	8	42	,,
7.	Durga Chaudhari	,,	,,	9	30	,,

FDG- Part II Male

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Krishna Bahadur Kshetri	Nawalparsi	Davichuli	9	40	SLC
2.	Ghana Nath Paudel	,,	,,	8	59	Class 7
3.	Til Bahadur	,,	,,	8	38	SLC
4.	Mekha Bahadur Saru	,,	,,	9	45	class 10
5.	Lal Badadur Saru	,,	,,	8	64	Class 5
6.	Nim Parsad Rana	,,	,,	9	54	,,
7.	Bhim Bahadur Shrestha	,,	,,	9	42	Class 8
8.	Om Raj Adhikari	,,	,,	9	39	SLC
9.	Hem Lal Tiwari	,,	,,	9	32	SLC

FDG- Part I Male

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Dal Bahadur Kaphle	Nawalparsi	Davichuli	7	69	class 8
2.	Lekh Bahadur Paudle	,,	,,	8	46	Class 5
3.	Bali Ram Sapkota	,,	,,	9	40	SLC
4.	Chandra Bahadur Gurung	,,	,,	7	65	class 8
5.	Om Prakash Bhattri	,,	,,	7	40	SLC
6.	Raju Ranjan	,,	,,	7	40	SLC

FDG- Part I Female

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Sita Thapa	Nawalparsi	Davichuli	7	46	class 5
2.	Lila Naupane	,,	,,	7	44	literate
3.	Om Kala Gargaha	,,	,,	7	45	,,
4.	Bishnu Bhattri	,,	,,	7	37	SLC
5.	Bhumi Sara Aale	,,	,,	7	40	SLC
6.	Dilmaya Adhikari	,,	,,	7	45	Class 7
7.	Phul Maya B.K	,,	,,	7	38	literate

KII- Part II

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Kham Lal Paudel	Nawalparsi	Davichuli	7	65	literate
2.	Ram Chandra Acharya (Milijuly Primary School)	,,	,,	13	48	Bachelor
3.	Gumi Khamcha	,,	,,	9	32	10+2
4.	Dhan Maya Khadka (Manakamana Pri.. School)	,,	,,	9	43	I.A
5.	Nara Dev Naupane (Bhimsen Aadarsha Higher	,,	,,	13	46	M.A

	Secondary School)					
6.	Pradip Kumar Baral (President of Shree Janaseva Club)	,,	,,	8	26	I.Com
7.	Krishna Bahadur Kshattri	,,	,,	9	40	SLC
8.	(staff of NAPA WASH)	,,	,,	8	19	10+2
9.	Prashu Ram Lamichane	,,	,,	8	76	SLC
10.	Krishana Parsad Lamshal	,,	,,	9	49	illiterate
11.	Khag Raj Kandel	,,	,,	9	59	I.A
12.	Nirmala Pande	,,	,,	9	33	I.A
13.	Samjhana Chaudhari (Staff of NAPA WASH)	,,	Maniri VDC	7	38	B.A

IDI- Part II

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Lal Bahadur Saru	Nawalparsi	Davichuli	8	64	literate
2.	Phul Kumari Chaudhari	,,	,,	9	41	literate
3.	Shanti Maya Rana	,,	,,	9	38	Class 7
4.	Chali Maya Magar	,,	,,	8	32	Class 7
5.	Utisara Bahraghare	,,	,,	8	46	literate
6.	Devi Bahadur Phewali Rana	,,	,,	8	70	illiterate
7.	Sita Nepali	,,	,,	9	40	,,

KII- Part I

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Dharma Bahadur Shrestha	Nawalparsi	Davichuli	7	57	SLC
2.	Shiva Parajuli (Helth post's heat)	,,	,,	8	40	M.ed
3.	Ram Narayan Bhusal	,,	,,	7	69	Class 8

4.	Sita Paudel	,,	,,	7	43	SLC
5.	Khum Bahadur Rai Magar	,,	,,	7	43	Class 8
6.	Sharda Dhungana	,,	,,	7	39	I.A
7.	Bhumisara Thapa(ale)	,,	,,		45	10
8.	Nau Maya Bache	,,	,,	8	38	Class 7
9.	Krishna Bahadur Aale (community mobelizer of DDC)	,,	,,	9	35	I.Com
10.	Dila Ram Pande	,,	,,	9	44	B.Com
11.	Til Prashad Kaphle (Political Leader)	,,	,,	12	47	Bachelor
12.	Shatya Narayan Bhusal (Political Leader)	,,	,,	12	43	PCL
13.	Hari Parsad Chapagain (Chairman of municipality)	,,	,,		45	MA

IDI- Part I

S.N	Name of respondents	District	Municipality	W.N	Age	Education
1.	Gyan Lai Bhusal	Nawalparsi	Davichuli	7	49	literate
2.	Bishnu Lamichane	,,	,,	7	22	10+2
3.	Yamuna Kaphle	,,	,,	7	40	,,
4.	Samita Kumal	,,	,,	7	26	10+2
5.	Nanda Kala K.C	,,	,,	9	40	Class 8
6.	Radhika Pande	,,	,,	9	30	SLC
7.	Rudra Prashad Rimal	,,	,,	8	72	Literate
8.	Lal Bir Aaslami	,,	,,	7	68	illiterate
9.	Nir Maya B.K			7	50	,,
10.	Chandra Khadka	,,	,,	9	46	Class 8

ANNEXE-2

PHOTOS

Focus Group Discussion with Part I male in drinking water office

Focus Group Discussion with Part I Female in drinking water office

Focus Group Discussion with Part II Male in drinking water office

Focus Group Discussion with Part II Female in drinking water office

KII with health post staff Sita Poudel

IDI with user

Meter reading done by part II staff

Home visit with NAPA WASH staff

Interaction with President of Part II

Washing dishes in private tap

Interaction with part I President

IDI with community member

User's involvement for construction of reserve tank in part II

Interaction with part II user's

Interaction with User

Users paying bill in part I office

Drinking Water Office part II

Taking photo with community people after observation intake

Interaction with past president of part II

Researcher going to reservoir tank for observation

Constructing Drinking Water Office part I

ANNEXE-3

QUESTIONERS

For: IDI

1. What type of tap connection do you have in your house? (a) Private (b) Public

2. If you use public tap, what time does it take you to bring water?

(a) 10 to 15 min (b) 15 to 30 min (c) above 30 min

3. What type of toilet do you have? (a) Permanent (b) temporary (c) others

4. Since when have you been using permanent toilet? Year: Month:

5, what do you do with the garbage that comes from the kitchen?

(a) Collecting in the dumping area (b) burning (c) throwing anywhere c) others

6. Have the need of water been sufficient? (a) Yes (b) No

7. If not, how much water is not sufficient?

8. Have the testing of water been done that you are using? (a) Yes (b) No

9. If testing has been done, is it pure enough to drink?

10. How do you and your family use water for drinking?

(a) Direct (b) boiled (c) filtered (d) other

11. Have you used water for vegetation? (a) Yes (b) No

12. If yes, have you done unseasonal vegetation?

13. Who is the most benefitted person in your family by drinking water? (a) How

14. What was the condition of drinking water before the scheme and what was the frequency of your bathing?

15. At what duration do you bathe?

16. When is the most important to wash hands?

(a) Before eating (b) after eating (c) after doing toilet (d) above all

17. How do you do the cleanliness of your house?

18. How can we keep our environment clean?

(a) cleaning around the house (b) cleaning the water source (c) managing the household garbage in effective manner (d) above all

19. Have any of your family members been suffered from the disease due to water within this year? (a) Yes (b) No

20. If yes, how many of your family had been suffered from what diseases?

21, have done any work for the security of water source? (a) Yes (b) No

22. If yes, what are the works?

23. How much have you invested in the scheme? (a) Money (b) Labor (c) Other

24. How much have you paid for the usage of water last year and are you unsatisfied with any thing?

25. What do you do when the problem comes in the scheme?

26. How are you doing the repair and maintenance of the scheme?

27. Are there any good things after the completion of drinking water scheme?

(a) Yes (b) No

28. If there are any please tell them one by one?

29. What are the bad aspects of the scheme?

30. What should be done for the sustainability of the scheme?

31. Are you satisfied with the work and accountancy of working committee?

(a) Yes (b) No

32. How much do you pay in a month for using water?

33. If you are not satisfied, what are the thing please say one by one?

34. Do you feel that the charge for using water should be decreased?

35. Do you have any thing to tell about the scheme which I have not asked?

****THANK YOU****

For KII

1. How is the role playing of Water User and Sanitation committee?

2. Does it conduct users gathering for mass meeting? (a) Yes (b) No

3. If yes, how many time does it do it and is there transparency in the accountancy?

4. Are you satisfied with the income and expenses of the scheme? (a) Yes (b) No

5. If no, what should be done please say one by one?

6. Have you noticed any change before and after the drinking water scheme?

(a) Yes (b) No

7. If yes, what are the areas that changes have occurred? Please say one by one.

8. Is there the access of every people of the Water User and Sanitation Committee (young, old, poor, rich, women, marginalize people etc)? (a) Yes (b) No

9. If no, what should be done to make reach of every person of the committee? Please say one by one?

10. Is there any comparative change in cleanliness/ awareness after the drinking water scheme? (a) Yes (b) No

11. If yes, please say the changes one by one.

12. What are the good aspects of the scheme in your view? Please say one by one.

13. What are the bad aspects of the scheme in your view? Please say one by one.

14. What are the opportunities that you have got from drinking water scheme? Please say one by one.

15. What are the challenges of the scheme? Please say one by one.

16. What should be done for making the scheme sustainable and effective? Please say one by one.

17. What are the different efforts for making the scheme sustainable?

18. Do you have any thing to say about the scheme at last which I have not asked?

****THANK YOU****

For FGD

1. What type of member is there in the water user and sanitation committee? What is the participation of members according to castes?

2. Can you say anything about the investment of the scheme? (Cash, labor and other)

3. Can you say about the repair and maintenance of the scheme?

4. If yes, how is the work done? If no, can you say the reasons behind it?

5. Can you say about the regular meeting of the scheme? What is the time interval of the meeting?

6. Is there the active involvement of all the members? If not, who is not involved and why?

7. Do there any problem come in the decision making of the committee? If yes, what were those problems and how did you solve it?

8. Are there any public taps in your scheme? If there are any, what are those locations and why they are kept there? How are you doing the repair and maintenance of those?
9. What are the good aspects of the scheme? Please say one by one without repeating.
10. What are the bad aspects of the scheme? Please say one by one without repeating.
11. What are the changes that you have found before and after the completion of the scheme? Please say one by one without repeating.
12. What are the efforts that you have done to make the scheme sustainable?
13. Have you formed any committee for the cleanliness of the scheme? If yes, what is the work of the committee and how is it working?
14. Have you kept any eligible person for the repair and maintenance of the scheme?
15. Have the time been saved due to ease of drinking water? If yes, how are you managing the saved time? Please say one by one without repeating.
16. Is there regular monitoring and evaluation of the scheme? If yes, who and when it is done?
17. Have you done coordination with local organization (government and non government)? If yes, what are the works that you have coordinated?
18. Are there any awareness programs being conducted in your locality? If yes, what are the types of programs? When was it conducted? Who conducted it?
19. What are the rules and regulations that you have made for the sustainability of the scheme and what the future programs?
20. Have formed another helping committee for effective running of the scheme? If there are any what are those committee doing? What are their right and duties?
21. How are you collecting the water bills? Are there any unsatisfied matters? If there are any what are those?
22. For the operation and maintenance of the scheme, what are the rules and regulations? Is there any improvement to be done? If there are any what are those?
23. Has earthquake done any devastation in your scheme? If yes, what is the present condition and what is the future planning?
24. Do you have any thing to say about the scheme at last which I have not asked?

****THANK YOU****