CHAPTER – ONE

INTRODUCTION

1.1 Background of the Study

Development of human society is the development of economic, political, social, religious and cultural aspects in harmony with physical environment. In spite of economic development, the world is suffering from various problems. The majority of the human population is in a miserable condition having tremendous pressure on resources. It has seen that modern technology is not being properly and correctly adopted. It has been used only for the benefit of a small community. As a consequence, it has negatively affected on the progress of common people, who do lack of basic needs such as food, clothes, education, health, and this situation has raised the issue of rural development.

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.

Water supplies and sanitation were first given priority on the United Nations development agenda about 30 years ago. This was a result of the 1977 United Nations Conference in Mar del Plata, Argentina that recommended proclaiming the 1980s to be the International Drinking Water Supply and Sanitation Decade with the goal of "Provid[ing] every person with access to water of safe quality and adequate quantity, along with basic sanitary facilities, by 1990" (World Water Assessment Program, 2003, as cited by Bhandari & Grant, 2007). International water policies and management practices have generally considered water to be a free and renewable resource. Governments in developing countries have often subsidized water supplies, typically in an attempt to achieve social and health benefits for low-income households that comprise a large majority of the rural population (Lammerink, 1998;

Whittington et al. 1998 as cited by Bhandari & Grant, 2007). Furthermore, developing countries have made huge investments in their rural water supplies under the presumption that local communities will be involved in their maintenance and operation.

In Nepal, planned development of water supply and sanitation sector commenced with the advent of the Third Five-Year Plan (1965-70). Initially, government provided drinking water supply and sanitation facilities to the selected major towns only. Up to 1980s there was no integration of sanitation. In response to International Drinking Water Supply and Sanitation Decade (IDWSSD), Nepal drew up a decade long plan (1981-1990) and raised its budgetary allocations to water supply and sanitation through consecutive periodic plans. The government announced the basic needs of the program in 1987, to provide basic needs to all the people by the year 2000. The water supply and sanitation was a priority element among the basic needs of the program (NWSSC, 1999/2000 as cited by Bhandari & Grant, 2007).

Users are at the center of all development activities. Effective use of resources and the provision of appropriate service level is facilitated by user participation at various stages of planning, implementation, operation and maintenance. The government policy of seeking users' participation in the decision making of project design and implementation was mixed during the 1980s, as indicated by the interventions under different programs. The processes followed in new construction projects were not based on a 'participatory approach'. However, users' participation in the decision making since the early 1990s was a precondition for the initiation of intervention processes.

Drinking water and sanitation facility are the basic needs of human beings. Development of this sector will have positive impact upon consumers' health, and will produce healthy manpower, which would contribute to the growth of other productive sectors and activities of the country. Safe drinking water will significantly control water borne diseases. It substantially minimizes health expenses to be incurred on treatment of such diseases. Apart from this, the time saved from fetching water could be utilized in productive works, which in turn, provide opportunity to earn more income to the public. Development of drinking water sector contributes to production of healthy manpower, additional income generation and less health expenditure on

treatment of diseases. As majority of the population is unaware about the importance of environmental, social and personal hygiene and sanitation, the water borne diseases are still out of control. As such epidemic of water borne diseases has been seen. Therefore, the major challenge is to develop and expand adequate drinking water supply with sanitation facilities. Side by side, it is also necessary to make the community aware of importance of sanitation for improving the public health.

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 past efforts in water supply and sanitation sector were primarily oriented to achieving physical targets and no serious evaluation seems to have been conducted to see whether or not the projects were successful in rendering anticipated services to the people, and whether any change was brought about in living standards of the people. Hence, an impact evaluation study of water supply and sanitation is very essential and relevant in the present context.

1.2 Statement of the Problem

The World Commission on Environment and Development (WECD) 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" (Brundtland, 1987, UNDP). In context of drinking water and sanitation 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 such as continued delivery of services, regular maintenance of the physical infrastructure through the participation of users, and long-term institutional

capacity of user groups, inter-institutional support, and technical soundness of the program.

Drinking water and sanitary facility constitutes basic needs of people. Therefore, a great deal of effort was made to develop the drinking water sector since the beginning of planned development from the 1960s. The UN call for the Decade of eighties as an International Drinking Water Supply and Sanitation (IDWSS) has given ample impetus to the sectoral development in Nepal, increasing the coverage from 12 percent in 1980 to 37 percent in 1990. The estimated coverage was aimed at 72 percent by the end of eighth five-year plan (1992-1997), but remained at merely 64 percent. Though there has been some achievements in terms of coverage in the past, majority of the services provided to dispersed and remote community in the rural areas of Nepal are unreliable or even non-existent as neither the community nor the government alone could afford to maintain by itself (Watanabe et al, 2007). In the rural areas, the lack in the part of the government to set up an enabling environment for the development of a system of management of DWS services through effective community participation is seen as the reasons for the failure as far as sustainability of the system is concerned. The overall sectoral objectives of Government of Nepal are to improve health and productivity through making water and sanitation facilities available to the population as a whole the goals have remained constant during the last several development plans.

Majority of the population has not developed sufficient awareness of environmental, family and personal hygiene. Therefore, it has not been possible to control water borne disease to the desired extent. Sometimes these diseases have appeared as epidemic. Hence, sufficient expansion and development of drinking water and sanitation, making people aware of sanitation and bringing improvement in the health of people, have been a main challenging task. Water availability is a major factor in facilitating improvements in hygiene practices. But an improved water supply alone does not always lead to the use of more water, as people may not be accustomed to doing so, or there may be other constraints. Where facilities are present, socio-economic criteria may determine whether people are allowed and can afford to use them. Sometimes, notably the rural elite or political religious power groups exclude particular socio-economic groups from access to water services. In a number of cases,

people lack money to buy, or the time to collect sufficient quantities of water for daily needs.

Hygiene behavior and the prevention of water and sanitation related diseases are influenced by socio-economic factors, such as housing, nutrition, clothing, education and time. Although the precise relation is difficult to establish, it is not difficult to imagine that families with better housing find it easier to maintain personal and domestic hygiene than the people with poor housing, especially poor housing is combined with crowding. More and better clothing can be washed regularly. Better nutrition provides a barrier against disease transmission. Education may help to develop hygiene behaviors. Where poverty causes families including mother of small children, to make every effort to earn living insufficient time will be left to spend on behaviors conducive to the prevention of water and sanitation related diseases.

Participatory approaches of involvement of the community in the decision making process and the development of the confidence and skills of the community is therefore very crucial for achieving the sustainability. Evaluation of the past programs has reflected the fact that majority of the systems built are in need of rehabilitation of varying orders (NO-Frill, 1989 as cited by Watanabe et al, pp2, 2007). The traditional thinking of the community as a passive beneficiary to which a new system or infrastructure have been built up and it was then up to the community to use, operate and maintain it as best as they could have resulted in many abandoned or poorly managed or operated systems. The lack of sustainability has thus awakened the sector on the appropriate approach of the development.

One of the main problems in many rural areas of Nepal is the lack of drinking water supply. The major impacts of this problem are: poor health conditions of the villagers and villagers have to spend much time in fetching drinking water (NPC, 2002). Many externally induced development programs in Nepal have failed due to the lack of understanding of real life of villagers, default in concept, designing and implementation modalities of the planners and program implementers. Poor participation of people in decision-making process is also a reason of failure of the program. In most rural water supply and sanitation programs in Nepal, the beneficiaries are expected to contribute towards the capital as well as the operation and maintenance costs. The intention of these contributions is to demonstrate the

commitment of the beneficiaries and develop a feeling of ownership for the implemented systems. Involvement of the users of the community from the initial planning stages to the final handing over of the system helps in the long-term sustainability of such schemes. Similarly, regular operation and maintenance is the responsibility of the users of the community themselves. Most of the existing schemes in VDC did not have a regular operation and maintenance mechanism like collection of O&M funds and other such arrangements. The ownership feeling for the existing schemes was not evident, as the users' participation in the planning and implementation process was found to be minimal. It has been widely acknowledged that users' participation is crucial to sustainability of the development of the schemes as well as better operation and management of the project. In this context, water supply scheme development is contingent upon the responsible agency's capability to expedite users' participation both in terms of labor and financial contribution.

"Involvement of various user categories like men, women, children, rich and poor the decision making process is also as important as users' participation. In the projects participation is also not equal to free labor and financial contributions to construction and maintenance. Only physical work and cash cannot create sustainable and reliable systems. People will not use and support facilities that did not meet their needs and capacities. Projects must therefore consult the various users categories men, women, rich, poor) on what they want, find out whether they are ready to contribute, inform them about the options and choices they have and their costs and benefits, and then jointly with them develop the scheme local people have valuable knowledge of their physical and social environment" (GTZ 1989).

It was reported that Chharchhare Drinking Water and Sanitation Project has enabled the community people to save time on fetching water, have reduced their workload and physical strain, and has improved health conditions, thereby indirectly facilitating a general economic development and considerable improvements to the quality of life. The project's new initiatives, sensitization and capacity building of local men and women have made changes in the quality of social life, reduced the gender gap and to some extent addressed the poverty (indirectly on saving time on water collection). It has also shown that through the increased participation of women and men, water and sanitation projects can become sustainable through the water and sanitation users

committees, the water user groups, voluntary committees and with the involvement of the Local Governance Bodies.

Including the above subjects, the study will be focused on the following research questions:

1. How is the water consumption pattern of the users' group?
2. Is the problem of drinking water and sanitation of the public solved through the project?
3. Is the Users' Participation approach useful for such type of development projects?

1.3 Objectives of the Study

The overall objective of the study is the exploration and analysis of the cultural understanding of the project implementation and its effectiveness focusing particularly on its impact on the people of the study area. Moreover, the specific objectives are:

1. To explore the demographic characteristics of the participants.
2. To understand the function and the procedures of water users' committee.
3. To find out the impact and the effectiveness of the project on public health and sanitation of the study area.

1.4 Rationale of the study

The present study has its own importance in the relevant field. In many rural areas of Nepal, the major problem is the lack of drinking water and sanitation. Users' participation could be a means for its solution. The users' participation assessment study may be an interesting area for the academicians and social researchers. Conceivably, this study may provide some concepts and visions to development workers as well as policy makers who have involved in water supply and sanitation sector in Nepal. If this were proved a solution for community to solve similar types of problems, it may be useful to apply for other communities of Nepal as well.

Another important significance of the study is about the project implementation. In Nepal, there have been many projects implemented but after the completion of the project, there has been no any significance seen. Therefore, whether the project

implementation is important or not, the people of the community really benefited or not, the project has met the objective or not, are some of the important outcomes, which will be an important knowledge for the interested ones from the perspective of the sustainable development.

1.5 Limitation of the Study

As an academic research, the study had been undertaken limiting itself within the walls of budgetary, temporal and spatial boundaries. This is a VDC where the drinking water and sanitation project has been implementing. The households of participant users, which are concerned with the drinking water and sanitation project, are the focus of the study. The findings and conclusion drawn from this study may be widely used in similar type of semi urban societies. However, since from the anthropological viewpoint, a uniqueness of cultural characteristics occurs in different societies so in all the other cases it may not be generalized.

1.6 Conceptual Framework of the Study

Conceptual framework of the study is based on Eco-centric Approach. This approach has been developed and used in practice since the Earth Summit of UN in 1992. People centered development and their participation in development activities; proper use of natural resources without degrading ecology and environment are the prime focus of the approach.

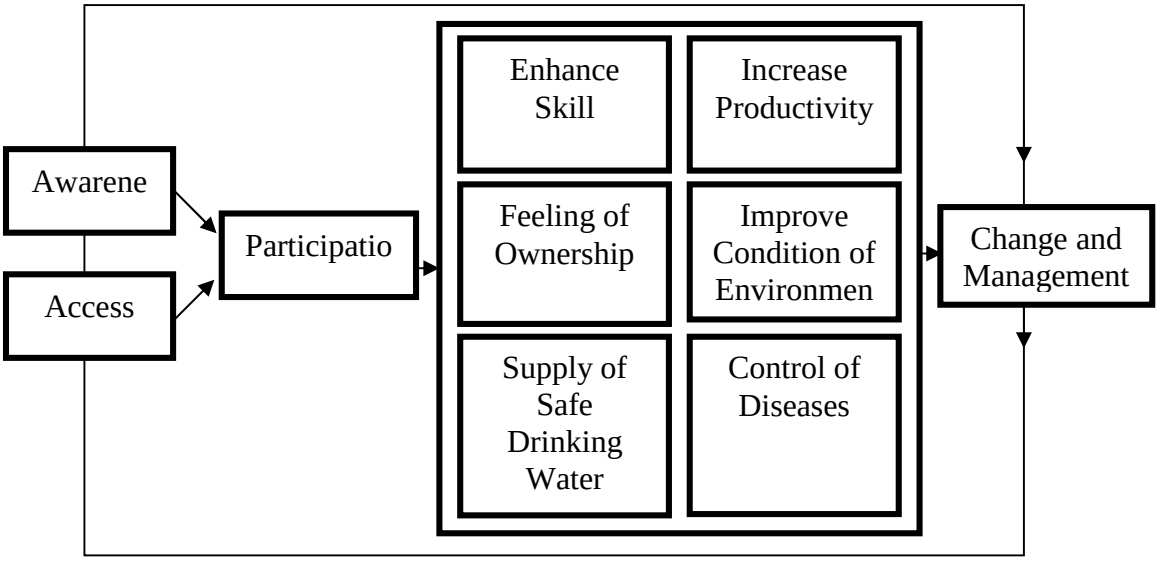


Diagram 1

The conceptual framework shown in the ***Diagram 1*** illustrates the mutual Interdependence of various variables related to users' participation in natural resource management and especially in drinking water supply. This study assumes that awareness leads the people towards the access; awareness and access both are useful to people inparticipation. Participation thus helps to enhance skill, increase productivity, feeling of ownership, supply of safe drinking water and eventually a change in the community and it enhances the management skill of the participators themselves.

CHAPTER- TWO

REVIEW OF THE LITERATURE

2.1 Review of Government's Acts, Rules, Regulations and Policies

Government of Nepal has made several policy interventions in the water and sanitation sector. The major interventions have been reviewed in the following paragraphs:

Directives for Construction and Management of Water Supply Projects 2047 (1991) outlined the process for establishing a water system through a series of steps that specify DWSS and local government's roles and responsibilities during the project planning, implementation and post-construction phases. The document includes several attachments formalizing the role of the WUC in water service provision, and initiating the move toward DWSS becoming a facilitating rather than an implementing agency.

Water Resources Act 2049 (1993) stipulated that the state owns all water resources and citizens only have the right of use. The control and management of certain aspects of water resources also fall within the jurisdiction of local government including VDCs and municipalities.

Nepal National Sanitation Policy (1994) defined sanitation as all activities that improve and sustain hygiene, to raise the quality of life and individuals' health. The policy directives focus on behavior change, community involvement, and the participation of NGOs as partners on development. The policy outlines major efforts in health and hygiene education linked to the provision of WSS services.

Water Supply Regulations 2055 (1997) established certain requirements for the formation of a water Consumer's Association (WCA), its legal registration and roles and responsibilities to provide water itself or through a licensee.

Local Self-Governance Act 2056 (1999) sought to strengthen the decentralization process delegating greater authority and responsibility to local committees vested with the power to collect fees from consumers for O&M.

New National Water Supply Sector Policy (NWSSP), 1998 is an official blueprint of the government elucidating commitment and future direction in the water supply and sanitation sector. Among others, the document clearly outlines that "Government of Nepal will attempt constantly to protect the environment, improve environmental sanitation and control any activity which endangers healthy and the productive life of Nepali people". The document targets to achieve the following objectives:

- provide and ensure safe, convenient and adequate water supply to all Nepalese people with sanitation as an integral component and with specific focus on disadvantages groups;
- reduce the incidence of water-related diseases that are so prevalent in Nepal and
- reduce the suffering and drudgery of women and children, who are traditionally involved in collecting water and taking care of domestic sanitation and hygiene.

2.2 Institutional Arrangements

In the institutional arrangements, the Government Organizations, Non-Government Organizations, and International Non-Government Organizations are working in the sector of water and sanitation in Nepal.

2.2.1 Government Organizations

National Planning Commission is responsible for overall water sector planning and coordination. The NPC sets overall national policy, strategy, and National Plan targets for all sectors of Nepal's economy.

Objective (Tenth Plan).

One of the objectives of this plan was to increase /improve access to safe and sustainable basic drinking water supply services in rural areas.

Strategies (Tenth Plan)

To scale up the demand driven and participatory approach to rural water supply and sanitation schemes. This approach involves NGOs, Community Based Organizations (CBOs), and local private sector to assist communities to plan, design, implement, operate and maintain their own schemes.

National Water Resources Development Council. The National Water Resources Development Council (NWRDC), established under the Water Resources Act of 1992, is responsible for national water resources decision-making.

Ministry of Housing and Physical planning (MHPP) is responsible for formulating and guiding sector activities to meet objectives and targets outlined in the National Department of Water Supply and Sewerage. The Ministry is the lead agency for the Community Based Development Projects. The MHPP is also the line ministry responsible for formulating policies and plans for the water supply sector where community participation is common.

Department of Water Supply and Sewerage is the lead government agency for Water Supply and Sewerage. DWSS is now the lead agency in the sector with responsibility for sector planning, coordination, technical standards, and management of design and construction activities for WSS facilities, coordination of health and hygiene education, and construction of sanitation facilities. Although current policy is to facilitate WSS construction with O&M, DWSS continues to operate and maintain a number of larger water supply systems through its District Water Supply and Sewerage Offices (DWSO). DWSO responsibilities include:

- of centrally funded program activities with local government agencies;
- design of new water supply systems;
- managing the construction process (including training for WUCs and technicians, and coordinating sanitation programs);
- operating and maintaining water supply systems that have not yet been handed over to WUCs; and
- providing backup technical and financial support to communities as requested to overcome major water supply system problems.

Ministry of Health and Population is responsible for both curative and preventive health services through a network of hospitals and health posts.

Ministry of Finance is responsible for allocating budgets for WSS programs.

Ministry of Local Development has the overall responsibility for overseeing activities at the district, and village level. The Ministry provides administrative, technical, and financial/accounting support to the DDCs through the Local Development Officer (LDO) and its staffs. Various local government agencies including DDCs, municipalities and VDCs each have responsibility for providing WSS services. Although budgets for construction of facilities are limited and must address other sector needs as well, these agencies to a limited extent do support the construction or rehabilitation of smaller water supply schemes through central government grant funds.

Ministry of Education participates in the sector through school curricula related to health and sanitation for students.

Formulation of New RWSS Policy

As per the Tenth Plan, the National Water Supply Sub- Sector Policy was revised and the Rural Water Supply and Sanitation National Policy, Strategy and Sectoral Strategic Action Plan (RWSSPSAP), 2004 has already been approved by the Cabinet on January 12, 2004. The Policy is already published in Nepali as well as English version.

Due to the following main reasons, the policy has been revised.

Private sector involvement; participation of gender issues; country goal regarding to Rural Water Supply and Sanitation (RWSS) is aligned with the Millennium Development Goals (MDGs); technological options by user's group; Well- defined roles and responsibilities of the stakeholders; 20 percent participation is compulsory for community and out of which 1 percent in cash; priority is given to disadvantaged group and only 10 percent participation is compulsory for them.

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).

2.2.2 Non-Government Organizations

Besides governmental organizations, a wide range of INGOs and NGOs, bilateral and multilateral agencies, and independent board created to liaison between the funding agencies and the users by involving NGOs are also working to improve WATSAN services in rural areas.

National NGOs such as Nepal Water for Health (NEWAH) and the Nepal Red Cross Society have a substantial history of sectoral support particularly for the construction of small gravity water systems, shallow tube well systems and promotion of improved sanitation.

Donor-financed projects (e.g. FINNIDA's rural Water Supply and Sanitation Project in the Lumbini Zone) pioneered project implementation modalities that built upon the experience of small local NGO's, strengthened any specific weaknesses, and then included them as full partners as Support Organizations (SOs) in the project planning and implementation process.

International NGOs such as Water Aid and Helvetas have also worked in partnership with local NGOs, providing funding; guidance and training to strengthen both national and local NGOs. There are now many national NGOs and as many as a

hundred local NGOs that have participated in WSS projects almost all of this experience is with small gravity WSS schemes in the hills, or hand pump/borehole programs in the Terai.

Rural Water Supply and Fund Development Board was established to provide financing for rural WSS systems through direct involvement of local NGOs. The Fund Board is an autonomous entity established under the auspices of MHPP, which is represented on the Board of Directors. The Fund Board provides assistance to rural communities through district level and local level NGOs (referred to as Support Organizations or SOs). SOs manage the pre-development, development and post-development phases of projects, focusing especially on community awareness, planning, and training aspects of a project. Larger national NGOs and private companies (referred to as Service Agencies) provide training and technical services to the Fund Board and participating SOs.

World Health Organization/Environmental Health Program has been supporting DWSS for some 25 years through the Community Water Supply and Sanitation Project and since 1995, through the Environmental Health Program. The water quality-monitoring program developed from the 1996 conference, which identified the need for drinking water quality standards, and a countrywide monitoring and surveillance system. A national task force on drinking water quality has been established with some 16 members representing DWSS, NWSC, MHPP, Department of Health, the Bureau of Standards, and selected experts.

UNICEF Environmental Sanitation Program (UNICEF) has been supporting the WSS sector in Nepal since 1992. The DWSS Environmental Sanitation Section and the Central Human Resource Development Unit (CHRDU) are the key government partners for the program with collaboration from Nepali NGOs and support from consultants. The UNICEF is also helping the government to prepare the national sanitation action plan which seeks to integrate sanitation and hygiene, community participation, child rights and gender issues into national policy, planning and programs. Similarly, it is supporting the intensive hygiene and sanitation program, which aims to produce measurable change in the health of children through transmission and reinforcement of health and hygiene messages about hand washing, food and water protection/covering garbage disposal, construction and use of

sanitation facilities, clean food, and proper use of clean water. Finally, the third program, sustainability in water supply, seeks to ensure that the benefits of past sector investments are realized.

2.3 Theoretical Overview

The concept of participation

Participation is a term which, although derived from radical ideas challenging developmental orthodoxy, is now to be found in development plans and policy statements of the most mainstream institutions, Again, whether this represents a significant change in the discourse, or the cooption of challenges to it, is open to debate. Participation is used to describe greater involvement by 'beneficiaries' in deciding the type of development projects they need, and how they are run. The degree of this involvement can, however, vary greatly.

Like many of the currently fashionable development 'buzz words', the precise meaning of participation is elusive. Adnan et al. 1992 (as cited by Gardner & Lewis, 1996) argue that meanings of participation can be broken down into three broad categories. First, participation can simply refer to a process in which information about a planned project is made available to the public. This may involve listening to local people's views about the plans, a more structured survey, or a formal dialogue regarding project options. This type of participation often only involves community leaders. It also leaves most decision-making power in the hands of the planners. Second, participation might include project related activities rather than mere information flows. This might involve using labor from the community, or a longer-term commitment by local groups to maintain services or facilities or even to plan for their future use (for instance, committees set up to manage sanitation facilities in an upgraded slum) again, the initiative has come from the outside. People are involved, but are not directly in control. Lastly, there are people's own initiatives. These fall outside the scope of the project agenda; they are therefore, some argue, the only true form of participation, for they are not imposed from the outside. If mobilization comes from the poorer sections of the community, it also truly empowers (ibid).

"Participation is a key prerequisite for sustainability" (ibid).

"Participation may be understood as close involvement of people in the economic, social, cultural and political processes that affect their lives (UNDP, 1994).

The participation being a broader concept comprises the following operational characteristics:
(i) Institutional presentation, (ii) distribution of benefits, (iii) cost sharing, (iv) pluralism, (v) gender integration, and (vi) mechanism for public policy debate (Uprety, 1999).

From the typological view, there are seven types of participation (Pimbert, et al., 1999):
(1) passive participation (2) participation in information giving (3) participation by consultation (4) participation for material incentives (5) functional participation (6) interactive participation (7) self-mobilization

Community Participation

A definition of community participation proposed at a Rapid Rural Appraisal (RRA) workshop is that "The collective effort by the people concerned to put their efforts and other resources together to attain objectives they set for themselves" (Watanabe et al, pp5, 2007). In this regard participation is viewed as an active process in which participants take initiatives and action that is stimulated by their own thinking and deliberation and over which they can exert effective control. On the other hand, in the passive participation people are put into actions that have been designed and controlled by external agencies. The factors, which influence people's participation in the community development projects, are mainly local leadership, communication and the level of awareness. These three components are interrelated and have joint significant influences apart from their respective individual effects (Livingstone & McPherson, 17(4): 294-301, 1993).

Community participation can also be defined as a process of people's involvement to achieve societal goals through self-reliant efforts. Unity, shared visions and understanding each other are most essential for social mobilization and sustainable development. People's participation will be enhanced when their felt needs and choices match with the activities. Awareness and sense of livelihood is another influencing factor of participation. (Watanabe et al, pp5, 2007).

People's participation is perceived today as an important dimension of an environmentally sustainable pattern of development. There are basically two reasons for this. When participation rests on some form of organization, it can encourage the direct management of local resources by the users. Secondly, such responsibility can be exercised in the collective interest embodied in the organization. (Egger, P. &Majeres, J., 1995). Esman and Uphoff (1984) assert that, purely executive form of decision-making is unsuccessful. They associate assembly forms of decision making with effective performance of specific tasks, indicative of better overall performance by those local organizations that have more participatory arrangements.

B.S.Bhandari , S Watanabe and D. 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.

In 1988, the government of Nepal adopted an irrigation sector program , whose major thrust is on farmers' participation, in recognition of the role water users need to play in sustaining irrigation development and management (Anseri 1989; Baker 1989). The program has two special characteristics, which distinguish it from ordinary public works programs operating in Nepal: it uses labor-intensive and local resource-based technologies to build infrastructure and it is based on popular participation (Egger & Majeres, 1995).

During the first phase of the Nepal Irrigation Sector Program (1980-1987), the formation in all projects of farmers' irrigation associations and their management body, the water users' committees, laid the foundation for active popular resource mobilization. The water users' committees played an important role in construction,

maintenance and operation of the irrigation system. This experience has prepared the way for the adoption of a participatory approach to irrigation development in Nepal (ibid).

A demand driven approach; Emphasizes on an active involvement of men and women from all sectors of the community including the poor – a community participation approach; Promotion of user based sustainable operation maintenance systems- a village based operations and maintenance mechanism. This project can be improved incorporating water and sanitation committees and water user groups should be formed at the village level and the villages should coordinate the activities of these committees and groups. Since government agencies have traditional practice to install schemes through contractors, obviating less participation. NGO and INGO have a practice to install DWS schemes at the request of users. Demand driven approaches which obviously leads more participation as compared to governmental organizations.

Public participation in water resources management should be built in such a way that representatives of water users and other stakeholders could really participate not only in monitoring of water agencies' activity but also in planning and implementation of water-related works at the expense of their own financing or other funding sources (Regallet, Gungoren & Sokolov 2007).

"Participatory approach to RWSS service delivery including community development activities, Non Formal Education, Health Hygiene and Sanitation Education and Women Technical Support Services linking to income generating programs have been very effective in empowering the communities, including women, where communities demonstrate a willingness to make social changes like enabling women to take decision making roles besides men in managing water schemes; and thus resulting in ownership. Participatory approach in planning cost sharing mechanism and community management including procurement and construction management by the community enhance transparency and ownership, are key for successful implementation even in conflict situation and sustainability (SOPHEN PROGRAM & ABSTRACTS, 2003).

Community Development

Anthropologist Charles J Erasmus, 1968 (as cited by Devkota, 1999), reveals some of the conceptual uniformities that can be found in definitions of community development. The most frequently stressed attribute was "'Self-help' group action via community participation and voluntary cooperation".

"One of the crucial factors behind the failure of the externally induced programs and projects is the lack of sense of their (communities') ownership among the villagers. Plans and decisions are made by central and district level leaders and projects are implemented only where they convinced of turning them into votes. This is clearly evident from the findings that there is a lack of motivation and understanding of local situations, immediate concerns and point of view of villagers on the part both central and district level planners and politicians" (Devakota, 2006).

International Cooperation Administration(1951:1) an agency of the American government defines " Community development is a process of social action in which the people of a community organize themselves for planning and action; define their common and individual needs and problems; make group and individual plans to meet their needs and solve their problems; execute the plans with a maximum of relevance upon community resources; and supplement these resources when necessary with services and materials from government and non-governmental agencies out side the community" (Devkota, 1999).

Participatory Rural Appraisal (PRA)

"Participatory rural appraisal (PRA) and its variants aim to enable rural people to plan and enact solutions to problems by analyzing their own knowledge of local conditions, facilitated by outsiders (Gardner & Lewis 1996).

PRA has some characteristics according to Chambers (1992), (as cited by Gosselink, Paul & Strosser, Pierre, 1997), these features are:

1) a reversal of learning, to learn from rural people;
2) learning rapidly and progressively with flexible use of methods, improvisation, and cross-checking;

3) offsetting biases, especially those of rural development tourism (spatial, project, person, dry season, diplomatic, and professional);
4) optimizing trade-offs between quantity, relevance, accuracy, and timeliness;
5) triangulation, using a range of methods, types of information, investigators and disciplines to cross-check information, and
6) seeking diversity.

Common Property and Water Resource Management Aspect

Water is a common-property resource. All common-property resources share two important characteristics. First, exclusion (or control of access) of users to these resources is problematic. Secondly, each user is capable of subtracting from the welfare of other users. Hence, a common property resource for which exclusion is difficult and joint use involves subtractability. According to this G. Hardin's definition, Common property is not owned by anyone. It is a free good owned by no one and belonging to everyone. Common property resources are basically open-access and freely available to any user. According to a second view, common property should be restricted to community owned resources-that is, those resources for which there exist communal arrangements for the exclusion of non-owners and for allocation among co-owners. To avoid some of the anthropological complications, 'community' is defined as 'resource community'-the group of people that uses a certain resource. Resources involved in common-property systems may be communal property or those which, although not legally owned by the community, are managed in accordance with community-based norms and rules. (Berkes, 1989).

According to Berkes (1998), common-property systems have certain critical roles in local communities:

Livelihood security:
All common-property systems are characterized by the presence of arrangements for allocation of the resource among co-owners (Bromley, 1985; Ostrom, 1986, cited by Berkes F., 1989).

Access equity and conflict resolution:

Common-property systems normally provide mechanisms for the equitable use of resources with a minimum of internal strife or conflict. Rules mutually agreed upon by all members of the group provide an efficient means of conflict resolution and reduce 'transaction costs' in the enforcement of these rules. Often, users themselves point out that their local rules serve primarily to reduce conflict in resource use, over and above other possible functions (ibid).

In cases where collective labor is needed for the operation of the production process, common-property systems include rules to even out the work by allowing for equal participation based on producer's relative right to the resource. In some cases, the means of production (for example, the water reservoir or water pipes) is held communally as well as the resource itself (the water) (ibid).

Mode of production:

Community-based resource-management systems often form the basis for the system of production. Typically, these management systems tend to be set up at the sub-village or sub-tribal levels, and consist of work teams that include a number of households within the community, work teams may be fluid and flexible, with different individuals and households teaming up on different occasions. Community members share a common culture, knowledge of the resource and knowledge of resource-use rules, facilitated by the simple rule, 'you must live in this community to use this resource' (Ostrom, 1985). Common-property systems serve as interface, not only between society and resource, but also between the individual and the society at large, social roles and obligations are often defined in terms of one's participation in work teams. Common-property systems are integral part of the local culture.

Resource Conservation:

Common-property systems are basically conservative in the way resources are utilized; many aim at local self-sufficiency. Some western-oriented development planners have even regarded common-property systems as an impediment to economic progress, whereas others increasingly see the value of incorporating them in the development process as a primary means of mobilizing people and resources for community-based sustainable development.

Ecological sustainability:

Common property systems deserve credit for many of those resources which have remained productive through the generations. The traditional use of resources often incorporates rituals to help synchronize harvesting with natural cycles (Johannes, 1981, cited by Berkes 1989). These serve to reinforce social controls in maintaining a productive resource from generation to generation. Mc Kean's (1986) detailed historical study of Japanese common lands *(iriaichi)* did not turn up a single example of a 'common that suffered ecological destruction while it was still a commons'.

Because of the crucial role played by common-property systems in sustainable resource use, their most significant application in the contemporary world context is their relevance to development. Since common-property systems provide, in effect, long-term and 'grass root's institutions, these systems are the most important candidates for popular participation in development decision making. Common property resource management systems have a political and socioeconomic context. The effective functioning of these systems depends on the existence of appropriate institutions. With many common property resources the institutions are local and informal, community-based rather than government-sponsored. Ignored by much development planning in the past, there is now abundant evidence from detailed case studies that these institutions play a crucial role in economic development (Ostrom et. al., 1988).

"The idea of Integrated Water Resources Management (IWRM) has to be taken into account as the starting point for water management. The Global Water Partnership (GWP) has defined IWRM as a process, which promotes the coordinated development and management of water, land and related resources to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. So, there is a wide acceptance of IWRM as the appropriate management tool for sustainable use of water resources and for improved delivery of water services. IWRM promotes participatory approaches, partnerships, subsidiary and decentralization, the need to strike a gender balance, the environmental, economic and social value of water. It replaces the traditional fragmented sectoral approach to water management that has led to poor services and sustainable resource use." (Vanquez, 2007).

Sustainability of a development project

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).

Long-term institutional capacity of user groups, inter-institutional support, and technical "Sustainability is the desire by planners and agencies to avoid creating projects which depend on their continued support for success; also used in its environmental sense to ensure renewal of natural resources" (Gardner & Lewis pp49, 1996).

"Well thought out development plans are, if they are designed and implemented by outsiders they are in continual danger of being unsuitable in the long term and of contributing to dependency; when funding ends, so does the project. Development discourses must therefore be challenged until they recognize that local people are active agents, and by changing their practices enable them to participate in project planning and implementation" (ibid).

According to government policy, the operation and maintenance costs of 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.

A sustainable water future depends on appropriate prices and the necessary resources need to come from project consumers (World Bank Water Demand Research Team, 1993; Whittington, 1998). However, Whittington et al. (1990) discovered that rural customers in Nigeria do not want to pay for water in advance or commit themselves to a fixed monthly payment due to their mistrust of public providers. Some scholars have focused on community-water education and the creation of organizational capacity to ensure project sustain-ability (Baker et al. 2006). The literature shows that water-user committees play a vital role in the sustainability of rural water schemes and that the enhancement of facilitation skills, the clarification of responsibilities, the improvement of transparency in decision making, and the augmentation of credibility are essential for making a committee trustworthy (Lopez-Gunn & Cortina, 2006).

According to Bohm et al. (1993), WTP for improved water services increases with income and wealth, family size, education, and dissatisfaction with traditional sources. In the same vein, a study on household demand for an improved water-supply system in Kathmandu shows that consumers' WTP for better service is increasing (Whittington et al. 2002). A similar study in Indian cities shows contradictory results and suggests that satisfied consumers are not willing to pay more for improved DWS schemes (Raje et al. 2002). Most scholars have focused on the financial sustainability of municipal (urban) or corporate water systems. The current study examines the variables that influence users' WTP for the operation and maintenance of rural DWS schemes in Nepal. This analysis also compares core problems on the basis of an institutional survey regarding the sustainable operation and maintenance of DWS schemes in the country. Most of the DWS schemes dysfunction due to lack of ownership on the scheme. There are various external and internal factors, which influence the performance and sustainability of the DWS scheme. Ownership of drinking water supply draws users' sentiment towards the surveillance of the schemes as a personal property. Users' satisfaction in yields, tap point location, quality and regularity are taken as major indicators to measure level of ownership. Rural water supply schemes created by INGOs are frequently left with no management and supportive institutional framework at all. The managerial 'vacuum' has increasingly been a primary reason for the huge investments becoming ineffective in rural water supply projects (DWSS., 2007).

Rural water-supply schemes in Nepal are partially or fully funded from governmental and nongovernmental resources. Many governmental organizations (GOs), nongovernmental organizations (NGOs), and international nongovernmental organizations (INGOs) are working in Nepal to increase coverage and to provide safe water supplies and sanitation to underserved populations in poor and remote areas. The consumption of water in rural communities of Nepal is quite different from other countries. The customary strategy does not normally entail charging for water from public taps that are located among 5–15 houses within a 500 meter distance. However, other countries and agencies such as the World Bank recommend that users should pay for water services (Asthana, 1997). To escape problems created by this approach, donor and government officials in developing countries have focused on financial issues, especially the generation of revenue through domestic connection (Singh et al., 1993).

Project-evaluation reports from developing countries indicate that shoddy construction of drinking water supply (DWS) schemes, excessive administrative centralization, lack of rewards for good operation and maintenance, and widespread corruption in supporting organizations are the major causes of failed system maintenance (Howe & Dixon, 1993 as cited by Bhandari & Grant, 2007; Singh et al. 1993). Similarly, in the context of Nepal, most DWSs are unsuccessful due to lack of involvement by women during the planning stages, government supervision, supporting mechanisms for the handover of DWSs, and coordination among local water-user committees, local government, and district water-supply authorities (Sharma, 1998; Bhandari et al. 7(2):201–214, 2005).

Many scholars claim that water-supply projects will be sustainable when consumers are willing to pay user charges that are sufficient to cover all costs in excess of grants. Willingness to Pay (WTP) can be construed as an indication of the demand for improved services and their potential sustainability (Kaliba et al. 2003). In contrast, other observers have concluded that rural water systems are unlikely to be sustainable unless grants are available to finance most or all initial construction costs (Bohm et al., 1993). Researchers recommend different models for WTP, but most assessments envisage a cost-recovery policy in the rural water sector (Whittington et al. 1990; Altaf et al. 1993; Howe & Dixon, 1993).

2.4 Literatures about Some Successful Sectors Relating to User's Participation

The concept of Community Forestry in Nepal has become successful for the conservation and resource utilization in Nepal. The degradation of the forest resource was rapid before the implementation of the concept of community forestry. There are so many studies and researches on this topic. Community Forestry is one of those sectors in which people's participation method is used for its management and sharing the benefits.

"The main forest management strategy on Nepal is based on people's participation, which is known as Community Forestry (CF). Under the CF arrangement, local people make decisions regarding the forest management, utilization and distribution of benefits from a forest; they are organized as a Community Forest User Group (CFUGs)." (Acharya K.P. and Acharya S., 2007).

Neeraj N. Joshi and Nazaruddin Mohd. Jali have researched on the Forest User Groups in the Nepal Hills about organizational structure, performance and participation within the users' group. Recent forest policy of Nepal (e.g., the Forest Act of 1993) has emphasized the importance of creating forest user groups as local organizations that are expected to be able to government managed local forest resources effectively.

Freeman and Lowdermilk, (1978:153-4) (as cited by Uprety, Laya Prasad, 2006) write:

"Irrigation water is of sociological importance because people must organize collectively to secure it, transport it, divide it into usable shares, enforce rules for its application, pay for it and dispose of unused portions. The kind of social organization, the patterns of power, decision-making, conflict and cooperation which people create and maintain for the social control of water intimately affects the productivity of its use. Attempting to comprehend physical and agronomic problems of irrigation without probing into the surrounding social organization and webs is like attempting to understand deficiencies in plant growth without reference to the conditions of climate. When water moves efficiently from rivers, through network of canals, to plant root zones, it is because people have effectively organized a decision pursuing

the collective interest. Defects in the delivery and application of irrigation water are typically associated with deficiencies in social organization."

In many situations, a local organization is needed so that it acts as a channel through which local people can participate in the development and implementation of rural development programs. It is also where institutions are reckoned to affect the participatory process that local organizations act as intermediaries between the bureaucracy of a nation/state and the local people in development tasks. The studies of Esman and Uphoff (1984) clearly point out local organizations as a necessary condition for accelerated rural development, and that such organizations must be seen in terms of a system of institutions performing various functions in the rural sector of a particular country.

In the context of Nepal, D.A. Gilmour and R.J. Fisher(1991) point to both formal and informal forest management systems. They indicate that it is quite common to find highly visible formal systems that are totally ineffective in carrying out any sort of forest management.

"The most successful development programs and projects, as identified in the village communities of Mehelkuna and Sahare, include Raniban Community Based Forest Protection and Conservation Program, Nange-Kopchi Farmer's Managed Irrigation Project, Simalgaira Women's' Group Controlled Irrigation Project, Gokulkund Farmers Managed Irrigation Project, Chandra-Surya Environment Conservation and Village Sanitation Promotion Program and Farmers' Group Based Secondary Crop Development Project. These are also the projects and programs which provide the important data and information on how people create projects locally, how they make decisions, how they utilize their social stock of knowledge for the formulation and implementation of village based development programs and projects, in what ways they organize both internal and external resources, that sort of strategies they follow while negotiating with development agencies, how they work collectively on program and project execution activities and what is the pattern of sharing program outcomes within a village community? All these aspects have been discussed in detail in the thesis" (Devkota, 2006).

In this way, the literatures reviewed as above indicate that Users' Participation Approach has been used in the sector of Community Forestry, Community Irrigation and such other Projects and found very successful. There have been so many studies in these sectors. Studies on users' participation in the sector of drinking water and sanitation are still low. Also, there are several studies on water supply and sanitation in the past. Most of the studies on water supply and sanitation were primarily focused on merely a health and sanitation sector. A few of the studies investigated into other direct and indirect impact of water supply and sanitation projects on socio-economic status of the users. The functions and procedures of the water users' committee, impact and the effectiveness after the implementation of a project which are major study subjects but they have been rarely studied. Also the present study is relevant and vital in view of contributing to filling up gaps in the existing literatures on the study of different sorts of participations such as cost sharing, benefit sharing, resource distribution and allocation, gender and caste ethnic group maintenance, labor participation, conflict resolution etc in Nepal.

CHAPTER - THREE

METHODOLOGY

3.1 Study Area

The study is aimed to present the view of the community under study area about the project implementation and multifaceted impact upon them. The field study was conducted in Uttam Tole, Shiva Tole and Lahare Peepal villages of Ward No. 3 of Dhorphirdi VDC of Tanahun district. In this VDC, Rural Water Supply and Sanitation Fund Development Board (RWSSFDB) had implemented water supply and sanitation project where there had been a serious problem of drinking water. Drinking water and sanitation problem was solved to a great extent in that area after the implementation of the project.

The researcher has a keen interest and curiosity on drinking water and sanitation and users' participation in this sector as well. So the study topic was selected about it. The topic was rationale, there are a very few researches have been conducted. The study area, Uttam Tole, Shiva Tole and Lahare Peepal villages of Ward No. 3 of Dhorphirdi VDC, are not so remotely located. There is the facility of surface transport from Dulegaunda bazaar of Prithwi Highway (Kathmandu-Pokhara Highway) or simply half an hour's waking distance from the highway. Although the study area is located remotely as compared to the urban areas, being the study subject interesting, the researcher thinks it as an interesting and challenging anthropological job. The local people of the study area are mainly migrants from remote villages, so there is a mixed type of ethnographic composition.

3.2 Research Design

The main objective of this study is to explore and describe the impacts of the project upon the users of the community. The participants or the users of the community are the main sources of the information, so the information has been gathered from them. This study has sought to explore the respondents' demographic characteristics such as literacy status, gender and ethnic composition, family structure and occupation etc. The study also focuses on the impacts of the project and understanding the function

and the procedures of the Water Users' Committee. They necessitate a combination of both an exploratory and a descriptive research design, which the researcher has used. Thus the collected information explores the project impact and the implication of such impacts has been described.

3.3 Universe

Universe in this context means the whole subject that is under the study. Universe of this study includes the users of the Chharchhare drinking water and sanitation project i.e., the users of the project command area. Hence, the universe of this study is 133 households.

3.4 Unit of the Study

There were total of 133 user households. The universe of the study is not so large and complicated. The household head is the unit of the study. Every household heads were interviewed for the required information. Thus the study is mainly based on the census method which is appropriate for such type of study. If head was not available, the immediate head of the household was taken as the household head.

3.5 Nature and Source of Data

This study has mainly based on primary data. Therefore, the required data was collected employing the different primary data collection techniques giving appropriate emphasis on the research objectives, questions and nature of data required. The study is also based on secondary data collection according to necessity. However, more emphasis has been given to the primary data. On this study qualitative as well as quantitative data are used. Primary data are collected from the universe directly and the secondary data are collected from the Water Users' Committee's records, Central Bureau of Statistics, Branch Statistics Office, etc.

3.6 Data Collection Procedure

The following techniques are used for the collection of required data:

a. Questionnaire- Schedule

A questionnaire schedule was made according to the information required. The model of questionnaire schedule has been given in the Appendix. Mainly quantitative data were collected using this method.

b. Observation:

This method was followed while the researcher reached every households to fill the Scheduled-Questionnaire. Indirectly, the households' activities such as households' cleanliness, environmental cleanliness and other information about sanitary behaviors were observed and noted them.

c. Key Informants' Interview:

Information was also gathered from the Key Informants by taking their interviews. The Water Users' Committee Members, Village Maintenance Worker, Village Health Promoter, WTSS representative for the Project Work and other persons from the users who were actively involved throughout the project work were chosen as the Key Informants. Mainly qualitative data were collected using this method.

3.7 Methods of Data Analysis

Data collected were analyzed both qualitatively and quantitatively. The quantifiable raw data from the field survey was processed and analyzed. Few simple statistical tools such as frequency and percentage were used. Likewise, tabulations and graphic presentation 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 some qualitative data. An attempt was made to interpret the qualitative data with anthropological approach. Also an effort was made to maintain the objectivity and avoid data error by comparing them with different data collected from various sources.

CHAPTER- FOUR

STUDY AREA AND THE POPULATION

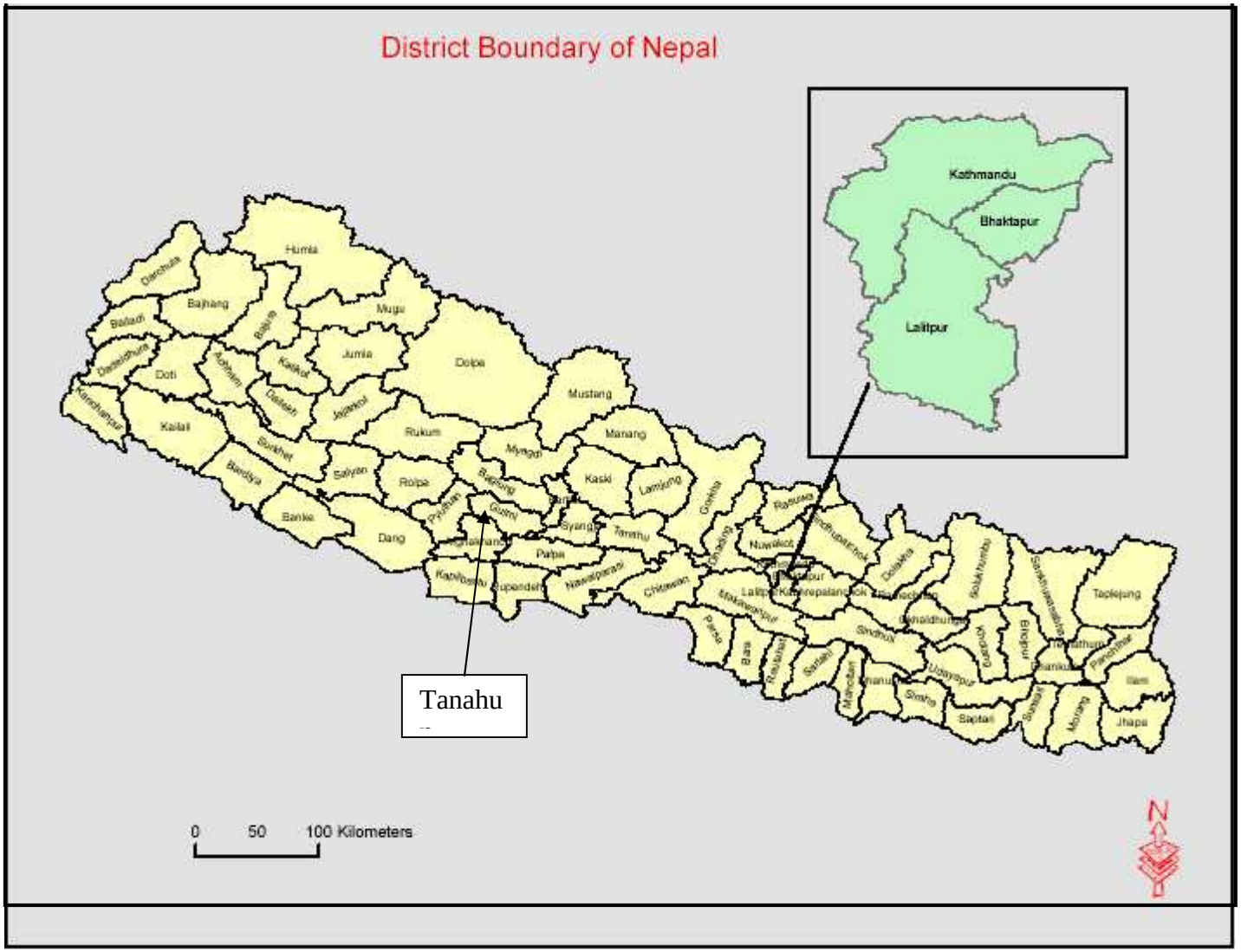
4.1 General introduction of the study area

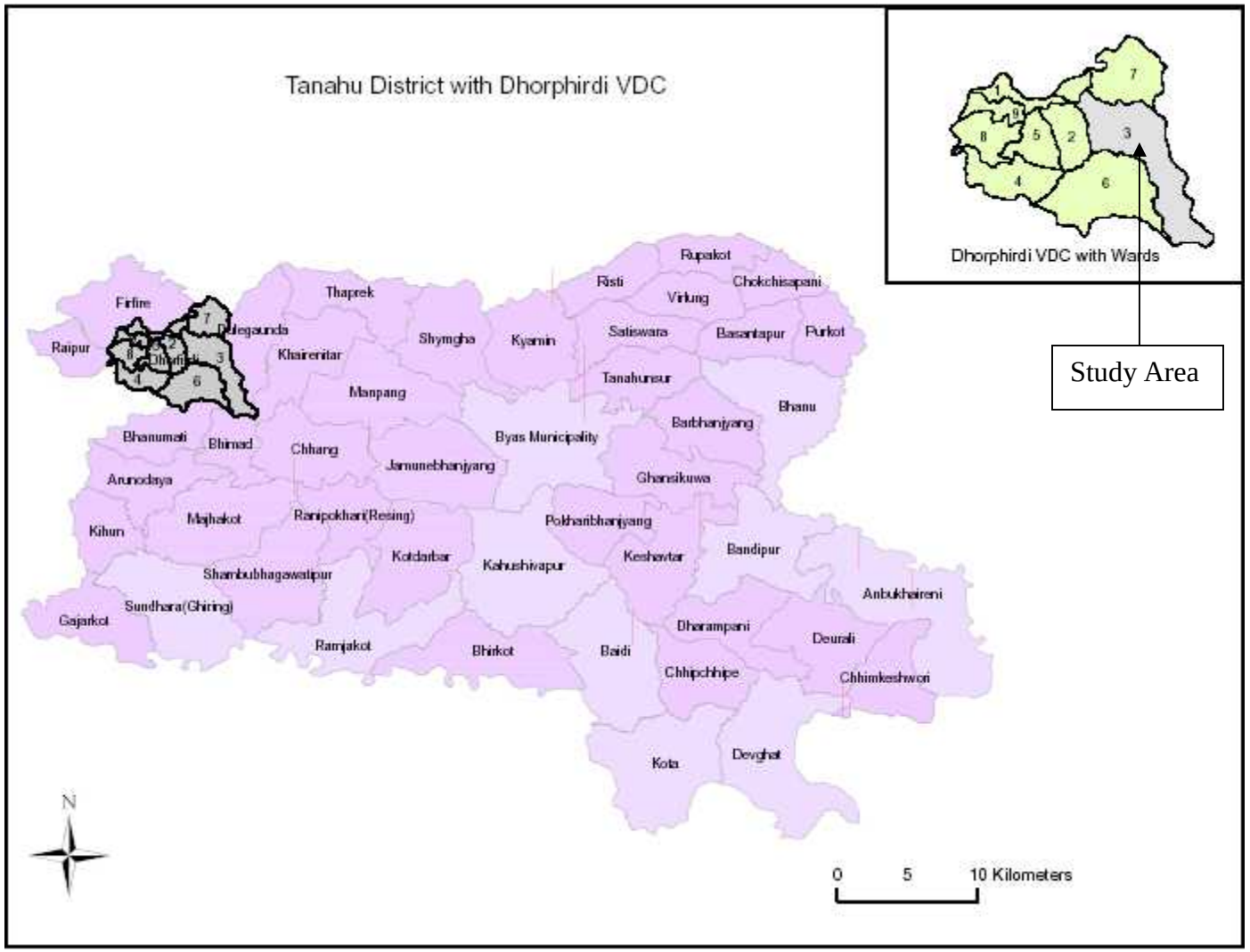
Geographically, Tanahun district is located in between 27°74’ to 28°13’ North latitude and 83°94’ to 84°56’ East longitude. The elevation of the district ranges from 200m to 2325m. The area of the district is 1546 square kilometer. The district falls under the monsoon region. The maximum mean monthly temperature of the district remains 38°C to 41°C and minimum temperature is 5°C to 6°C. (Branch Statistics Office, 2007).

Administratively, the district is located in Western Development Region. The district has shared its border with Chitwan district in the east, Syangja district in the west, Kaski and Lamjung districts in the north and Palpa, Chitwan and Nawalparasi districts in the south. Damauli is the head quarter of Tanahun district.

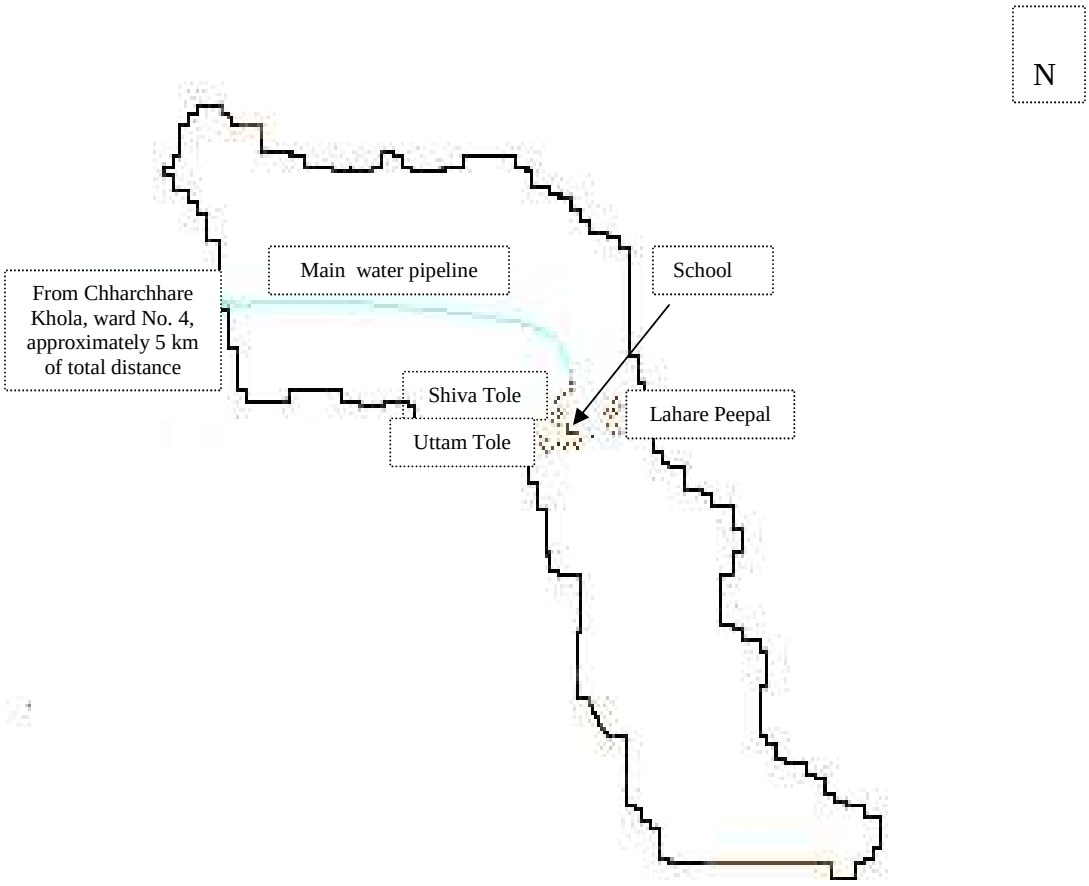
Dhorphirdi VDC where the project has been implemented shares its borders with Dulegauda and Khairenitar VDCs in the east, Raipur and Phirphire VDCs in the west, Bharat Pokhari VDC of Kaski district in the north and Bhanumati and Bhimad VDCs in the south. The village is located towards west from Prithwi highway at about half an hour’s walking distance. Prithwi Highway (Kathmandu and Pokhara Linking Highway) is the nearest all season road which links that area to the capital city of Nepal and to the famous city Pokhara. Its location is about 175 kilometers from Kathmandu and about 25 kilometers from Pokhara and about 25 kilometers from Damauli. . Dhorbarahi Temple that is famous among the religious people and well known internal tourism spot is situated in this VDC.

Project area of Chharchhare Drinking Water and Sanitation covers the villages namely Shiva Tole, Uttam Tole and Lahare Peepal of ward No 3 of the VDC. The command area of the project is about 0.25 square kilometer. It is located in the low valley of Dhorphirdi VDC in between Seti River and Bange Khola.


District Boundary of Nepal
Kathmandu
Bhaktapur
Lalitpur
Tanahu
0 50 100 Kilometers
N


Tanahu District with Dhorphirdi VDC
Dhorphirdi VDC with Wards
Study Area
Rupakot
Risti
Chokchisapani
Virlung
Thaprek
Firfire
Raipur
Dhorphirdi
Khairenitar
Shymgha
Kyamin
Satiswara
Basantapur
Purkot
Tanahunesur
Manpang
Bhanu
Barbhanjyang
Bhanumati
Bhimad
Chhang
Byas Municipality
Jamunebhanjyang
Ghansikuwa
Arunodaya
Majhakot
Ranipokhari(Resing)
Pokharibhanjyang
Kihun
Kotdarbar
Kahushivapur
Keshavtar
Bandipur
Shambubhagawatipur
Anbukhaireni
Sundhara(Ghiring)
Gajarkot
Dharampani
Deurali
Ramjakot
Bhirkot
Baidi
Chhipchhipe
Chhimkeshwori
Kota
Devghat
N
0
5
10 Kilometers

Study Area


N
Main water pipeline
School
From Chharchhare Khola, ward No. 4, approximately 5 km of total distance
Shiva Tole
Lahare Peepal
Uttam Tole

4.2 Climate

The climate of Dhorphirdi VDC is humid and sub-tropical with a monsoon rainfall pattern. This is the case in the study area as well. The study area is characterized by a moderate temperature, heavy monsoon rainfall and distinct seasonal variations. The average temperature in the valley floor is between minimum of 9.9°C in January and a maximum of 34.6°C in June.

The annual rainfall of the study area averages 2089.1mm with about 66 percent of precipitation occurring during the rainy season months (May to August) (Narayani Basin Office, Pokhara, the record of Khairenitar Station in 2005). Local convectional hailstorms in autumn and hailstorms and strong winds during the dry spring are the occasional local climatic phenomena. Usually, ground fog appears in the winter mornings. The seasonal cycle is hot and wet summer and cool and dry winter.

4.3 Natural Resources

Dhorphirdi VDC is rich in water resources as there are many rivers and rivulets here. These are Seti River, Bange Khola, Suraudi Khola and Kyangdi Khola. The VDC is well known for community forestry as there are many such forests conserved by the community. Some rare herbs can be found in the jungle. There are iron and copper ores found in this VDC. People say that in the Rana regime, iron and copper ores were locally processed and metals were produced. Local suspension bridges were made using the same iron that was produced locally.

4.4 Socio-Demographic Structure

Tanahun district is administratively divided into three electoral constituencies, one municipality and 46 VDCs. The total population of the district is 315237 of which 146788 (about 47%) are males and 168449 (about 53%) are females. Population growth rate of the district is 1.62 percent. There exist a total of 62898 households, with average household size of 5.01. The population is composed of various castes, ethnicity, religious and cultural groups. Of the total population, the dominant number is of Magar (26.8%),

followed by Brahmin (13.1%), Gurung (12.5%) and Kshetri (11.9%). The religions practised in the district are mainly Hindu (83.2%), Buddha (15%) and Islam (1%). Christianity though practised by a low percentage of people, is growing fast in number in last few years. Nepali language is the dominating mother tongue of the district (58.6%), secondly Magar language (21.5%) and then Gurung (10.5%) and Newar (4.9%).

Dhorphirdi VDC has a total population of 11736 of which 5363 (about 46%) are male and 6373 (about 54%) are female. The number of the total household is 2517, which shows an average family size of 4.7 persons per household (CBS, 2001). Greater numbers of female with male population is due to higher birth rates of female children. Also the male members are absented from the households for a search of job. Among them a remarkable number of male members are absent due to foreign jobs. In this ward, out of total population 3575, the population of male members is 1688 (about 47 %) and female is 1887 (about 53 %) according to population census 2001.

Literacy rate of Dhorphirdi VDC is 66 percent; male literacy rate is 78 percent and female literacy rate is 56 percent (CBS 2001).

4.5 Economic Activities

Subsistence agriculture and livestock are the main basis of economy and major sources of livelihood of people in the district. In the VDC, 59.7 percent of the population is usually economically active population (aged 10 years and over). In which 61.7 percent of the male population and 58.0 percent of the female population is usually economically active There are a remarkable number of retired ex-service persons who have been using their pension as a source of income so they are seen usually inactive.

The study area has a uniform land pattern. The land comprises a low land with a sandy soil abandoned by the nearby river. The land occupied and used has not a longer past, just been used by the newly settled migrants. Due to regular use of the organic manures the quality of the arable land is being improved.

People of the study area have involved in the various types of occupations, besides the agriculture as well to support their income and livelihood.

4.5.1 Agriculture

The economy of the study village is based upon agriculture In the VDC, agriculture is the primary economic mainstay and includes crop farming and animal husbandry. Paddy, maize, millet, potato, wheat, green vegetables are the main crops of the area. Most of agricultural methods are traditional and modern methods have not actively involved. They usually work only for four months of the year and remain unemployed for the rest of the year. The percentage of households having agricultural land and livestock both is 42.6 percent , similarly having land, livestock and poultry is 36.9 percent Population employed in agriculture, 70.3 percent (male 64.3 percent, female 75.4 percent).

4.5.2 Livestock

Animal husbandry is an integral part of agricultural activity in this VDC. Most farmers rear buffaloes, goats and pigs either for dairy products like milk and ghee or for meat and manure for fertilizer and biogas. Buffaloes are mainly reared for their milk and meat whereas goats and pigs are kept only for meat. Milk and meat fulfill their diet and sometimes provide them a supplementary income.

4.5.3 Salary/ Wages and Own Account Economic Establishments

The population employed in salary/wages and own-account economic establishment is 16.5 percent (male 25.7 percent, female 8.8 percent) (CBS, 2001). This sector includes employment in the government sector or private organization, teaching, and other professionals.

4.6 Ethnicity, Caste and Religion

Dhorphirdi has a heterogeneous society having different caste and ethnic groups. The majority population of the VDC is from caste group. **Table 1** describes the caste wise distribution of the population. Caste group comprise more than 50 percent of the population and the remaining are from ethnic group.

Table 1: Distribution of Population by Caste/Ethnic group

Caste/Ethnic Group	Frequency	Percent
Brahmin	2186	18.63
Kshetri	2116	18.03
Magar	1873	15.96
Kami	1276	10.87
Kumal	967	8.24
Gurung	704	6.00
Newar	682	5.81
Gharti/Bhujel	479	4.08
Thakuri	472	4.02
Damai	430	3.66
Sarki	239	2.04
Others	312	2.66
Total	11736	100

Source: National Population Census, 2001, CBS

There is not any single caste or ethnic group domination in this VDC. Caste groups Brahmin and Kshetri are approximately equal and they are followed by Magar an ethnic group but not so far less. Kumal; a tribal ethnic group also lives in this VDC.

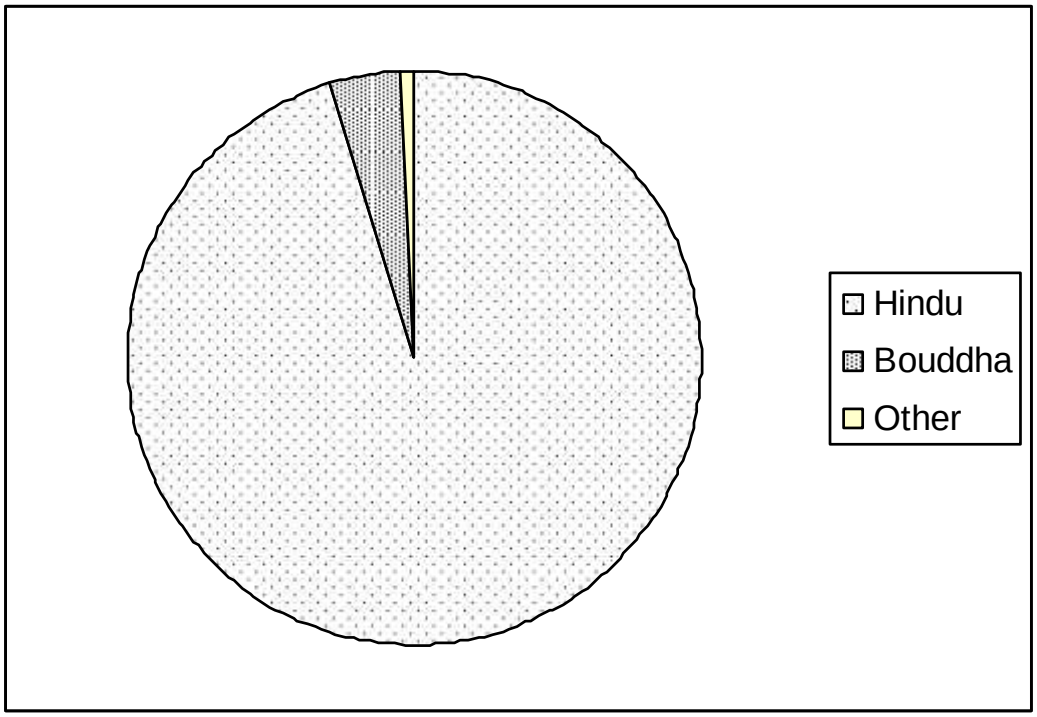
Though there are different castes and ethnic groups, mainly two types of religions are practised in this VDC.

Table 2: Distribution of Population by Religion

Religion	Frequency	Percent
Hindu	11189	95.34
Bouddha	441	3.76
Other	106	0.9
Total	11736	100.00

Source: National Population Census, 2001, CBS

Figure 1 : Distribution of Population by their Religion



Source: National Population Census, 2001, CBS

The **Table 2** shows the population practising Hinduism is overwhelming. There is a very low percentage of Buddhism and others religious groups are negligible. 'Others' category mainly comprises Islam, Christian and the religion not stated.

CHAPTER- FIVE

DEMOGRAPHIC CHARACTERISTICS

5.1 Socio-Economic Profile of the Respondents

The socio-economic characteristics of respondents i.e. age, ethnic composition, education, marital status, family structure and occupation have been given in the following paragraphs and tables.

The total households covered by the study were 133 in number. Caste/ethnicity, Age, Gender Structure, Household size, Literacy Status and Economic Status were included in the analysis of socio-economic characteristics of the respondents.

5.1.1 Age and Ethnic Composition of the Respondents

Age is an important demographic factor to do the type of work and involvement in decision-making process. Here, people above 16 years were taken as respondents. For analysis, the ages are categorized into three groups i.e. 16 to 24, 25 to 39, 40 to 59 and 60 and above. The number of respondents regarding to the age group and ethnic group are distributed in **Table 3**. Below the table, bar diagrams are also given to show the ethnic composition and age wise composition of the respondents.

Table 3: Distribution of the Respondents on the basis of Age and Ethnic Composition

Ethnic Group	Age Group				Total
	Below 25	25-39	40-59	60 and over	
Kshetri	0	6	11	2	**19**
Brahmin	1	16	19	4	**40**
Magar	0	10	6	1	**17**
Gurung	2	10	8	1	**21**
Bhujel	0	5	4	0	**9**
Other Non-Dalits	0	9	5	0	**14**
Sarki	0	4	3	0	**7**
Kami	0	5	1	0	**6**
Total	**3**	**65**	**57**	**8**	**133**
%	**2.26**	**48.87**	**42.86**	**6.02**	**100.00**

Source: Field Survey, 2008

Figure 2: Ethnic Composition of the Respondents

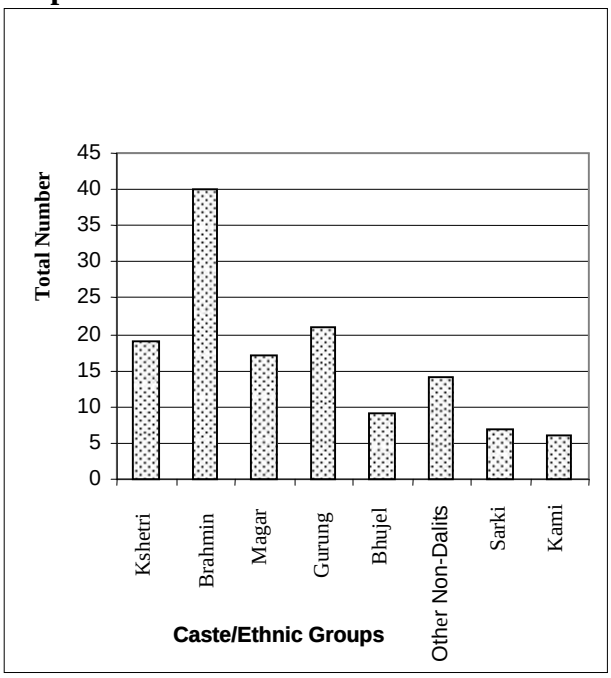
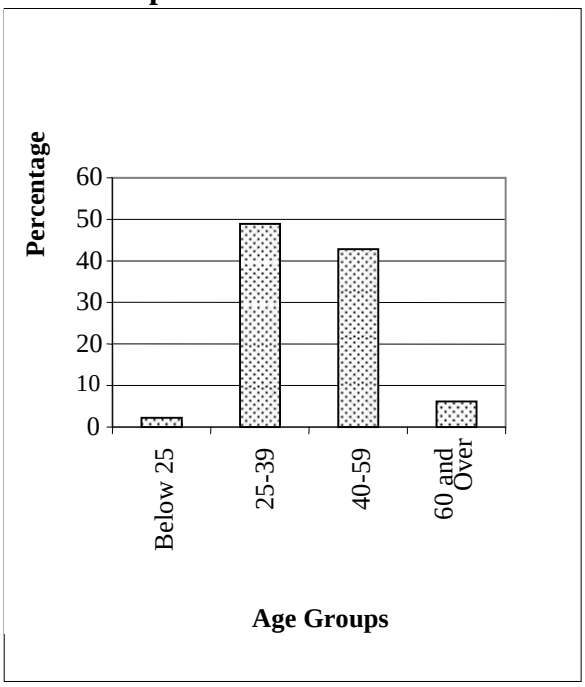


Figure 3: Age wise Composition of the Respondents



Source: Field Survey, 2008

In this survey, Brahmin is the largest group among the users. The households of the Brahmin respondents in the study area were 40. Similarly, the number of households of Gurung, Kshetri, Magar, Bhujel, Other Non-Dalits, Sarki and Kami were 21, 19, 17, 9, 14, 7 and 6 respectively. Among Other Non Dalits, the household numbers were Kumal 4, Sanyasi 3, Newar 3, Thakuri 3, and Tamang 1, making a total number of 14. Sarki and Kami were among Dalit castes and their numbers of households were 7 and 6 respectively. The highest number of the respondents was at the age group 25-39, which was 48.87 percent. This age group is certainly favorable for the participation in the project. The lowest number of percentage was 2.26 that belongs to the age group of below 25.

5.1.2 Age and Gender Structure of the Respondents

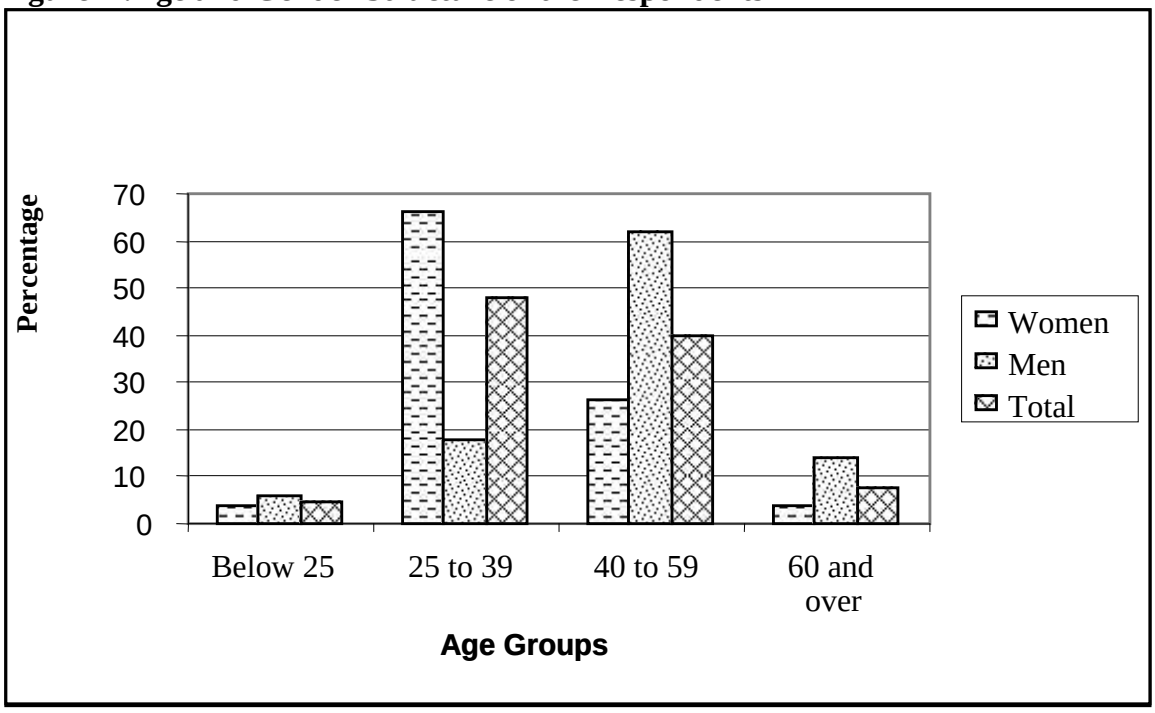
The respondents were distributed in different age groups. Below 25, 25 to 39, 40 to 59 and 60 and over. Their gender structure was also studied. There is a difference in structure between men and women according to their age. Women are in majority (66.27 percent) at their age group 25 to 39 while men are in majority (62.00 percent) at their age group 40 to 59. But if compared, female are in majority than male and it seems their number to be very high at the age group 25 to 39. Since the number of female respondents is larger in total, the age group of the majority respondents seems to bend towards the age group as of the female respondents, i.e., 25 to 39. **Table 4** shows the age and gender structure of the respondents.

Table 4: Distribution of the Respondents on the basis of Age and Gender Structure

Age Group	Women		Men		Total	
	Frequency	%	Frequency	%	Frequency	%
Below 25	3	3.61	3	6.00	6	4.51
25 to 39	55	66.27	9	18.00	64	48.12
40 to 59	22	26.51	31	62.00	53	39.85
60 and over	3	3.61	7	14.00	10	7.52
Total	**83**	**100.0**	**50**	**100.0**	**133**	**100.0**

Source: Field Survey, 2008

Figure 4 :Age and Gender Structure of the Respondents



The numbers of women at the age group 25 to 39 to be in a majority number shows their presence at home and are staying as the head of the household. The male adults are absent at their home; this can be compared with the number of persons absent at home with the **Table 10** (given later)**.** But the male adults at the age group 40 to 59, being their majority number at this age group is due to because they have returned to their home and passing their retired life leading household these days.

5.1.3 Caste/Ethnic Group and Gender of the Respondents

The respondents were distributed according their caste/ethnic group and gender. Their sex ratio has also been presented according to this basis. The frequency and percentage was distributed among the caste/ethnic groups of men and women separately. **Table 5** shows the caste/ethnic group and gender relation of the respondents.

Table 5: Distribution of the Respondents by Caste/Ethnic Group and Gender

Caste/Ethnic Group	Women	Men	Total	Sex Ratio
Kshetri	13	6	19	0.46
Brahmin	19	21	40	1.11
Magar	12	5	17	0.42
Gurung	13	8	21	0.62
Bhujel/Gharti	7	2	9	0.29
Other Non-Dalits	8	6	14	0.75
Sarki	6	1	7	0.17
Kami	5	1	6	0.2
Total	**83**	**50**	**133**	**0.60**

Source: Field Survey, 2008

Figure 5: Gender Structure of the Caste/Ethnic Group

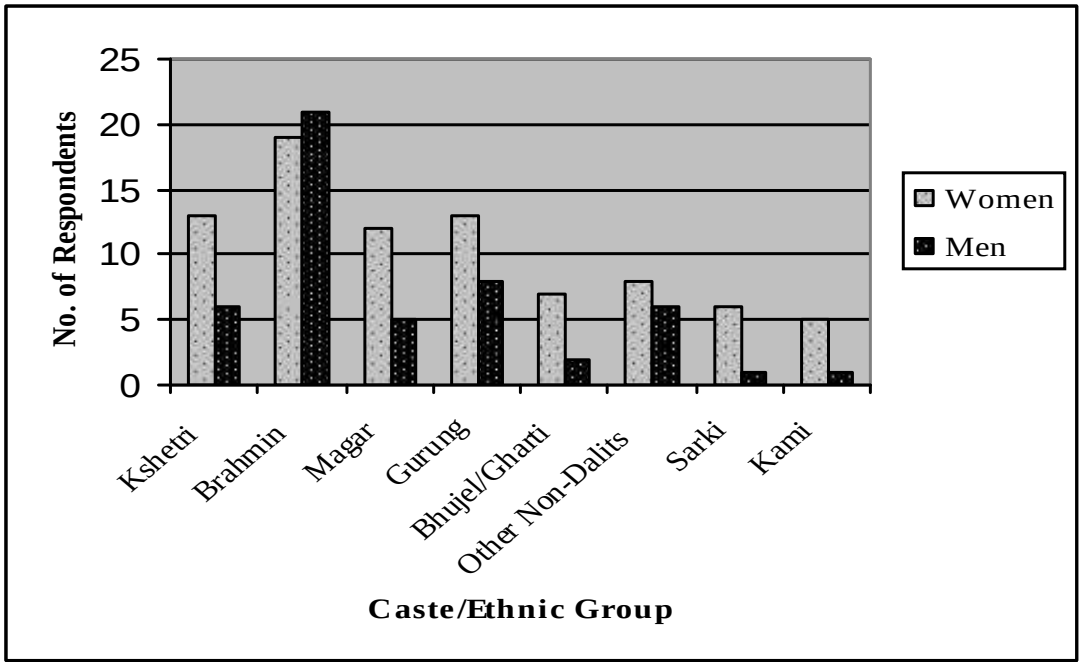


Table 5 shows that, women respondents are less than male in the caste Brahmin. But in the remaining all other castes, women respondents are greater in number. The sex ratio seems highest among the Brahmins and lowest among the Sarki castes. The highest sex ratio in Brahmin caste shows that males have given a less priority to leave home than in other ethnic or lower castes of this area. But this does not mean that women leave their home for the search of job. In remaining other castes, the sex ratio is low. In Gurung caste, the sex ratio is low but rather high than other castes except Brahmin. It is because the retired males are present at their home.

The sex ratio in the study area is 0.60 of the total which seems very low in comparision to the national ratio that is 0.97. Brahmin seems having highest sex ratio, this is due to because of the attendance of Brahmin household heads in their home. Male adults from other castes such as Bhujel/Gharti, Magar, Gurung and Kshetri were found absent at their home and absence is mainly due to their job in foreign countries.

5.1.4 Educational Status

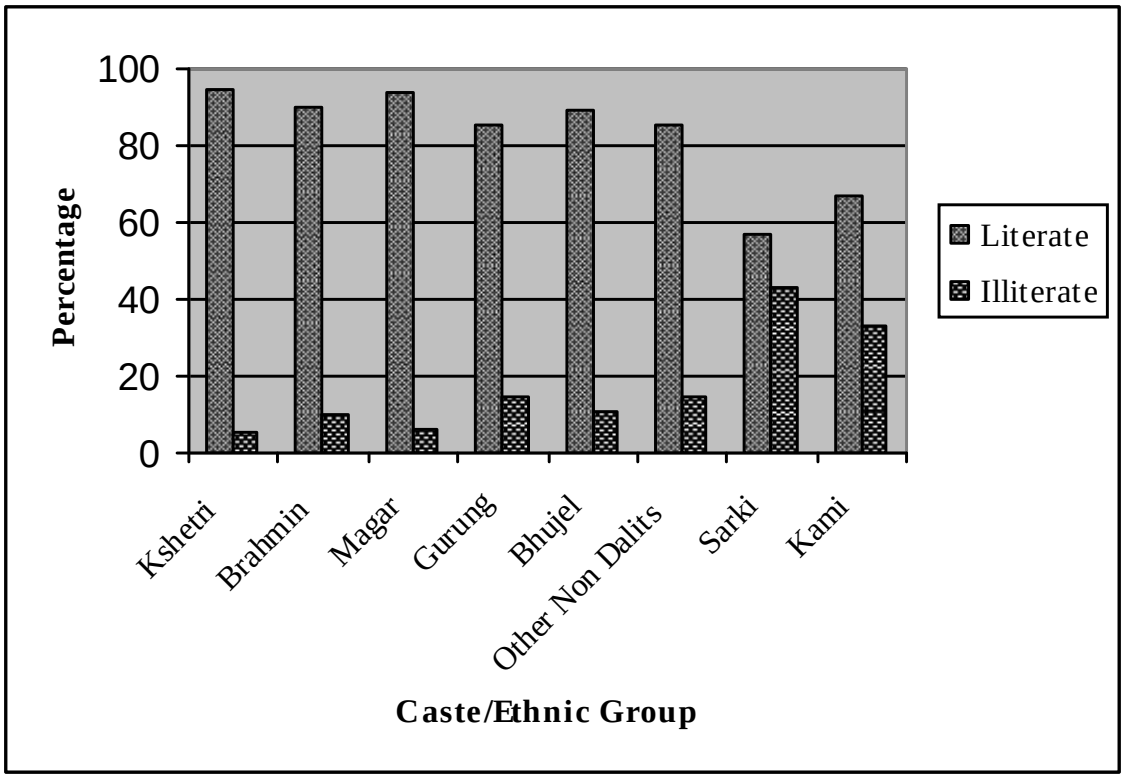
Literacy is the principal indicator of life that exposes the bright future. It plays a vital role for fulfilling awareness and change as well as economic development but the literacy of Nepal is very low. A caste wise distribution according their literacy status has been presented in the table.

Table 6: Distribution of the Respondents on the basis of Literacy Status

Ethnic Group	Literate	Percent	Illiterate	Percent	Total	Percent
Kshetri	18	94.74	1	5.26	19	14.29
Brahmin	36	90.00	4	10	40	30.08
Magar	16	94.12	1	5.88	17	12.78
Gurung	18	85.71	3	14.29	21	15.79
Bhujel	8	88.89	1	11.11	9	6.77
Other Non Dalits	12	85.71	2	14.29	14	10.53
Sarki	4	57.14	3	42.86	7	5.26
Kami	4	66.67	2	33.33	6	4.51
Total	**116**	**87.22**	**17**	**12.78**	**133**	**100.00**

Source: Field Survey, 2008

Figure 6 : Literacy Status of the Respondents



In **Table 6**, the percentage of illiterate respondents is 12.78 percent whereas literate are 87.22 percent. It shows the respondents' caste and their literacy status. Lower castes Sarki and Kami have rather low percent of literacy rate. It seems that in this survey though their literacy status is high as compared to national status, they are yet far behind than the other high castes. Kshetri has the highest literacy status among the respondents. Magar secondly, and higher than Brahmin, which is contradictory as compared to national literacy status. This is mainly due to the migration of higher status of Magars in this area. The number of respondents of Kshetri and Magar is less; due to the numbers of respondents are small these small numbers if fluctuated, may lead some error. The Brahmins have the highest number of respondents, but they seem in third position in literacy status despite their literacy rate is 90 percent.

5.1.5 Family Size and Structure

Structure of family plays a vital role for decision-making. The respondents have different family sizes and structure. Almost families were found to be a nuclear type. Nuclear family includes married couple and their unmarried young children. **Table 7** shows the distribution of the respondents according to the family size.

Table 7: Family Size of the Respondents in the Study Area

S.N	Family Size	No. of Households	Percent
1	1to 3	51	38.35
2	4 to 6	64	48.12
3	7 to 10	18	13.53
	Total	**133**	**100.00**
Total Persons in a Family (Average Family Size) = 4.3			
Male Members per Household =1.7			
Female Members per Household =2.6			

Source: Field Survey, 2008

The family size of the study area is 4.3 in number which is smaller as compared to the national average size. The largest percentage of the families has the family size 4 to 6 and secondly 1 to 3. This is due to their consciousness towards family planning and their literacy status also relates with this. Only the numbers of persons usually resided at their households were counted. The number of male members in a family is far less as compared to the female member shows that the males are absent at their home.

5.1.6 Type of Houses

Generally, we compare that people living in concrete building have the higher status than the people living in wooden or brick houses. During the field survey, mainly two types of houses were found. The concrete houses were considered as the permanent houses. The next type of the houses found was semi-permanent having their walls of cement concrete blocks and temporary tin roofs.

Table 8: Distribution of the Types of Houses used by the Respondents

Types of Houses	No of Houses	Percent
Cemented and Concrete House	122	91.73
Cement Concrete and Stone Wall but Temporary Tin Roofs	11	8.27
Total	**133**	**100.00**

Source: Field Survey, 2008

The number of Cemented and Concrete House was very high as compared to the other types of temporary houses. **Table 8** shows the types of houses and their number.

The participants are living at a comparatively higher living status. The main income sources are foreign employment and services. They give their priorities to spend their money for the modern facilities rather spending their money in agricultural lands or other income generating sectors.

5.1.7 Economic Status

In Nepal, especially in rural areas, main occupation of the people is agriculture, which is the main source of income. The economic condition of Nepal is totally depended on agricultural production and women play a major role as they actively participate in the various forms of activities relating to agriculture.

Occupation

In the study area, the occupations or the main sources of income were foreign employment, agriculture, livestock, services (including pension) and others such as retail business, masonry, carpentry etc.

In the **Table 9**, the number of households and their main sources of income is shown. Since, the households have more than one source of income; the total percentage is more than 100. Out of 133 households, just less than half households, i.e., 48.12 percent have been involved in agricultural activities i.e., their only source or one of the income sources has been agriculture. Similarly, 50.38 percent households, just more than half, have their income source as livestock. Major source of income either only or mixed with other

sources, is the foreign employment and the number of these households is 60.15 percent. Mainly the male adults go for the foreign job and send the remittance to their family. Here in their home, female members look after their children and do their household's work. Some of them do other types of works such as agricultural activities and animal husbandry.

Table 9: Proportion of Households on the basis of their Income Sources

Main Sources of Income	Number of Households	Percent of Households
Agriculture	64	48.12
Livestock	67	50.38
Foreign Employment	80	60.15
Services (Including Pension)	71	53.38
Others	24	18.05

Source: Field Survey, 2008

Thus, in this survey, female household heads have majority numbers. A remarkable number; more than half of households i.e., 53.38 percent, have their income source as services and the pension gained from their past services such as services of the government of Nepal or Indian Army service. But here almost respondents were Indian Army pensioners. Besides, in other sources of income category the number of households was only 18.05 percent. In this category, businessman, masons, carpenters were included. Thus significant proportions of households represent that agriculture, livestock, foreign employment and services are main sources of income.

A remarkable number of male members from the study area are in the foreign countries in a search of job. So, foreign employment is a main source of income of the study area. The number of households, total persons absented from the households and the country of destiny is shown below.

Table 10: Distribution of Households on the basis of No. of Persons and Country of Destination for a Foreign Employment

No of Hhs	No of Persons	Country of Destiny						
		India	Malaysia	Saudi	Qatar	Kuwait	other Arabian countries	USA
75	82	40	7	13	7	4	5	1

Source: Field Survey, 2008

Table 10 shows the number of households from which persons were absent for their foreign destiny was 75. Among 133 households, this number seems large. Out of 82 absentees, approximately half in number have gone to India. Open boarder, no need of passports, and being their relatives in Indian Army, no need of large sum of money for the job and no risk of loss of money are the main reasons for the flow of male adults towards India. It was found that, mainly the persons who have gone to India are from Indian army / ex-army's family.

Income

Some questions related to income were asked to the respondents to measure their approximate income. Since, no respondents have kept their proper balance sheet to show their income and expenditure in a written manner, it was only their approximation. It might not represent the actual status. Some upward biases of income due to prestige reason and downward biases due to their hiding of actual income might be occurred. Usually upward bias seems in low-income families and downward bias in high-income families. As the people of the community have different types of sources of income, they also have different amount of income. Foreign employers do not send money in a regular basis so an approximation was made for a month. For the income of the farmers having agriculture as their subsistence economic source, the production and consumption was calculated and approximations were made.

Table 11: Distribution of Households on the basis of their Monthly Income

Monthly Income (Rs.)	No of Households	Percent
0 - 4,999	26	19.55
5000 – 9,999	67	50.38
10, 000 – 14,999	27	20.30
15, 000 – 19,999	11	8.27
20, 000 and above	2	1.50
Total	**133**	**100.00**
Average Income per Household per Month = Rs.8582.21		

Source: Field Survey, 2008

The households were categorized in five groups according to the amount of monthly income. 0 to Rs.4,999, Rs. 5000 to Rs.9,999, Rs.10, 000 to Rs.14,999, Rs.15, 000 to Rs.19,999 and above than Rs. 20, 000. The number of households and their monthly income category is shown in the **Table 11** above. From the table almost half of the households have the income between Rs.5000 to 9,999 in a month. The income below and over this range seems so far. The percentage of households above Rs 20,000 was only 1.5 percent.

Expenditure

The households were categorized in five groups according to the amount of monthly expenditure. The categories of the amount of monthly expenditure were distributed from lower to upper category. As in the case of income distribution, the households were categorized according to their expenditure amount such as Rs 0 to Rs.4,999, Rs. 5000 to Rs.9,999, Rs.10, 000 to Rs.14,999, Rs.15, 000 to Rs.19,999 and above than Rs. 20, 000.

Table 12: Distribution of Households on the basis of their Monthly Expenditure

Monthly Income (Rs.)	**No of Households**	**Percent**
0 - 4,999	24	18.05
5000 – 9,999	68	51.13
10, 000 – 14,999	29	21.80
15, 000 – 19,999	10	7.52
20, 000 and above	2	1.50
Total	**133**	**100.00**
Average Expenditure per Household per Month = Rs.8657.40		

Source: Field Survey, 2008

From the **Table 12**, the expenditure at the range of Rs. 5000 to 9,999 seems highest percentage of the households which is approximately half of the total households. There may be some hidden expenditure which may not be submitted due to respondents recall problem and other cases such as biases. However the data gives some idea about their living status. The income and expenditure seems to be almost equal amount.

Nearly 70 percent households have less than Rs.10, 000 monthly income. In terms of expenditure percentage of households more or less similar to pattern of income per household. It shows that there is a positive association between income and expenditure.

CHAPTER- SIX

FUNCTION AND PROCEDURES OF THE PROJECT

The project Chharchhare Drinking Water and Sanitation was selected as a best practice due to its demand driven approach with users' participation and demand driven approach at all levels. Main responsibilities of the water users committee were: propagate the benefits of community based water supply maintenance to villagers, to collect funds for expenses related to preventive and break down maintenance of water and sanitation system, assist and support the local mechanics to carry out maintenance services or water supply systems. Ensure that the surroundings of the water supply installations are kept clean and hygienic condition. The community people formed a water users' committee and actively participated in different phases according to their community work plan. Their active participation was needed at the construction phase. They collected local materials as well as labored for the project. They collected money as a fund for construction and maintenance purposes. After the completion of the project for the operation and maintenance they collect the water tariff according to the consumption of water as much what the installed water meter shows. Who consumes larger amount of water pays more tariffs.

6.1 Functions of the Water Users' Committee

A water user's committee is made to run the project smoothly. It has been working from the commencement of the project. There are 13 members in this committee in which there are 10 male members and 3 female members. The respondents were asked whether the users' committee is working efficiently or not. Almost all the members gave their answers "Yes".

Chandrakala Regmi said "Among the all users, our committee members had worked very hard. The initiation for the demand of the project to the fund collection process, to convince every user in every step of works, there were not only economically able people but also were poor, various castes, having different background; to manage them giving some subsidies, convincing users for the labor work, all was very hard work. They led the

community to run the project smoothly but there is everyone's sweat mixed in the success of the project."

Being a demand based project, there were some active people who initiated to demand the project. There were some important jobs before launching the project; to commit the community people to make realize a need of launching an ambitious project, contacting different government and non-government institutions for their respective helps before a formal committee was made.

Now, water users' committee has its own building. Water Users' Committee's official works such as monthly fees collection, revolving fund collection, fund mobilization etc are executed from this office. Besides, community meetings, committee meetings, public gatherings etc are also other uses of the building. This office building was constructed themselves using the fund of the committee.

Every year especially in rainy seasons there is a possibility of damage of the structure at the source by the rainwater. The users' committee members usually observe after a heavy raining in such conditions sometimes VMW informs them. If there is any minor problem of maintaining, they do themselves, they do not inform the users. In serious cases of maintaining the source, or if they feel a need of some added works to be done at the source, such as plantation, fencing, support structures etc, they call a meeting and do the work. Sometimes some extra fund is collected for the temporary work though they have a sufficient fund. As for the respondents when there is a need of their help for the protection, they are always alert for that. In the last rainy season they had contributed their labor for the protection of the source. Some contributed labor charge if they were not able to attend the work. If a pipeline has any leakage or if there is a need of changing pipeline near someone's home, committee repairs it. Besides if the case is inside the house, some technical suggestions are given, but the necessary materials are to be managed by the owner of the house.

Main works performed for the initiation of the project by the participating users were:

1. Gathering of the interested community household members. 2. Formation of water users' committee 3.Collection of the fund 4. For making a Community Work Plan

Community Work Plan

The users participated according to their *work plan*. The *work plan* was a scheduled task to be done by the users in their community. This plan was formulated in the initial stage before the implementation of the project. The *work plan* was as follows:

1) Sketching of the Project
    a) Community Map (immediately)
    b) Sketching of the water tanks and water taps (immediately)
2) Sanitation Revolving Loan Fund
    a) Loan mobilization (in first 6 months)
    b) Sanitation (continuing the activities)
3) Mother Child Taps Sanitation and Health Education Plan
    a) Committee formation (immediately)
    b) Raising Tap Tax (After the completion of the construction stage)
    c) Selection of the Taps (After the completion of the construction stage)
4) Improvement of Households and Community Sanitation
    a) Collecting of Community garbage and burning it (Every week)
    b) Household Supervision (Every week)
5) Women Technical Support Service (WTSS)
    a) Committee formation/ Appointment (immediately)
6) Informal Education Program
    a) Income generation possibilities (continuing the activities from the beginning)
7) Environmental Resource Conservation and Measurement
    a) Plantation (in first 3 months)
    b) Cleaning taps, wells and source (from beginning, then every week)

8) Collection of Local Materials
    a) Collection (after the decision of launching of the project)
    b) Labor mobilization (after the decision of launching of the project)
9) Community Investment Contribution
    a) Fund raising (in initial 6 months)
    b) Opening of a bank account (immediately)
    c) Opening of a combined bank account (in first 3 months)
10) Construction material collection (other than locally available)
    a) Market research (in first 6 months)
    b) Transportation of materials (in construction stage)
11) Community manpower planning
    a) Village Maintenance Worker (in first 3 months)
    b) Village Health Promoter (in first 3 months)
    c) Store Keeper (in first 5 months)
12) Manpower planning of the helping agency (whenever need)
13) Maintenance planning
    a) Appointing VMW & VHP (in first 3 months)
    b) Wage and salary (after the completion of the construction stage)
14) Community planning for monitoring and evaluation
    a) From the group (in every months)
    b) From the committee (in every months)

The water users' committee was mandated for doing most of the above works. The committee members did their work in different steps. At first they got the recommendation from VDC and District Water Resource Committee, for registration of the Water Users' Committee in District Administrative Office and such like

administrative works. They opened a bank account in the name of the committee. They prepared a community map. Nominating a female volunteer for a training program of Village Health Promoter (VHP) and appointing a Village Maintenance Worker (VMW) were other important works. Management of the Revolving Fund and executing it and at the same time they took initiation for the demand of the economic aid. For the purchasing of the construction materials they frequently visited the market places. They took the responsibility for the monitoring and evaluation of the Project Work.

6.2 Decision Making Process in the Water Users' Committee

Present water users' committee has been working from the commencement of the project. A few members were changed due to their absence at home. General assemblies mandated them again and again. This also proves that the committee members are working at their best performances. A question was asked to the respondents whether the respondents were satisfied or not. Almost all the respondents were satisfied with the present water users' committee. The supplement answer from majority respondents was that the committee should do their best in future as they did before.

Present water users' committee had been holding their regular meetings in last date of every month. Due to their reduced burden and lack of regular businesses they have changed their routine and made it modified. Now the regular meeting has been holding in the last date of every third month. Usually, after serious discussion on any subject to be decided the decision is made based on consensus. Till today, there is no any apparent conflict for a decision making process. This has also been same in case of general assembly meeting. There was no any political, ethnical, gender biasness in decision-making and service delivery process. Every respondent agreed that the committee hears everyone's problems, suggestions and sayings.

6.3 Conflict Management

There was not any distinct and serious conflict that affected the project. Yes, a conflict was at the water source at the initial stage. It was with the other water users who had been using the source for irrigation for a small piece of land since before. This was solved by

paying a sum of money and the conflict settled making a consensus with them. Among users inside, there was no conflict, if some occurred, had settled by making consensus.

6.4 Sort of Participation

Participation of the users was both in cash and labor. Some locally available materials such as sand, gravel, bamboo, other wood materials, digging tools were collected by themselves, the transportation from the nearby highway also carried out by them. But the fund collection was very hard because it was a very ambitious project for them. The helping institution was just a catalyst. The whole work ahead was to complete by them.

Participation thus has seen in every stage of the project. In decision-making, fund collection, operation and maintenance and proper use of the water resource.

6.5 Village Maintenance Worker (VMW)

A village maintenance worker was appointed to work for the water project. He observes frequently the water source and gives his suggestions to the committee. Besides this if some resistance occurs in pipeline system he maintains, if there is any serious problem existed, that cannot be solved by him, then informs the committee. Village Maintenance Worker (VMW) has no idea of maintenance if there is any major technical problem. Dilli Ram Paudel one of the active participants is now working as the VMW. He reported that there is no any great technical problem. Sometimes minor problems occur, in such cases, he solves them or reports to the committee.

6.6 Operation and Maintenance Fund (O&M Fund)

For the operation and maintenance of the project a fund named Operation and Maintenance Fund has been collected. It is generally used for the same purpose. The secretary of the committee Bhoj Raj Bhattarai told, they have spent some money from this fund for the construction of support walls at the source such as buying rods, cement, sand, stones etc, and air valves, unions, flinch in pipelines. Some sisoo trees were planted at the source at the beginning of the project. But sometimes the fund is utilized for other purposes. For example, last year they distributed a sum of Rs 3000.00 for each user member households to by a water filter. A water filter was necessary because in rainy seasons especially in a first rain, supplied water used to be muddy. The member

household of this project should compulsorily buy one water filter for safe drinking water supply. And every household uses its own water filter.

6.7 Construction of a Community Building

A community building has been constructed by using their participation effort. The user households collected the money and also used the previously collected fund for the construction of the building. This building is used for their official use as well as their community functionaries.

CHAPTER- SEVEN

IMPACT OF THE PROJECT ON PUBLIC HEALTH AND SANITATION

7.1 Beneficial Effects of the Project in Personal Hygiene, Sanitation and Environment

The respondents were asked for their view about the beneficial effects of the project in personal hygiene, sanitation, and environment. All of them have given the answers. Since the question was open-ended and subjective, there were various types of answers. It was difficult to put each answer differently. So, similar types of answers have been put in a single category. Also due to the multiple response answer, each respondent has given one or more answers.

Table 13: Proportion of the respondents on the basis of benefits they gained from the project

S.N.	Benefits of the Project	No. of Respondents	Percent
1	Facility for bathing and washing, improvement in sanitation, clean latrine, improve in children's hygiene	86	64.66
2	Better vegetable production, vegetable production at oneself's homestead, water facility for livestock	78	58.65
3	Time saving, no need of queuing at the tap stand	47	35.34
4	The problem of water has been fulfilled, there is peace and facility, conflict reduced, consensus increased	46	34.59
5	No need of fetching of water facility for female members	44	33.08
6	Fresh and hygienic water for drinking	31	23.31
7	Achievement of the aim, availability of abundant water	24	18.05

Source: Field Survey, 2008

In the **Table 13, a**mong the respondents, the significant proportion of them replied having facility for bathing and washing, latrines have to become clean, children's personal hygiene has improved and as a whole, they have an improved sanitary condition. Similarly the respondents have given their priority in second number to have better vegetable production, vegetable production at their own homestead, and water facility for their livestock. Least number of respondents gave a general type of answer that they have achieved their aim and have availability of abundant water. This was least in number because the answers were already given by them in particular facilities gained by installing piped water in their home. Besides, this answer was given especially by those respondents who have not given their view in any particular facility.

7.2 Types of Toilets

Toilets used by the households were almost of modern flush type toilets. Among 133, only 2 households have their temporary type toilets and the respondents having such types of toilets answered that they would make a permanent type of toilet soon. This indicates that all the households are aware about the use of toilet. Some of the households were using toilets attached with their biogas plant. This system has both utilities of producing biogas as well as use of toilet itself. Thus toilets are also useful for fuel saving, helpful for indoor sanitation and have seen as environment-friendly.

7.3 Using of Toilets

How long the households have been using the toilet was a question. There were various types of answers. This was mainly because of their migration at the present place. The older residents were using their toilets more than ten years. The newly migrants have made their toilets when they made their houses. This shows that the households are aware of the use of the toilet. Awareness program executed by the water and sanitation project encouraged to make toilets and afterwards remaining two households (among the present users) with no toilets made their toilets soon. The revolving fund helped them to make the toilets.

7.4 Household Cleanliness

Respondents were aware of their households clean. Almost all respondents have been disposing household garbage safely, cleaning household yard daily and keeping livestock away from the house. By simple observation it could be seen practically. Only three households were not seen as what they replied; they were keeping their livestock attached with their home. It could be temporarily kept before making a permanent shade; at least it seemed to be so.

7.5 Environmental Cleanliness

Respondents were aware of the environmental cleanliness. They agreed about cleaning household surroundings, maintaining sanitation around water sources and disposing household refuses in a composite pit.

Bhoj Raj Bhattarai, Secretary of Chharchhare Water and Sanitation Users Committee said that after the completion of the project, the committee members visited every household to teach them make household surroundings clean. They not only taught about keeping the surroundings and homestead clean but also managed to keep a dustbin in every Tole for the collection of waste plastic materials. And every household was convinced that every week the materials should be burnt in a fixed place. In observation, in many places the bin could be seen kept for such purpose. In case of the other wastages that could be digestible as a fertilizer were disposed in a fertilizer pit where the pet animals' excreta was disposed. Water users' committee has helped the nearby school to make a toilet; also a drinking water facility has been provided by keeping a water tap stand at the school. A sum of money was distributed to each user's household to buy a water filter which was especially useful for rainy seasons.

There are sub committees made to monitor every Tole's cleanliness of the surroundings.

7.6 Village Health Promoter (VHP)

A VHP had trained in community mobilization particularly focusing on health, hygiene and sanitation promotion including cleaning roads, public places, intake, Reservoir Tank (RVT), Tap stand and Break Pressure Tank (BPT). VHPs have been assisting to motivate community people to improve personal, household and neighborhood sanitation through building household latrines and domestic waste disposal pits and other activities.

The VHP has been given the responsibility for mobilization, dissemination and demonstration of the information and materials regarding the importance and impacts of latrine construction and its utilization on health in the community. Women Technical Support Services (WTSS) helped for VHP's training and other necessaries. This institution also helped for establishing the Sanitation Revolving Loan Fund that has been very useful for helping the users in various purposes.

Lila Mahat Village Health Promoter said that training was given to her about the community health. She had visited the community households frequently. Now, she has been teaching practically especially to the female members of the community about health and sanitation, e.g., washing hands before and after meals, washing, bathing, maternity health and such other health related matters. After her practical teachings she now feels that there is a change in the community about health and sanitation. Community members have been realizing that there is a relationship between poor sanitation and illness.

7.7 Latrine Construction through Utilization of SRLF

Sanitation Revolving Loan Fund (SRLF) is grant money given by RWSSFDB to the water and sanitation users committee (WSUC) through the Support Organization (NGO) to construct household certain standard latrine by mobilizing this fund as loan. RWSSFDB provides grant up to squatting toilet pan (commonly used in rural areas in Nepal) level for about 25 percent of the household in the community to create the revolving loan fund to construct household latrine. Household can take a loan with rules

and regulations of pay back from WSUG. The households are selected by discussion and decision of the community meeting as per healthy home survey information. Money revolved until every household in the scheme site constructs latrines. Finally, the amounts of SRLF including earned interest and penalty amount (if any) are kept in O & M fund after the construction of toilets in each household in program areas.

Two latrines were constructed using this fund because rest of all had already made their latrines. The respondents who made the better latrines for their households have given the similar answer that the fund was very helpful for them. They have their feelings that the children always use the household toilet and there is no need of insisting for use of the toilets as it used to be before. Some households have changed their toilets improving it, and some have constructed bathrooms too. Certainly it shows their consciousness towards sanitation.

7.8 Socio-economic Impacts

Social impact includes the contribution of the project in social capacity building and rural infrastructure building. It has also developed local level leadership. The project has provided a forum for the community people. It also helps for the managerial skill of the community. The change in image and attitude towards the users and the committee members has a social importance. Social cohesiveness, empowerment of women and socially backward people are some other positive impacts of the project.

The tariff collected from the users is mobilized among the users. If someone needs money s/he gets from the committee and returns with interest. The fund is continuously raised. The collected fund has also been utilized in different community development works.

7.9 Negative Consequences

There were no any apparent negative impacts from the implementation of the project. All the respondents reported no negative impact of the project. Some respondents reported that the charge incurred was very expensive as compared to the water facility.

Dal Bahadur Magar said that he had lent money for paying the project and afterwards difficultly paid the loan. Sarita Thapa one of the respondents says, “Due to water facility we have become very lazy. We spend our leisure time watching TV throughout the day. There are many more beneficial effects of the project as comparing these minor problems.” Though the project reduced the burden, some other types of problems have been seen. Women are usually seen gathering at some place or someone’s house and gossiping for a long time.

The drinking water is not so hygienic in rainy seasons. It is also a negative impact, and a matter to be cared about. Some cases of water borne diseases have seen in some households in summer and rainy seasons.

CHAPTER- EIGHT

SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1 Summary

The study is focused on user's participation in drinking water and sanitation. The researcher reviewed the literatures regarding sustainable development, people's participation, community participation, water resource management, some successful projects in which user's participation has a key role, and governments' prevailing Acts, Rules, Regulations. The government and non-governmental institutions working on this sector are also reviewed in an extent showing their relations in this sector. The publications, books, articles etc. on various subjects such as users' participation, drinking water and sanitation, water resource management were reviewed.

The study area was such that there were 3 settlements combined Uttam Tole, Shiva Tole and Lahare Peepal in ward number 3 of Dhorphirdi VDC of Tanahun district. The households who have participated for the success of the drinking water and sanitation project and have got a help from Fund Board were included as universe. The number of households is small i.e. 133, so the suitable method of taking information considered was whole count of the universe. Nine key informants- from water users committee, agency official staffs, from the users, VMW, VHP were interviewed with using semi-structured questionnaire. Besides that, Focus Group Discussion, Mass Meeting, Observation and other PRA tools were applied for data collection.

- There was a heterogeneous composition of various caste and ethnic groups among the participants and almost all of them were new migrants.
- Almost 50 percent households were higher castes and rest were ethnic castes and lower castes.
- As a whole, there was a majority of female household heads. In age wise composition female household heads are majority in younger age group (25 to 39) and male household heads in rather older age group (40 to 59).

- Literacy rate of the respondents was high (87.22 percent).
- Most of the families were nuclear type. Average family size was 4.3.
- Major income sources of the households were foreign employment, services, livestock and agriculture respectively.
- Average income per household per month is Rs. 8582.21 and average expenditure is Rs.8657.40.
- Benefits from the project implementation are facilities for bathing and washing, improvement in sanitation, clean latrine, improve in children's hygiene, better vegetable production at oneself's homestead, water facility for livestock, time saving, no need of queuing at the tap stand, water facility, peace in the community, conflict reduced and consensus increased, burden of fetching water reduced especially for women, availability of fresh and hygienic water for drinking, awareness of using toilets, encouragement for the construction of toilets, awareness of proper disposal of garbage, maintaining sanitation around the water sources, environmental cleanliness.
- Permanent provision of a post of Village Health Promoter (VHP); priority has been given to a female for the post.
- Latrine construction and improvement through the utilization of Sanitation Revolving Loan Fund.
- The project was implemented according to the Community Work Plan. There was not any type of biasness emerged among the users according their caste/ ethnic groups, higher and lower castes, anybody's political thought, poor and rich, gender etc. All the decisions were taken on the basis of consensus of the users. Everyone's problems, suggestion and sayings have been taken seriously.
- Sort of participation was in cash, kinds and labor.
- A provision of a post of Village Maintenance Worker (VMW) for the maintenance and other related works.
- The collected fees are used for the operation and maintenance of the system and are collected as a fund. The fund is raised by its mobilization and other fund raising sources. It has also been used for community's wellbeing.

8.2 Conclusion

Before launching the project, there were only a few community taps providing the water for the community. There used to be a very lengthy queue in the nearby community taps everyday especially in dry seasons. The community had always a thought of water in those drought seasons. The nearby springs and streams were also filled for washing clothes and for fetching water. The drinking water thus collected was unsafe for their health .In this background, the community people decided to work for an ambitious project. Fund Board helped them in that situation. After the intervention of the project almost 90 percent of the respondent express the incidence of water borne diseases is decreasing rapidly.

Thus the project Chharchhare Drinking Water and Sanitation was selected as the best practice due to its users' participation and demand driven approach at all levels. The community people formed a water users' committee and actively participated in different phases according to their community work plan. Their active participation needed was at the construction phase. They collected local materials as well as labored for the project. They collected money as a fund for construction and maintenance purposes. Latrines have been constructed using the revolving fund. There is a clean environment as compared to before. After the completion of the project for the operation and maintenance they collect the water tariff according to the consumption of water as much what the installed water meter shows. Who consumes larger amount of water pays more tariffs.

Hence, the project was implemented by the initiation of the beneficiaries by organizing themselves as it was their 'felt need'. The existence of a rural association is a must in mobilizing village resources. The water users' committee came into being to mobilize cash, labor and material for the implementation of the project to the operation and maintenance phase. The sense of ownership of the users' is also an important aspect to success the project and its sustainability. Besides, the users are mobilizing the fund like a micro credit system. A needy person borrows money from the fund and refunds it with

some interest added after some time. Thus the fund is useful for other income generating purposes and social and religious functionaries.

Hence, Chharchhare drinking water and sanitation project seems successful in its aim and it has shown a good example of users' participation approach which would be a lesson.

8.3 Recommendations and Suggestions

Based on the research study and findings, following recommendations and suggestions have been made.

Protection/maintenance of the source, reservoir, pipes and management of water resource, supply of better quality of water

Regular maintenance/supervision (pipes/water reservoir etc) has a very important and key role for the sustainability of a project. In Nepal many projects failed due to lack of its regular maintenance and supervision. Protection of the source mainly includes fencing around the source, plantation at the water source, making a permanent support dam. Similarly, improving the quality of water e.g. installing a water filter plant at the source, sufficient supply of water, management of the overflowed water, search of the alternate water resources (if the existing source is inadequate for fulfilling the increased population), maintaining cleanliness in the water supply system, if increased the no. of members capacity of the tank should be increased are other necessary things to be careful about.

User awareness

User awareness has also a key role for the sustainability of a project. After the completion of the project, if there any negligence has occurred; the project will end in a shorter lifespan. Active participation is constantly needed afterwards the completion of the project. All the members within the Users Group should be aware of the works needed.

Continuity in the participation, resource management and conflict management

Participation at once does not meet the goal of the project. After the completion, it is needed as before for the sustainability of the project. For this WUC should do its best as

did during the construction period. Water Users' Committee should hear everyone's grievances, if the number of members increased, there should be a proper management of the water resource in its benefit sharing and there should be a certainty that no new conflict would emerged among the users.

Technician's supervision and provision of a permanent VMW

In this regard among many things, there should be continuity in a permanent provision of a VMW. It would be better if there are some technicians within the users group. A regular supervision of a technician in the rainy seasons is always being a need.

Revolving fund management and other social activities

Proper management of the present Revolving Fund, though it is utilized properly today, should be continuously managed in future and one of the major uses of water resources by rather expanding its area in other social programs too. Alternatively, a fund should be collected in a rather large scale from the Users so that other social welfare works would be handled by using this participatory approach. Users now have shown their unity in their development work. This unity is very important for the wellbeing of the society. To sustain this type of unity, proper management of the conflict, hearing to everyone's voices, grievance handling, inclusion of the backwards, gender balance etc is needed. So before holding of any new programs care should be taken about them. Sources of increasing of Amount of the fund should be increased.

Training in different managerial aspect and legalization of Users' Committee may ensure regular activity of Users' Committee in post construction stage. Regular tariff system for regular operation and maintenance and cost recovery as well as linkage with other line agencies for micro-credit activities also should be introduced and to be strengthened the existing such systems.

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Others: Compilation of Reading Materials (Anthropology of Resource Management, Anthropology in Development Process etc

APPENDICES

Appendix-I

Questionnaire -Schedule

Questionnaire No Household (HH) No: ……Date of Interview:….

General Information

1 Name of the Respondent: ……. 2 Caste/Ethnicity:… 3.Age:… 4.Sex: Male Female 5.Religion… 6.Marital Status…

7.Educational Status…

Name of Head of the Family:

Household Information

8. Total persons in the HH: ……..Male: ….. Female: ….
9. Number of absentees from the household (Number with Sex and Country of destiny)….
10. Sources of Income: i. Agriculture ii. Live stock iii. Foreign- employment iv. Services (including retired) v. Others……..

11. Total income (monthly/ yearly) Rs:

12. Total expenditure (monthly/ yearly) Rs:

13. What type of house is occupied by the household?

a) Permanent b) Semi permanent c) Temporary d) Others …

14. What type of toilet is used by your household? a) Household flush b) Household non-flush c) Others..... d) No Toilet

15. How long have the household been using this type of toilet? …Yrs……..months

16. What is the area of the kitchen garden? Ropani: …….Anna:… …

17. How does your household dispose of its garbage? a) Dumping for the fertilizer b) Burning c) Dumping in a fixed place d) Dumping anywhere

18. Do you have water piped into your house? a) Yes b) No

19. If Yes, How long has the piped water system been established in your household? Years … Months...

20. Is the need of water fulfilled? a) Yes b) No

21. If No, how do you fulfill your need of water? …….

22. Do you think that the water is hygienic enough? ……..

23. How does your family consume water for drinking purposes?

a) After boiling b) After filtering c) Without boiling and filtering

24. Do you use the water to irrigate your kitchen garden? a) Yes b) No

25. If yes, has the system improved the vegetable production? a) Yes b) No

26. If yes, does your family also practise the off-season vegetable production? a) Yes b) No

27. Who is/ are most benefited from the piped water system in your family? …….

28. In what way is/are benefited? ……..

29. During the last seven days, how many times have you bathed? Total baths…

30. Before the project has been lunched, how many times you used to bath in a week in these days of the year? Total baths…

31. What is the important and critical time of hand washing? a) Before meals b) After meals c) Before and after meals d) After the use of latrine

32. Do you know how to keep food hygienic? a) Covering cooked food b) Pre-heating stale food before eating c) Washing fruits and raw vegetables before eating d) Do not know

33. Do you have any idea about keeping household clean?

a) Disposing household garbage safely b) Cleaning household yard daily c) Keeping livestock away from house d) Do not know

34. Do you know how to keep environment clean? a) Cleaning household surroundings b) Maintaining sanitation around water sources c) Disposing household refuses in a composite pit

35. During the last twelve months, is any member of the family infected by water borne diseases?

a) Yes b) No

36. If yes, how many members? …….

37. What was/were those diseases? a) Worms b) Cholera c) Dysentery d) Diarrhea e) Hepatitis f) Typhoid g) Others….

38. Have any works been done for the protection of the water source? ……

39. Have you involved yourself in the work for the protection of the source? ……..

40. What sort of participation do you have in this project?

i) Cash (Rs)…….. ii) Labor participation (Rs)……..iii) Other types of participation…….

41. How much did you pay for water over the last 12 months? …….

42. Which agency has/have helped for the establishment of this system? ……

43. How was the project lunched here? i) it was our own demand ii) the project/s decided to implement here

44. During the last 12 months, of what sort and how much did you contribute for the maintenance of the project? i) Cash (Rs)…..ii) Labor (Rs)……..ii) Other types of Contribution ……..

45. What are the main functions of the present Water Users' Committee? ……

46. When was it established? ……..

47. Are you satisfied with the structure and decision making process of the present WUC? ……

48. How often the regular meetings are held? ……

49. When was the last meeting held? ……

50. What type of role does the committee play for the plan and running the project smoothly? ……..

51. Is any political bias seen in decision making process of the committee? ……..

52. Does the committee hear every member's problems in the process of decision making? ……

53. If any types of conflicts had occurred, how did the committee manage them? ……

54. How long has your family been involved in the present water users' group? ……..

55. What, in your view, are the beneficial effects of Chharchhare Water Project?

……..

56. What are your grievances, if any, about the implementation of the project?

……..

57. What is your feedback on how to make it better out of the present Water Users' Committee? ..... 58. Do you want to give any suggestions to make this project more effective?

1.
2.
3.
4.

59. Do you have anything more to say about this project?

Name of the Interviewer:…….Date:……..

Appendix-II

Checklists

Key Informants Interview (Checklist): Users' Participation in the Chharchhare Drinking Water and Sanitation Project

1. How many members are in the present water users' committee?
2. How often are the General Assembly meetings held?
3. What is about the caste /ethnic group and gender composition in the committee?
4. What are the project related works to be done by the Village Maintenance Worker?
5. How have the sanitation behaviors been changed among the users?
6. What is Sanitation Revolving Loan Fund and how does it help the users in sanitation?
7. What are the project related works to be done by the Village Health Promoter?
8. What helps have been got from the Women Technical Support Services (WTSS)?
9. How was the project lunched and implemented (a brief description)?

Appendix-III

Name of the Key Informants

1. Hom Bahadur Sapkota (Chairman of the Water Users' Committee)
2. Pitambar Khati (Treasurer of the Water Users' Committee)
3. Bhoj Raj Bhattarai (Secretary of the Water Users' Committee)
4. Dilli Ram Paudel (Village Maintenance Worker)
5. Lila Mahat (Village Health Promoter)
6. Ram Chandra Sharma (User and an active participant, a teacher)
7. Dal Bahadur Magar (User, a meson)
8. Sarita Thapa (User, a housewife)
9. Chandrkala Regmi (User, a shopkeeper)
10. Mitrakala Subedi (WTSS representative)