



Institute of  
Social Studies

COMMUNITY PARTICIPATION AND DEVELOPMENT AGENCIES  
IN RURAL DRINKING WATER SUPPLY  
(CASES FROM NEPAL)

A Research Paper presented by

Musrat H. Khan

(Nepal)

In Partial Fulfilment of the Requirements for obtaining the Degree of

MASTER OF ARTS IN DEVELOPMENT STUDIES

Members of the Examining Committee

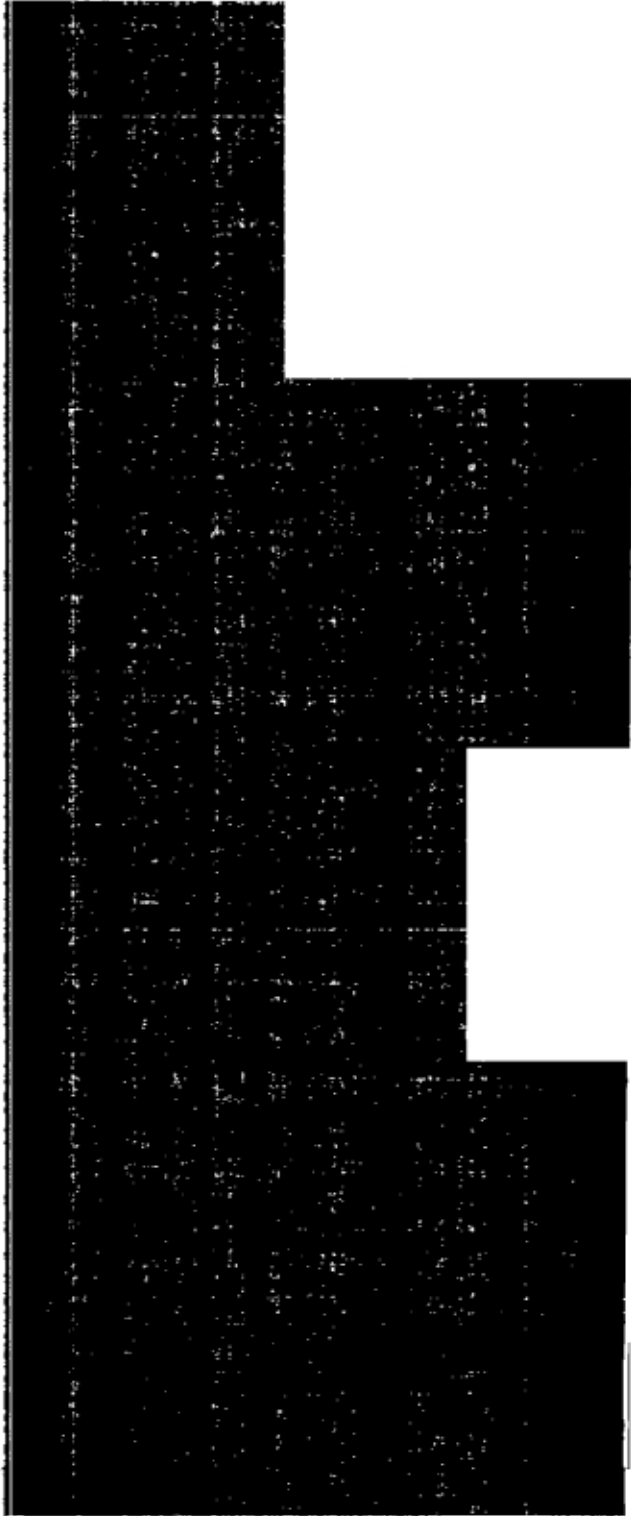
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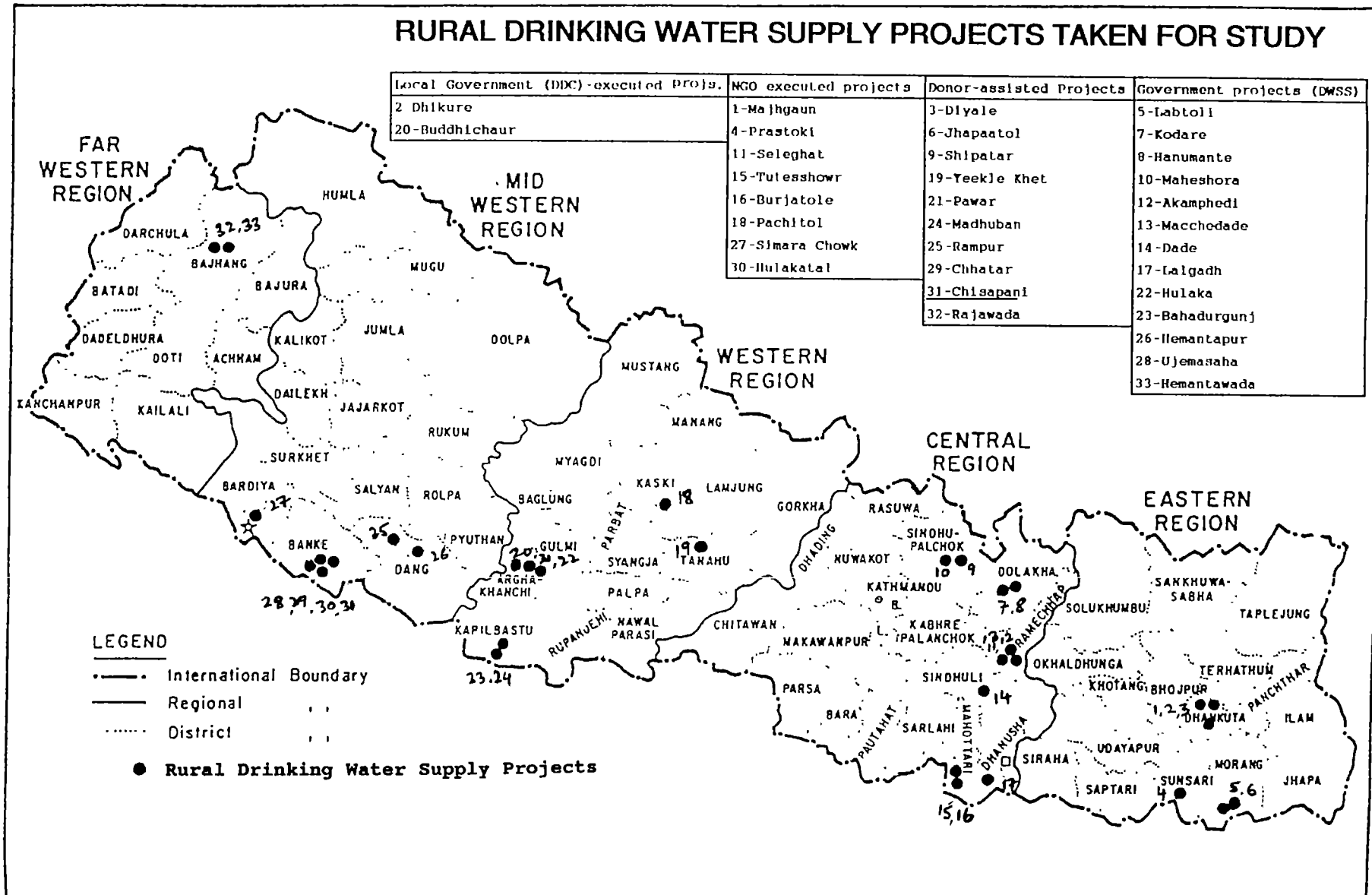
*To my mother  
Nazma Khan  
for her love, understanding and patience*



# NEPAL

## RURAL DRINKING WATER SUPPLY PROJECTS TAKEN FOR STUDY

Local Government (DDC)-executed Projs.	NGO executed projects	Donor-assisted Projects	Government projects (DWSS)
2-Dhikure	1-Majhgau	3-Diyale	5-Tabtoli
20-Buddhichaur	4-Prastokl	6-Jhapaatol	7-Kodare
	11-Seleghat	9-Shipatar	8-Hanumante
	15-Tulesshowr	19-Yeekle Khet	10-Maheshora
	16-Burjatole	21-Pawar	12-Akamphedi
	18-Pachitol	24-Madhuban	13-Macchedade
	27-Simara Chowk	25-Rampur	14-Dade
	30-Hulakatal	29-Chhatar	17-Lalgadh
		31-Chisapani	22-Hulaka
		32-Rajawada	23-Bahadurgunj
			26-Nemantapur
			28-Ujemasaha
			33-Hemantawada



PHOTOGRAPHS



A Water User Committee being interviewed along with Community Health Volunteers

Photo: Rural Water Supply and Sanitation Project, Lumbini Zone, Nepal



The handing over ceremony of a rural water supply scheme.

Photo: Rural Water Supply and Sanitation Project, Lumbini Zone, Nepal



Women are the principal users of water supply facilities.  
Photo: Rural Water Supply and Sanitation Project, Lumbini Zone, Nepal



Women are the principal users of water supply facilities.  
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**CHAPTER I**  
**INTRODUCTION**

**Introduction**

In a survey undertaken by WHO in 1975 of 75 developing countries with a total population of about 2 billion, it was estimated that about 1.2 billion did not have access to a reasonably adequate domestic water supply. Of the unserved population 90% were defined as rural. The rural population served in these countries was estimated to be 300 million, but the rural population increase in the same countries by 1990 was estimated to exceed 400 million. This made clear that the major attention had to be directed towards the rural sector in the area of drinking water supply.

Nepal has a poor infrastructural base, and the case of drinking water supply is no exception. Even though water is the most important natural resource of Nepal (an estimated 6000 rivers and streams), safe drinking water continues to be a serious area of concern. The magnitude of the problem is shown in the table below.

**Table 1.1 Rural population served by drinking water supply**

Year	Water Supply Coverage of Nepal						Rural water supply coverage of the world
	Population (in millions)			Water Supply Coverage			
	Urban	Rural	Total	Urban	Rural	Total	Total
1970	0.4	11.1	11.5	57%	3.7%	5%	14%
1980	0.7	14.0	14.7	58%	8.0%	11%	29%
1990	1.8	17.1	18.9	66%	34.0%	37%	
2000 Same Pace	2.9	20.3	23.2	70%	45.0%	48%	
HMG target	2.9	20.3	23.2	90%	75.0%	77%	

Source: HMG (His Majesty's Government)/MHPP (Ministry of Housing and Physical Planning) and WHO/UNDP Nepal: Drinking Water Supply and Sanitation Sector Review and Plan (1991-2000), April, 1991. The figure of the world's coverage is taken from International Institute for Environment and Development, 1981, pp 6

Considering the figures in the above table, it can be seen that during the period between 1980-1990 over 5 million people have been served. But during the same period the population of Nepal had grown by about 4.2 million. By the year 2000 the population of Nepal is estimated to rise to well over 23 million. The point is that even if the water supply coverage continues at the present pace (which is 750,000 people per year) coverage by the year 2000 will only reach around 45 percent. The problem is further amplified by the fact that even though almost 90% of the population are rural-based, the majority of infrastructure services, including water supply, are concentrated to urban areas only. With increasing concern over the rural-urban infrastructural gap,

and the vast majority of the population living in the rural areas, the coverage of rural water supply, especially during 1990, has attained remarkable achievements, i.e., from 3.7% coverage in 1970 it has risen to 34% - a more than nine-fold increase. Even then 66% of the rural population are without adequate drinking water supply and in comparison with the world's rural population Nepal's achievements in this sector is very poor. Data of 1980 shows that 29% of the world's rural population had access to drinking water, whereas the figure for Nepal was only 8% during the same period.

### **The Problem**

The percentages shown in Table 1 represent the design populations of completed water supply systems and do not take into account the present condition, quality and population using these systems. A substantial proportion, probably exceeding 50% of rural water systems are in need of repair or renovation and are not providing adequate service<sup>1</sup>. It is clear that the figure would drop considerably from 34% when actual coverage is to be summed up. A deep concern has already been expressed concerning the rapid deterioration of many completed drinking water supply schemes. His Majesty's Government's seriousness to alleviate this problem can be observed by the fact that a major focus of this sector's development plan for the decade 1990-2000 consists of rehabilitating the existing water supply schemes. Thus, the question of sustainability of rural drinking water supply schemes in terms of operation, maintenance and management is a serious problem and has yet to go a long way before it is resolved.

The government has long recognized that effective grass-roots development in Nepal requires a strong measure of local participation in the cultivation of self-reliance, since poor communications, limited central budgetary resources and a weak civil service place strict limits on the capacity of the central government to cater to local needs (World Bank, 1989). This is evident by the fact that a significant portion of rural drinking water need has been met through community-based projects operating under the approach of community participation. Its relevance, is accentuated by the difficult terrain and remoteness of areas for accessibility and transportation (about two-thirds of the land being covered with mountains and hills). However, the prevalent issue

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<sup>1</sup>Ministry of Housing and Physical Planning Task Force Report, in collaboration with WHO, UNDP and WB.

is that even though the provision of community water supply schemes have a comparatively high degree of features that closely align it with the concept of 'genuine participation', many problems crop up during its various phases of design, construction, and operation that render it vulnerable to be in operation in the long run.

#### **Justification of the study**

The Fifth Development Plan (1975-80) of Nepal provided the drinking water sector a budget of around 4% of the total budget of all sectors combined, which was more than double from a small figure of 2% in the previous plan periods. Following this, an ambitious plan was drawn up with the hope of receiving a massive external financial support that was strongly influenced by the concept of International Drinking Water Supply and Sanitation Decade developed by the UN Water Conference in Mar del Plata, Argentina in 1977. However, the international funding process was found to be not-so-simple and, hence not much financing materialized. The target set to cover upto 68% of the population with the provision of safe drinking water by the end of the Decade Plan (1981-1990) period, proved to be too ambitious. The decade came to an end with a much smaller coverage figure of 37%.

The Basic Need Programme of HMGN (His Majesty's Government of Nepal) aims at 100 percent coverage by Water Supply and Sanitation services by the year 2000 through the implementation of its Decentralization Programme. Likewise, the Eighth Development Plan (1992-1997) sets an intermediate target figure of around 70% coverage. To achieve this figure 8% of the total national budget would be required whereas the present allocation amounts to 4%. This means that unless there comes a drastic change in HMGN policy in near the future with a much higher priority accorded to the water supply sector among all other sectors, these targets would not be achievable. But that kind of priority could not be forthcoming in the foreseeable future because of HMGN's commitment to all sectors in the Basic Needs Fulfilment Programme.

Considering the very limited top level attention received by the water sector, it is not surprising to find that very low budgets get allocated for the rural water sector. Furthermore, the tendency in the past for the main rural water supply programme has been to be centralized, focusing on the construction of new works, with very less attention being paid to repair and maintenance and involvement of beneficiaries in a serious manner that could lead to its

sustainability. On the other hand, the major practice of intervention by multi-lateral and bi-lateral agencies in this sector has been to launch projects by collaborating with the DWSS (Department of Water Supply and Sewerage) which is the lead agency in this sector, and NGOs. But keeping in mind the present state of rural drinking water supply (an estimated 50% needing repair and rehabilitation) it is evident that the donor-assisted projects alongwith the government are more interested in expanding their coverage and are very little concerned over its long-term use. Therefore, beneficiary participation in terms of meeting the costs of water supply schemes in terms of installation as well as operation and maintenance has been found to be the only viable mechanism through which the rural people can meet their need of water supply earliest. This approach of beneficiary participation is gaining increasing relevance in the area of rural drinking water supply also because of the fact that the donors produce capital costs and leave the operation and financing costs to the recipient country. But on the other hand, with an increasing capital investment and an increasing number of installations, recipient countries do not have the funds nor the manpower to look after such installations (Widstrand, 1980:69). It would be worth mentioning that countries which have undertaken rural water supply as a social service have found the financial burden of operation and maintenance to be rapidly increasing. Hence, beneficiary participation in terms of meeting at least the cost of operation and maintenance at the local level is a must, or supplies will be going out of service almost at the same rate as they are being constructed.

#### **Research questions**

The main problem that this research attempts to tackle is why many rural water supply schemes after being constructed with the participation of beneficiaries soon fail to function properly and are difficult to sustain? Obviously, part of the explanation to this problem is to be found in the worsening conditions under which all rural development activities in Nepal are carried out. Another major fact is that there is a considerable gap between what beneficiary participation entails and how it is actually carried out by development agencies. In the end the poor results are shied upon by planners and development agencies, but the consequences of a defunct water supply scheme borne by the community - who is the sufferer ultimately. Enough rhetoric on participation has been publicized - by the state, development agencies and NGOs. A wide gap exists between what is said and what is carried out in the

name of participation. The challenge today is to make it operational. Hence the specific purposes of this research are to delve deeper into the following questions:

- *To what extent is beneficiary participation carried out by the development agencies at the operational level ?*
- *Which characteristics of development agencies contribute significantly to the sustainability or non-sustainability of a rural water supply scheme ?*
- *What are the major problems encountered that increase the vulnerability of a rural drinking water supply scheme in providing the required services ?*
- *Where does the actual problem of operation and maintenance and sustenance of water supply lie; with the development agency and the way beneficiary participation is carried out or is there something lacking within the community itself?*
- *Lastly, is there any way in which beneficiary participation could be carried out so that the failure rate of rural water supply schemes could be minimized?*

### **Hypotheses**

Following hypotheses have been taken for the purpose of this research:

- *Community participation is not practiced fully in the majority of the water supply schemes*
- *Water supply schemes in good condition have higher degree of participation than schemes in poor condition*
- *Community participation is more assured when the project is carried out by an NGO than other development agencies.*
- *Higher the contribution of the community higher the degree of participation*
- *The degree of participation decreases as the number of beneficiaries increase*

## **Objectives of the study**

Almost 90% of the people in Nepal live in rural areas. In terms of percentage of population living in urban areas Nepal stands second lowest in Asia and third lowest in the World. (Asian Development Bank, 1985:3). On the other hand, the economic indicators of the World Bank reveal Nepal to be fourth from the bottom among the poor countries in the world (Poudyal, 1991:172). Therefore, the rural economy of Nepal is marred with poverty where people depend upon traditional agricultural practices for their survival. In these conditions, water carrying can be very time consuming in rural Nepal. An average family spends 15 minutes to 1 hour to fetch 3 to 5 "gagris" (water vessel of 15 to 20 litres capacity). On the other hand, rural water schemes have to survive many difficulties that are characteristic of other activities in rural areas. Since drinking water is a basic need, an analysis of the rural water sector will reveal many aspects of rural development as well. Keeping this in mind, the objective of this research, therefore, is:

- a. to study and analyze the rural community water supply schemes, which have been operationalised on the basis of community participation,
- b. to identify major problem areas that lead to the failure of rural water supply schemes in the long-run
- c. recommend appropriate measures that could enhance its sustainability

## **Methodology**

Field survey of 33 community water supply schemes carried out for the Strategic Planning Project of Department of Water Supply and Sanitation, has been taken as the basis of this research. The findings drawn, and the conclusions arrived at, could be termed as very much current since the survey was finalized on May 1994. In order to enrich the study secondary data obtained from studies carried out by His Majesty's Government and various donor-assisted projects involved in providing drinking water supply to rural areas has also been used selectively. In addition, the conceptual framework has been developed from books, journals and documents available at the ISS library and the library of IRC (International Water and Sanitation Centre) at The Hague, The Netherlands.

### **Limitations of the study**

The study is based on the field survey of 33 communities which are spread over all the five development regions (Eastern, Central, Western, Mid-Western and Far-Western) of Nepal and the three geographic regions (Mountain, Hill and the Terai). As there are numerous rural water supply schemes all over the country this study could be taken as a representative of community water supply schemes of the whole country. It should be noted that even though in many instances, especially at the policy level, drinking water supply is linked to sanitation and health, this research is concerned with drinking water supply only. The focus is exclusively on beneficiary participation and the success of rural water supply schemes. So far as the concept of participation is concerned, on one hand it can be regarded as an essential part of planning and implementation. On the other, participation can be a goal in itself. This research is mainly concerned with the former. It takes beneficiary participation as a means to achieve a smooth functioning of the water supply scheme in rural communities. However, keeping in mind the comparatively recent concept of participation as a goal (which is mainly concerned with the concept of community management) this study cannot remain silent to this approach. Therefore, its importance in the context of rural drinking water supply schemes is briefly touched upon, since an extensive study of this concept is beyond the scope of this research. ✓

It should be taken into account that the field survey gives the picture from the community's angle only. The other picture, i.e., the development agency's viewpoint and their perception of the community and their difficulties in carrying out the process of community participation process is not dealt with in this research, as the survey did not provide such information.

### **Organization of paper**

This research is carried out in five chapters. This chapter has provided the introductory framework with the problem, justification of study, hypotheses and research questions, objectives of the study, methodology and limitation of the study. The second chapter provides the concept of community participation and the third chapter provides the concept of community participation in rural drinking water supply. These two chapters together provide the conceptual framework of this study. The fourth chapter provides the analytical framework, tests the hypotheses and briefly highlights the key findings of this research. The fifth chapter concludes this research.





**CHAPTER II**  
**THE CONCEPT OF COMMUNITY PARTICIPATION**

**2. Introduction**

The development debate commonly centres between "delivered development", which is planned from the top, with people as objects; and "participatory development", which is planned from the bottom, with people, particularly the poor, as the subjects of the development process (Wignaraja, cf. Kortén, 1987:xv) The participatory approach is often described as "bottom-up" since it starts with self-help efforts but engages higher level resources to the extent that local efforts are not effective (Uphoff, 1992:13). In relation to this, the current notions of community participation connote the direct involvement of ordinary people in local affairs and forms a wider debate about popular participation in Third World Development. Popular participation, in turn, is concerned with broad issues of social development and the creation of opportunities for the involvement of people in political, economic and social life of a nation. The focus of community participation is on the deprived and disadvantaged groups in small communities, and with developing mechanisms on how to involve them directly in decision-making. However, it should be borne in mind that there is a considerable influence of populist ideas in community participation. Hence, it may be argued that the principles of community participation are a primary expression of populist ideas in the Third World, since community participation theory, as in populist theory, suggests that ordinary people have been exploited by politicians and bureaucrats and have been left out from both political affairs and the development process (Midgley, 1986:17). Therefore, even though popular participation may be distinguished from community participation they are inspired by similar ideals, connote similar processes, and are interlinked (Ibid, 1986:23).

Before conceptualizing community participation further, the question arises as to how the concept of popular participation entered in the scenario of Third World development.

**2.1 Popular participation in Third World development**

Development during the 1950s and 1960s for developing countries meant rising incomes per capita and structural shifts from predominantly rural-agricultural to urban-industrial economies. It was also a time when it was believed that

certain "developed" countries were models and developing countries should try to copy them. Not before long this idea was questioned due to a variety of wide shortcomings. Wolfe (1982:79-83) provides five major shortcomings. First, even though some "developing" countries achieved higher rates of national income, distribution remained highly unequal. Second, industrialization and agricultural modernization were proving very disruptive. Planning in terms of fixed-term "development plans" increasingly fell into discredit because many factors depended on international economic and political relations which were out of control of national governments. Fourth, economic growth and modernization started to result in having devastating impact on natural resources and physical environment. Fifth, a widespread disillusionment was observed with the consequences of technological and cultural transformations brought from "developed countries". Due to the above reasons, in the 1970s there was a wide consensus in incorporating values of equity, human solidarity, creativity, and above all, the insertion of popular participation as a central element in national development. The next section highlights the deficiencies the concept of participation is expected to overcome and its justification as a widely proclaimed approach in Third World development.

## **2.2 Community participation as a development strategy**

It is widely believed that community participation may, increase the access of disadvantaged communities to project benefits, enhance motivation of communities, increase ownership of projects, encourage self-reliance by transfer of skills, build local institutional capacities, and ensure that greater proportions of project benefits flow directly to targeted deserving beneficiaries (Bhatnagar and Williams 1992, cf. Gopal et al. 1994:8). Oakley et al (1991:2) provide two strong grounds on the support of people's participation: (i) poverty is structural and has its roots in the economic and political conditions which influence people's livelihoods. Hence, the abilities of the people should be developed so that they have a say in the activities that influence them. (ii) Development programmes have largely bypassed the vast majority of rural people. Oakley et al further elaborate that participation must begin by recognizing the powerful, multi-dimensional and, in many instances, anti-participatory forces (Ibid: 4). Proponents of community participation advocate that this concept does not only facilitate service delivery by lowering costs and smoothing implementation but also fosters a

sense of belongingness and the integration of communities, which helps people to contribute positively to national development (Midgley, 1986:34).

Uphoff, (1992:4-5) has gone to the extent of describing collective action, or the participatory sector, as the third sector or the middle sector of the economy, the other two being the public and the private sector . He explains "it is similar to the public sector in that its decisions are taken with regard to common interests rather than individual ones. On the other hand, it can operate with the flexibility of the private sector, avoiding 'red tape' that so often constraints government decision-making and implementation. It differs from the public sector in that its decisions are not backed by authority and the coercion this can invoke, while differing from most of the private sector in not seeking profit as the criterion of success" (Ibid).

In summary, the approach of community participation as a development strategy has been put forward on the following grounds:

i) More achievement at lower cost: It is believed that if the efforts of the local people are harnessed, conventional services that have not reached the rural people or the urban poor can be provided. When resources are saved due to community contributions, it can be used to cover more services in other communities.

ii) Intrinsic value to communities: Communities should be allowed to participate in development processes which affect them.

iii) Catalyst for further development: The organizational pattern created for one project and the enthusiasm generated by its success will provide stimulus for further development efforts to be successful.

iv) A sense of responsibility for the project: The community will feel that the completed project is their own, have pride in it and a sense of responsibility for it. This will make them use it wisely and do their best to maintain it. Hence, there is also a part of emotional investment in it by the community.

v) It guarantees felt need: By making the collective effort to organize and participate in construction, and/or making a financial contribution, the

communities show that they really need the service and are willing to support it and use it once it is completed.

vi) It uses indigenous knowledge and expertise: Participation is said to enable progressive change while making use of indigenous knowledge at the same time and adapting it to new circumstances.

vii) Limited dependence on professionals: Participation is said to use the services of professionals only in areas in which it lacks expertise.

viii) Conscientisation: Participation intends to help people in understanding the nature of their constraints and make effective demands to politicians and the government.

The next section briefly elaborates what is in fact meant by participation theoretically at the operational level; whose participation is the concept of community participation concerned with and how it is expected to be carried out.

#### **2.2.1 The participation sought by Community Participation**

When it comes to the type of participation sought from the community, the theory of participation relates to 'authentic participation' (Midgley, 1986). Many writers have described authentic participation in different ways. However, the crux of this theory can be attributed to resolution 1929 (LVII) of United Nations Economic and Social Council, i.e., (i) participation in contributing to the development effort; (ii) participation in sharing equitably the benefits derived therefrom; (iii) participation in decision-making in respect of setting goals, formulating policies, implementing economic and social development programmes (cf. Midgley, 1986:25). Cohen and Uphoff have described the above three as participation in implementation, participation in benefits, and participation in decision-making respectively. To this they have added 'participation in evaluation' as an extra dimension (1977:7).

V The other type of participation is 'pseudo-participation' which in fact had dominated the rural development scenario during the heydays of the community development era. 'Pseudo participation' limits community involvement to implementation or ratification of decisions already taken by external bodies (Midgley, 1986:26). This is the type of participation which in reality is

highly practised in developing countries, and is widely abhorred in present day concept of community participation.

Oakley et al (1991:7-8) connote the above differentiation between 'authentic' and 'pseudo' participation to 'participation as a means' and 'participation as an end'. 'Participation as a means' implies the use of participation to achieve some predetermined goal or objective. In this government and development agencies see participation as the means to improving the delivery systems of project they seek to implement. Population is mobilized to implement the task at hand, and when the project comes to an end so does participation. 'Participation as an end' sees participation as a process to develop and strengthen the capabilities of the rural people to intervene more directly in development initiatives. ✓  
Manoj

Even though 'authentic participation' is the type of participation sought in the development process, it has been consistently claimed by various writers and even by the UNRISD's Popular Participation Programme that it is practically impossible to materialize authentic participation, since it requires a 'profound social structural change' and a 'massive redistribution of power' (Pearse and Stiefel, 1979, 1982 cf. Midgley, 1986:27).

### 2.2.2 The Participants sought by Community Participation

The United Nations has suggested that the participants or the 'who' in community participation entails small communities comprised of individuals at the lowest level of aggregation at which people organize for common effort (United Nations, 1975:31). It mainly includes the deprived and the disadvantaged.

Many views are expressed propagating that poor communities have little potential for participation and it is difficult to arouse the poor from their apathy and indifference to development issues (United Nations, 1981. cf. Midgley 1986:28). They argue that even though people will collaborate to harvest crops, prepare for festivals and ceremonies and contribute to community projects, these cannot be taken as the basis for the involvement of the poor on a continued basis (United Nations, 1975, cf. Ibid). Earlier writings on community development also concluded the belief that rural people would resist progress as they are bound by traditionalism. ✓

Contrarily, other writers view that deprived communities are not as passive and disorganized as has been suggested, and claim that poor people know what they require to satisfy their interests, meet their needs and solve their problems (Hakim, 1982:138). Midgley and Hamilton (1978) revealed from their research that rural communities are not disinterested in development, and despite encountering many difficulties, are capable of spontaneous involvement (cf. Midgley, 1986:28-29). Therefore, it is the type of views expressed by Midgley and Hamilton on which the entire concept of community participation is based. The question of 'who participates' is linked both to the understanding of participation and the objectives of the developmental intervention. Some believe that only the most disadvantaged should be mobilized for participation, others believe that the whole community should be involved. Moreover, where there is a direct link between participation and the achievement of tangible project objectives, the client group becomes the beneficiaries (Oakley et al., 1991:20). In case of a rural setting, participation of the entire community rather than the beneficiaries only would be more fruitful.

### **2.2.3 How participation is sought by Community Participation**

Below mentioned are the most widely used channels through which community participation is expected to be materialized and enhanced.

#### **A. Through decentralization policies**

Since a majority of ordinary people are excluded from development activities, decentralization is widely advocated as a prerequisite for community participation, especially by those who favour a formal community organization. Implicit in a genuine government concern for participation are bureaucratic structures like decentralization and local level planning structures. Evidence shows that few governments have willingly devolved these bureaucratic controls to the local level (Oakley et al., 1991:21). People favouring non-formal community organizations worry about the regularization of procedures and organizational structures that is linked to decentralization. They stress autonomy, spontaneity and informality and believe that local communities should deal with external authorities from a position of strength. Their other concern is that formality might weaken the community's position (Midgley, 1986:33). Nevertheless, actual decentralization occurs only when local decision-making bodies have control over financial resources. Since the local decision-making bodies are unable to raise sufficient revenues to meet their

own needs, they are dependent on external funds and thus are subject to external control.

## B. Through agencies

### 1. *Local institutions*

The concept of institution building is adherent to community participation. Uphoff (1986:4-5) provides a category of six institutions:(i) Local administration (ii) Local government (iii)Membership organizations (iv) Cooperatives (v) Service organizations and (vi) Private businesses. Disregarding the issue whether local institutions should be formally or informally organized, the concept of community participation should work towards their further consolidation and effective functioning in the long run for its sustainability.

### 2. *Development projects*

One of the important vehicles through which community participation is intended to be materialized is via a number of development projects through which development interventions are undertaken by governments and agencies. Community participation in the planning, designing, and implementation of development projects is increasingly a feature of development project design. Even then, for too many rural development projects participation is seen as yet another input to be programmed and managed along with other inputs (Oakley et al., 1991:10). It has been pointed out that these development projects could easily become an end in themselves and that participation will simmer away once the project is completed. Moreover, the style of a development project is often such that it suggests that the professional is the expert, while the rural people are inexperienced and do not know.

### 3. *Non-governmental Organizations*

It is often prematurely assumed that NGO-supported projects and programmes tend to take the view that only the beneficiaries themselves know what is the appropriate course of action. The main argument behind this is that the NGOs are perceived as being dynamic, flexible and socially concerned. They argue that their 'participatory style' is in contrast to the allegedly undesirable and unsuccessful top-down and uncaring style characteristic of large donors in

particular and also of many third-world bureaucracies (Tendler, 1982:11). Hence, they are conceived as more likely to adopt innovative approaches than government organizations and donor agencies. They are also thought to be capable in mobilizing resources due to their international links.

✓ However, too much reliance on NGOs and voluntary organizations in fact impede the realization of community participation ideals. In the past it has been increasingly evidenced that NGOs and voluntary organizations, especially large ones, function bureaucratically and use formal procedural rules to carry out their tasks. There are also problems of malcoordination and duplication of services. Issues of competition and aggressive struggles have also been witnessed when they try to dominate a particular field of service. Another problem is the lack of continuity. Often new programmes are launched with enormous enthusiasm, but after some time it fizzles out and the local communities are left with unfinished projects and unfulfilled promises. There is also the problem of resource constraint, since once the NGOs start to face funding problems, the entire community suffers in the end. Hence, this sort of dependence is hardly conducive to the promotion of self-reliance and autonomy promoted by the theory of community participation.

### 2.3 Obstacles to participation

There are three basic obstacles to participation (Oakley et al, 1991:10-14):

(i) *Structural obstacles*: A centralised political system that lays less emphasis upon local mechanisms for administration and decision-making can greatly reduce the potential for authentic participation. In addition, the existing legal system within a country can seriously frustrate efforts to promote participation.

(ii) *Administrative obstacles*: Centralised bureaucracies, by their very nature are major obstacles to people's participation since they encourage centralized administrative structures. Administration of such structures tend to have negative attitude towards the whole notion of people's participation. The planning of development programmes, which are centralized too, discourage local involvement. The costs of encouraging local participation in planning are substantial, and hence it is discouraged.

(iii) *Social obstacles*: It refers to the mentality of dependence which is deeply and historically ingrained in the lives of rural people. For many generations they have been dominated by and dependent upon local elite groups. Moreover, since mere survival is the greatest challenge to them, they have very little time to participate. Another crucial fact is that the rural



people do not necessarily constitute a homogeneous economic and social unit. There are the poor, the very poor, and not so poor who have different access to resources (Midgley, 1986:25). Rural people may share their poverty, but there may be many other factors which divide them and can breed mutual distrust.

*poor*

Rural communities are often portrayed as internally harmonious and without potential for class conflict. But in reality rural communities are stratified, both economically and socially. Conflicts of interest is found between the poorest poor and those who are better off, between small landowners and tenants, and between landless workers and small farmers. Therefore, it cannot be assumed that community leaders acting on behalf of the community would always make decisions in the best interests of the poorest because many such decisions would, by definition, be against the interest of those better off (Tendler, 1982:13). Hence, it has been found that, it would be misleading to assume that the services provided by development agencies and organized at the community level would always benefit the rural poor, especially services like, drinking water, electrification, health, agricultural inputs, agricultural credit and technical assistance. Services in which the poor cannot be denied include roads, schools, community playgrounds, etc.

Studies over the past decades by anthropologists and political scientists have shown that what has often been described as 'participation' has really been involved with participation of the rural elite resulting in their empowerment. Hence the 'participants' (i.e., the rural poor) sought by the approach of community participation, in many instances, was found to be lacking. Moreover, improvements in the status of the poor and excluded minorities, have often been carried out by committed and powerful governments rather than by decentralization to local communities, where the rural elite tended to capture most of the benefits and exclude the local poor (Ibid).

In case of Nepal, in addition to class conflict, an additional dimension that requires due attention is the caste structure of the society. The social system is based on Hinduism (as 86.5% of population believe in Hinduism), which constitutes of four castes and thirty-six sub-castes. This caste system exerts a powerful influence on the social organization of life in Nepal (Shrestha, 1994:1). Therefore, in the Nepalese context, the caste to which different

community members belong to is also a major factor affecting the level of harmony within a community and influences the unity for common interest.

#### **2.4 Gender and participation**

Participatory programmes and projects were formulated on the basis of an assumption that benefits will be reaped equally by all the community members. It was carried out without comprehensive information on the condition and position of men and women in the community and without analyzing specific situations and needs of men and women in specific areas. This led to the issue of gender and the need to understand the differential impact of development efforts on men and women in participatory programmes.

The term 'gender' was first introduced by psychologists and used by feminists to get away from the biological inferences of the word 'sex'. Gender is a social meaning given to being a man or a woman, constructed on relatively slight biological differences and approved by ideologies and customs (Young, 1993:24). It is a term which encodes a very crucial point that the basic social identities as men and women are socially constructed rather than based on fixed biological characteristics (Shrestha, 1993:31). The social environment under which men and women are brought up or nurtured through childhood leads to the enforcement of male characteristics and female characteristics. This very basis of nurturing and socialization practice determine sex roles and can be noticed, at least in the case of Nepal, that girls gradually start helping in domestic chores (indoor activities) while boys assist in the field (outdoor activities). This leads to a different type of perception of men and women, and to the ever-increasing fact that there is gender-based subordination of women that has existed for a long time but had been left unadhered to. Women have less bargaining power in many developing countries that actually starts from within the household and is clearly reflected in participatory development projects where they have practically no say, even though they are the ones who are directly affected by it. This is due to the fact that they lack access to productive resources like land and secondly, they are involved in subsistence production which is considered as 'invisible' and largely remains unpaid. Moreover, the cultural and traditional norms also aggravate the situation. All these compounded with literacy and lack of awareness contribute towards women's lack of participation in development efforts.

## 2.5 Community participation, rural development and the state

The nature of participation needs to be examined when the issue of government and participation is discussed. The main question is whether the government takes it as a means to control and mobilize local resources, or whether it genuinely intends to promote participation which seeks to redress the imbalances of previous development strategies in favour of the excluded rural people (Oakley et al., 1991:23). Even though most proponents of community participation would avoid state involvement and seek instead to strengthen the community's capacity to deal with its own problems through its own initiative and effort, they tend to disregard the fact that most of the government in Third World countries in fact shape and determine the nature of community participation activities. Therefore, ignoring the role of the state would be a serious omission.

Governments have sought to include the notion of popular participation in various aspects of rural development strategy. In effect, the state-directed participation becomes purely instrumental, and the state uses it to pursue its pre-determined goals. Hence, many participatory programmes do not go beyond taking advantage of local cheap labour for construction of public works or consultation with village chiefs in order to gain access to the village population.

Midgley (1986:38-44) describes four modes of state responses to community participation: (i) The *anti-participatory* mode, which holds the view that the state is not interested in the poor and that it neither supports community participation nor social development. This mode suggests that the capitalist system itself is the major obstacle to participation, and that once a revolutionary transformation of society has taken place, mechanisms for the full participation of the people and the realization of their aspiration will emerge. (ii) The *manipulative* mode in which the state supports community participation, but for ulterior motives. In this case, the state uses community participation for purposes of political and social control. It also recognizes that community participation can reduce the cost of social development programmes and facilitate implementation. (iii) The *incremental* mode in which there is official support for community participation but due to an ambivalent approach to implementation it fails to support local activities properly or to ensure that participatory institutions function effectively. (iv) The *participatory* mode, which is the sought-after mode by the proponents

of community participation. In this mode the state fully approves of community participation and responds by creating mechanisms for the effective involvement of local communities in all aspects of development.

## 2.6 Criticisms of the community participation approach

Decades ago, many developing countries, including Nepal, have the community participation approach as one of their fundamental goals in development. Even though the belief in community participation is still reaffirmed, actual progress has been very slow. Numerous programmes and government-assisted projects are launched behind the flowery frame of community participation. However, the evaluation reports show that "these projects were as short on accomplishments as they were long on intentions and promises" (Cernea, 1992:1). Therefore, the process and approach of community participation, like any other development approach, has been open to staunch criticisms. Some of the major ones are briefly described below.

1. It has been criticized on the ground that despite its widespread propagation, there is little evidence that the participatory mode of community participation has been put into practice by the governments of the Third World. It is obscured by inefficiencies of government administration, bureaucratic indifference, procedural delays and many other problems. The state support for community participation programme has been haphazard and ad hoc.

2. Since deprived communities are differentiated in terms of status, income and power, it is very difficult to conceptualize a cohesive and integrated community and hence the concept of community participation is romanticised by populist thought rather than a serious analysis of community life (Midgley, 1986:35).

3. Even though the proponents of community participation advocate self-reliance, independence and autonomy and are stern critics of paternalism, they do not realize that their own approach is riddled with paternalism (Midgley, 1986:35).

4. The concept of community participation tends to equate people's involvement with a total and continuous commitment to activism, which is hardly feasible. Ordinary people have many other commitments and it is a myth that the poor have excessive free time for community activities (Midgley, 1986:36).

5. Successful community participation calls for so many preconditions that it is unlikely that it will ever be met (Midgley, 1986:36).

6. Community participation is feasible for small projects, since once the projects grow in size beyond a certain point the problems of bureaucratization might lead to the loss of the original features of genuine participation.

7. Even though the concept of community participation craves for authentic participation, its proponents are self-contradictory in the sense that they propose interventionist strategies for its promotion.

8. Even though self-reliance and autonomy form the basic tenets of the ideology of community participation, issues of social justice and redistribution come to the fore, since poor communities lack the resources to meet their needs.

9. A study of the World Bank even suggested that governments might prefer rural people to participate only in project implementation since their involvement in project identification and assessment might give rise to increased expectations (World Bank, 1988, cf. Oakley et al., 1991:15)

## **2.7 The Concept of Community Management**

Community management is an approach that integrates the perspectives of both 'top-down' and 'bottom-up' processes involving social mobilization and a great deal of devolution of power in a truly democratic context (Korten, 1987:XV). The earlier approaches to the problem of participation dealt mainly with community participation in implementing government-controlled projects and programmes. Community management, however, takes as its point of departure, not the bureaucracy and its centrally mandated development projects and programmes, but rather the community itself: its needs, its capacities, and ultimately its own control over both its resources and destiny (Korten, 1987:XIX). This brings to the fore the issue of control and empowerment of the community. Wolfe also argues that "participation has always implied a struggle for greater self-empowerment, and has always been conflictive" (1993:XII).

Korten (1987:4-5) provides three arguments why governments should support the concept of community management to intensify the critical development resources, even though its success depends on difficult-to-achieve policy and institutional changes.

*i) Local variety* - Since, optimizing productivity and sustainability in resources requires appropriate adaptation to the local variety, the broadly distributed decision processes of community management systems have nearly unlimited potential for such adaptation, whereas centralized bureaucracies, which function according to standardized rules, have little capacity to respond to the special needs and preferences through which adaptation might be achieved.

*ii) Local resources* - Local people are capable of mobilizing a large variety of resources once they are committed to an idea, whereas the bureaucracies of the central government are limited to the resources they bring from outside the community subject to their direct control.

*iii) Local accountability* - Since a basic principle of a democratic society is that the people who bear the major force of consequences of an action should have the control over it, those people to whom such control is delegated should be as directly accountable as possible to those most directly affected. Generally, the link between decision and consequences is closest when decisions regarding the use of local resources are within the local community.

### **Conclusion**

The main purpose of this chapter was to clarify the concept of community participation and bring into limelight the issues that are prevalent in theory as well in practice. It has shown that community participation is part of the wide debate of popular participation in the development of developing countries. It centres its argument at the community level and propagates a bottom-up approach as an alternative development strategy as opposed to the top-down approach of development that is actually found to be prevalent in most of the third world countries. It argues that through this approach more people, especially the poor, who have so far been considered to be marginalized as a result of previous development strategies will have a better say in the development efforts that directly affect them. But it should also be taken into account that a considerable amount of populist ideas influence the theory of community participation.

When the issues of autonomy and self-reliance get into the debate of community participation, it aids in arriving at a workable definition for the purpose of this research, not in terms of what it is but what it is set out to achieve. Hence, community participation is said to be achieved when programmes which are desired and utilized by the community are effectively sustained by them after

all external support has been phased out (Midgley, 1986:27). This view leads to the path of community management, since this concept requires the community to have control over the project after being completed and its resources. Therefore, it is the effective devolution of power to local communities to decide on matters that concern their welfare and prosperity which lies at the centre of philosophy of community participation (Midgley, 1986:150). But one should not forget the fact that authentic participation is very difficult to achieve in reality. Therefore, it is widely suggested that the degree of community participation could be increased by adopting a process approach in which a process of continued dialogue between planners and beneficiaries is carried out in search for the most appropriate strategy.

This chapter has discussed the concept of community participation in the development arena of the Third World. The next chapter provides a framework and issues that are prevalent in the area of community participation in rural drinking water supply.





**CHAPTER III**  
**COMMUNITY PARTICIPATION IN RURAL DRINKING WATER SUPPLY**

This chapter constitutes of three parts. Part I gives the introduction and the concept of community participation in rural drinking water supply. Part II gives the issues prevalent in this sector and ends with providing a brief explanation of the concept of community management in drinking water supply. Part III explains the activities constituting community participation in rural drinking water supply that shall be taken as the analytical base for the next chapter.

**Part I**

**3.1 Introduction**

The interest in the provision of rural water supplies, or rather safe water supplies for rural areas, has lasted for decades. In the beginning the interest of development agencies on such installations was mainly based on the rather simplistic idea that if people changed from impure water to clean water supply, tremendous health benefits would automatically be the result. In consequence, a healthier population would also contribute more to the economy and therefore also to the development. A further idea was that of social benefits that would accrue: since women spent too much time and hard labour on collecting water, by providing water supplies closer to the village or the house, it would alleviate their plight and would make it easier to use their labour more effectively in the rural economy.

**3.2 Community participation in rural drinking water supply**

Community participation in the field of drinking water supply was first brought into global limelight by Van Wijk-Sijbesma (1979) and was further explored by White (1981) and Whyte (1983). Community participation in case of drinking water supply virtually means good consultation with the community at different stages. It ensures that the project introduced by the development agency is adapted to meet the needs of community members, and to avoid difficulties in implementation (White, 1981:6). It has its own distinct characteristic in the sense that often there is genuine and active participation in its different stages as it is a specific type of infrastructure which results in immediate benefit to the community. The community members participate directly in

designing, planning, construction and its maintenance. Therkildsen's (1986) suggestion on the different stages that occur in community participation in water supply is shown in Table 3.1. In the table, planning and preparation of the village scheme both are concerned with the planning and designing of the scheme as both consist of pre-implementation participation. During the construction stage, which is the implementation of the scheme, even though the villagers provide unskilled labour they still can actively participate in the quality and supervision of construction. This is crucial in the sense that if the community is to 'own' the scheme and be responsible for it, it should be fully satisfied with the construction quality of the scheme. Since the villagers are thought to be skilled enough in the planning of the scheme, there is no justification to limit them to providing unskilled labour only in the construction stage. In this regard White (1981:3) states that the involvement of community in providing labour for the construction of water supply schemes can hardly be considered as participation unless there is some degree of sharing of decisions by the development agency with the community.

**Table 3.1: Role of the community in different stages of rural drinking water supply projects**

Stage	Villagers' roles
. Identification	None
. Preparation of village scheme	Village approves or rejects proposal to construct the scheme
. Planning	Village approves or rejects water source; locates public standpipe subject to project approval
. Construction	Village provides most unskilled labour
. Operation	Village fully responsible (funds, labour, organization)
. Maintenance	Village fully responsible (funds, labour, organization)
. Monitoring and evaluation	Village provides project with information

Source: Oakley et al., 1991:56

The decision making in water supply is basically concerned with technical options, which is usually outside the participatory purview of the villagers. The technical aspects are left to the external technicians who are hired by development agencies. Hence, it is the responsibility of the technicians or engineers unless there is a choice to be made between alternative solutions either in terms of major decisions over types of systems to be adopted, or more minor

questions of the design of user facilities. Hence, one of the most talked about essential aspects in the area of community participation, i.e., decision-making by the community, so far as technological choice is concerned, is evidently absent where no technological options exist.

## Part II

### 3.3 Issues in community participation in rural drinking water supply

The major issues that confront the rural drinking water supply are briefly described below:

#### 3.3.1 Operation and maintenance

The global survey of WHO has revealed that O&M has evolved as the second most important constraint (the first being funding limitations) in the area of drinking water supply in developing countries (WHO, 1986). There is an increasing evidence that as construction of new schemes increase so do the installations that fall into disuse for a variety of reasons. The main problem areas seem to be precisely lack of public participation and lack of funds for recurrent costs, and operation and maintenance of installations (Widstrand, 1980:65). One of the main reasons behind the neglect of operation and maintenance activities and emphasis on construction and capital investments is the over-ambitious, well-publicized and unrealistic targets for coverage set by the International Drinking Water Supply and Sanitation Decade, i.e., "Water for all by 1990" (Cairncross et al., 1980). Since the population to be provided with water supply was great, size and quantity was important and question of operation and maintenance was put off for the future. This obviously made the work of donors easy, since they could provide pipes, pumps, drilling rigs into neat packages. This led planning to be done from above without any say whatsoever from the local people.

Operations includes questions of administration and management, and of efficiency in general. Maintenance is a repair and overhaul operation done periodically, to restore, repair and keep up the water-supply systems. Operation involves dealing with systems, personnel, and villagers, whereas maintenance can be done without any contact with villagers or end users. The skills required for these activities are different.

Resources required for operation and maintenance are frequently under-estimated in budget proposals. It is further reduced by approving authorities when it comes to actual allocations (Schultzberg, 1978:337). The costs of providing adequate supplies are undoubtedly high, and it is unlikely that the consumer in rural areas can pay for full cost of the service. Even then, there are strong grounds for villagers meeting the operational costs, at least in the long run. Thus, user participation has evolved as an important factor in solving operation and maintenance problems. On the basis of a large survey Miller concluded that "self-help and participation had their most powerful impact on the operations and maintenance aspects of water systems. This is most important because this is usually the weakest area of rural water systems" (1979:133).

### 3.3.2 Community contributions

The community contribution in rural drinking water supply amounts to providing unskilled labour, local materials, cash and in a number of cases food provided to 'mistris' (skilled labour). The case of community providing labour and local material is not new, but issues arise when cash is contributed by the community. When drinking water is supplied by an external agency it could be argued that cash contribution by the community does not amount to community participation. Any such payment is a fee for service whether it is made before the scheme is installed or afterward as a matter of revenue collection. However, in two cases a cash contribution qualifies for community participation: (i) when cash contribution is on a community basis for a communal facility and not by individual families for household connections. (ii) when cash is raised for a new facility where the community council has no general funds and no right to raise local taxes (White, 1981:56). In fact, White (Ibid:6) sees cash contribution by the community prior to the implementation of a project as one form of community participation. But the issue is there of communities which are cash-starved and prefer to contribute a high amount of labour and even local material instead of parting with a small amount of cash.

### 3.3.3 Willingness to pay, User charges and Cost recovery

#### *Willingness to pay*

The drive for sustainability and replicability has made the 'willingness to pay' of a community to be a major area of interest. This study is used to determine the level of interest and the felt need of the community. In addition, consumers' willingness to pay for the services consumed is also a crucial factor for a water supply scheme to remain in operation. (Saunders and Warford, 1976). This stands true for poor areas also. People prefer to have and to pay for a water supply than to have none at all (Bromley, 1977). However, keeping the fact that all the people already have some sort of water supply to fulfil their needs, the issue remains that charging for water would perpetuate and increase the difference between those who can afford a water supply and be benefitted from the 'improved' water and those who cannot afford and have to rely on polluted water. In this situation, the observation of consumer reaction to the introduction of water charges offers the only useful evidence for this purpose (Saunders and Warford, 1976).

#### *User charges*

When the pumps or the taps at community standpoints do not work regularly or water peters out people tend to avoid unreliable sources of water. In any case they will try to avoid paying for their use. They think that after all, God provides the water and they did the digging, so why shouldn't the government provide the pipes free. Hence, they consider that there is no justification for charges (Widstrand, 1978:280, Schultzberg, 1978:336)). Therefore, the prerequisite for obtaining user charges from the community is that the water supply should be reliable and the quality of water should be good so that the community does not stop using the scheme and goes for alternative source.

A variety of opinions exist on revenue collection and on the basic philosophy of charging for water. There are three aspects to it: (i) economic - it concerns with the problems of the total economic benefits of exploitation of water and of the efficient use of resources (ii) financial - the financing of operational costs, including servicing of loans (iii) social - the social benefits of water supply (Carruthers 1973).

But the encompassing issue is whether water is a social good that should be distributed free of charge, or is it a commodity on which consumers probably set a value and for which they would be prepared to pay a certain price (Widstrand, 1980:90). Carruthers and Browne (1977, cf. Widstrand 1980:) provide some reasons for a case for free water from communal points in rural areas: (i) the short run marginal cost of water frequently is close to zero and even in the long run it is low; (ii) rural water supply should be regarded as a social service and the financial criteria should play a subordinatory role; (iii) governments where social elements play an important role may take the merit-want of water into consideration and avoid charging for it; (iv) providing rural water supply as a measure to enhance the income redistribution effect; (v) the rural consumers get a low degree of service; (vi) the ability of the rural poor to pay is low and he/she will only pay for water when there is no alternative source (vii) the revenue collected is low and sometimes is equal to its collection cost.

On the other hand, people looking for a strict financial performance ignore the above, especially international financial institutions like the World Bank. With respect to this type of funding agencies, and especially the World Bank, Carruthers (1978) questions whether the World Bank is the proper institution to implement such programmes, since "...even though its heart may now be in the right place, its thinking and actions are still governed by the 'banking head". Moreover, he purports that providing funds for rural water supplies requires a charity rather than a banking perspective.

#### *Cost recovery*

Many rural water projects including even those supported by international donors were planned on the assumption that rural people are unable to pay for water and the water systems were either provided free or were highly subsidized. The concern was mainly on coverage rather than on how effective the systems were in providing continuous and reliable water supply. A survey of water charges in 122 developing countries, as shown in the table below, reveals the fact that there was no cost recovery in 28% of the 122 developing countries. Full cost was recovered only in case of 6% of the countries studied.

**Table 3.2: Cost recovery of water charges in 122 developing countries**

Cost covered by user contribution	Percentage of countries surveyed
All costs (O&M plus capital)	6
O&M plus part of capital	16
O&M costs only	20
Part of O&M costs only	30
No cost recovery	28

Source: Briscoe et al., 1988:17

To sustain the water systems in such cases the governments would either have to subsidize rural water supply by charging urban consumers higher rates or maintenance funds would have to be derived from funds earmarked for other sectors of the economy (Munasinghe, 1992). If the provision of water is made free, funds for the operation of water schemes have to be budgeted and raised from somewhere else.

Nevertheless, even though issues arise when it is questioned whether the would-be-beneficiaries would actually pay the amount they said when the need arises, it is widely acclaimed that for communities able to pay user charges, assigning a high priority for water service and charging user-fee, which is at least able to cover operation and maintenance expenses, increases the probability of water systems to remain operational. So far as cost recovery is concerned, it would be difficult for a government, donor-agency or an NGO operating in a rural poor setting to justify or even claim for cost recovery.

#### 3.3.4 Ownership and responsibility

The sustainability of rural water supply schemes depends on the extent of feeling of ownership and responsibility taken by the community. The 'sense of ownership', in which the community sees it as its right to manage, is often used as an indicator of community commitment and is judged by the proper use, operation and maintenance of the scheme. But the issue of ownership goes beyond the right to manage the scheme (McCommon et al., 1990:5). It is often voiced that the community should in fact own the scheme legally, since it has been found that governments are usually reluctant to provide this legal base. It is often seen as an obstacle to the sense of ownership since communities may not perceive themselves as the owners of the scheme for the very good reason

that from a legal standpoint they do not have ownership rights (IRC, 1992:7) On the other hand, the perception of the community is also important with regards to legal ownership. Is the community willing to own the scheme on legal grounds as well ? This question is important because most poor communities rarely trust the government and do not want to be embroiled in consequences arising out of legal ownership of the scheme. A legal ownership will undoubtedly have some obligation to the community also and not only to the government. But, the important issue, as Wood (1983, cf. IRC, 1992:7) argues, is not so much as to "who owns the system?" but the fact that "who is responsible for taking care of it?" is important. Therefore, if the community feels that it is responsible to take care of the scheme and carries out the needed operation and maintenance, it is satisfactory to assume that there is a sense of ownership within the community.

### 3.3.5 Sustainability

With concern to project sustainability there has been a paradigm shift in the international donor community's analytical base from the initiation approach community participation to the responsibility approach. The initiation approach was concerned with mobilizing support for the project in which the participatory type of activities was delegated to field staff whereas the responsibility approach is concerned with helping local people and communities assess and make decisions in order to take responsibility and control (Donnelly-Roark, 1987). This new emphasis linking responsibility to sustainability suggests that participation should be redefined as the learning process through which communities are able to deal with technology, change, and development (Ibid).

It has been suggested that the degree of support provided by the external agency and the internal support provided by the community together play a significant role in the sustainability of the scheme. A carefully planned and implemented scheme in which the participation of community is actively sought in every stage has better chances of generating the feeling of ownership and responsibility of the scheme which would ensure its sustainability, i.e., the smooth functioning of the water supply in the long-run.



### 3.3.6 Technology and Spare Parts

It is not a matter of designing technology for traditional society, but designing technology in collaboration with traditional society. Questions like: Will it work? Will it last? and Can the rural community afford it? (Henry, 1978:370) should help in providing a guideline for technology that adapts to the rural conditions. Henry is further of the view that most of the work being carried out in the field of 'appropriate technology' is primarily 'downgrading technology' so that it fits a rural setting (Ibid).

Project beneficiaries differ greatly in their ability or desire to absorb innovations imposed from outside and the kinds of innovations they are willing to accept. One of the greatest challenges is to determine how to predict in advance what the public will accept. The rate of acceptance may depend more on how the innovations are presented and followed up than on their content (James, 1978:383). Besides normal wear and tear, installations land up in disuse also due to vandalism where parts of the installation (brass taps, pipes, valves, etc.) disappear. These would be minimized if the frequency of use of the installation is high and the community appreciates the reliability (continuous flow of water) from that source.

The technology to be used is often determined by the physical conditions, and the options are limited. When there is a choice in equipment to be used there is much to be said for selecting the least complex machinery. The general view is that preference should be given to locally manufactured equipment, since imported equipment and spare parts are not only expensive, but it also results in a delay in maintenance works. Also the technology should be such that it would be reliable, have reasonable costs and should be maintainable by the local population (Sailsbury, 1978). Even if these are under manageable limits, the problem is still there of the availability of spare parts in the breakdown sites in time and its proper installations. Lack of proper transport, unavailability of technicians and mechanics, and above all the ability of the local community to accumulate the necessary funds for repair and maintenance are still found to be dominant problem areas in the field of maintenance. However, local participation in maintenance has proven to be fruitful (Widstrand, 1980:97).

### 3.3.7 Women's participation

Generally, women have not been encouraged to participate even in the discussions concerning rural water supply programmes. Henry (1978:365) argues that almost 100 percent of the water used for domestic purposes is carried by women, who, in many cases, spend more than 50% of the time doing so. In case of Nepal, 92% of the water collection activity is done by women as shown in the table below.

**Table 3.3: Gender division of time use in rural Nepal**

Work	Time input in village and domestic work(X)	
	Men	Women
Cleaning	10	90
Cleaning	5	95
Maintenance	7	93
Laundry	10	90
Shopping	54	46
Other domestic work	22	78
Childcare	16	84
Animal husbandry	55	45
Family farm enterprise	45	55
Gathering and hunting	60	40
Fuel gathering	34	66
House construction	72	28
Food processing	13	87
<b>Water collection</b>	<b>8</b>	<b>92</b>
Outside earning activity	69	31
Local market economy	43	57

Source: Karmacharya, 1994:23

Henry further states that unless something is done to make water supply more accessible, it will be difficult for rural areas to achieve a significant breakthrough in agricultural production, keeping in mind the value of time and labour saved of women.

The routine exclusion of women from planning and implementing water development projects, and from maintenance of water supply facilities, can have serious consequences. It is a common experience that improved facilities of water supply are unused or inoperative within a few years of their installation. This is in large part due to a failure to take into account socio-economic factors which influence the acceptance or misuse of water facilities (UNDP, 1985:31)

### 3.3.8 Other issues

Apart from the above, there are technical and institutional problems to be overcome. Lack of sound water policies, institutional and management

weaknesses, lack of trained manpower, are prevalent in this area. These weaknesses lead to frequent failures in water supply systems. Even the simplest system requires maintenance. Unless villagers have a sense of responsibility of systems installed and are prepared to contribute in cash and kind, the likelihood of breakdown is great. Local associations have also been considered in connection of fee collection and similar activities. But problems crop up in the management of such schemes, whether they are planned locally or not.

#### 3.4 The concept of community management in rural drinking water supply

The concept of community management evolved as a result of failures of community participation approaches to generate good results (IRC, 1992:4). It draws its argument by putting forth the argument that communities in rural areas have always managed their traditional sources of water (Yacoob, 1989). When a new water supply scheme is constructed by an external agency in the community, it usually has to enter into some sort of arrangement with the external agency and change its existing management practices. An enhanced management role for communities is seen as a way of increasing cost effectiveness, improving reliability, and ensuring sustainability by placing a larger share of the responsibility for operation and maintenance in the hands of the community itself (IRC, 1992:4). Especially with regards to sustainability this concept argues that sustainability depends on more than community participation alone; it requires capability and willingness on the part of the community to take charge so that it is able to exercise decision making and control during project development. The three basic components of community management are: (i) *responsibility*: The community takes on the ownership and attendant obligation to the system; (ii) *authority*: the community has the legitimate right to take decisions regarding the system on behalf of the users; (iii) *control* - the community is able to carry out and determine the outcome of its decisions; (McCommon et al., 19 :10):

Therefore, community management in water supply, which is built on long experience of community participation, is said to go much further, since it equips communities to take charge of their own water supply schemes. The linkage between community participation and community management can be seen in the sense that community participation leads to community management through progressive levels of local responsibility, authority and control as management passes from the external agency to the community. The concept of community

management rightfully puts forth the fact that there is no predetermined specific set of action that an external agency can take to ensure this smooth change, since one community is distinct from the another.

### Part III

#### 3.5 Community participation activities of successful rural water supply projects

After providing the concept of community participation in rural drinking water supply in this chapter and various associated issues, it becomes necessary for the purpose of this research to explain what connotes successful participation in water supply and what are the activities that constitute community participation in rural drinking water supply. In this regard, Shepherd and El Neima (1983) conclude that successful participation in water supply could best be measured in terms of rate and length of breakdown; the greater the degree of participation, the greater the chances of continued water supply (cf. Oakley et al., 1991:56). Likewise, Yacoob and Warner (1988), on the basis of experiences gained by WASH (Water and Sanitation for Health Project) list the following community participation activities that are associated with most successful rural water projects:

*(i) Community mobilization and organization:* Community participation means involving as many community members as possible by providing an institutional vehicle through which they can act.

*(ii) Project negotiations:* Communities need to communicate their preferences and have a say in the type of projects to be considered. The community may give its input in consultations or in public discussions.

*(iii) Community operation:* Community organizations are usually elected or appointed committees. Their potential operating effectiveness depends on the degree to which they are allowed to function in project development.

*(iv) Training:* Training is necessary for people involved in implementation.

*(v) Community contribution:* Communities must contribute to the development and operation of their projects if they are to feel that they own the resulting system.

*(v) Cost recovery:* The community must meet any obligations to external agencies.

*(vi) Operation and maintenance:* To the extent possible, communities should accept and exercise responsibility for operations and maintenance.

Keeping in mind the above community participation activities that are widely acclaimed to be associated with successful rural water supply projects, it becomes essential to take the above activities into consideration in order to measure the level of community participation in all the projects taken for study in this research. They have been briefly explained below and further elaborated in the forthcoming chapter.

*(i) Community participation in planning and decision-making:* This activity has been taken to include both community mobilization and organization activities as well as project negotiations activities as stated above. Since community mobilization and organization as well as project negotiations both constitute consultation and organization of consultation before the execution of the scheme, they have been termed under the above heading.

*(ii) Presence of a water user committee:* This activity is concerned with the community operation activity, as it is through the organizational framework of the water user committee the community water supply project is brought under operation.

*(iii) Community contribution:* As mentioned above.

*(iv) User charges:* As denoted by cost recovery mentioned above.

*(v) Operation and maintenance:* - As mentioned above

The 'training' activity has not been dealt with in this research since most of the communities were not found to be involved in training. The details of all the above mentioned activities and how they are analyzed has been explained in the next chapter.

## **Conclusion**

This chapter has provided the basic concept behind community participation in rural drinking water supply and the analytical base that shall be used in the forthcoming chapter. In case of rural drinking water supply, the concept of community participation is mainly concerned with a good consultation with the community during its different stages. The problem of operation and maintenance of the drinking water supply after the scheme has been constructed and the project personnel have left, is still the basic issue that needs to be resolved at the community level. Likewise, the issue of cost recovery and user charges are still the problem areas in most of the developing countries. In the same way, the sense of ownership and a feeling of responsibility of the water supply scheme create a good base for sustainability. But sustainability

depends upon the type and extent of support provided by the development agency and the cooperation provided by the community for the scheme. A carefully planned and implemented scheme in which the participation of community is actively sought in every stage has better chances of generating the feeling of ownership and responsibility which ultimately lead to the sustainability of the scheme.

There appears to be a distinct relationship between local commitment of the community and the success of programmes. The disappointing results of many water-supply programmes can often be attributed to the lack of community understanding and participation. If people feel the need for drinking water and participate in its planning and feel responsible for it, and if they form some sort of an organization to pay for it or for someone to look after it, it is certainly possible that it will be kept up. It is also highly questionable whether outsiders can impose and bring about consumer participation. In this context, referring to water supply Widstrand states "If planning should be done, not only for the people, but also with the people, it seems to be a fruitful way to develop systems which involve choices by the local users themselves and the corresponding responsibilities". (1980:169).

**CHAPTER IV**  
**COMMUNITY PARTICIPATION AND DEVELOPMENT AGENCIES**

**4.1 Introduction**

This chapter is the analytical part of the research and has been divided into three parts. Part I is the analytical framework. Part II tests the hypotheses on the basis of analysis and its findings, and part III provides the key findings of this research. I would like to mention that all the activities that have been taken for analysis evolved out of the responses of the community in the questionnaire during the survey. These responses were grouped accordingly and the detailed description of each community, their location in Nepal, and their responses are given at the end of the chapter in tables 4.1, 4.3, 4.4 and 4.5

**Part I - Analytical framework**

**4.2 Two aspects of analysis**

There are basically two purposes of this analysis. Firstly, to find out the degree of community participation in drinking water supply in Nepal and inherent issues in the area of community participation in drinking water supply. Secondly, to find out the degree of participation carried out by different development agencies active in the field of constructing water supply schemes with the participation of the community. For this purpose the analysis has been conducted basically on two aspects:

**4.2.1 The water supply schemes**

The nature of 33 water supply schemes and the technology used were found to be as given in the following page (Table 4.1). Since the major purpose of this research was to analyze the community water supply schemes on the basis of its post-construction stage (i.e., the state in which these schemes were found after the development agencies had left the scene) all the 33 community water supply schemes were categorized under their actual state. Almost two-thirds (20) of the schemes were found to be in need of some repair. Only 13 schemes were found to be in good working condition. In order to facilitate the analysis and to provide a good picture of the state of operation and maintenance, the schemes that were in need of repair were further categorized

under schemes that were in need of minor repair and schemes that were in need of major repair. Schemes coming under major repair are those where the tank/reservoir is leaking, pipes are damaged and the flow of water has been reduced drastically. Most of the schemes requiring major repair were found to be in need of complete rehabilitation. These are termed as "major repair" in the analysis. By "minor repair" is meant those schemes where minor faults like replacement of tap faucets, replacement of washers, nuts bolts, greasing, etc. are needed. "Schemes in good condition" are the schemes that have neither the need for minor repair, nor major repair, but are operating satisfactorily. These are termed as "schemes in good condition" and also also "successful schemes".

**Table 4.1 Nature of water supply schemes and their location in Nepal**

S.No.	Name of Community	Nature of water Supply scheme	Development Region	District	Village Dev. Committee	Geographical Region
1.	Majhgaon	Gravity flow	Eastern	Dhankuta	Pakhribas	Hill
2.	Dhikure	"	Eastern	Dhankuta	Ghorlikharka	Hill
3.	Diyale	"	Eastern	Dhankuta	Ghorlikharka	Hill
4.	Kodare	"	Central	Dolakha	Kabre	Mountain
5.	Hanumante	"	Central	Dolaha	Kabre	Mountain
6.	Shipatar	"	Central	Sindhupalchowk	Bhotshipa	Mountain
7.	Maneshwora	"	Central	Sindhupalchowk	Maneshora	Mountain
8.	Akamphedi	"	Central	Ramechhap	Those	Hill
9.	Seleghat	"	Central	Ramechhap	Baluwajhor	Hill
10.	Macchedade	"	Central	Ramechhap	Manthalee	Hill
11.	Dade	"	Central	Sindhuli	Dade Gurasea	Hill
12.	Tuteshwar	"	Central	Mahottari	Maisthan	Terai (Plains)
13.	Lalgadh	"	Central	Dhanusa	Bangdabar	Terai (Plains)
14.	Yeekle Khet	"	Western	Tanahu	Dhulegauda	Hill
15.	Buddichaur	"	Western	Argakhanchi	Sitapur	Hill
16.	Pawar	"	Western	Argakhanchi	Simalpani	Hill
17.	Hulaka	"	Western	Argakhanchi	Sandikhark	Hill
18.	Rampur	"	Mid-Western	Dang	Rampur	Terai (Plains)
19.	Hemantapur	"	Mid-Western	Dang	Bijouri	Terai (Plains)
20.	Hemantawada	"	Far-Western	Bajhang	Suheda	Mountain
21.	Rajawada	"	Far-Western	Bajhang	Suheda	Mountain
22.	Labatoli	Hand Pump	Eastern	Morang	Lakhantari	Terai (Plains)
23.	Simara Chowk	"	Mid-Western	Bardiya	Sorahwa	Terai (Plains)
24.	Ujemasaha	"	Mid-Western	Banke	Kanadi	Terai (Plains)
25.	Chhatar	"	Mid-Western	Banke	Kohalpur	Terai (Plains)
26.	Hulaktal	"	Mid-Western	Banke	Kohalpur	Terai (Plains)
27.	Chisapani	"	Mid-Western	Banke	Chisapani	Terai (Plains)
28.	Madhuban	Deep tubewell	Western	Kapilvastu	Motipur	Terai (Plains)
29.	Jhapatol	"	Eastern	Morang	Baijanathpur	Terai (Plains)
30.	Prastoki	"	Eastern	Dubahi	Prastoki	Terai (Plains)
31.	Burjatol	Dug well	Central	Mahottari	Kissanagar	Terai (Plains)
31.	Pachitol	Protected Spring	Western	Kaski	Rupakot	Hill
33.	Bahadurgunj	Overhead tank	Western	Kapilvastu	Bahadurgunj	Terai (Plains)

#### 4.2.2 The development agencies

Another aspect of the analysis looks into the activities of development agencies. Basically all the development agencies were found to be operating in community water supply schemes, namely, the government, the donor-supported



projects, the NGOs and the local government. (1) Government-executed projects are the water supply schemes that were funded and implemented by the Department of Water Supply and Sewerage (DWSS), which is the lead agency in the area of drinking water for His Majesty's Government of Nepal. (ii) Donor-supported projects are those water supply projects which are funded and supported by bilateral (e.g. HELVETAS, i.e., the Swiss Development Cooperation) and multilateral donor agencies (e.g., the Asian Development Bank). But, of course, these donor-aided projects are not carried out solely by the donors only. They are executed in cooperation with the government, i.e., the DWSS, since direct donor support to the government is channelled as well as executed in cooperation with the government, which means collaboration with the DWSS in the area of drinking water supply. (iii) NGO-supported projects are those that are funded and implemented by both local and international NGOs (iv) Local government-supported projects are those that are funded and implemented by the District Development Committee (DDC). So far as these development agencies are concerned the local government, i.e., the District Development Committee in this case, has not been analyzed since they were involved in implementing only two projects out of the 33 projects taken for study. This made difficult to infer any judgements upon their activities. Therefore, the analysis of development agencies is centred upon the government-supported projects, i.e., DWSS who had implemented 13 projects, followed by donor-assisted projects (10 projects) and NGO-executed projects (8 projects) in this study. However, when community participation is analyzed the study draws its inferences and findings from all the 33 schemes.

Before further elaboration of the analysis, a brief description of how a rural water supply scheme in Nepal is carried out is explained below:

#### **4.3 The process in which a rural water supply scheme is carried out in Nepal:**

It should be noted that this process is mainly applicable to the District Development Committee, Department of Water Supply and Sewerage (DWSS) and the development projects which are carried out in collaboration with the DWSS. It is not applicable to NGOs.

First of all the community has to make the request for a water supply scheme to the Village Development Committee (VDCs), which is the lowest political body in the political hierarchy. The VDC then recommends the requests and forwards it up to the District Development Committee (DDC). The DDC, after collecting

all the requests from different VDCs, organizes a meeting in its office in the presence of the District Assembly which ranks the schemes according to its priority. This meeting decides which water supply scheme is to be given for construction to which organization. The development agency, hence, is informed by the DDC to undertake the particular scheme.

After receiving the information from the DDC, the development agency starts the study of the water supply scheme area, usually, in three steps. Firstly, a pre-feasibility study of the scheme is taken by technical persons who visit the scheme area and collect information about the situation of the source of water, its yield and capacity, population and community's willingness to participate. On the basis of these information, it is determined whether the water supply scheme is feasible or not and whether there is a felt need. When every thing works well at this pre-feasibility stage, in the second stage, a technical, economical, social and health behavioural study is undertaken. On the basis of this information the first plan is laid which needs to be approved by the villagers. If the villagers approve it, the third step is carried out in which a detailed survey, design and estimate is carried out on whose basis a report is prepared. The report is then put forward again to the villagers for approval. This third step is most important in the sense that there is active involvement of the community from this stage onwards because this stage decides upon the formation of the Water User Committee, layout of the water supply schemes, location of water standpoints, structures, contributions of the villagers and responsibilities of the Water User Committee. When this stage is through with the approval of the community and the development agency, the construction work of the scheme is started. During this third phase, the villagers usually organize mass meetings, usually in the presence of the staff of the development agency. These mass meetings have been considered to be the most participatory way to involve local communities in the planning and decision-making of the schemes. During a mass meeting the community approves the scheme design, decides on the location of waterpoints, decides on how the fund is to be collected, how labour and other contributions are to be divided between households. But above all, it determines the members of the Water User Committee.

#### 4.4 Clarification of analysis

##### The meaning of community participation in this research

For the purpose of analysis of this research I conceptualize the process of community participation to be achieved when the community has participated in the planning and decision-making of the scheme and has revealed basic features that increases its potential to sustain the scheme in terms of proper functioning after the construction had been completed and the scheme handed over to the community, i.e., to the Water User Committee of the community. The activities selected below are in line with the concept of community participation in rural drinking water supply mentioned in chapter III.

*1. Involvement of the community in planning and decision making* - This entails consultation with the community before the scheme is constructed and also concerns participation by the community in decision making in terms of designing the scheme, location of water standpoints, etc. The 'technical' aspect of decision making was not considered to be equally relevant because decision-making in this case turned out to be the involvement of communities in the technological choice of water supply schemes. In almost all cases there was virtually no technological option and the communities accepted whatever scheme that was designed by the technicians of the development agencies. Moreover, in most cases the topographic condition of Nepal and the nature of water source itself automatically provide limitations to the type of technology to be used.

*2. Water User Committee (WUC)* - A water user committee (WUC) is the most common form of organization through which the beneficiaries are supposed to contribute in the costs of the scheme and share the benefits. The function of a WUC, in principle, is: (i) to represent the community in contacts with the development agency (ii) to organize contributions by the community, in cash or in kind, towards, construction, and towards operations and maintenance (iii) to organize proper operation and maintenance (iv) to keep accurate records of all payments and expenditures (v) to hold regular committee meetings to discuss and decide on issues and problems, and to inform the community regularly on decisions (IRC, 1992).

A WUC has a chairman, a vice-chairman, a treasurer, a secretary and other members. Most WUCs have representatives from all wards and clusters of the

scheme area, which makes it possible to integrate different caste and ethnic composition of the community. The essence of a Water User Committee is more crucial when the scheme is handed over to it by the implementing agency, since it plays a key role to ensure the sustainability of the scheme.

**3. Community contributions** - Even though some writers in the area of drinking water supply (e.g. White, 1981:56) consider cash contribution as amounting to community participation, I have considered any contribution by the community in terms of cash, labour, local material as amounting to community <sup>participation</sup> contributions. This was because in the survey it was found that only a few communities were willing to contribute cash, "if necessary" - the obvious reason being their state of poverty and the fact that cash is far more dearer than labour and local material in rural Nepal.

**4. Collection of user charges** - It means whether the community is paying anything for the water consumed by it. This factor is not only associated with the operation and maintenance aspect of a drinking water supply scheme, but also to its sustainability aspect in the sense that the community has funds available in order to carry out the required operation and maintenance. A community which pays user charges gives a good signal that the water supply scheme will remain operational for a long time.

**5. Feeling of responsibility for minor repair by the community** - This activity shows whether the community feels that it is the community's responsibility to carry out the required operation and maintenance, at least for minor repairs.

#### **4.5 Method of analysis**

As mentioned above, the analysis has been based by categorizing schemes under three groups: schemes that are in good condition; schemes that are in need of minor repairs; and schemes that require major repair. For the sake of comparative analysis average has been taken, and where necessary other statistical techniques like the standard deviation, and Spearman's Rank Correlation Coefficient has been calculated in order to support the analysis. Graph and supporting tables has been used for portraying the information. As it turned out to be necessary to give points to the activities mentioned above for the sake of analysis, the justification for giving points to each activity is given below.

1. *Community's involvement in planning and decision making* - The communities had been classified on the basis of whether they had participated in planning and decision-making or not. Considering the importance of community participation in planning and decision making two points was given if the community had participated in planning and decision making, and zero point was given if it had not.

2. *Formation of a Water User Committee* - While tabulating the data water supply schemes grouped under four headings: WUCs that were formed with consensus, which meant that the members of the WUC had been elected or decided upon by mass meetings in which everybody could voice their concern; WUCs that were formed for the sake of formality only, which meant that the WUC was formed to fill the official procedural requirements on the part of the development agency; WUCs that were not formed with consensus, which meant that the WUC was not formed with the approval of the majority of the community; and finally no WUC in the community, which meant that was no WUC has been formed in the community, and even if it had formed it had become dysfunctional.

One point was given if the WUC was formed with the consensus of the community. The other activities, namely, WUC not formed with consensus and, WUC formed for formality only, do not amount to participation and hence were given zero.

3. *Community contributions* - In the survey it was found that there were six types of contribution by the communities: cash, labour and local material; cash and labour; cash only; labour and local material; labour only; and finally, no contribution at all.

Since, any form of contribution was considered as participation it was given one point, and no point was given where there was no contribution from the community.

4. *Feeling of responsibility for minor repair by the community* - Four classifications evolved under this heading: community feels that it is responsible for both minor repairs and major repairs; community feels that is responsible for minor repairs and feels that the implementing agency is responsible for major repairs; the community feels that the implementing is responsible for both minor and major repairs; the community feels that no one is responsible for both major and minor repairs.

Where the community felt that it was responsible for at least minor repair was given one point and zero point was given where there was no feeling of responsibility for operation and maintenance by the community.

5. *User charges* - Four types of activities evolved under this heading: communities collecting user charges on a regular basis (usually on a monthly basis); communities collecting user charges on an 'as required' basis, i.e., the communities collected user charges from the beneficiaries only when there were repairs needed to be done to the scheme; communities not collecting user charges at all; and finally there were two communities where the scheme was there, but no water came and hence no justification for user charges.

If the community was paying user charges on a regular basis it was given two points. This is because if a community collects regular user charges it has a high chance of keeping it in proper use for a long time. If it was collecting on an 'as needed' basis it was given one point and no user charges meant zero point. The details of the points of every community is shown in Table 4.2 at the end of the chapter.

#### 4.6 The Time Dimension

The table given below gives an interesting feature of the water supply schemes that were undertaken for study. Most of the schemes requiring major repair were in fact old schemes, and most of the schemes that were in good condition were schemes that were newly built. The average age of schemes requiring major repair was found to be 6.6 years whereas the schemes that were in good condition were found to be only 3.1 years old on an average. Going further than the average, the standard deviation was calculated. It was found that the schemes requiring major repair also had the widest deviation (3.64) and the schemes that were in good condition had the lowest deviation (2.11). Therefore, it confirms the fact that, in general, the schemes requiring major repair were older schemes. Another interesting feature is that the time required for construction was also the shortest for schemes that were in good condition and longest for schemes that were in need of major repair. The average time taken to build the schemes in new condition was 3.79 months whereas the time required to build the schemes in need of major repair was 47.4 months. Again the standard deviation in this case also shows that the widest deviation was present in schemes requiring major repair (32.89), and schemes that were in good condition had the lowest deviation (4.62). This is a clear

indication that the schemes requiring major repairs were in fact 'problematic' schemes in one way or the other.

**Table 4.2 Age and time required to complete the water supply schemes taken for study**

Good condition			Minor repair			Major repair		
Community	Age	Time	Community	Age	Time	Community	Age	Time
Seleghat	1	2	Prastoki	3	2	Dhikure	11	36
Pawar	1	1	Shipatar	2	6	Diyale	6	96
Madhuban	0	12	Pachitol	8	3	Kodare	5	4
Majhgaon	4	3	Hulakatal	4	0.25	Hanumante	2	36
Macchedade	4	12	Tuteshwar	5	4	Buddichaur	9	2
Yeekle Khet	1	3	Rajawada	1	24	Hemantawada	11	24
Jhapatol	6	0.25	Dade	1	24	Hulaka	4	72
Burjatole	4	3	Chisapani	1	1	Rampur	2	36
Labtoli	3	0.25	Lalgadh	10	36	Hemantapur	12	72
Simara Ch.	3	0.25	Maheshora	4	12	Bahadurgunj	4	96
Akamphedi	3	12						
Ujemasaha	8	0.25						
Chhatar	4	0.25						
Average	3.2	3.8		3.9	11.2		6.6	47.4
Standard dev.	2.11	4.62		2.91	11.82		3.64	32.89

Age is calculated by taking 1994 (the year of survey) as the base year  
Time means the time required to construct the scheme (in months)

Therefore, keeping in mind the above table, an argument could be raised in this research that schemes requiring major repair are in fact older schemes, and hence naturally fall into the category of "major repair" whereas schemes that have been recently constructed have not undergone the time of wear and tear, and hence are obvious to fall into the category of "schemes in good condition". Even though the exact nature of relation between these two variables cannot be given, the Spearman's rank correlation coefficient was calculated in order to give a brief explanation about this important factor and to test the relationship between the age of scheme and the condition of scheme. The result showed that there is in fact some relationship ( $r = 0.44$ ) between these two variables, and hence the time dimension cannot be ignored and needs to be taken into consideration when we talk about the condition of the schemes.

Another possible argument that could be raised is that the concept of community participation has been practised only in recent years and schemes that were old naturally had a poor degree of participation since the concept of community participation was not "pushed forward" so much as it is in years. In this regard, I would like to mention that the concept of people's participation has

been both a method and an objective of rural development programmes in Nepal<sup>2</sup>. But to assess the increase in the degree of participation over time in Nepal is beyond the scope of this study. Therefore, in order to provide a simple explanation to this situation, the rank correlation coefficient was calculated between the age of scheme and the degree of community participation. The result showed that there is some relationship ( $r = 0.42$ ) between the age of scheme and the degree of participation, and that this factor should also be duly be accounted for. The calculation of the rank correlation of coefficient is provided at the end of this chapter.

To sum up the above analysis, we can fairly say that the time factor also has its influence in determining the condition of the scheme and needs to be duly accounted for in order to give a fair picture of the analysis.

## Part II

### 4.7 Testing of hypotheses

#### *Hypothesis 1*

*Community participation, as measured by the following five activities is not practiced fully in the majority of the water supply schemes.*

#### Indicator:

Presence of community participation activities in each of the 33 water supply schemes, i.e.,:

- Community involvement in planning and decision making
- presence of a water user committee
- Contribution by the community
- Feeling of responsibility for minor repairs
- Collection of user charges

#### Result:

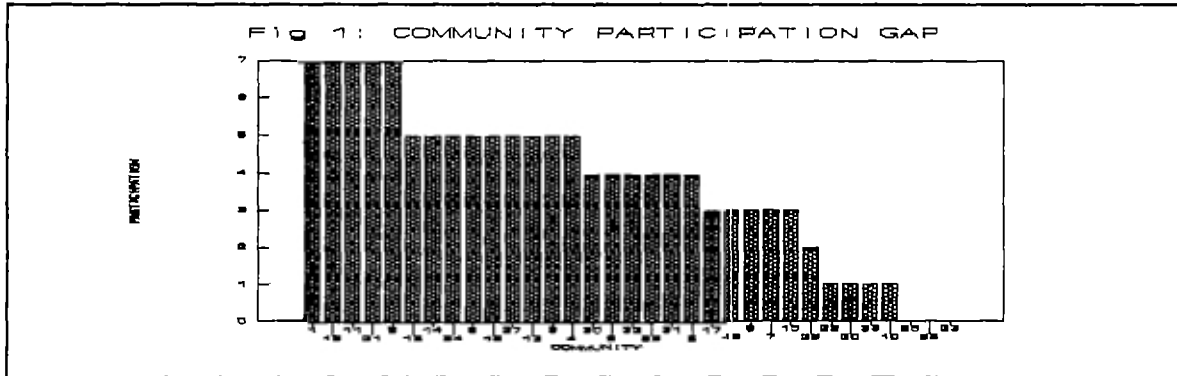
The analysis revealed that in the majority of the schemes the process of community participation is not practised fully. In order to give a simple

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<sup>2</sup>Poudyal, 1991:171



picture, the total points of every community amount to  $7 \times 33 = 231$ , whereas the points signifying community participation amounted to 125 only. Hence, the gap amounted to 106 points which has been shown by the blank space in the graph.



**Hypothesis 2**

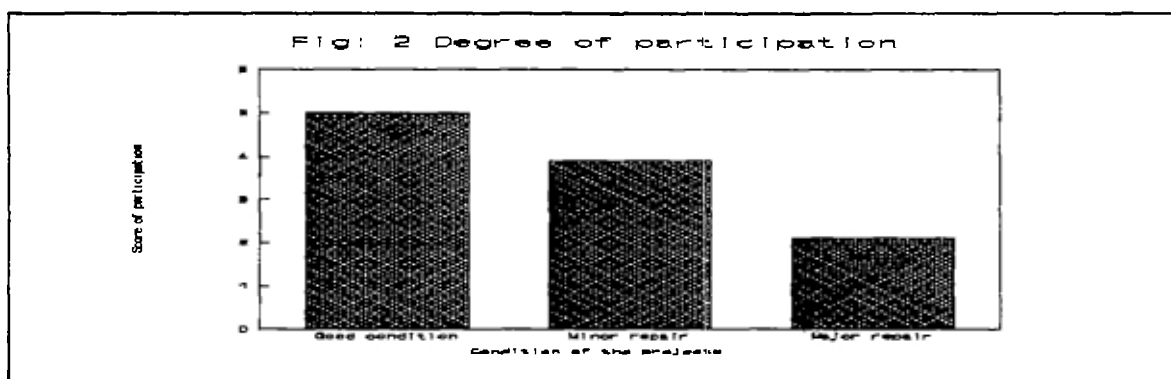
*Schemes in good condition have a higher degree of participation than schemes in poor condition*

Indicator:

- The degree of community participation, as measured by the activities involved in the process of community participation, in schemes that are in good condition, schemes that are in need of minor repair and schemes that are in need of major repair.

Result:

The analysis revealed that indeed, schemes that are in good condition had a higher degree of participation and schemes in need of major repair had the lowest degree of participation. The average point for schemes in good condition was 5, followed by schemes requiring minor repair (3.9), and schemes requiring major repair (2.1). However, the standard deviation was found to be the highest in schemes requiring major repair (2.26), followed by ~~schemes~~ schemes in good condition (1.57) and schemes in need of minor repair (1.22). The figure below shows the graphic representation of the above hypothesis on the basis of average points.



**Hypothesis 3**

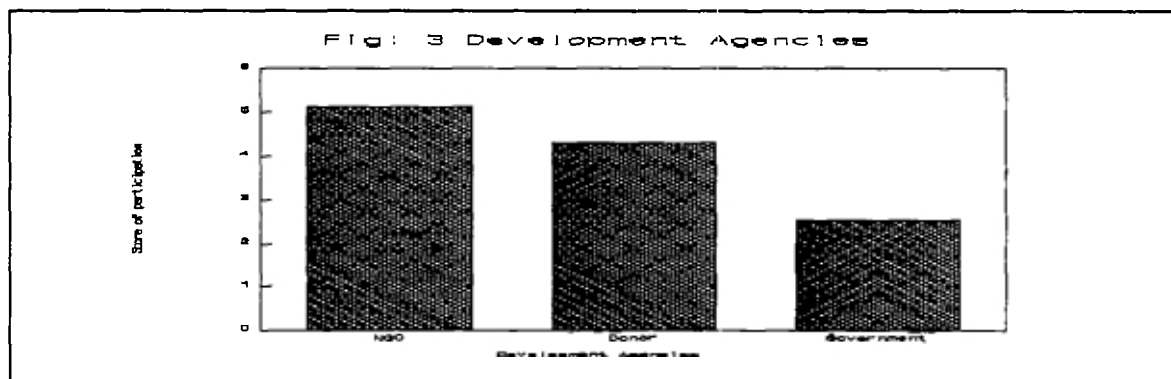
*The process of community participation is more assured when the project is carried out by a NGO*

Indicator:

- Degree of participation, as measured by activities involved in the process of community participation, carried out by NGOs in their projects in comparison to those of government-supported projects and donor-supported projects.

Result:

Despite some major criticisms of NGOs, as highlighted in the conceptual framework, NGOs were found to be comparatively more sensitive to the process of community participation. The donor-funded projects ranked second and the governmental agency (DWSS) seemed to be a poor vehicle of community participation. The average point of NGO-executed projects was 5.1, followed by donor-assisted projects (4.1), and government-executed projects (3.3). Moreover, none of the NGO-supported schemes were in need of major repair.



#### **Hypothesis 4**

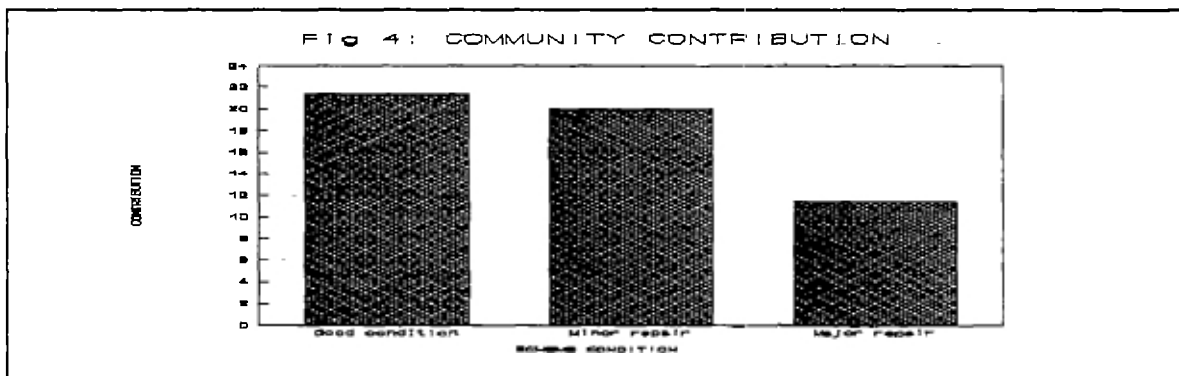
*Higher the contribution of the community, higher the degree of participation*

#### Indicators:

- Proportion of community's contribution in terms of cash, labour and local material to total cost of the scheme in schemes that are in good condition compared to schemes that are in need of minor repair and schemes in need of major repair
- Correlation between community contributions and degree of participation in all the schemes

#### Result:

The analysis revealed that in fact, there was higher contribution in schemes that were in good condition in comparison to schemes that are in need of major repair. Even if we disregard the communities which had not contributed anything, and taking the average of those communities only who had contributed, the average contribution by the community in schemes that were found in good condition was 21.34%, followed by schemes requiring minor repair (20%) and schemes requiring major repair (11.4%).



The calculation of correlation also showed there is a fair relationship ( $r = 0.72$ ) between the degree of community contribution and the degree of participation.

### Hypothesis 5

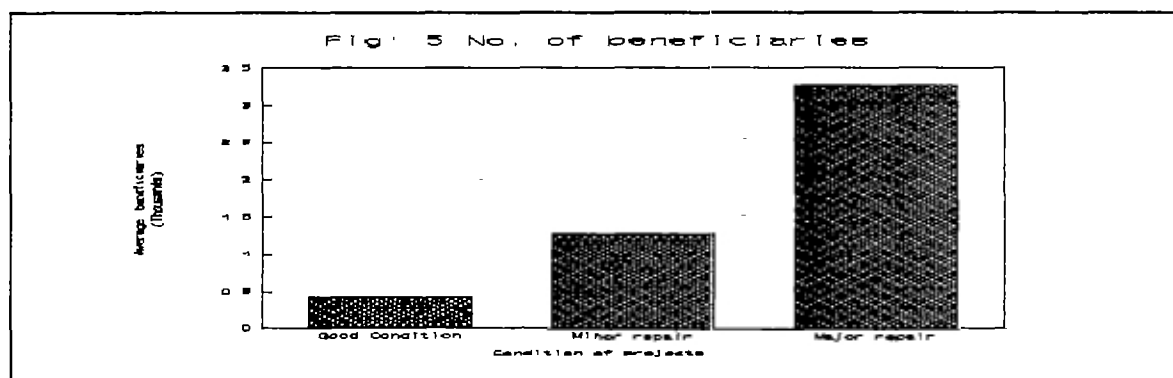
*Greater the number of beneficiaries, lower the degree of participation*

#### Indicator:

- Average number of beneficiaries in schemes in good condition, schemes in need of minor repair and schemes in need of major repair
- Correlation between the number of beneficiaries and degree of participation in all the schemes

#### Result:

The result showed that the average number of beneficiaries was 421 in schemes that were in good condition. In case of schemes requiring minor repair and schemes requiring major repair, the average number of beneficiaries was 1292 and 3265 respectively. The correlation also showed that there is a fair negative relationship ( $r = - 0.62$ ) between the number of beneficiaries and the degree of participation. It is also worthwhile to mention that, on an average, the NGOs were found to be involved in schemes that had less number of beneficiaries and the government was found to be mostly involved in schemes that had the highest number of beneficiaries.



### Part III

#### 4.8 Findings

The findings explained below first relate to each activities in terms of it being practiced in all the communities and then a brief description is given

as to which of the three development agencies was better in terms of incorporating the activity in the execution of the schemes.

#### *Community involvement in planning and decision making*

Out of 33 communities only 8 had been involved in planning and decision making. Six out of eight communities that were involved in the planning of the scheme had the schemes in good condition. Nine out of ten schemes which were in need of both minor and major repair had no involvement of the community in the planning of the scheme. Moreover, one common activity that was evidenced in communities not willing to take over the scheme from the development agency was that they were not consulted at the planning stage. In comparative terms, the NGOs were found to have involved the communities more. On the other hand none of the projects supported by the government had involved the community in the planning of the water supply scheme.

#### *Water User Committee (WUC)*

In total there were five communities which had no WUC. Out of these five water supply schemes four were in need of major repair. The one community in which it was functioning was mainly because of leadership, and that also of a woman who had contributed the cash requirement all by herself. She even thought that she was personally responsible for it which was the main reason why the scheme was found to be in good working condition.

#### *Community contributions*

Community participation in terms of community contribution was found to be high. 26 communities out of 33 had contributed. There were 7 communities that had not contributed anything, out of which five required major repair and the remaining two were in need of minor repair. In total 50% of all the schemes requiring major repair had no contribution from the side of the community. Again, the NGOs were found to acquire at least some form of contributions from the community, followed by donor-assisted projects and government-assisted projects.

### *Responsibility for Operation and maintenance*

The responsibility for operation and maintenance almost went side by side with community contributions. In total 26 communities felt that they were at least responsible for minor repairs. Almost all the communities when asked what type of responsibility they wanted regarding operation and maintenance, replied that they were willing to take the responsibility of minor repairs but wanted the implementing agency to take the responsibility for major repairs. There were six communities which felt that the development agency was responsible for both major and minor repairs, and one community was found to be totally irresponsible in the sense that it thought that no one was responsible for any type of repair. So far as the development agencies are concerned, responsibility for operation and maintenance was found to be comparatively good in NGO-supported projects followed by donor-supported projects and government-supported projects.

### *User charges*

Only 13 communities collected user charges on a regular basis, and five on an 'as-needed' basis. It was interesting to find that there were two communities who paid user charges on a regular basis, even though the schemes were in need of major repair. On the other hand, there were 13 communities who paid no user charges at all, out of which six needed major repair, three needed minor repair and four were functioning well. More communities collected user charges in donor-assisted schemes, followed by NGO-supported schemes and government-assisted schemes. This was the only activity in which the NGOs did not perform the best and were second to donor-assisted projects.

In many cases proper justification was not found to be given to communities as to why user charges should be collected. Communities that did not collect user charges often were of the belief that there is no need to collect money on a fixed basis for operation and maintenance. Once the problem arose they would raise the required money and carry out the necessary minor repairs.

#### 4.8.1 Other key findings

##### *Community participation in construction*

Community participation in construction was mostly limited to providing unskilled labour. The quality of construction and its supervision was done by the development agency and the community had no say over it. This amounts to a mere 'passive acceptance' by the community. Thus, so far as the entire implementation stage is concerned, it was found that most of the communities were consulted only for location of water supply standpoints by the development agencies.

Absence of community participation in the construction stage had led to poor quality construction in almost all cases where the schemes were in need of major repair. In addition, lack of community participation in the construction of the scheme could also lead to embezzlement of funds as was found in one case which is worth mentioning. The VDC (Village Development Committee) chairman, in conjunction with the contractor had manipulated the project for his personal benefit. In this case, even though the community was involved in the planning of the scheme, the absence of community participation in the construction stage made it possible for the VDC Chairman to manipulate it for his personal benefit. This scheme was found to be in need of total rehabilitation.

##### *The need for an effective contractual agreement*

The majority of the communities, especially those which had schemes that were in need of major repair felt a strong need for a contractual agreement with the development agency in which the roles and responsibilities of the agency and the community are spelled out clearly. Out of 33 communities only 7 had written contractual agreements. Schemes were in good condition in four of the communities that had written contractual agreements with the development agency. On the other hand, only one scheme had contractual agreement in schemes that were in need of major repair. Therefore, the existence of a contractual agreement is also a signal of whether the development agency as well as the community are serious in fulfilling its obligations in the development effort. It kind of 'legally' binds both the community and the development agency.

### *The need for a formal handover of the scheme*

The formal handing over of a scheme to the water user committee (in which the water user committee is given a certificate of ownership by the development agency) and its due acceptance by the community is necessary to provide assurance that the development agency is no more the owner of the scheme and the ownership has been 'rightfully transferred' to the community. On the community's side it shows the community's willingness to takeover the scheme and is a sign of community's satisfaction over the construction of the scheme. By 'rightful owners' I do not want to delve into the area of 'legal ownership' of the scheme, which lies beyond the scope of this study. In this context, 'handing over of the scheme' is limited to the fact that the scheme is no longer owned by the supporting agency who had built the scheme but by the community and in fact the Water User Committee formed in the community, which is supposed to take over charge after the development agency completes the scheme.

So far as handing over of the scheme to the Water User Committee was concerned, in the majority of cases there was no handover of the scheme (either formal or informal). The handing over of the scheme took place only in 6 schemes, out of which four were informally handed over and two were formally handed over. In a number of cases where even though no handing over was done the community still felt that it owned the scheme. This was mainly because of the fact that the community had made considerable contributions. Contrarily, in cases where the schemes were in need of major repair, there was no or very minimal contribution by the community. It was also found that in these cases the community even refused to takeover the scheme despite the implementing agency's 'pressure' to hand it over. In fact, the community even put up some conditions to the development agency if it were to take over the scheme.

### *Women' participation in WUC*

The participation of women in decision making, in terms of members of the WUC, was generally found to be very poor. There were women members only in 12 WUCs. Women were found to be mainly involved in the construction stage as unskilled labourers, and not during the planning of the scheme. In some cases it was found that women were included in the Water User Committee not by the wish of the community but as a requirement imposed by the development agency. Where included they were sheerly in a marginalized position and were undoubtedly



dominated by the male members and had virtually no say whatsoever in decision-making.

In all the headings under "other key findings" mentioned above the NGOs were found to be functioning better comparatively whereas the government (DWSS) was the poor performer. The donor-assisted projects ranked in the middle.

#### ***Communities perspective of development agencies***

The survey was also concerned with finding the attitude of communities towards development agencies. It was found that the agency with which the community would like to seek assistance from had nothing to do with the type of agency. The main factor that determined their preference for the type of agency depended upon the experience they have had with the agency. However, the fact remained evident that communities preferred to work with those agencies that had higher degree of community involvement from the very beginning. In the majority of cases where the community had bitter experiences with the government, they wanted to work with the NGOs. But still some communities preferred to work with the government (i.e., DWSS) and were reluctant to work with NGOs or donor-supported projects. The reasons behind it being: (i) their contribution was comparative less in the scheme. In some cases they did not contribute anything. (ii) The DWSS is perceived as a stable agency (iii) In case of most large schemes in terms of capital requirement, the reason could be that the community did not think that any agency other than the government, will have the sufficient capital or technical skill that would be needed in case of a major breakdown. Concerning NGOs, communities in many cases still felt that they should be provided assistance through the DWSS because it is a permanent and an established institution, whereas projects and NGOs are temporary agencies. Moreover, even though in some cases the community was satisfied with the work carried out by the NGO or the donor-assisted project, the communities still thought that DWSS would be a better agency to get assistance from in the future.

#### **4.8.2 Two new areas for participation sought by the community**

In this I wish to highlight the area of procurement and supervision of construction quality in which the community expressed its strong desire to participate as revealed in the survey.

## ***1. Procurement***

No communities had participated in the procurement of materials needed for the scheme. One of the reasons the communities mentioned why they would like to play an active role in the procurement of materials was to reduce cost of the scheme. They strongly believed that their participation in the procurement of materials would significantly reduce the total cost of the scheme.

## ***2. Supervision and control of construction quality***

Most of the schemes in need of major repair had the poorest quality of construction, whereas the schemes which were in good condition were found to have the high construction quality. It was also found that only two communities had participated in the supervision of construction quality of the scheme. In the remaining 31 communities there was no community participation in supervision of construction quality. The construction was carried out by contractors and the quality of construction was under the supervision of technicians and personnel of the concerned development agency. The communities' strong desire to participate in construction was mainly to ensure construction quality. They were not satisfied with their role in construction to be limited to providing unskilled labour only.

## **Conclusion**

It has been found from the above analysis that there is a strong relationship between the degree of community participation and the success of drinking water supply projects. It has also been revealed that the time factor also has its influence over the state of the water supply scheme. Another fact that emerged is that, indeed, the community participation activities have not been fully carried out in the majority of the schemes by the development agencies. Among the development agencies the NGOs excelled in comparison to the government and the donors. Except for the "user charges" activity there was a comparatively high degree of community participation in NGO-executed projects followed by the donor agencies and lastly, by the government in all the activities that were used in this analysis to ascertain the degree of participation. It also seems to be clear that schemes that are in good condition tend to have a comparatively higher degree of contribution. Another characteristic of successful schemes was that the number of beneficiaries were found to be the

lowest in that group and the schemes requiring major repair were found to have the highest number of beneficiaries.

TABLE 4.3 (Characteristics of water supply schemes)

SCHEME CHARACTERISTICS	Community participation activities				Development agencies				
	MAJOR REPAIR	MINOR REPAIR	GOOD CONDITION	Total	GOVT. (DWSS)	DONORS	NGOs	LOCAL GOVT (DDC)	Total
Implementing Agency:									
Government (DWSS)	6	3	4	13	13	0	0	0	13
Projects:	2	3	5	10	0	10	0	0	10
NGOs	0	4	4	8	0	0	8	0	8
Local government (DDC)	2	0	0	2	0	0	0	2	2
Total	10	10	13	33	13	10	8	2	33
Number of schemes	10	10	13	33	13	10	8	2	33
Average number of beneficiaries	1265	1292	421		2622	1226	591		
1 Community participation in plan. & Dec.									
Yes	1	1	6	8	0	2	5	1	8
No	9	9	7	25	13	8	3	1	25
Total	10	10	13	33	13	10	8	2	33
2 Water User Committee (WUC)									
Formed with consensus	3	9	12	24	9	7	8	0	24
Formed for formality only	1	1	0	2	1	1	0	0	2
Not formed with consensus	2	0	0	2	1	0	0	1	2
No WUC	4	0	1	5	2	2	0	1	5
Total	10	10	13	33	13	10	8	2	33
3 Community Contributions									
Cash, labour and local material	0	1	2	3	0	2	1	0	3
Cash and labour	0	1	6	7	1	2	4	0	7
Cash only	0	1	0	1	1	0	0	0	1
Labour and local material	2	3	1	6	0	4	1	1	6
Labour only	3	2	4	9	5	1	2	1	9
No contribution	5	2	0	7	6	1	0	0	7
Total	10	10	13	33	13	10	8	2	33
4 Perception on responsibility for O&M									
Community for both minor and major	0	2	2	4	1	0	3	0	4
Minor: community; Major: agency	2	5	9	16	7	5	4	0	16
Minor: community, major: not known	2	2	2	6	0	4	1	1	6
Agency for both minor and major	5	1	0	6	5	1	0	0	6
No one for both minor and major	1	0	0	1	0	0	0	1	1
Total	10	10	13	33	13	10	8	2	33
5 User charges									
Collected on regular basis	2	5	6	13	3	6	3	1	13
Collected when needed	0	2	3	5	2	2	1	0	5
No user charges	6	3	4	13	6	2	4	1	13
No water	2	0	0	2	2	0	0	0	2
Total	10	10	13	33	13	10	8	2	33

**TABLE 4.4**  
**COMMUNITY PARTICIPATION ACTIVITIES OF ALL WATER SUPPLY SCHEMES**

Development Agency	Community Name	Involvement in Plan & dec	WUC formation	Community contributions	User Charges	Responsibility for O&M	Total points
	GOOD CONDITION						
NGO	Seleghat	2	1	1	2	1	7
Donor	Pawar	2	1	1	2	1	7
Donor	Madhuban	0	1	1	2	1	5
NGO	Majhgaun	2	1	1	2	1	7
DWSS	Macchedade	0	1	1	2	1	5
Donor	Yeekle Khet	2	1	1	2	1	7
Donor	Jhapaatol	0	1	1	1	1	4
NGO	Burjatole	2	1	1	0	1	5
DWSS	Labtoli	0	1	1	1	1	4
NGO	Simara Chowk	2	1	1	0	1	5
DWSS	Akamphedi	0	1	1	0	1	3
DWSS	Ujemasaha	0	1	1	1	1	4
Donor	Chhatar	0	0	1	0	1	2
	Total	12	12	13	15	13	65
	Average						5.00
	Standard dev.						1.57
	MINOR REPAIR						
NGO	Prastoki	0	1	1	2	1	5
Donor	Shipatar	0	1	1	2	1	5
NGO	Pachitol	2	1	1	0	1	5
NGO	Hulakatal	0	1	1	1	1	4
NGO	Tutesshowr	0	1	1	0	1	3
Donor	Rajawada	0	0	1	2	1	4
DWSS	Dade	0	1	1	2	1	5
Donor	Chisapani	0	1	1	1	1	4
DWSS	Lalgadh	0	1	0	1	1	3
DWSS	Maheshora	0	1	0	0	0	1
	Total	2	9	8	11	9	39
	Average						3.9
	Standard Dev.						1.22
	MAJOR REPAIR						
DDC	Dhikure	2	1	1	2	1	7
Donor	Diyale	0	1	1	2	1	5
DWSS	Kodare	0	1	1	0	1	3
DWSS	Hanumante	0	1	1	0	1	3
DDC	Buddhichaur	0	0	1	0	0	1
DWSS	Hemantawada	0	1	0	0	0	1
DWSS	Hulaka	0	1	0	0	0	1
Donor	Rampur	0	0	0	0	0	0
DWSS	Hemantapur	0	0	0	0	0	0
DWSS	Bahadurgunj	0	0	0	0	0	0
	Total	2	6	5	4	4	21
	Average						2.1
	Standard dev.						2.26

DWSS - Government-supported schemes (Department of Water Supply and Sewerage)

NGO - NGO-supported schemes

Donor - Donor-supported projects

DDC - District Development Committee

TABLE 4.5

## INDIVIDUAL CHARACTERISTICS OF DRINKING WATER SUPPLY SCHEMES

SCHEMES IN GOOD CONDITION														
		Ma Jhgaon	Labloli	Jhapalol	Seleghat	Akamphedi	Macchedade	Durjatole	Yeekle Khel	Pawar	Madhuban	Simara chowk	Ujemasaha	Chhatar
SCHEMES CHARACTERISTICS														
Implementing Agency														
	Government (DWSS)		*			*	*						*	
	Projects			*					*	*	*			*
	NGOs	*			*			*				*		
	Local government (PPC)													
	number of beneficiaries	130	40	250	294	644	288	231	1015	520	1288	120	650	1631
1	Community participation in planning and decision making	*			*			*	*	*	-	*		-
2	Water User Committee (WUC)													
	Formed with consensus	*	*	*	*	*	*	*	*	*	*	*	*	
	Formed for formality only													
	Not formed with consensus													
	No WUC													*
3	Community Contributions													
	Cash, labour and local material			*										*
	Cash and labour		*		*			*		*	*	*		
	Cash only													
	Labour and local material								*					
	Labour only	*				*	*						*	
	No contribution													
	Total contribution (% of the total cost)	7	NA	42	45	4	0.8	26	40	34	15	13	8	NA
4	User Charges													
	Collected on regular basis	*			*		*		*	*	*			
	Collected when needed		*	*									*	
	No user charges					*		*				*		*
	No water													
5	Perception on responsibility for O&M													
	Community for both minor and major	*	*											
	Minor: community; Major: agency				*	*	*	*		*		*	*	*
	Minor: community; major: not known			*					*		*			
	Agency for both minor and major													
	No one for both minor and major													

TABLE 4.6

## INDIVIDUAL CHARACTERISTICS OF DRINKING WATER SUPPLY SCHEMES

SCHEMES IN NEED OF MINOR REPAIR											
SCHEME CHARACTERISTICS	Prantoki	Shipatar	Maheshora	Dade	Tuleshwor	Lalqadh	Pachitol	Hulakatal	Chisapani	Rajawada	
Implementing Agency:											
Government (DWSS)			*	*		*					
Projects		*							*	*	
NGOs	*				*		*	*			
Local government (DDC)											
Number of beneficiaries	240	1022	826	1400	3448	5040	102	160	230	455	
1 Community participation in planning and decision making							*				
2 Water User Committee (WUC)											
Formed with consensus	*	*	*	*	*	*	*	*	*		
Formed for formality only										*	
Not formed with consensus											
No WUC											
3 Community Contributions											
Cash, labour and local material								*			
Cash and labour	*										
Cash only				*							
Labour and local material					*				*	*	
Labour only		*					*				
No contribution			*			*					
Total contribution (% of the total cost)	12	14		0.6	3		70	23	11	27	
4 User charges											
Collected on regular basis	*	*		*		*				*	
Collected when needed								*	*		
No user charges			*		*		*				
No water											
5 Perception on responsibility for O&M											
Community for both minor and major	*							*			
Minor: community; Major: agency		*		*	*	*			*		
Minor: community; major: not known							*			*	
Agency for both minor and major			*								
No one for both minor and major											

TABLE 4.7

## INDIVIDUAL CHARACTERISTICS OF DRINKING WATER SUPPLY SCHEMES

SCHEMES IN NEED OF MAJOR REPAIR											
SCHEME CHARACTERISTICS		Dhikure	Diyale	Kodare	Hanumante	Buddhichaur	Hulaka	Bahadurgunj	Rampur	Hemantapur	Hemantawada
1	Implementing Agency:										
	Government (DWSS)			*	*		*	*		*	*
	Projects		*						*		
	NGOs										
	Local government (DWG)	*				*					
2	Number of beneficiaries	-	450	2106	978	570	6446	5646	5400	7750	2275
3	Community participation in planning and decision making	*					-	-	-		-
4	Water User Committee (WUC)										
	Formed with consensus		*	*	*						
	Formed for formally only						*				
	Not formed with consensus	*									*
	No WUC					*		*	*	*	
5	Community Contributions										
	Cash, labour and local material										
	Cash and labour										
	Cash only										
	Labour and local material		*			*					
	Labour only	*		*	*						
	No contribution						*	*	*	*	*
	Total contribution (% of the total cost)	21	21	0.6	NA	2					
6	User charges										
	Collected on regular basis	*	*								
	Collected when needed										
	No user charges					*	*	*	*	*	*
	No water			*	*						
7	Perception on responsibility for O&M										
	Community for both minor and major										
	Minor: community; Major: agency			*	*						
	Minor: community; major: not known	*	*								
	Agency for both minor and major						*	*	*	*	*
	No one for both minor and major					*					



RANK CORRELATION BETWEEN THE AGE OF SCHEME AND CONDITION OF SCHEME

The Time Dimension (A)

COMMUNITY NAME	AGE OF SCHEME	RANKING OF CONDITION OF SCHEME	RANKING OF AGE OF SCHEME	d	d <sup>2</sup>
Madhuban	0	27	33	-6	36
Seleghat	1	27	29.5	-2.5	6.25
Dade	1	15.5	29.5	-14	196
Pawar	1	27	29.5	-2.5	6.25
Chisapani	1	15.5	29.5	-14	196
Yeekle Khet	1	27	29.5	-2.5	6.25
Rajawada	1	15.5	29.5	-14	196
Shipatar	2	15.5	25	-9.5	90.25
Rampur	2	5.5	25	-19.5	380.25
Hanumante	2	5.5	25	-19.5	380.25
Prastoki	3	15.5	21	-5.5	30.25
Macchedade	3	27	21	6	36
Akamphedi	3	27	21	6	36
Simara Chowk	3	27	21	6	36
Labtoli	3	27	21	6	36
Hulakatal	4	15.5	15	0.5	0.25
Bahadurgunj	4	5.5	15	-9.5	90.25
Majhgaun	4	27	15	12	144
Chhatar	4	27	15	12	144
Burjatole	4	27	15	12	144
Maheshora	4	15.5	15	0.5	0.25
Hulaka	4	5.5	15	-9.5	90.25
Tutesshowr	5	15.5	10.5	5	25
Kodare	5	5.5	10.5	-5	25
Diyale	6	5.5	8.5	-3	9
Jhapaatol	6	27	8.5	18.5	342.25
Pachitol	8	15.5	6.5	9	81
Ujemasaha	8	27	6.5	20.5	420.25
Buddhichaur	9	5.5	5	0.5	0.25
Lalgadh	10	15.5	4	11.5	132.25
Dhikure	11	5.5	2.5	3	9
Hemantawada	11	5.5	2.5	3	9
Hemantapur	12	5.5	1	4.5	20.25

3354

Rank Correlation Coefficient (r Rank) =

0.4395053476

$$r_{Rank} = 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

where, d = differences between ranks of corresponding X and Y.  
 n = number of pairs of values (X,Y) in the data.

## RANK CORRELATION BETWEEN DEGREE OF PARTICIPATION AND AGE OF SCHEMES

### The Time Dimension (B)

Community Name	Participation	Age	Rank of participation	Rank of Age	d	d <sup>2</sup>
Madhuban	5	0	23.5	33	-9.5	90.25
Seleghat	7	1	31	29.5	1.5	2.25
Dade	5	1	23.5	29.5	-6	36
Pawar	7	1	31	29.5	1.5	2.25
Chisapani	4	1	16	29.5	-13.5	182.25
Yeekle Khet	7	1	31	29.5	1.5	2.25
Rajawada	5	1	23.5	29.5	-6	36
Shipatar	5	2	23.5	25	-1.5	2.25
Rampur	0	2	2	25	-23	529
Hanumante	3	2	11	25	-14	196
Prastoki	5	3	23.5	21	2.5	6.25
Macchedade	5	3	23.5	21	2.5	6.25
Akamphedi	3	3	11	21	-10	100
Simara Chowk	5	3	23.5	21	2.5	6.25
Labtoli	4	3	16	21	-5	25
Hulakatal	4	4	16	15	1	1
Bahadurgunj	0	4	2	15	-13	169
Majhgaun	7	4	31	15	16	256
Chhatar	2	4	8	15	-7	49
Burjatole	5	4	23.5	15	8.5	72.25
Maheshora	1	4	5.5	15	-9.5	90.25
Hulaka	1	4	5.5	15	-9.5	90.25
Tuteshohar	3	5	11	10.5	0.5	0.25
Kodare	3	5	11	10.5	0.5	0.25
Diyale	5	6	23.5	8.5	15	225
Jhapaatol	4	6	16	8.5	7.5	56.25
Pachitol	5	8	23.5	6.5	17	289
Ujemasaha	4	8	16	6.5	9.5	90.25
Buddhichaur	1	9	5.5	5	0.5	0.25
Lalgadh	3	10	11	4	7	49
Dhikure	7	11	31	2.5	28.5	812.25
Hemantawada	1	11	5.5	2.5	3	9
Hemantapur	0	12	2	1	1	1

3482.5

Rank Correlation Coefficient (r Rank) = 0.418031417

$$r_{Rank} = 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

where, d = differences between ranks of corresponding X and Y.  
n = number of pairs of values (X,Y) in the data.

## RANK CORRELATION BETWEEN COMMUNITY PARTICIPATION AND COMMUNITY CONTRIBUTION

COMMUNITY NAME	Participation	Community Contributions	Ranking of Participation	Ranking of Contributions	d	d <sup>2</sup>
Majhgaun	7	7	31	15	16	256
Yeekle Khet	7	40	31	30	1	1
Dhikure	7	21	31	23.5	7.5	56.25
Seleghat	7	45	31	32	-1	1
Pawar	7	34	31	29	2	4
Prastoki	5	12	23.5	18	5.5	30.25
Dade	5	0.6	23.5	8.5	15	225
Burjatole	5	26	23.5	27	-3.5	12.25
Madhuban	5	15	23.5	21	2.5	6.25
Rajewada	5	27	23.5	28	-4.5	20.25
Shipatar	5	14	23.5	20	3.5	12.25
Diyale	5	21	23.5	23.5	0	0
Pachitol	5	70	23.5	33	-9.5	90.25
Macchedade	5	0.8	23.5	10	13.5	182.25
Simara Chowk	5	13	23.5	19	4.5	20.25
Chisapani	4	11	16	17	-1	1
Jhapaatol	4	42	16	31	-15	225
Ujemasaha	4	8	16	16	0	0
Hulakatal	4	23	16	26	-10	100
Labtoli	4	21	16	23.5	-7.5	56.25
Kodare	3	0.6	11	8.5	2.5	6.25
Hanumante	3	5	11	14	-3	9
Tutesshowr	3	3	11	12	-1	1
Akamphedi	3	4	11	13	-2	4
Lalgadh	3	0	11	4	7	49
Chhatar	2	21	8	23.5	-15.5	240.25
Hulaka	1	0	5.5	4	1.5	2.25
Hemantawada	1	0	5.5	4	1.5	2.25
Buddhichaur	1	2	5.5	11	-5.5	30.25
Maheshora	1	0	5.5	4	1.5	2.25
Rampur	0	0	2	4	-2	4
Hemantapur	0	0	2	4	-2	4
Bahadurgunj	0	0	2	4	-2	4

1658

Rank Correlation Coefficient (r Rank) = 0.722927807

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$$r_{Rank} = 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

where, d = differences between ranks of corresponding X and Y.  
n = number of pairs of values (X,Y) in the data.

CORRELATION BETWEEN PARTICIPATION AND NO. OF BENEFICIARIES

COMMUNITY NAME	NO. OF BENEFICIARIES X	PARTICIPATION Y	(X-Avg X)	(Y-Avg Y)	(X-Avg X) (Y-avg Y)	(X-Avg X) 2	(Y-Avg Y) 2
Labtoli	40	4	40.00	4.00	160.00	1600.00	16.00
Pachitol	102	5	102.00	5.00	510.00	10404.00	25.00
Simara Chowk	120	5	120.00	5.00	600.00	14400.00	25.00
Majhgaun	130	7	130.00	7.00	910.00	16900.00	49.00
Hulakatal	160	4	160.00	4.00	640.00	25600.00	16.00
Chisapani	230	4	230.00	4.00	920.00	52900.00	16.00
Burjatole	231	5	231.00	5.00	1155.00	53361.00	25.00
Prastoki	240	5	240.00	5.00	1200.00	57600.00	25.00
Jhapaatol	250	4	250.00	4.00	1000.00	62500.00	16.00
Macchedade	288	5	288.00	5.00	1440.00	82944.00	25.00
Seleghat	294	7	294.00	7.00	2058.00	86436.00	49.00
Diyale	450	5	450.00	5.00	2250.00	202500.00	25.00
Rajawada	455	5	455.00	5.00	2275.00	207025.00	25.00
Pawar	520	7	520.00	7.00	3640.00	270400.00	49.00
Buddhichaur	570	1	570.00	1.00	570.00	324900.00	1.00
Akamphedi	644	3	644.00	3.00	1932.00	414736.00	9.00
Ujemasaha	650	4	650.00	4.00	2600.00	422500.00	16.00
Maheshora	826	1	826.00	1.00	826.00	682276.00	1.00
Hanumante	978	3	978.00	3.00	2934.00	956484.00	9.00
Yeekle Khet	1015	7	1015.00	7.00	7105.00	1030225.00	49.00
Shipatar	1022	5	1022.00	5.00	5110.00	1044484.00	25.00
Madhuban	1288	5	1288.00	5.00	6440.00	1658944.00	25.00
Dade	1400	5	1400.00	5.00	7000.00	1960000.00	25.00
Chhatar	1631	2	1631.00	2.00	3262.00	2660161.00	4.00
Kodare	2106	3	2106.00	3.00	6318.00	4435236.00	9.00
Hemantawada	2275	1	2275.00	1.00	2275.00	5175625.00	1.00
Dhikure	3265	7	3265.00	7.00	22855.00	10660225.00	49.00
Tutesshowr	3448	3	3448.00	3.00	10344.00	11888704.00	9.00
Lalgadh	5040	3	5040.00	3.00	15120.00	25401600.00	9.00
Rampur	5400	0	5400.00	0.00	0.00	29160000.00	0.00
Bahadurgunj	5646	0	5646.00	0.00	0.00	31877316.00	0.00
Hulaka	6446	1	6446.00	1.00	6446.00	41550916.00	1.00
Hemantapur	7750	0	7750.00	0.00	0.00	60062500.00	0.00
					-89761.363636	141144489.8	146.9090909

$$r = \frac{\sum (X-\bar{X}) \sum (Y-\bar{Y})}{\sqrt{\sum (X-\bar{X})^2 \sum (Y-\bar{Y})^2}}$$

Correlation coefficient (r) = -0.62

## CHAPTER V

### CONCLUSION AND RECOMMENDATIONS

This research brings forward the conclusion that despite widespread recognition of the importance and need to supply the rural people with drinking water, it has achieved poor success. The water supply schemes in almost two-thirds of the communities taken for study are in need of repair. Therefore, like elsewhere in the developing world, poor functioning of water supply schemes remain to be the key problem in Nepal as well. In addition, the large gap in community participation is a sign of haphazardly implemented schemes, which could be mainly attributed to the weaknesses of development agencies. This gives a clear signal that there is not only a need for a well-planned service-delivery approach on the part of development agencies in which all stages of community participation are seriously taken into account, but also the fact that these should be equally well-implemented. One obvious reason that crops up in this matter is that if the development agencies were to give all the activities of community participation due importance it certainly would require time-consuming, extensive and costly surveys which apparently goes beyond the justification of planners and implementers. But the crux of the community participation theory rests on the fact that if such detailed information seeking surveys are carried out and are further accompanied by equally well implementation procedures the cost to development agencies will undoubtedly be low - but in the long-run only. Therefore, this fact alone is sufficient cause for the development agencies to justify costs in the short-run if it means that the scheme will be sustainable in the long-run, because simply investing heavily by the government and international donor agencies cannot ensure the rural villager with continued supply of water. Therefore, rural drinking water supply is only one of those sectors of the rural economy where investments in terms of constructing water supply schemes will only give temporary relief to the rural villager. In order to keep the water supply running smoothly for a long time, much more seems to be needed than funding.

The research highlights the following areas where the concern of development agencies needs to be drawn if sustainability is to be achieved in the long run.

#### *1. Community involvement in planning and decision-making*

If the community is not involved in the planning and decision-making of the scheme, chances are great that the scheme would run into trouble soon.

Moreover, if the development agency is to ensure community participation in succeeding activities of the development effort and to make it sustainable, involvement of the community at the planning stage is a must. In fact, all communities surveyed wished to participate in the planning and decision making of the scheme. Only in one case it was found that the community did not want to participate in the planning process because they thought that they cannot contribute in planning as most of them were illiterate. Therefore, the overwhelming fact is evident - involvement in planning is not only highly desirable but is in fact a necessity which is vehemently sought by the community.

## *2. Water User Committee (WUC)*

Still a great gap needs to be overcome in order to make the Water User Committee perform its required role. Considering the haphazard manner in which the Water User Committee was organized by the development agencies in a number of cases, it shows that the development agencies still do not tend to acknowledge the potential of the community in its organizational capabilities. Therefore, the development agencies need to respect the fact that the communities have been managing their traditional water sources for decades and if the newly constructed scheme constructed by them is to remain functioning, there is virtually no way out except to bank on the villagers' capabilities. It should build on the capabilities of the community rather than impose something that is totally new to the community.

### *Women's members in WUC*

The finding that the presence of women representatives in the Water User Committee had no significant relationship with the well-being of the scheme is a sheer indication of the fact that women practically have no say in decision-making in Nepal, especially in rural areas. Nevertheless, the presence of women members in a Water User Committee is a must, even if their concern is not given due weightage by male members of the committee. But at least their presence marks the beginning, and in due course of time better results could be expected as they get used to committee meetings and gradually voice their concern.

### ***3. Community contributions***

Community contributions turned out to be one of the major determinants, not only in assuring a higher degree of community participation, but also the fact that, failing to acquire any contribution from the community would eventually land the scheme into trouble. Acquiring a high level of contribution, hence would increase the probability to make the community actively participate in all the stages. But on the other hand, the fact remains that a community which contributes higher also expects higher 'attention' from the development agency. Therefore, the development agencies, before embarking upon the policy to acquire high contribution from the community, should also be prepared to satisfy other expectations of the community which comes along with a higher level of contribution.

### ***4. Responsibility for Operation and maintenance***

In the schemes studied very little was found in terms of 'operation' as such, and the concept of operation and maintenance was virtually found to be limited to maintenance only, which means timely repair of the water supply facilities. Even then, clarity of roles and responsibilities of the community and development agency, and its due communication to the communities has turned out to be the major issue in case of operation and maintenance. Is the community required to take the responsibility of minor repairs only or major repairs also? If the community undertakes minor repairs does it mean that the development agency will cater to major repairs? But before this, what constitutes major repairs and what constitutes minor repairs should be clearly determined and agreed upon. Is minor repair limited to broken tap faucets, leaking pipes and replacement of washers in hand pumps. What happens if the pipe leaks but at a number of places? Is it the responsibility of the community or of the development agency? These facts need to be clearly addressed as it was the crucial factor that was found to be lacking in all the communities studied.

### ***5. User charges and cost recovery***

Before imposing upon the community to collect user charges, it should be made clear as to why user charges need to be collected. If the purpose of user charges is to take care of minor repairs the community would rather collect the money on an 'as needed basis' i.e., when there is a need for minor repair,

which was found to be the case in many communities where there was no system of collecting regular user charges. In this regard, user charges could be materialized endogenously or exogenously: (i) endogenously - where the 'seriousness' of the community in paying user charges on a regular basis would depend on their felt need for a reliable water source. The role of the WUC would be detrimental in this case. (ii) exogenously - where it could be 'convinced' as a requirement by the implementing agency upon the community prior to the construction of the scheme. In this case the development agency only stresses the need of user charges to be collected on a regular basis, and leaves the rest (fixation of charges, method of payment, etc.) to the Water User Committee of the community.

So far as cost recovery in community water supply is concerned, it still seems to be far-fetched goal, at least in case of Nepal. The development agencies should understand the fact that at this stage of carrying out development efforts in rural areas of Nepal, people still perceive the need for a strong backing by the implementing agency to cater to major repairs. So far the communities are only willing to take the responsibility for minor repairs, which in itself is a achievement from having no responsibility at all. Therefore, the development agencies should assure the community that it will cater to major repairs. At the same time they should carry out efforts to make the Water User Committee more effective, at least in terms of collecting user charges on a regular basis. Only when this materializes and the community is able to accumulate its own funds in due course of time will the goal of sustainability in drinking water supply start to appear in the horizon.

#### ***6. Contractual agreement***

Lack of contractual agreement shows the need for development agencies to be clear as to the type of partnership, i.e., the degree or the extent of participation, it seeks to elicit from the community for development efforts. These contractual agreements should be carefully developed and clearly communicated to the community. There are basically two parts in contractual agreements in case of rural drinking water supply. One is the contractual agreement with the implementing agency for the construction in which the community's contribution in terms of labour, local material, food to skilled labour and cash is spelled out in addition to the obligation and contributions of the development agency. The other part of the contractual agreement is what comes into force after the scheme is constructed and the development agency has



left the scene. This part is very important from the viewpoint of sustainability, and in fact has become the major concern in the area of community participation. The crucial issue in this part of the contract is that if the community is responsible for minor repairs, is the development agency willing to rescue the community if the need for major repairs arise? This has been the agreement which is found to be missing between the project and community in all the communities studied, except one where the development agency (which happened to be a NGO) had made contractual agreement with the community in writing that the community should be responsible for minor repairs, and the major repairs would be done by the NGO itself. This calls for the implementing agencies to be institutions, and the water supply project not to be taken as a one-time contract. Therefore, especially for those organizations who have very less chances to remain operational in the long-run should make arrangements so that they handover their part of support (which in effect is to take care of major repairs that arise in the future and to see to it that the community carries out the minor repairs as agreed) to some institution that will remain in operation for a long time.

#### *7. Community participation in procurement*

If the development agencies wish to elicit a greater degree of participation and tap the 'potential' of the community, then they should also be willing to relax a bit of control over the resources and hence also seek participation of the community in the area of procurement. This would also be a sign of 'genuinity' on the part of development agencies on their approach to participation and a propellent that could contribute significantly in the area of community participation. It is a well known practice of development agencies to procure materials themselves in large quantities for distribution to different communities where they carry out their development efforts. They argue that this way they are able to purchase at a cheaper rate and save resources. But the point is not as much as of saving resources, as it is of having control over resources. Therefore, communities should be allowed to participate to purchase materials which could be bought locally. If not, the community should be convinced that the development agency is their best bet to obtain good quality materials at lowest possible price.

### *8. Community participation in construction*

The construction of water supply schemes does not require a very high level of engineering and technical skill. The communities have built their houses and other small facilities in their communities, and there is no reason to assume that their knowledge and skill do not comply to that of building reservoirs or standposts or wells for a water supply scheme. Community participation in construction will not only lead to better results in terms of sustainability and feeling of ownership of the scheme but will also reduce cost and contribute to 'conscientization' - one of the ultimate objectives of community participation as stated in Chapter II.

### *9. The need for a consistent government policy*

Inconsistency in government policies could be a major problem in this area. A number of schemes in the study were found to be constructed because of the good 'connection' of the community with politicians and people in high places of the power hierarchy. This is out of the usual procedure of installation of water supply schemes. In one case, due to the good connection of the community with one of the ministers (who belonged to this constituency) the community was not required to contribute anything - not even labour. The scheme was completed, but in the end the WUC of the community was not willing to take over the scheme since it was not involved in the planning and decision-making of the scheme. This fact, therefore, reveals that the government ultimately would be in a loss if it deviates from the normal procedure prescribed by itself. Even the community, for which the government thinks that it is doing a favour by going beyond the rules and regulations, will not accept its effort in the end. Therefore, adherence to the policies and procedures is a necessity on the part of the government so that its development efforts get appreciated, which in turn, breeds strength for the approach of community participation.

### *10. Monitoring and evaluation*

There is a clear need for timely monitoring and evaluation to be taken by development agencies, not only for the sake of finding out the state of the scheme, but also to find out the problem areas that crop up during the course of time. This would largely aid in understanding how rural people react to interventions undertaken by outsiders and would lead to refinement in policies.

It would ultimately lead to better planning and implementing practices as development agencies learn from their successes and failures.

#### **Responsibility of the donor agency**

The survey had revealed that, at the present stage, the majority of communities in Nepal, at least in case of drinking water supply, want the development agencies to take care of the 'heavy' burden, i.e., the responsibility for major repairs. This is because, apart from a large amount of cash required for construction of water supply schemes, people also seek help from the development agencies for technical guidance and for proper survey. Therefore, in technical as well as in financial terms, the communities still lack the capacities to cater to major repairs, as it requires both a high financial requirement and good technical ability, which lacks in the rural areas of Nepal. At this stage one may question that if the community is assumed to be capable enough to carry out major repairs, wouldn't it have been able to construct the scheme in the first place without the outside help of the development agency ?

#### **Responsibility of the community**

Another area of concern are the schemes that need minor repairs. Here, the responsibility undoubtedly should be of the community. Why is it so that communities, especially those that have the perception that they are responsible for minor repairs have failed to carry out their responsibilities, especially those communities who have a system of collecting user charges? This question is a clear indication for the need to broaden the perception of development agencies on communities and their entire approach to community participation. In addition, it is a strong signal to the development agencies that the communities need to participate in every stage if the 'feeling of ownership' and the 'responsibility to take care of minor repairs' is to be considered as a promising criteria for the project's sustainability. It also gives way to a number of areas that need to be studied, a number of conditions to be met and the search for development approaches that need to be refined again and again with case studies and experiences gained at the community-level.

One such approach that is increasingly gaining worldwide acceptance is the concept of community management in drinking water supply. It derives its

inspiration from Agenda 21 outlined at the Earth Summit in Rio de Janeiro in June 1992, which states, "Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes" (Evans et al., 1993:7). Even though this concept claims to go beyond the concept of community participation (Ibid:4-5), its core lies basically in filling the gaps that have been experienced in the community participation approach and as depicted in this research paper. In addition, its argument to provide an alternative approach complies with that already provided by the community participation approach. The crucial issue is still there: to what extent are the development agencies willing to let the communities participate? To what extent are they willing to give up their control in planning, decision-making, and implementing of the development projects to be taken over by the control of the community?

Just as the development of development approaches will never stagnate, in the same way neither will the communities and their knowledge of the outside world, and their attitude and understanding of development agencies and their new approaches. Therefore, development agencies should not bank on patch-up work and think of sustainability, but rather push for changes needed at the fundamental level. In this regard, one of the basic 'prerequisites' forwarded by the community management approach is the empowerment of the community, which in fact is a bold step that could lead to sustainable water supply systems. With regards to the development agencies this approach calls for the national water agencies to undergo significant attitudinal and organizational changes; to provide NGOs with official government backing; to create an "enabling environment" by the national government; and the need for donor agencies to undergo changes and accept longer time frames (Ibid:11-12). Therefore, on one hand, the community management approach should be commended for its efforts in its drive towards sustainability, but on the other hand its 'prerequisites', and 'environment' in which it is advocated to operate are still far from what is actually found in practice in a rural setting of a developing country. Nevertheless, this approach is more advanced and is more demanding from the government, the donors, the NGOs, and even from the communities itself. Therefore, with its increased demand from the communities and development agencies, it seeks to fill the gap between the construction and sustenance of water supply schemes. A detailed explanation of this approach is outside the scope of this study.

Therefore, on the basis of my research I would like to mention that increased participation is no panacea to successful water supply schemes, especially in the area of operation and maintenance. The time factor does have its influence over the condition of the scheme. Another fact is that a well-constructed water supply scheme is necessary but not sufficient to ensure its sustainability. But still, I would like to conclude that the process of community participation, if carried out effectively by the development agencies with cooperation from the community, it certainly would alleviate many problematic issues and build the base for achieving sustainable development in the area of rural drinking water supply.

Lastly, I would like to refrain myself from any policy recommendations in this area mainly because the survey did not provide much information on the actual reasons behind the breakdowns of water supply schemes, which could have given an additional dimension to this research.

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