

**EMPOWERING THE POOR: NGO INVOLVEMENT IN RURAL DEVELOPMENT  
IN THE MIDDLE HILLS OF GORKHA DISTRICT, NEPAL**

By

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A thesis submitted in partial fulfilment of the requirements for the degree of  
Master of Science

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To My Wife  
Chubby,  
With All My Love...

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## ABSTRACT

This study is a combination of both exploratory and evaluative research aimed to discover socio-economic and technological impacts of development efforts of Save the Children/US. The collected data were analyzed statistically using T-test, chi-square test, z-test and co-efficient of correlation. To facilitate the exploration of qualitative data indexes are constructed.

The findings related to socio-economic factors reveal that there is not much change in the sources of employment. People lack alternative sources of employment. Farm income is higher in the NGO-project area while the off-farm income (except from business and service) is higher in the control area. This is related to better food sufficiency in the project area.

Despite successful family planning activities in the project area, the household size is found to be higher, but the nature of the data show that such result is due to the already aging population, not because of new births. Average number of family members falling sick is less in the project area which is closely linked to better health services, MCH clinics, immunisation and awareness among the people.

The impact of better educational attainment is reflected in the change of various aspects of rural life like early marriage practice, health practice and agricultural activities etc. Very important results were found in terms of awareness about their legal rights, the female status, perception of equal rights and ability to communicate with the bureaucrats. All the results show that there is significant difference between the people in the project and in the control areas.

A lot of efforts are found to be done by the NGO to develop the agricultural sector, covering from sales of various seeds to providing extension services and training of the target population. As a result, a significant difference in production and productivity of the main cereal crops are seen. People have adopted HYVs of cereal crops, vegetable and fruits. However the results regarding cereal crops are not as convincing as the results of vegetable and fruit production. However, some impressive evidence regarding banana and orange orchards are observed in the study area.

A higher proportion of agricultural innovation, higher level of both production and productivity, use of environmentally sound manure, and initiation in commercial production (of banana and orange) is due to better education and awareness. Better health status, higher proportion of healthy children, extensive use of family planning measures, better immunisation, and use of latrines must be due to formal and informal education and awareness in the project area. The different socio-economic picture seen in marriage practice, fewer number of children below six years of age, small household size, less food deficiency and higher expenses for education are due to better education. Therefore, the NGO strategy of making education an entry point and its integrated rural development approach is appropriate and effective.

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## DEFINITIONS

Agricultural Year	The period between mid-April to mid-April of the following year.
Fiscal Year	The period between mid-July to mid-July of the following year.
Household	A group of family members who live in the same house, share the same resources and have share on financial transaction.
Ilaka Jhankri Pratha	The area covered by the NGO covering 12 VDCs. A traditional health practice which has belief on superstition.
Perma	The act of exchanging labor instead of paying in monetary terms.
Project Area	Villages in the study area where Save the Children(the NGO) has implemented its various development activities.
Control Area	Villages in the study area where the involvement of Save the Children is absent

## EQUIVALENTS

1 Ropani	: 0.05 Hectare
2 Muri of:	
- Paddy	: 48.80 Kg
- Rice	: 70 Kg
- Maize	: 63.20 Kg
- Wheat	: 63.20 Kg

## GLOSSARY

Bari	Upland where there is no possibility of stream irrigation.
Bhailo	A traditional religious performance where people visit neighbours during Tihar festival.
Brahmin	Members of the so called highest Hindu priestly caste, believed to be of Aryan origin and widely found in Nepal.
Chettri	Members of the caste ranked second among Hindu who are famous for their contribution in war and still they are widely found in Nepal.
Damai	A so called lower caste among Hindu who have tradition of tailoring.
Dashain	The main festival of Hindus and observed throughout Nepal by almost all castes.
Gurung	Members of the Buddhist religion, belonging to Tibeto-Barman origin and famous for their contribution during the world wars. They are mainly found in the middle hills of Nepal.
Jamarko & Goreto	The elementary series taught in the NFE classes
Jeevan Jal	A mixture of salt, sugar and boiled water used as medicine while suffering from diarrhoea.
Kami	A so called another lower caste among Hindu who have tradition of pottery.
Khet	Irrigable land
Kodalo/ Kodali	The spade like equipment used to plough land by hand and also used for cultivation of crops.
Magar	The definition of the Gurung caste is also applicable for them. The main difference is, Magars are Hindu while Gurungs are Buddhist although both the castes share the Hindu culture.
Sarki	The another so called lower caste among Hindu who have tradition of making shoes.
Tihar	The second important Hindu festival during which sisters worship their brothers.

## ABBREVIATIONS

ACTI	Agricultural Credit and Training Institute
ADB	Asian Development Bank
ADB/N	Agricultural Development Bank/Nepal
ADO	Agricultural Development Office
APROSC	Agricultural Project Service Centre
CBS	Central Bureau of Statistics
CTEVT	Council for Technical Education and Vocational Training
DDC	District Development Council
DPHO	District Public Health Office
EU	European Union
GTZ	Deutsche Gesellschaft fuer Technische Zusammenarbeit
HDR	Human Development Report
HH	Households
HMG/N	His Majesty's Government of Nepal
HP	Health Post
HYV	High Yielding Varieties
IFAD	International Fund for Agricultural Development
IRDP	Integrated Rural Development Program
JT	Junior Technician
JTA	Junior Technician Assistant
Kg	Kilogram
MPs	Members of Parliament
NGO	Non-governmental Organisation
NFE	Non-formal Education
No.	Number
Rs.	Rupees (Nepalese Currency)
SFDP	Small Farmer's Development Program
SL	Significant Level
SRS	Simple Random Sampling
SWC	Social Welfare Council
TRN	Table of Random Number
UMN	United Mission to Nepal
UNO	United Nations Organisation
VDC	Village Development Committee
WB	World Bank
WDR	World Development Report

## CHAPTER I

### INTRODUCTION

#### 1.1 Background of the Study

Despite nearly four decades of planned development efforts supported by massive international effort, Nepal remains one of the poorest and least developed countries with an average annual per capita income of US\$ 160 (at 1988/1989 prices). More than 40% of Nepal's population lives below the poverty line. Poverty in Nepal is a predominantly rural phenomenon with 97% of the poor concentrated in rural areas (Sharma, 1991).

The manufacturing sector, which largely depends on agriculture and still in its infancy has remained very low (less than 5%) because of a poor infrastructure and limited market opportunities among other factors.

It has been the tradition of the government to take grants and loans to finance its deficit budget every year. The figures relating to foreign loan and grant are increasing and many times the government has to borrow from donors and international financial institutions to pay its debt. In 1990/91 Nepal's outstanding external debt reached Rs. 46 billion, or 46% of the estimated GDP (Rademacher, A., and Tamang, D., 1993, pp:6).

Growth-centered development tends to concentrate power in the hands of those who have the most to gain from its preservation. Funds are often channelled through central governments who retain complete control of them. In many cases, progress, when realized, tends to be by and for the elites. Particularly in countries with inequitable political structures, the benefits of growth reach the rich and never see the poor.

Thus the life of the majority of the people is vulnerable. It is more vulnerable and fragile in the hilly and mountainous areas where transportation and communication are difficult, and where trade & commerce are still a foreign phenomenon.

Nepal has suffered from geo-political isolation. Landlocked and bordered by two Asian giants, China and India have shadowed economic growth. Access to the sea has been made difficult despite the nearest point being in Bangladesh.

Free flow of finished goods from India and import of all the necessary industrial inputs has crippled her economy. An open and liberal industrial policy designed to lure foreign investors has drained natural resources.

Economically, Nepal is a divided country. The northern people have access to and interests across the Chinese border while those in the south are pulled toward India.

Nepal is geographically squeezed and economically encroached by many external factors and, is lagging behind despite efforts by government and external friends through government and other channels like NGOs.



NGOs have been working in Nepal since 1954, trying to uplift the living standard of poor people. Recently, donors like GTZ and DANIDA have started to provide financial and technical aid through various programs. The other renowned names are Save the Children, Redd Berna etc and the United Mission to Nepal (UMN), famous for its work in the health and education sector, especially in the remote areas of the country. How they are performing is completely a research issue, but at least they are seen as grassroots level actors trying to rescue the poor.

## 1.2 Statement of the Problem

Agriculture is one of the major focus areas of NGOs. Each NGO has its own package, program approach and implementation procedure, working in different geographical locations of the country. Although there is lack of sufficient data to support the positive achievements of NGOs, the general feeling is that different development activities including agriculture packages can reach effectively and efficiently to the poor section of the community through the NGOs through government mechanisms. In the mainstream of development, funds have usually been allocated to large scale projects where only a privileged few in the urban areas or the rural rich receive the benefits of costly infrastructural development projects (Gurung, 1991).

Since the People's Movement in 1989, the NGO sector in Nepal has been growing at an alarming rate. While a portion of the newer NGOs are being accused of having ingenuine intentions, if even a minority of the many new organizations are successful, this is trend worth acknowledging. NGOs at their best, can be effective forums in which the people act for socio-economic change and they can be vehicles fuelled by responsible, directed people power (Tamang, D., Rademacher A., 1993, pp:1).

However, "there is a feeling that NGOs benefit themselves more than they are benefitting the disadvantaged groups. There is a mistrust that there are NGOs with too many NGO executives in the 5 star hotels and very few examples of NGOs are available which really are working in the field. If this mistrust is too strong it will jeopardize the relationship we are trying to foster" (Baidhya B.G., cited by Tamang D., Rademacher A., 1993, pp:36)

Keeping these claims in view, this study proposes to examine whether poverty alleviation and rural development project initiated by Save the Children/US (NGO) has served as means of development and empowerment. Are the programs implemented by it within the reach of the poor people? Is there change in people's approach to various facets of human life and ultimately is there any difference in socio-economic and technological aspect in the project area compared to the control area? Alternatively, are they only a fashion of our time?



### 1.3 Rationale of the study

In Nepal, especially in this democratic era, the number of NGO is increasing. They have diversified objectives entailing single sector to multi-sectors like health, education, agricultural development and so on. One of such NGOs is SC/US which has been working in Gorkha District since 1981. It covers thirty two village development committees from the southern plain to the very remote VDCs like Manbu. It encompasses fields like women in development, health, education training, agricultural development and empowerment.

Since very few independent studies have been carried out on more than one sector, the actual performance of this NGO is not yet known.

The findings of this study will be relevant to the NGOs as well as to development professionals including agricultural scientists and the policy makers planners.

It is hoped that the study will be helpful on re-shaping and re-directing the activities in operation for better achievements in the future.

### 1.4 Scope of the Study

Due to limitations of temporal, financial and human resources, this study has concentrated on only one project area where Save the Children (the NGO understudy) has implemented its various programs.

For presentation of its performance this study has encompassed activities related to health care and family planning, education and legal awareness as well as agricultural activities too.

Again, due to the same constraints, the aspects like education and legal awareness are dealt with in brief concentrating on aspects which are important in view of rural development.

In order to evaluate the NGO the study has endeavoured to focus directly on the areas where it is involved and where the impact of its programs may be assessed. Furthermore, the socio-economic conditions, of the people are also analyzed with regard to indirect impact.

### 1.5 Organisation of the Study

This study is divided into ten chapters. Introduction, literature review, methodology and the profile of the study area are covered in the first four chapters. The results and discussions about the findings are done in the next five chapters and the remaining last chapter covers the summary in brief, hypothesis testing, conclusions and recommendations.

## 1.6 Objectives of the study

The general objective of the study is to explore socio-economic and technological impact of the NGO among the beneficiary groups.

*The specific objectives are:*

- (a) To analyze the current socio-economic conditions of the people in the study area.
- (b) To assess the availability and utilisation of health services.
- (c) To investigate the difference in the educational status between project and control groups.
- (d) To examine the legal awareness of the people.
- (c) To study the effectiveness of the project's agricultural activities.

## 1.7 Hypotheses of the study

### 1.7.1 *Socio-economic condition*

There is no significant difference between settlements in the project and control groups in terms of:

- household size
- early marriage practice
- food deficiency
- farm and off-farm income
- expenses on non-food items

### 1.7.2 *Health care and family planning*

- i. There is no significant difference between settlements in the project and control groups in terms of:

- use of immunisation
- availability and use of ENT services.
- use of family planning
- number of household member fell sick and their number of hospital visits

- ii. There is no relationship between:

- immunisation and health condition of child health.
- the availability of drinking water and child health.
- the number of people falling sick and their hospital visits.

### 1.7.3 *Educational Status*

- There is no difference in the educational attainment neither by settlements nor by gender.
- The distribution of the students among the households is similar in the

both settlements.

- The number of 'out of school' children is equal in the both areas.
- There is no relationship between respondents' age and capacity to take care of children's education.

#### 1.7.4 Legal Awareness Aspect

There is no significant difference between the settlements in the project and control groups in terms of:

- awareness about legal rights
- households ability to go to court.
- the perception that law has favored male
- ability to communicate with the officials

#### 1.7.5 Agriculture

There is no significant difference between the settlements in the project and control groups in terms of:

- production of major cereal crops
- vegetable production
- the fruit production
- the adoption of improved varieties of cereal crops
- the availability of extension services
- the opportunity of agricultural training
- respondents perception toward training
- effectiveness of training

## CHAPTER II

### LITERATURE REVIEW

NGOs at present include those activities which directly advance the economic and social well-being of individuals, families and communities as a whole. In general NGOs are social institutions which are outside the governmental hierarchy functioning independently or sometime with the support from government or other local and foreign institutions (APROSC, 1986).

#### 2.1 Historical Perspectives of NGOs

Discussing historical perspective of NGOs, Liamzon C. M. (1989), writes involvement the NGO in integrated rural development in the Asian Region can be traced back to the work of personalities like Gandhi or Rabindra Nath Tagore in India or Y.C. James Yen at Ting Hsien (Northern China) who experimented on the integrated four fold program of rural reconstruction.

In the fifties and sixties rural development was synonymous to community development. Some of the NGOs inspired by Gandhi include the Association of Voluntary Agencies in Rural Development (AVARD), the Agrindus Institute at Mirzapur, Uttar Pradesh in India or the Sarvodaya Sramadana Movement in Sri Lanka.

During this period, some of the distinguishing characteristics of non-governmental development organizations were clear, a) local community participation, b) volunteer field workers and c) partnership of NGOs and people's groups particularly in village reconstruction works.

The first approach of NGO involvement can be seen as relief and welfare services which have to be sustained by massive external assistance. NGOs with this approach seek to address poverty issues through direct delivery of relief and welfare service. Simple infrastructure projects, moving medical services, donations of food and implements ...these have and still constitute essential and appropriate responses to emergency situations demanding immediate and humanitarian response. However, such action offers little more than temporary alleviation of the symptoms of underdevelopment.

In the second half of the seventies, a second NGO approach emerged. This approach stressed community-based rural development activities with community self-reliance as the ultimate goal. This was achieved through developing strong community-based approaches plus the introduction of self-help and income-generating activities. The term "rural development" came in vogue with NGOs who were involved in multi-factor approaches or interventions at community-level. These NGOs consciously focused on integrated rural development.

Today empowerment of people has been found to be highly emphasised by NGOs. The formal purpose of NGO supported projects might be, improvements in *health or*

*literacy or agriculture* but NGOs have also been concerned with how much each project enhances people's power. It is said that the constituency of NGOs is poorest of poor.

Non-governmental organizations have become the new hope of development cooperation. Criticism of official and multi-lateral development assistance is mounting. After more than four decades of international cooperation, there is more poverty in the Third world (with the exception of a few countries) than ever before. It has become clear that existing instruments can not bring about change. Even the large donor organizations, such as World Bank and the regional banks, UNDP and the European Union (EU) doubt their own ability to solve problems and find their doubts confirmed by internal evaluations. What do this state of affairs and is there reason to hope that the NGOs can do better job? (Theil R.E., 1994).

The NGOs argue that they can circumvent the unwieldy bureaucratic planning and administration process, that they are flexible, efficient, close to the target groups and democratic at the grassroots level and that their funds flow directly to the poor. How accurate is this claim (Theil R.E., 1994)?

Because non-governmental organizations have simplified and flexible operating procedures and policies, they are capable of being more responsive to the specific needs of beneficiaries than government organizations. NGOs are usually small with modest operating budget. Therefore they are organizationally more cohesive and cost effective. Their staff are generally motivated to effort change as well as being creative and innovative in the methods they use to organize and involve beneficiaries (ADB, 1988).

NGOs have achieved success in activities which have posed difficulties to larger organisations with more formal sectoral based styles of working. There are noted here to draw attention to their achievements. It is believed by many that, NGOs due to their flexible nature can take the leading demonstration new methods of working with *communities to improve living standards*. The integrated strategy followed by most NGOs interviewed present a style that differs significantly from that used by most agencies promoting agriculture and forestry program in the country, it allows an approach that may be more suited the old view of farmers managing their family members, houses, livestock and private and communal lands as an interlinked system.

Some of the areas where NGOs have been particularly successful are *women involvement in development activities, agro-forestry, use of smokeless stoves etc* (Denholm & Rayachhetry, 1990).

SC/US (the NGO under study) covered small geographical unit which provided participation opportunity for a large numbers of people within the area. The greater number of people's participation within a small area has contributed to the transparency of the results on efforts made by the people. As villagers are included in making decisions for their own benefit they have been able to learn as they go along. Their direct involvement in carrying out the plans has given



them enough confidence to the innovative in their action as well as in the nature of activities being undertaken. As the staff of the project and the villagers frequently interact for a common goal the chances of creativity has been developed in the both sides. The staffs attempt to build on an indigenous practices, while the villagers have learnt new techniques taught by the trained staff (Poudyal, et al., 1992).

Most NGOs work with, and through people's organisations offering financial and other support. The links can be established in different ways. In much of Africa, NGOs usually provide assistance to existing peoples organizations (WDR, 1993. pp:87)

## 2.2 North-South relations through NGOs

Today, apart from managing projects, NGOs should act as catalysts with Northern NGOs, for example, concentrating more on international lobbying while supporting Southern NGOs on the ground. In this manner, the NGO vision of 'people-centred development' obtains a global platform (Duffield, 1993, pp:369)

NGOs have a wide spectrum in terms of their working area, reaching from urban and sub-urban poor to rural-remote poor. The amount of funds they have collected and spent has been increased dramatically along with the numbers of people they are dealing with. In 1980s one rough estimate suggested that NGO activity touched 100 million people in developing countries - 60 million in Asia, 25 million in Latin America and 12 million in Africa. Today the total is probably near 250 million and will rise considerably in the years ahead (HDR, 1993. pp:88).

On average, two-thirds of the funds northern NGOs raise for spending in the south come from private contributions. The highest per capita private contributions to NGOs were from Sweden followed Switzerland, Norway and Germany (above US\$ 13 per capita in all cases). Between 1970 and 1990, grants by northern NGOs to projects and programmes in developing countries increased from just over US\$ one billion to US\$ five billion. The country raising the most, however, is The United States - US\$ 2.7 billion, almost half the total in 1991 (HDR, 1993. pp:88).

Northern NGOs also serve as channels for governmental funds. On average, a third of their funds comes from governments, though the proportions vary widely - from 10% in Austria, Ireland and United Kingdom to more than 80% in Belgium and Italy. Between 1970 and 1990, such funds increased from less than US\$ 200 million to US\$ 2.2 billion. Taking private and government contributions together, the total transferred by and through northern NGOs increased from US\$ 1 billion in 1970 to US\$ 7.2 billion in 1990- in real terms twice the rate of increase for international development assistance (HDR, 1993. pp:88).

### 2.3 NGOs & Government

NGOs have both co-operating and conflicting relationship with government.

The NGOs concerned with a particular sector as group sometimes narrowly define their activities, ignoring the general socio-economic conditions of the developing member country. In some cases, this narrowed focus has led to a conflict between the priorities of the NGOs & those of government. To maintain their independence and their perceived role, some NGOs work directly with specific target groups at the community level and minimise their contact with the developing member country government (ADB, 1988).

But Koirala G.P., (1992) (premier of Nepal), states that the government does not wish to control the functioning of social organisations, rather it wishes to encourage them. However, it does wish to acquire information regarding their work.

### 2.4 NGOs in Nepal

The NGO sector in Nepal is coming out of a period of relative dormancy. Before 1990 NGOs were strictly controlled and the procedures for registering and operating were widely perceived to be cumbersome and for the benefit of greater control rather than greater efficiency. It is widely expected that the new government will pay greater attention to the effective use and involvement of NGOs in Nepal's future development. A complete inventory of NGOs is badly needed, not only to know what areas are being covered and where the gaps are, but for formulating better alliances and coordination for the future (UNICEF, 1991, pp:11).

### 2.5 Role and Functions of NGOs

NGO's role goes beyond the conjunctural or specific forms of government, since their vocation is not toward transformation conceived in terms of power from the state (which clearly doesn't mean that they can't work in co-operation with the state. A possibility which is of current importance so long the movement for democratization deepens). Their inclination is toward setting roots at the bases, toward encouraging autonomy of popular initiatives and participatory democracy. In this way they seek to reduce diverse cultural contributions and to move toward utopia of new social relations, beyond the dilemma of reform or revolution (Landim, 1991, pp: 91).

These non-governmental organizations were formed generally in response to felt needs; economic, social, cultural, political, which official organizations had ignored or overlooked or even unable or unwilling to address (South Commission Report, 1991. pp:34).

HDR (1993), states that, usually it is the responsibility of the government to initiate the rural (and also the overall) development in the country but there

are a lot of NGOs and INGOs which are engaged in the rural development. Despite their relative flexibility autonomy, efficiency, effectiveness and resourceful capacity, they can't cover a large area and run the programme in mass scale as the government can and does.

*The areas generally covered by NGOs are:*

- (a) Tackling poverty & reaching the poorest
- (b) Providing the credit to the poor
- (c) Empowering the marginal groups
- (d) Challenging the gender discriminations

#### *2.5.1 Tackling Poverty and Reaching the Poorest*

The main target of NGOs are found to be the poorest section of the society. Therefore NGOs have achieved success to reach such people either in rural-inaccessible area or in urban-poor area, especially in the areas where government has failed to reach.

If government and official aid programme usually fail to reach the poorest 20% of income groups, most NGO interventions probably miss the poorest 5-10%. This usually includes for example the sick, the elderly uneducated with asset-less people along with high proportion of households headed by women.

Most of the NGOs except with few exceptions work in the rural area, where poverty is a rural phenomena for improving their living standard. Directly or indirectly they want to hit the poverty either by providing education or through income generating programs or by developing their social and economic infrastructures.

#### *2.5.2 Empowering Marginal Groups*

The NGOs' emphasis on empowerment is partly a reflection of their interest and their interventions indeed occasionally enable poor people to resist local elites and claim their rights. In such cases they are likely to come up against official opposition - as well as opposition from powerful local interests. In several countries, NGOs have helped empower people in rural areas by organizing them into groups. For instance in Zimbabwe, networking among groups has increased their effectiveness.

#### *2.5.3 Challenging Gender Discrimination*

Until early 1980 almost all of the NGO interventions were gender-blind (HDR, 1993) like those of the other development programmes. But today every, either small or big NGOs, all like to include the gender issues in their programs. This may be the response to the women movement in the both developed and developing countries. More than that some NGOs have been established specifically to enhance the power of women in the family and in society.



#### *2.5.4 Delivering Emergency Relief*

One of the strong reasons historically proven for emergence of the NGOs is to provide the emergency relief materials. A large number of NGOs are founded in response to emergencies from famines, wars or earthquakes and only later did they extend their activities to long-term development.

#### *2.5.5 Providing Credit to the Poor*

This is one of the most important means through which NGOs are trying to help poor despite their proven failure of credit repayment. It is an attempt to make them participate in the economic activities which are very important stimuli for alleviating poverty.

The examples are The Grameen Bank in Bangladesh and PCRW in Nepal. These schemes have often been very successful in reaching the poorest section of society by providing the credit with nominal interest rate as service charge.

Over the past decade NGOs and international financial institutions such as IFAD have taken the lead in demonstrating that poor rural women can be reached through group lending and savings programs. The repayment records of these women have often been superior to those of their male counterparts (Evan, 1989; IFAD, 1992. pp:289).

Recent experience in the provision of credit to rural women via small group lending schemes NGO sponsored micro-enterprises credit projects savings and loan clubs has demonstrated that poor rural women can make productive use of credit in a wide range of agricultural and non-farm micro enterprises that they fit into or around their agricultural and domestic work (Berger and Buvinic, 1989; IFAD, 1992. pp:229).

Several specific sectors stand out as areas of particularly solid NGO performance, distribution of credit, training of local people, introduction of technological change including agriculture and primary health care. In these, the NGO's performance in delivery can be measured to close the gap between actual and potential requires not only land, labor, capital and entrepreneurship, but also attention to qualitative factors, above all education. It is through education and training that the poor become aware of their social entitlements (WDR, 1992. pp:349).

Some NGOs have provided shining examples for a very long time in the fight against rural poverty and their efforts have ranged from relief to development and empowerment of the poor. Their activities, even if local and financially modest, have strongly influenced the quality and the techniques of project design (Idriss J M., Therosa P., 1992).

## 2.6 Strengths of NGOs in Emergency and Relief Works

NGOs can bring five main strengths to emergency and relief work (HDR, 1993):

1. With an extended network of contacts on the ground NGOs are in a good position to draw the attention of the international community to existing or impending emergencies, particularly vital when the government chooses to down-play the emergency or exclude bilateral or multilateral agencies.
2. Following their warnings the NGOs can lobby governments and international organizations to increase their resource for emergencies sometimes through international consortia.
3. Untrammelled by bureaucratic and political constraints, NGOs can usually act much faster than official agencies. And since they are less susceptible to political pressures they sometimes work where governments forbid interventions from government or multilateral agencies.

The voluntary organizations are expected to perform three important corrective functions in relation to the "two dominant institutions" the bureaucracy and the private corporation (Langton, 1981 cited by Tongswate M., & Tips W.E.J., 1987). The three functions are:

1. The prophetic function
2. The supplemental function and
3. The modelling function

The first expectation lies in its potential power to speak to the conditions of injustice and depersonalization that are present in post-industrial society. This expectation conceives of a new moral mission for the voluntary sector based on the belief that "the primary role of voluntary associations is to continuously shape and reshape the vision of a more just social order" (Sherry, 1970).

The second expectation is that voluntary organization should become an alternative mechanism in providing many of the services to the people. The third expectation which distinguishes the voluntary organization and non-governmental sector as a social movement concerns its experimental and innovative capacity. Voluntary sector is expected to demonstrate forms of organizations and practice which are human scale oriented. In organizational life that overcome and reduce depersonalization, bureaucratization and sterile professionalism that are associated with the governmental and corporate sector (Langton, 1981).

## 2.7 Problems of NGOs

Langton (1981), has remarked on the following problems associated with NGOs:

1. Wasteful duplication and practices
2. Excessively narrow issue advocacy by many groups
3. Increasing centralization
4. Ineffective accountability procedures
5. Trends towards bureaucratic practices
6. Insufficient financing to support organizational goals
7. Insufficient opportunities for participation in decision making
8. Inadequate long-range planning
9. Rigid and routinized allocation practices
10. Excessive and/or harmful governmental regulations.

These are the problems that are endemic to all the dominant institution of our society and as such are pathological expressions of modern organizational diseases. This statement should not minimize the importance of the problems. To the contrary, their commonality infuses these problems with even greater significance within the voluntary sector. The sharing of the same organizational pathology should strengthen the 'real life' standing of the voluntary sector. It provides a significant congruence of interests in organizational form and practice between the voluntary sector and the governmental and corporate sectors. Thereby it points to two paths of opportunity. On the one hand, it infuses the modelling function of the voluntary sector with greater relevance and meaning. On the other hand, it points to problem areas in which successful innovations in the corporate and governments sector can benefit the voluntary sector. In either case the reciprocity of interests may strengthen substantially the role of the voluntary sector as it does its part to discover how to manage organizational life with greater effectiveness and sensitivity" (Langton, 1981).

## 2.8 Rural Development

The experience of early 1970s forced development thinkers to think alternative and simultaneous rural development. It was because the trickle down and spread effect didn't take place as it was thought instead, the cumulative causation made the prosperous region more affluent while leaving the resource-poor area more vulnerable. Urban-biased development activities separated the society into two fractions giving rise to dualism.

There came a dissatisfaction of these approaches, especially when it was recognized that such development led to dualism in the economy, because the benefits of growth did not "trickle down" to the majority of the poor (World Bank, 1975).

Rural development is a strategy designed to improve the economic and social life of a specific group of people - the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the

rural areas. The groups include small-scale farmers, tenants and the landless (World Bank, 1975).

Rural development is defined as improving living standards of the mass of the low-income population residing in rural areas and making the process of their development self-sustaining.

Mosher(1975), states that a trend in the technologies, organisations activities and values of societies that it

1. increases the opportunities of all its rural people for vigorous health... to participate... in activities of their culture
2. progressively provides more effective means for adjustment.. the conflicts and injustices that invariably arises as technological and other cultural change take place,
3. maintains... an optimum balance between each rural person's opportunities for freely chosen self-expression and the ..corporate needs of the culture in which he lives, and
4. increasingly brings all present and potential farm land into its most effective use all without irreparable damage to earth's ecosystem.

## 2.9 Objectives of Rural Development

Norman T. Uphoff & Milton J. Esman (1974), find the three dimensions of rural development, which are, improving:

1. Agricultural productivity  
With increased productivity it can be believed that it can increase the supply of food and other products available for consumption or export.
2. Income  
It is important because this can enhance the range of alternatives which rural people can choose from.
3. Welfare  
It represents the ultimate justification for any policy.

Dias & Wickrramanayake(1983), are of the opinion that long term objectives of rural development are to make our rural areas and villages as attractive to live in as our cities.

ADB (1988), states that overall objectives of rural development policies are:

- (a) preventing further rural poverty
- (b) increasing production
- (c) distributing rural assets equitably

- (d) eliminating poverty (through adequate wage employment for and/or transfer of more productive assets and skills to the rural poor)
- (e) improving the quality of rural life (providing basic infrastructure and social services)
- (f) enabling the rural poor to share control over their environment and the use of local resources and to participate in all decisions affecting their lives and
- (g) strengthening existing rural institutions so that they play a progressive role in development and building new institutions which support self-sustained development.

## CHAPTER III

### RESEARCH DESIGN

#### 3.1 Research Design

Through evaluative and exploratory research method, the NGO's activities are assessed about its impact on the project group. The project beneficiaries are compared with the non-project group (Fig. 3.1). The type of research employed is "with" and "without" design, to explore the impact of the NGO (project) in various aspects of rural development. The "with" group refers to the NGO beneficiaries covered by the Save the Children/US represented by Project Area and "without" refers to the group without the NGO activities, represented by Control Area.

#### 3.2 Survey Design

All the necessary information were collected using both primary and secondary sources, however most of the data were collected from primary sources. These sources are classified as follows:

##### I. Survey Sources:

- Household survey
- Key informant survey
- Group discussion

##### II. Non-survey Sources:

- Field reconnaissance study
- Secondary sources

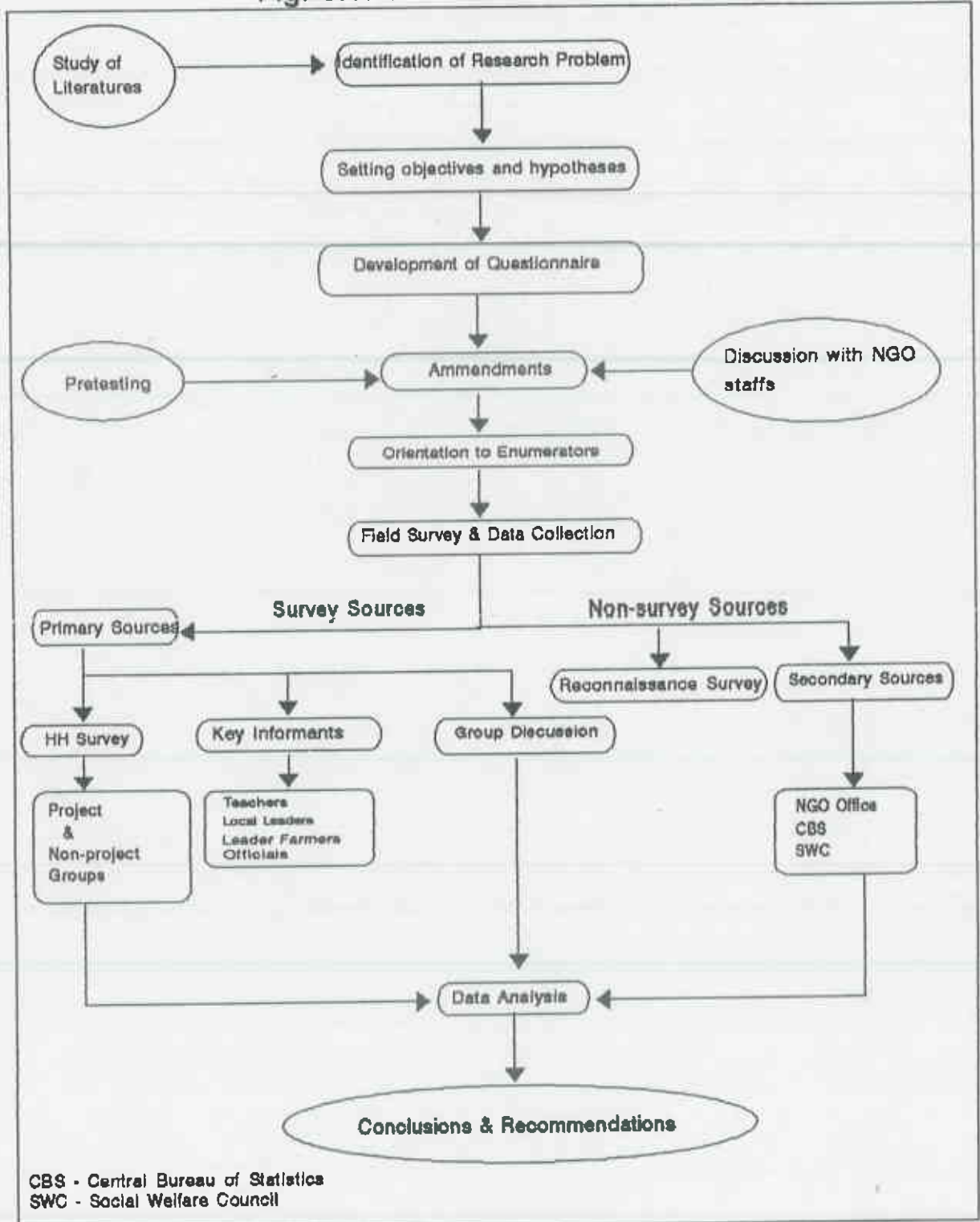
#### 3.3 Survey Sources

##### 3.3.1 Household Survey (Structured Questionnaire Survey)

The questionnaire survey method was employed to collect data from individual units. Each beneficiary household was considered as one sampling unit. Using this method the detailed information about family size, age and education of family, landholding size, individual parcels by landholding type, crop production and income, livestock holdings, and other household information were collected to get the basic picture of the study area.



Fig. 3.1: The Research Framework



### 3.3.2 Key Informant Survey

Key informants, like school teachers, general and progressive farmers, ward chairmen and other local leaders including elites, the bank and other NGDO staffs, and development workers (including the project officials) were interviewed to get relevant information.

### 3.3.3 Group Discussion

Even if it were for short duration, an extensive discussion was done a the group of observers from World Information Fund (WIF), an NGO from Baglung District, for comparative assessment of various issues .

Also the researcher was lucky enough to visit the different progressive farmers and the leaders of the women's group, with the visitors from the other project. During these visits group discussions were organised and the author was lucky to capitalise these opportunities.

## 3.4 Non-Survey Sources

### 3.4.1 Field Reconnaissance Study

To gain overall picture of the project area and to develop initial understanding about the project's development works field reconnaissance study was done and necessary information were collected which are helpful for the preparation of comprehensive and in-depth research. The type and condition of the agricultural and other social development works were directly observed.

Discussions about their achievements, prospects and problems related to various socio-economic aspects and about the project activities were done with the project people, especially with the women groups.

The project office seemed to be a training centre where every day different kinds of training use to be conducted and people from various VDCs of the district were found to be attending the training sessions. So researcher did not miss to tap this opportunity and to discuss with the trainees.

Similarly, the researcher was fortunate to talk with the people coming to attend the teacher's meeting, and the patients of the ENT (Eye, Nose and Throat) camp coming for treatment which was organised by the project office.

During these important events very important information and attitudes of the project beneficiaries were collected.



### 3.4.2 Secondary Sources

Some of the information and data were gathered by using secondary sources like available literature and other sources of information in the form of secondary data. Climatic information, geographic facts and land use pattern for instance, were collected using this method.

## 3.5 Sample Design

### 3.5.1 Sample Size

The total number of the households was 1270 in the study area (Table 3.1). But during the data collection it was found that at least 300 households in the control area were landless (new settlers). Therefore the remaining approximately thousand households were considered as the sample units, for which a sample size of 169 was decided according to the "tables for statistician" prepared by Arkin and Cotton (1963). Out of total respondents 87 were from the project site and 82 from the control site. Thus this study has covered 19.46 and 15.67 per cent of the total households in the project and control area respectively.

An expected rate of occurrence of not more than 95% was taken as the basis for determining the sample size, implying a confidence level of 95% and a reliability of plus minus 3% considering the homogeneity of the rural households in regard to their main socio-economic characteristics.

Table 3.1: Percentage of Sample Households by VDC

VDC	Total HHs	Landless	Net HHs	Total Sample	Sample %
Baguwa	447		447	87	19.46
Borlang	823	300	523	82	15.67
Total	1270	300	970	169	35.13

Source: Baguwa Village Development Committee, 1994  
Borlang Village Development Committee, 1994

### 3.5.2 Sampling Method

The name of the households were taken from the respective Village Development Committees (VDC). The delineation of the project area and the identification of the name list were done by the help of the project staff.

After obtaining the population of the households, their numbering was done. Then using the Simple Random Sampling (SRS) method the sample households were identified. Each household of VDC was given a number starting from 001. Then using the Random Number Table (RNT) the required number of the households were drawn. During the selection of the households, a sample of 20% was reserved to avoid the unavailability of data due to possible refusal or absence of respondents.

Although attempts were made to maintain the equal proportion of male and female, proportion of female respondents was found to be higher in the project since they were highly responsive, informative and active. So out of the total respondents 71 percent were female and that of male was only 29% while in the control area due to the reverse situation approximately 54 and 46 were the proportion of the male and female respondents.

### 3.6 Data Collection

#### 3.6.1 Collection of the Primary Data

A well structured questionnaire was used to gather the primary data. Prior to designing the questionnaire a coordination schema was prepared keeping the research objectives and hypotheses in view. Then the questionnaire was developed and later on translated in to Nepali.

However, several aspects and variables were added later on in Kathmandu as suggested by the Head Quarters of the NGO. These aspects were empowerment and agricultural training.

To get the maximum response and to make the questions as practical as possible, pretesting was carried out in Budhanilkantha village in the suburb of Kathmandu city. Then using the feedback information from this exercise necessary changes were done in the questionnaire.

A two-day orientation was given to the enumerators to make them familiar with the questions and the study area and at the same time this opportunity was capitalised, to find out the flaw still remaining in the questionnaire. As expected, several mistakes were detected and replaced in local terms.

Due to the wide spread area, where it used to take a long time to reach the respondents from the station, hardly two questionnaires could be filled a day per interviewer. Also everyday the editing of the data was done allocating separate time with each and every enumerator.

### 3.6.2 Collection of the Secondary Data

The main sources of secondary data was the local project office and the respective village development committees. The District Agriculture Office (DAO), Gorkha, Social Welfare Council (SWC), Kathmandu and Head Quarters of the NGO were also important contributors for the secondary information.

The other sources of secondary data were the government officials, local level development workers, beneficiary groups and project staff. Such data were also collected through documentation research, which were collected from government offices, private research agencies and project related offices.

### 3.7 Data Processing and Analysis

Both quantitative and qualitative data were analysed using SPSSpc. The data are generated from beneficiary as well as control groups for cross-sectional analysis. Descriptive statistics such as frequency, percentage, arithmetic means and standard deviation in relation to the research objectives are used to interpret the data. Chi-square test, Z-test, t-test and correlation are carried out to test the hypotheses statistically.

### 3.8 Formulation of Index

For the better analysis of the qualitative data, indexes were constructed. Family members educational attainment, type of family planning, health condition of children for instance, are analysed on the basis of indexes (Annex E). Instead of only proportion, for better results perfect scores are used for calculation of index.

### 3.9 Limitation of the Data

As the rural farm households do not have practice of keeping records, so they had responded on the basis of memory recall. In rare cases, it was realized that respondents had tendency of concealing the facts but as the sample size is large, such responses can be expected to have insignificant impact.

### 3.10 Problems Encountered during Data Collection

A serious problem was meeting the respondents at home. It was because of the coming rainy season which made farmers busy in farms in preparing land for cultivation. Many times data had to be collected in the fields interrupting farmer's work.

The problem was different in the control area where people were neither responsive nor so informative as in the project area. Moreover, they were skeptical and reluctant to respond to questionnaire. Many times, the same problem

of concealing facts and figures were realized. They some times tended to give different figures in order to attract the NGO's attention in their villages but as most of the interviewers were from the local area, they could easily detect the problems and corrected them by the respondents.

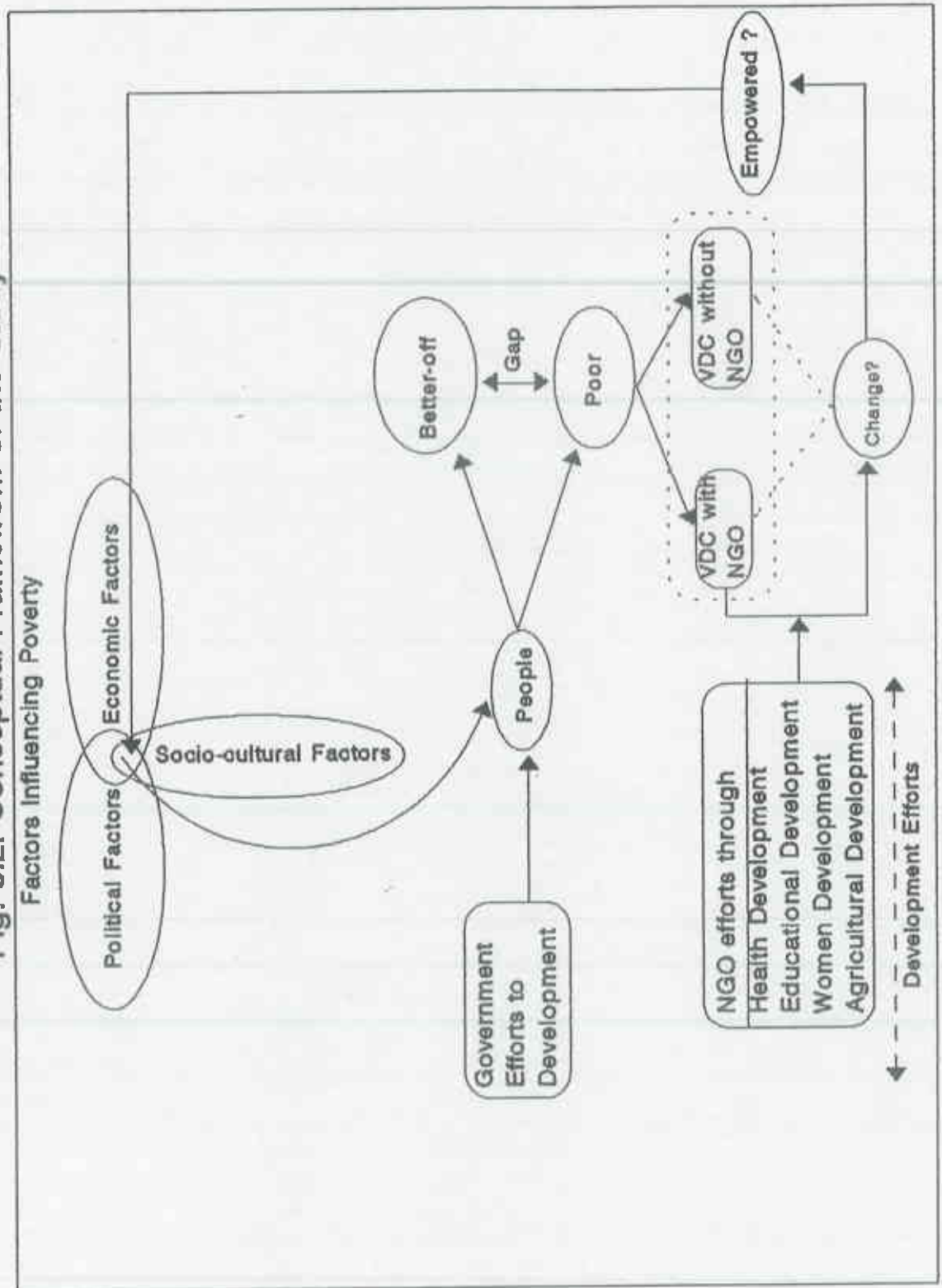
Another problem was the identification of the households. Several hundred settlers were landless (encroachers trying to settle in the control area). These households were also counted in the data provided by the VDC office, but as they had no land and were not the permanent settlers they were omitted from the list.

### 3.11 Conceptual Framework of the Study

There are various political, socio-cultural and economic factors which have impact on under development and poverty (Fig. 3.2). Government is continuously involved in rescuing these ill-fate poor from such poverty trap, but its efforts are not enough to focus on the most needy people. Therefore, the class difference has arisen and has increased the gap between the better-off and the poor. As a result, the condition of poor is aggravated each day.

Save the Children/US as one of the partners in development of Nepal has been involved to help and empower them through various activities. They are education, public health, women development, agriculture and natural resources development etc. One important assumption is that all these activities affect each other but in this study only health services, educational and agricultural activities including awareness development in legal aspect have been taken for analysis, in order to see whether they have played any role on poverty alleviation and empowerment.

Fig. 3.2: Conceptual Framework of the Study



## CHAPTER IV

### GORKHA DISTRICT AND THE STUDY AREA

#### 4.1 General introduction to Gorkha District

Gorkha is one of the districts of Gandaki zone in the Western Development Region of Nepal (Map 4.1). It is the place of origin of modern Nepal from where Late *King Prithivi Narayan Shah* initiated the nation unification process and still the district head quarter is called as '*The Old Capital*'. That is why this district has its own historical value and importance.

The another reason why this district is famous, is because of great warriors who fought in the World Wars and made both Nepal and Gorkha famous throughout the world.

#### 4.2 Geographical Settings

This district is situated between 84°27' to 84°58' eastern latitude and 27°15' to 28°45' northern altitude. The area of the district is approximately 3610 square kilometres.

To present better picture of the district, the geographical settings (in terms of regions) has been briefly explained below.

- 4.2.1 Himalayan region
- 4.2.2 Tundra region
- 4.2.3 Hilly region
- 4.2.3 Southern plain

##### 4.2.1 Himalayan Region

This region covers areas where there are mountains of more than 5000 meters of height and where there is snowfall round the year. *Mt. Manasalu*, *Mt. Himalchuli*, *Mt. Budhha* are some of the famous mountain peaks situated in this region.

This region is enriched by natural heritages like lake *Kalchuman*, the famous *Dudh Pokhari* (the milky lake) and the *Narad Kunda* (Lake).

What ever may be luring natural beauty due to the severe cold, the round-year snowfall, and both uncultivable & unfertile land has made the human settlements impossible in this region. It is only the Gurungs (the brave warriors) and the Sherpas (the snow tigers) live rarely in these areas in a very pitiful life.





Map 4.1 Location of SC/US Working Area

The economic activity in this region is more or less absent. The only source of income is the meagre production of potato and millet where land helps these unfortunate people and of course some income may come from tourism if they are lucky enough to manage small tea shop or hotel along the route to the base camp for the mountain expedition teams.

#### 4.2.2 Tundra Region

This region covers up to the height of 2500 meters of the district which lies in the foot of the high Himalayas. The settlements like Wihi, Prok, Lho are situated in this region. This region also has heavy snow fall during the most of the months. Thus it has also very cold climate throughout the year. It is only the summer season when some warmth can be felt.

Most of the people in this region have occupation of raising the livestock mostly goat, sheep and *Chamri* (Himalayan-cow). This region also lacks fertile soil. That is why agricultural activities can not flourish in this region. The major crops grown are potato and *Phapar* (Buck Wheat). Therefore potato is the main staple of the settlers.

This region also lacks the economic activity except the existence of some nominal shopkeepers for the supply of daily needs which does not have any major impact on the economic activity of the region.

#### 4.2.3 Hilly Region

This region covers the range of area from 900 meters to 2500 meters of height. Chapkot, Pokhari Thok, Takukote are some of the settlements lying in this region.

Due to the suitable climate of the south aspect of the hills, most of the population of the district lives in this region. Therefore this area is densely populated. In the past the hills were covered by the dense forest but due to the huge increase in population and lack of alternative source of income people have encroached the jungle. So unlike in the past they are marked by neckedness which is erosion prone, giving rise to natural calamities and environmental hazards.

This region also lacks the impressive economic activities except the sales of some agro-produces like fruits and dairy produces. Of course there are existence of some local markets for the supply of the daily needs for the neighbouring settlers.

The thought of promoting industries, either based on the local or imported raw materials is still primitive with the exceptions for those established by government.



In this sense, the dominant occupation of the settlers is the agriculture and allied activities which barely help to survive. Therefore their economy is nothing more than a subsistence one.

#### 4.2.4 The Southern Plains (*Tar* and *Vesi*)

At the foothills of the *Mahabharat* range, usually narrow strips of plains are found to be existing. The plains of *Palungtar*, *Chhepetar*, *Mahatar*, *Pokhara Tar*, *Mallatar*, *Changlitar* are some of the famous plains and are the major staple producing region in the district. These plains lie in the water-shade of the big rivers like *Marshyangdi*, *Chepe*, *Budhi Gandaki* etc, which make irrigation possible even if it is in a small scale. Also because of enough rainfall, suitable climate for the agriculture most of the land is cultivated extensively unlike in the rest parts of the district.

Also due to the suitable climate fruits like mango, pineapple and banana are produced (even if it is in a small scale) which are important sources of income. However most of the region lacks the transportation and market which gives rise to the marketing problem for agricultural produces.

#### 4.3 Temperature and Rainfall

The mean annual temperature of the district is around  $19^{\circ}\text{C}$ . The mean monthly maximum temperature is  $25^{\circ}\text{C}$  in July and the minimum is  $12.8^{\circ}\text{C}$  in January. The monthly mean rainfall recorded at the height of 1,135 meter is 575 mm in July and 15 mm in January.

#### 4.4 The Boundary & Population

This district is surrounded by *Dhading* in the east, *Lamjung* and *Manang* in the west, *Chitwan* and *Tanahun* in the south and Tibet Autonomous Region of the People's Republic of China in the north. The district is politically divided into 69 segments to represent the village development committees (VDCs). The total population is 251,750 comprising 119,214 male and 132,536 female (DDC, 1992).

#### 4.5 Land Use Pattern

Out of the total land available in the district rock, steep hills and mountain area have covered 36.84 per cent and another 31.13 per cent is covered by forest (Table 4.1). Around 16 per cent of the total land is covered by pasture land. Although 15.71 per cent of the total land can be used for agricultural and allied activities, only 12.60 per cent is being cultivated which doesn't only comprise the plains but all the terraced land, inner plain and Bari land. Although forest is seen to be occupying 1/3rd of the total land high population growth (as found by many studies) has geared the tendency of encroaching it.

Table 4.1: Land Use Pattern of the District

Land Use	Area(in ha.)	%
Cultivable land	56,799.00	15.71
Cultivated land	45,536.21	12.60
Forest	112,534.70	31.13
Pasture	58990.00	16.32
Rocky hills and mountains	133,145.70	36.84
Total	361,469.40	100

Source: ADO, 1993

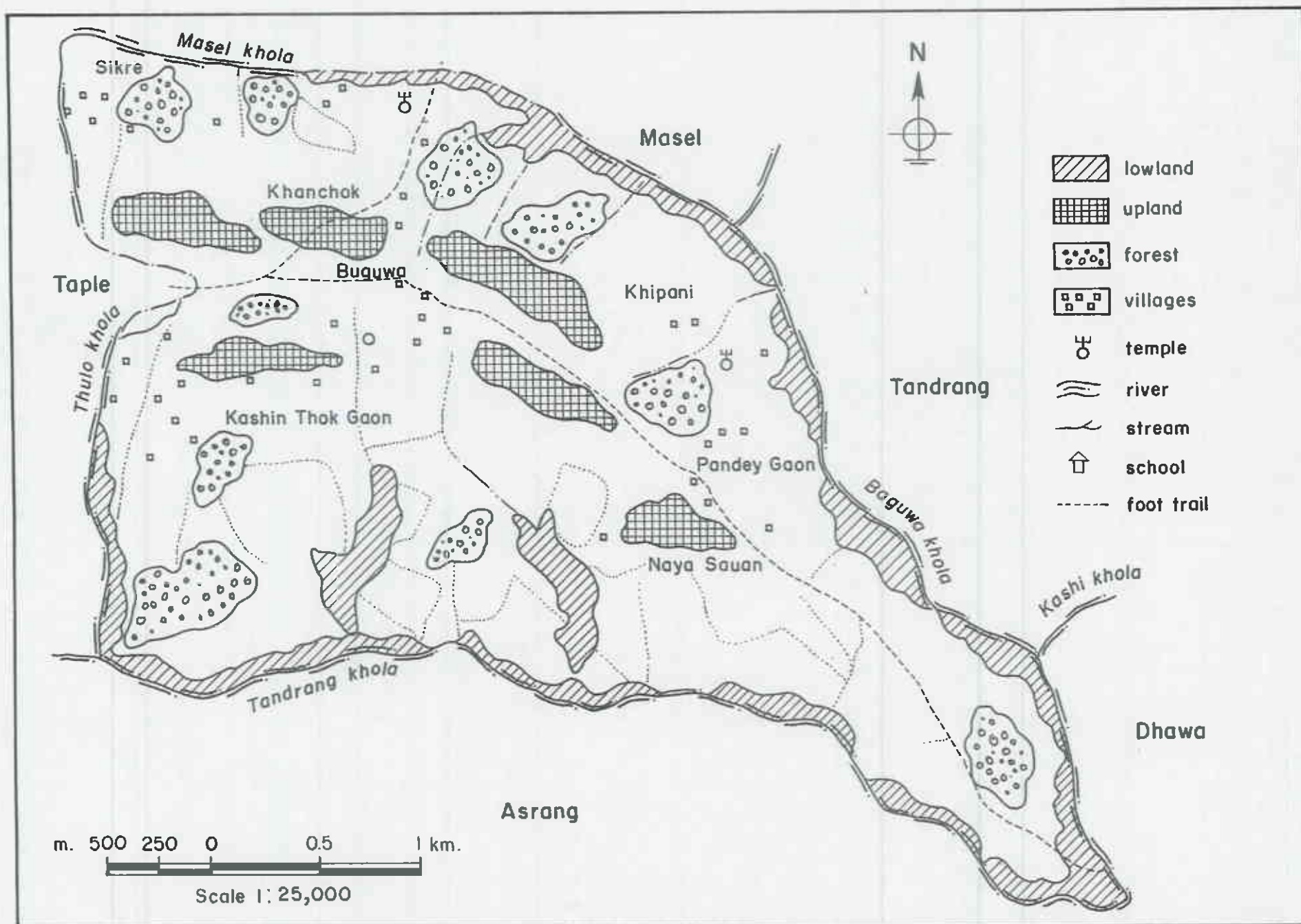
#### 4.6 Water Resources

The natural springs, streams and rivers are the main sources of water for domestic use and irrigation. Although the study area lies in the water-shade of greater *Budhi Gandaki* river, small streams like *Moti Khola*, *Baguwa Khola*, *Masel Khola*, *Thulo Khola* and *Lastul Khola* are the major source of irrigation in the inner parts. But no such remarkable streams are found in Borlang area although very small stream, active only during the rainy seasons are found.

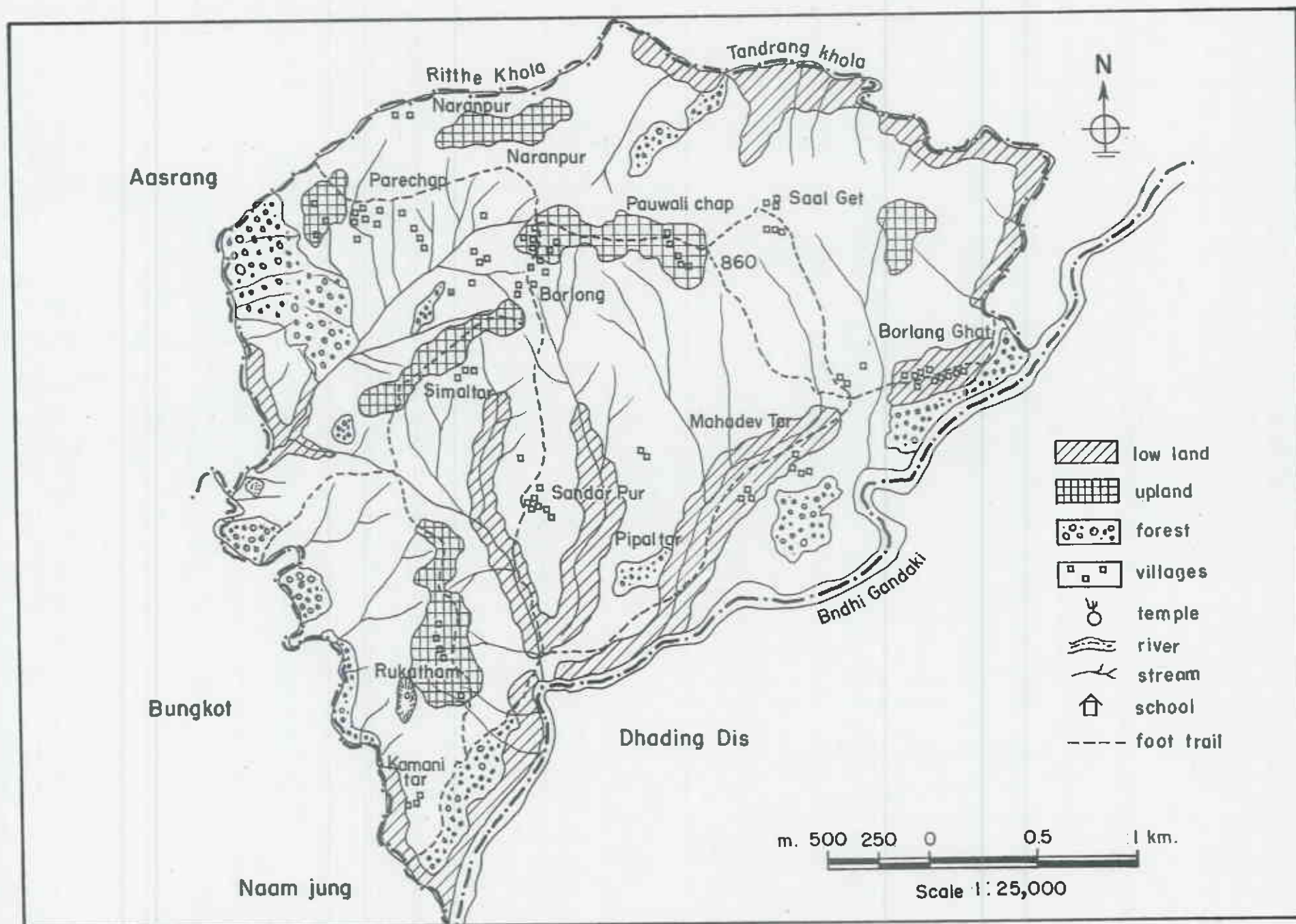
#### 4.7 The Study Area

The study area is in the eastern part of the district and comprises the two village development committees. The project village development committee is Baguwa (Map 4.2) while the control village development Committee is Borlang (Map 4.3).

To make the comparison better the virgin land where no NGO or other development agencies are involved was searched and in this criteria Borlang Village Development Committee area was found to be suitable. This VDC was also suitable because of the similarity in geographical settings and other socio-economic factors of the two areas.



Map 4.2: Baguwa Village Development Committee Area Gorkha District



Map 4.3: Borlang Village Development Committee Gorkha District



The study area is in a quite remote place. The district headquarters is around 121 kilometres from Kathmandu while the study area is around another 21 kilometres far from the district headquarters. The accessibility of road is quite far way, although efforts have been made to connect with the road, however it seems that there will be no such facility in the immediate future.

The only way to go to the study area is by foot trail and it takes around two days from the district headquarters for a porter and a full days walk to reach without any luggage. Almost nine small and big hills should be crossed many times with deadly steepness.

In the midway to the study area from district headquarters, small market centre called Putali Bazaar is located. Right after then one has to walk along the way which is partly stream and partly foot trail. Local people say that while going to the study area this semi-stream walkway should be crossed more than hundred times and many-times one should walk in the middle of the stream, if there is no water. During the rainy season, this stream really becomes problem for the local people because they no longer can walk in the middle of the stream as they do in the dry season.

#### 4.7.1 Settlement Pattern

Due to topography of the area, the villages are found to be clustered in certain geographical locations. The clusterness of the settlement is a need rather than mere sentiment since by living in such way, one can easily get help from his neighbours in time as no external assistance can be reached in emergency. The uniform scatterness of settlements can hardly be observed. The proximity to water resources and forest resources are the dominant reasons for the settlements to be situated in any particular location.

Looking aerially, one village is hardly at a distance of more than one kilometre from the other, but steep rocky and steep hilly trail make it difficult for a frequent visit from one settlement to another. That is why the settler's most of the time is spent on walking either for water fetching or collecting firewood or fodder or even going to field.

#### 4.7.2 Religion & Ethnicity

Almost all the people are Hindu by religion despite the fact that the caste like Gurung, Magar and Tamang are basically from Buddhist religion. However, these castes also have accepted most of the Hindu tradition and culture. One can hardly distinguish the tradition and culture between these castes and the rest of the others. The main notable tradition they have is that they bury the corpse unlike the other castes who burn it. Dashain and Tihar are the main two festivals observed by almost all the ethnic groups.

Brahmin, Chettri, Newar, Magar, Gurung, Darai, Damai, Kami and Sarki are the ethnic groups found in the study area.

Although the northern part of the district is dominated by Gurung and Magar caste, the whole study area is dominated by Brahmin and Chettri followed by Newar. These castes are found to be mixed in the settlements, however the settlements of lower castes (untouchable) like Damai and Kami are clustered in some specific areas. Kamigaon for instance, is the major settlement for the Kami caste (the Blacksmith) and the same is applicable in case of Damai (the tailors) and Sarki (the cobblers).

#### 4.7.3 Occupation

Agriculture and allied activities are predominant occupation of almost all the population, although some family members are found to have other occupation like business, service, pottery or tailoring. The castes like Brahmin and Chettri are totally dependant on agriculture with some exception of government service and teaching profession. Like wise Newars (traditionally from the Merchant class) also depend on agriculture for their livelihood.

Due to various reasons, the concept of commercial farming has not yet penetrated either of the settlements (of course there are exceptions with several progressive farmers). No substantial change can be observed in years-old farming system. Growing cereal crops, rearing livestock and poultry are followed by one generation to another as if they are mandatory for survival. As such the economy is not exception from rest of the country which is nothing but again a subsistence economy.

The disadvantaged or untouchable caste have their own traditional occupation. Damai and Kami for instance, have the business of tailoring and pottery respectively. Their business, although is basic need of the rest of the society have neither been changed nor even improved. Neither the techniques of providing service is changed nor their skill. Especially in the control area the working environment of these caste is miserable.

Also only with their main profession (agriculture) and minor occupation like tailoring and pottery they can't survive. This is reason why they work as wage labor (both in agriculture and in non-agriculture sector). Porter is another occupation followed by caste like Gurung, & Magar in the study area. Brahmin, Chettri and Newar are rarely found doing this job.

#### 4.7.4 Migration: Real or disguised

Although it is another field of complete research but the general observation is that the youngsters are either engaged in study or have gone to city or have joined army (either national or Indian). Only their female counterparts and the old couple are left to work in the house. Talking to some of these household heads, it was found that most of the youngsters settle in the cities (elsewhere they work) and do not have even communication with home. They don't know whether they have really settled or will return back. The certainty is only with those who are in Indian army. They in fact return back home after retirement from service.



#### 4.7.5 The local Market Centre

Although small shops and teashops are frequently found in the villages, where local people gather, the only small market centre where people have to visit frequently to sell their agro-produces and at the same time to purchase their daily needs, is Aarughat Bazaar.

The people in this area are forced to face two fold disadvantage. On the one hand because of the lack of transportation and enough demand, they get low price for their produce and on the other, since it is a remote area and because goods are carried only by porters, the price they are forced to pay is unnecessarily higher compared to price in the district headquarters.

#### 4.7.6 Trade: An absent economic activity

This area lacks any kind of economic activity that is noteworthy. They have very few things which are really marketable.

Although few farmers have started to practice improved farming and rearing improved breed of buffalo but this is rare. This is why they have very little to sell. Whatever milk, the settlers produce, they are bound to sell to the local teashops if they want to sell. In some cases they take to local market centre for which depending upon distance, it takes the whole morning in just going and coming back. Otherwise they have to use themselves or produce ghee which is less perishable and can be transported at a longer distance. They have no other options like bringing to the big market or bringing to dairy farms. Similar problems can be observed among the banana farmers.

However, there is debate between the settlers and the people in the local market. The farmers claim that they do not have enough market even if they have high surplus produce. The reason is that the only market is at least an hours walk from almost all the villages and it is not guaranteed that by the end of the day all the produces brought for sale will be sold. The people of the market on the other hand argue that although the market is small, it has enough demand for the agricultural produces like fruits and vegetables. They blame farmers for not being able to produce according to demand.

Barter system still predominates the rural areas. In many cases even the payment of the labor is done through food grain since the flow of money in these rural hinterlands is very low, concentrated among only few better-off families. This is reflected in terms of *Perma*.

The tradition of *Perma* (exchange of labor) is pervasive. However, this tradition hardly exists between the disadvantaged class and rest of the castes.

It is due to the age-old belief that the other castes should not eat and drink things touched by these lower-caste people.

#### 4.7.7 Institutional Facilities

These locations are very rarely affected by development paradigms like the accessibility to hospital, road, or market. As such these phenomena are totally foreign for the people.

Better-off biased nature in facility location has dominated the availability of institutional facilities. All the government offices and corporate offices are located in Aarughat Bazaar.

Even for a minor legal matter people have to visit Gorkha, the district headquarters. No important administrative facilities are available for the people of the either settlement.

##### 4.7.7.1 Educational institutions

Although there are primary schools in some of the villages, for the high school education they have to go to Aarughat Bazaar or Dhyampesal which is approximately two hours walk from some villages of the study area. This makes the accessibility difficult. During the rainy season due to the current of streams it is difficult for children to cross them. For higher education they should go to cities like Kathmandu or Pokhara or Gorkha (district head quarter). They get this opportunity if their financial condition is sound.

##### 4.7.7.2 Banking facility

Similar to the other infrastructural facilities, the study area is marked by the absence of banking facility which is within their accessibility. However branch offices of Rastriya Banijya Bank and Agricultural Development Bank are located in Aarughat Bazaar. These are the only banks in the whole study area where people have to visit for all kinds of banking transactions.

##### 4.7.7.3 Health post

For the treatment of the minor health problems they can visit Aarughat where there is government health post, which is poor from the point view of modern equipments. Therefore people have to visit either Gorkha district hospital or they have to afford to go to Kathmandu or Pokhara for treatment.

Except these government associated offices NGOs like Save the Children/US and CARE-Nepal are working in this area having working station at Aarughat Bazaar.

#### 4.7.7.4 Communication/transportation

The study area has no means of communication other than post office. For telephone or trunk call service they have to visit either Dhading District headquarters or Gorkha District headquarters.

#### 4.7.7.5 Drinking water

Although there are some water taps built by other agencies, they are not functioning. Many times dropless taps are found to be standing waiting for another project to make them functioning.

Therefore people have to rely either in the natural spring or on the open stream for drinking water. If they are lucky they can find some natural water spout (*Dhunge Dhara*) in their proximity.

### 4.8 Characteristics of the Study Area From the Point View of Poverty

Since this study is endeavoured to focus on the backward area, delineation of poor from among the better off people is quite necessary. There are several characteristics of poor and several indices have been developed to measure poverty. Here, the major ones at the household level has been considered as proposed by IFAD publication 1992.

#### 4.8.1 Material Deprivation

Material deprivation, is one of the indices, measured by inadequate food intake and poor nutritional status of food, poor health (physical stamina) and education, lack of clothing, housing and consumer durable, fuel insecurity and absence of provision for survival in an emergency.

#### 4.8.2 Isolation

This refers to the geographical isolation and also social and political marginalisation of rural households. The rural poor often live in remote areas or are far from development and service institutions and thus they lack sufficient political influence. Isolation is also reflected in terms of absence of roads and communication (lack of radio, T.V. and newspaper). Associated with this, is the high illiteracy, which hinders information.

#### 4.8.3 Alienation

Poor people are far away from development paradigms. The development in technology for instance, may be impressive in the country, but it may be strange for the poor. They are unable to take advantage of rapid technological change.

They are unaware of bureaucratic procedures so they feel strange themselves when they visit their own government offices or centres of trade and commerce.

#### 4.8.4 Lack of assets

This does not refer only to the land and capital but also the absence of tools, equipments and machinery. It can be also measured by level of holdings of other daily use.

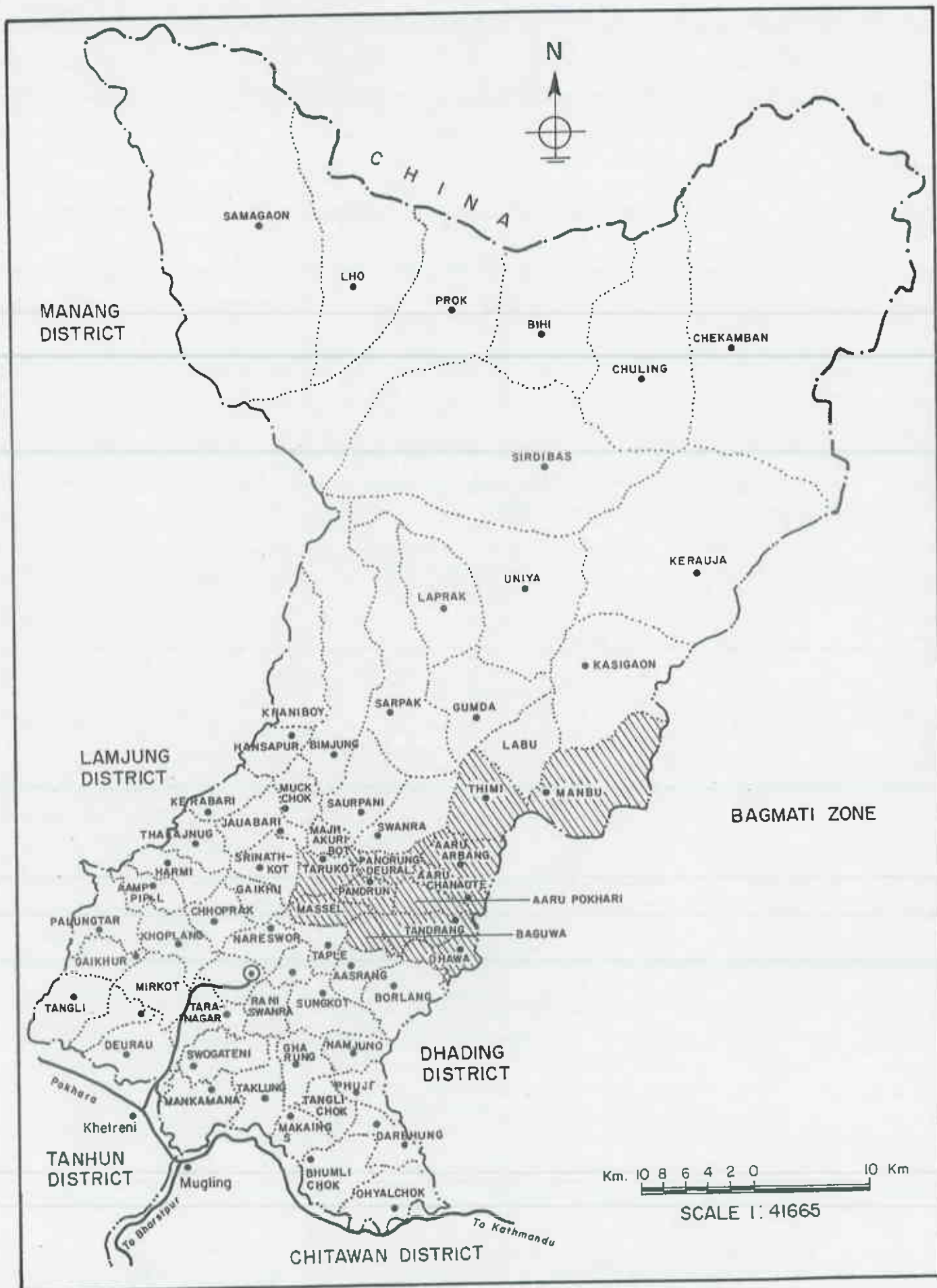
All the above stated characteristics are sign of endemic poverty. Isolation from transportation, lack of communication, alienation from growth and development, technological deprivation, dependence and lack of assets are in one or the other way found to be existing in the study area which will be clear in the following chapters of discussion.

#### 4.9 The NGO

The NGO (Save the Children/US popularly known as 'SEV' in the area) has its head quarters in Kathmandu but the site office is at Aarughat Bazaar with the responsibility of 12 VDCs up to Manbu in a very remote area in the north (Map 4.4). Although, Save the Children/US had started its developmental activities in the district in 1981, it had started to work in 1988/89 in this area.

The objectives of SC/US is to implement "a community based integrated rural development program" in remote and isolated communities to meet the basic human needs. It has covered areas like agriculture and natural resources management, women development, health, and education (Fig. 4.1). Although it has covered all these areas but main focus is put on education viewing its importance and impact on the other rest of the activities.

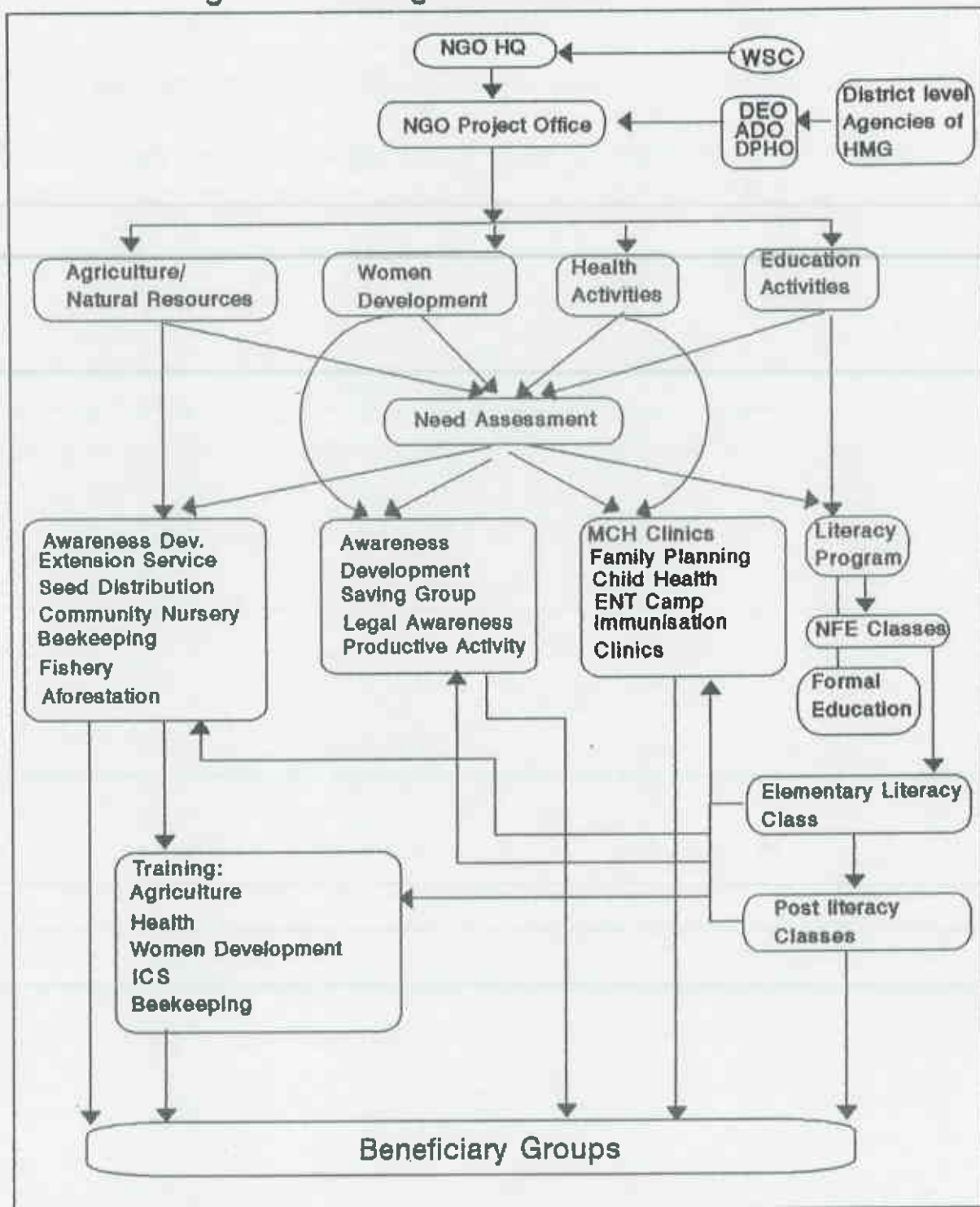
Also Fig. 4.1 shows that the NGO carries on need assessment in the areas before its activities are implemented. Being education as their entry point especial attention has been paid on non-formal education. After the successful ending of the NFE classes the NGO initiates its other sectoral programs. Therefore the figure shows that education is linked to various aspects of its development efforts. Extension service, distribution of seeds and saplings of various plants, distribution of beehives and promotion of afforestation are important activities of the NGO in agricultural and natural resources sector. Similarly agricultural training and introduction of fertilizer (green manure) are other important aspects.



Map 4.4: NGO Impact Area in Gorkha District



Fig. 4.1: Working Mechanism of the NGO



Source: Field Survey, 1994.



In the women development aspect the NGO has been working to form saving groups. In addition, legal awareness programs, introduction of productive activity, encouraging community development activity are other important ones. closely linked to this aspect the NGO also has various health care and family planning activities. Services are provided in the areas like immunisation, and family planning. Similarly needy people are served through the MCH clinics and the ENT camps. Recently, the SC/US has extended its activities in Nuwakot District (in the hills) and in Siraha District (in the Terai).

#### 4.10 Summary

The study area is one of the remote area in the middle hills of Nepal, virtually isolated from other parts of the kingdom. The high and rugged hills have made the life difficult. Accessibility to and from this area, is difficult because of absence of even good foot-trail, especially during rainy season (when pedestrians can't use the stream as walkways). Due to this reason it lacks modern facilities like hospital, road and telephone etc. For these kinds of services, the settlers have to visit either Gorkha or Dhading district headquarters.

Due to the absence of road, effective communication media and mass illiteracy, people are alienated from the changes that is taking place in the country or elsewhere. Most of the characteristics developed to measure poverty are found among the people in the study area. In order to help these poor people the NGO is working in various aspects of development.

## CHAPTER V

### SOCIO-ECONOMIC SITUATION

Socio-economic factors affect every aspect of human life. The way people perceive, accept and react to things are largely affected by their socio-economic background. So this aspect has been discussed focusing on main issues. This Chapter deals with some of the areas where NGO activities have indirect impact.

#### 5.1 Demography

Here major discussions are related to issues like household information including ethnicity, gender, family size age distribution, marital status and various occupations of both respondents and family members.

##### 5.1.1 Ethnicity & Settlement Structure

Among the respondents in the project area, Brahmins are the major proportion followed by DKS group. Then the proportion of Chettri, GMD and Newars are found to be in descending order (Table 5.1).

In the control area, however, Brahmin, GMD, and DKS have almost the same proportion followed by Newar and Chettri, having the least proportion. Except in the case of Damai, Kami and Sarki, the settlements of the rest of the castes are found to be mixed.

Table 5.1: Respondents' Ethnicity

Ethnicity	Project Area		Control Area	
	f	% (n=87)	f	%(n=82)
Brahmin	32	36.3	20	24.4
Chettri	16	18.4	6	7.3
Newars	6	6.9	14	17.1
GMD*	8	9.2	20	24.4
DKS#	25	28.7	22	26.8

\* GMD - Gurung, Magar, Darai # DKS - Damai, Kami, Sarki

n - subsample size

Source: Field Survey, 1994

### 5.1.2 Respondents' Gender

In the project area majority of respondents are women while the case is vice-versa in the control area (Table 5.2). The sex ratio of the respondents are 1:2.5 and 1:0.7 respectively in the project and in the control area. The higher number of women respondents in the project area is because of their involvement in the project activities especially in women development programs. They are more active, informative and communicative.

Table 5.2: Respondents' Gender

Gender	Project Area		Control Area	
	f	%(n=87)	f	%(n=82)
Men	25	28.7	44	53.7
Women	62	71.3	38	46.3
Total	87	100.0	82	100.0

f - frequency of household, n = subsample size  
Source: Field Survey, 1994

### 5.1.3 Household Size

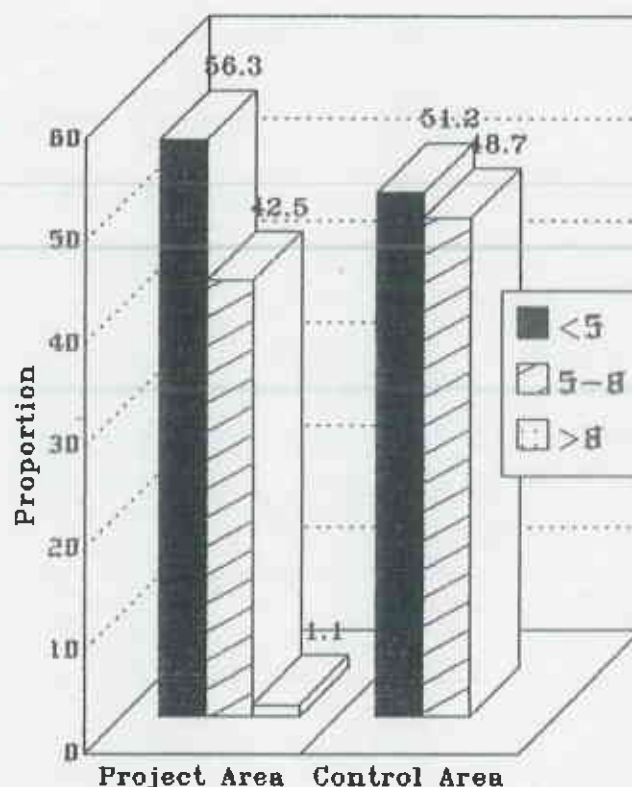
The households are categorized into three groups (Fig. 5.1) on the basis of family members; of less than 5 (small), up to 8 (medium) and more than 8 (large). In both project and control area the majority of the households fall in the first category. The proportion of medium size households in the project area is far below the first group while this difference in the control area is not significant.

The small size households are only 12.1 per cent higher than the medium size family in the control area where this group is larger than those in the project area. These data show that there is clear gap between the first two categories in the project area while it is not significant in the control area. These results can be attributed partially to family planning activities.

However, average family size (5.48) is higher in the project area than in the control area (5.39), but figures in Table 5.1c clearly depict that the population within age group 6-60 is higher and the population under 6 is less in the project area than those in the control area.

Therefore, the large household size in the project area is because of already grown population, not because of new birth.

**Fig. 5.1: Respondents' Household Size**



Source: Field Survey, 1994

#### 5.1.4 Respondents' Age Structure

Among the various age groups, majority fall in the age group of more than 50 in both project and control area (Table 5.3). However, the proportion of the second and third group is similar in the project area while there is absolute gap between these groups in the control area.

The reason for higher involvement of the second age group is because of their responsibility. In fact in the Nepalese tradition this group is the manager of home although they are not household heads. Therefore this group is supposed to possess the detail information about the home. Due to relative inability to work in the field, compared to the rest of the classes, people above 50 years of age are found at home.

Relatively less proportion of respondents below 30 years of age were available for interview. One of the possible reason is their higher involvement in farm activities. The other reasons may be in case of women, they have tendency to be married earlier than men while in case of men they may be away from home for service or other occupational purposes.

The last but important reason is that according to tradition elders have to deal in external matters. Despite their sufficient knowledge about the issues, they can not participate actively in discussion.

Table 5.3: Age Structure of the Respondents

Age class	Project Area		Control Area	
	HH	%(n=87)	HH	%(n=82)
<30	13	14.9	8	9.8
31-50	37	42.5	41	50.0
>51	37	42.5	33	40.2

HH - Household, n - subsample size

Source: Field Survey, 1994

This situation differentiates the two areas. The higher participation of the first age group in the project area than those in the control area signifies that they possess knowledge and at the same time they've freedom for communication with outsiders.

#### 5.1.5 Household Member's Age Structure

Figures in Table 5.4 show the total population of the households belonging to various categories. The nature of the figures show that they have followed the basic characteristics of population pyramid, which is usually bulged in the age group of 15-50. The apex of such pyramid is usually narrow. Both of these characters are also found in figures shown in this table. The nature of figures also show that proportion of people in the age groups of 7-14 and below 6 is higher than the age group of more than 60 which implies the child bearing capacity of the age group 15 to 50.

While calculating economically active population and dependency ratio, the upper age limit is assumed at 50. It is because in a rural setting health of people above 50 is not sound so they stay at home rather than work in the field.

##### 5.1.5.1 Economically active population

Comparing the inter-settlement situation, the economically active population of both men and women are higher in the project area (Table 5.4). The implication of this trend is that the dependency of economically inactive population is less in the project area which is desired from the point view of per capita earning. This partly signifies the success of the family planning activities.

### 5.1.5.2 Dependency ratio

Calculation also shows that the dependency ratio is higher in the control area. This is clearly depicted in the Table 5.4 where the population of age group of 7 to 14 is higher than all the other groups. The higher the dependency ratio the less the per capita earning. This also means the larger proportion of the household income is spent on this category for food and schooling. However this situation is not severe in the project area. Also population growth is higher in the control area, where the figures of age group below 6 is significantly higher in both men and women cases. Thus these findings help to infer that the demographic situation is better in the project area.

Table 5.4: Distribution of Household Members by Age Group and Settlements

Category	Project Area		Control Area	
	Men %(f=254)	Women %(f=223)	Men %(f=227)	Women%(f=213)
Less than 6	11.4	10.31	14.54	15.5
7 to 14	26.4	22.42	27.31	27.2
15 to 30	29.9	33.19	26.37	26.8
31 to 50	21.3	23.32	21.15	22.1
More than 50	11.0	10.76	10.13	8.5
Sex Ratio	1:0.9		1:0.9	
EAP	51.2	56.5	48.0	48.8
Average EAP	53.8		48.4	
Dependency Ratio	1:0.95	1:0.76	1:1.08	1:1.05
Average Dependency Ratio	1:0.86		1:1.07	

f - frequency of subsample, EAP - Economically Active Population  
Source: Field Survey, 1994



### 5.1.6 Marital Status

Marital status of the households reflects their living standard and quality of life. Nepal's almost all rural areas and mostly hilly areas are marked by the early marriage tradition. This is especially true in case of women and widely followed by so called lower caste.

An estimation done for Nepal by UNICEF (1991) shows that 40% of all women may be married before the age of 16. With the birth of her first child (in the age of 14 or 15), a girl is fully accepted as 'adult' although for many years she still may be subject to the authority of her mother-in-law and her husband's family.

According to Nepal's legal provisions, women above the age of 17 are eligible for marriage with her guardian's permission. However, unlike in the urban areas, this legal provision is not widely practised in the rural areas.

In the project area among the family members of the age group 10-17, as presented in Fig. 5.2 & 5.3, no married men or women members were found while in the control area 7 per cent of the men and 12.7 per cent of the women married members were found.

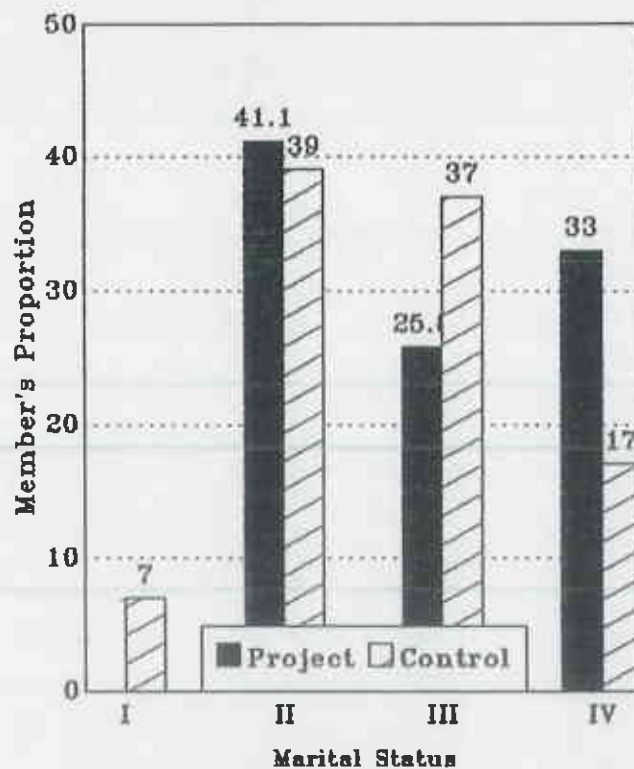
However, the situation is reverse in the case of unmarried members of the same age group. Of the total men and women a higher proportion of unmarried members were found in the project area than in the control area.

The situation is not different in the case of age group of 18-30 years. In the project area only 25.8 and 33.3 per cent of the men and women unmarried members were found while in the control area the proportion of men and women falling in this category is 37 and 45.7 per cent which are substantially higher compared to the project area. Likewise, the unmarried proportion of this age group is substantially higher in the project area.

Figures in the table also reveal that women in the project area are better off in marriage issue than in the control area because in each age group and in each marital issue the figures are always higher for the project women in unmarried case while situation is found to be just reverse in the married case.

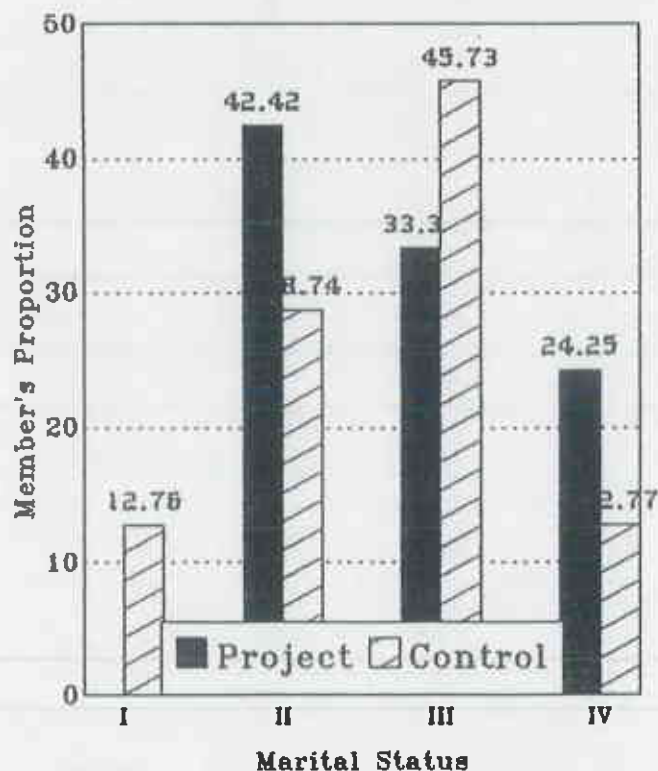
This analysis shows that the people in the project area have a tendency for late marriage. Also it implies that women are treated more judicially in the project area compared to the control area.

**Fig. 5.2: Marital Status of 10-30 Years Men**



I: 10-17 years married, II: 10-17 years unmarried  
 III: 18-30 years married, IV: 18-30 years unmarried  
 Source: Field Survey, 1994

**Fig. 5.3: Marital Status of 10-30 Years Women**



I: 10-17 years married, II: 10-17 years unmarried  
 III: 18-30 years married, IV: 18-30 years unmarried  
 Source: Field Survey, 1994

## 5.2 Respondents' Major Occupation

As depicted by Table 5.5, agriculture is still predominant occupation in the both study areas and for both sexes. Teaching is the second major occupation in the project area and service in the control area. Only 11.4 per cent of the total men respondents are involved in the service sector in the control area. Compared to the proportion involved in the agriculture sector, this figure is small. But, in the project area about 60 per cent of the men has different occupation than agriculture. The table also shows that almost no women respondents are able to find employment other than in agricultural sector.

Table 5.5: Respondents' Major Occupation

Occupation	Project Area		Control Area	
	Men %(n=25)	Women %(n=62)	Men %(n=44)	Women %(n=38)
Agriculture	40.0	100.0	88.6	100.0
Service	12.0		11.4	
Teaching	36.0			
Business	12.0			

n - population in the subsample

Source: Field Survey, 1994

This situation has very important implication. The first is that at least respondents in the project area have diversified occupational opportunities. The second is that women respondents in the settlements are stuck in traditional occupations and household work because for service they have to leave village which is very difficult unless they are highly educated. The teaching occupation also needs higher education which the women in these areas do not possess. So they have no other option than to stay at home or work in the field.

A higher involvement in areas other than agriculture can be related to educational attainment. It is natural that the more people are educated the more easily they find job in the non-farm sectors.

## 5.3 Respondents' Minor Occupation

Table 5.6 presents that, agro-labor is found to be an important source of minor occupation in the project area. In the control area it is wage labor which is important. Very few people are engaged in sectors like tailoring. In both areas, tailoring is an important source of employment.

Overall, in the project area only 39.1 (out of 87) per cent has minor occupation while in the control area, 57.3 (out of 82) per cent has minor occupation. But, the data in the table reveal that availability of more minor occupation in the control area is due to minor jobs like labor.

Although, their minor occupations are not different than the traditional ones, still they are important from the point view of income, in an alternative occupation scarce economy. Thus, the findings about the both major and minor occupation show that these people lack new sources of employment.

Table 5.6: Respondent's Minor Occupation  
(Multiple Choice)

Minor Occupation	Project Area		Control Area	
	Frequency	%(n=87)	Frequency	%(n=82)
Agriculture	1	1.2	1	1.2
Business	3	3.5	6	7.3
Tailoring	4	4.6	9	10.9
Agri-labor	17	19.5	5	6.1
Labor	9	10.3	26	31.7
Total	34	39.1	47	57.3

n - subsample size,  
Source: Field Survey, 1994

#### 5.4 Household Member's Occupation

Similar to the respondents' major occupation, majority of the family members are also engaged in agriculture and allied activities. Compared to the project area, a higher proportion of the family members are engaged in agricultural activities in the control area (Table 5.7).

According to the figures in the project area, a bulk of the members fall in the student category. The proportion of student members is higher in the project area, compared to that in the control area (44.9% vis-a-vis 29.1%).

The third major category is service. In the project area 7.9 per cent of the men are engaged in service however, the proportion of this category does not seem to be promising in the latter case. Very few proportion of the women members are engaged in the service sector in the project area and they are absent in the control area. The third major occupation in the control area is various kinds of labor.

Table 5.4: Household Member's Occupation

Occupation	Project Area			Control Area		
	f	%(f=390)	%(f=215)*	f	%(f=358)	%(f=254)*
Agriculture	129	33.1	60.0	162	45.3	63.78
Service:men	31	7.9	14.4	6	1.7	2.36
:women	2	0.5	0.9			
Business	6	1.5	2.8	2	0.6	0.78
Tailoring	14	3.6	6.5	22	6.2	8.66
Labor:men	6	1.5	2.8	25	6.9	9.84
:women	8	2.1	3.7	15	4.2	5.91
Agro-labor	13	3.3	6.0	7	1.9	2.76
Military	6	1.5	2.8	15	4.2	5.91
Sub-total	215	55.1		254	70.9	
Students	175	44.9		104	29.1	

f - Frequency of the members

\* - Proportion of the sub-total

Source: Field Survey, 1994

Compared to the project area, a higher proportion of both men and women are involved in wage labor, which comprises the various kinds of wage works. Despite the fact that labor is least preferred job, a significant proportion of respondents fall in this category and are engaged in carrying goods from Gorkha and Dhading Veshi.

The situation is more serious when students are excluded. Very high proportion of the family members are found to be engaged in agriculture. This shows the importance of agricultural sector from the point view of employment.

Non of the employment (except service and business) mentioned above is different from the traditional one which could be important from the entrepreneurial point of view. Neither in the project area nor in the control area, people are able to find new avenue for better employment. However, the fact that a higher per cent of people engaged in labor sector and military show that the situation is serious in the control area.

### 5.5 Classification of Households

Respondents in the study area are classified on the basis of their land possession. Farmers owning less than 10, between 11 to 20 and more than 20 ropanies are classified as small, medium and large farmers respectively (APROSC, 1990. pp:19).

According to this classification, 44.8 per cent of the households in the project area and 32.9 per cent in the control area are small holders but the medium class land holders are higher in the control area (by 56.19%). The small land-holders are higher in the project area (Table 5.8).

Table 5.8: Distribution of Household by Landholding Size (in Ropani)

Category		Project Area	Control Area
Landholding	category	%(n=87)	%(n=82)
<10	Small	45.9	32.9
11-20	Medium	41.4	64.6
>20	Large	12.6	2.4

n - subsample size

Source: Field Survey, 1994

However, as Nepalese rural areas are marked by mass poverty, comprising all the small and medium farmers in the hills and mountains, ADB/N has defined the poor as those who possess less than 20 ropanies (one ha.) of land in the hills (ADB, 1975 cited by NPC, 1992). Therefore available data show that 86.21 per cent in the project area and 97.56 per cent of the farmers in the control area, are poor.

### 5.6 Land Distribution by Caste

Figures in Table 5.9, show that in the project area among the small holders DKS are in the highest proportion followed by Brahmin. In the medium and large landholders however, the highest proportion is occupied by Brahmin. Data also show that GMD and DKS, although each combine three ethnic groups, still have less proportion. Therefore the data show that both in the medium and large landholding Brahmin occupies large proportion. But in the control area majority of small holders are Brahmin where the proportion of DKS in medium holders is larger.



Table 5.9: Land Distribution by Caste Groups

Caste	Project Area			Control Area		
	< 10 %(n=40)	11-20 %(n=36)	> 20 %(n=11)	< 10 %(n=27)	11-20 %(n=53)	> 20 %(n=02)
Brahmin	28	44	46	30	21	50
Chettri	12	28	9	15	4	
Newar	5	9	9	11	21	
GMD	10	5	18	26	22	50
DKS	45	14	18	18	32	

Source: field survey, 1994

### 5.7 Average Landholding

Referring to Table 5.10, average irrigated landholding is higher in the project area (by 52.07 %) than in the control area. In the project area average irrigated land is 6.98 ropani (0.35 ha) while in the control area this is only 4.59 ropani (0.23 ha). But in the case of unirrigated land, the land holding is higher (by 426.09%) in the control area. Taking the total average figure, average land holding is slightly higher in the project area compared to control area. The difference of total average land holding is only 5.19 per cent in favor of project area.

The average unused fallow land is higher in the control area in terms of both settlements and number of households. Considering the total households and their average unused fallow land, it is evident that people in the project area use land more extensively.

Data in the table also show that a significant proportion of people in the project area have taken land in rent which shows that people in these areas have tendency to work in the farm than going to work as labor.

Table 5.10: Average Land Holding Size (in Ropani)

Category of land	Project Area			Control Area		
	F	Average	SD	F	Average	SD
Irrigated Land	85	6.98	5.13	78	4.59	1.75
Unirrigated Land	84	6.21	5.11	82	7.83	4.37
Upland Rented In	7	1.57	0.98	3	4.33	4.16
Upland Rented Out	3	3.00	1.00			
Lowland Rented In	7	2.29	2.14	3	3.33	2.31
Lowland Rented Out	1	4.00				
Land in Other Use	5	2.60	1.52			
Unused Fallow Land	17	1.82	1.29	30	2.47	1.59
Total	87	13.38	8.50	82	12.72	4.45

SD - Standard Deviation, F - Frequency of households

Source: Field Survey, 1994

## 5.8 Food Sufficiency Status

The figures presented in Table 5.11 show that in the project area out of total households 21.8 per cent fall in small landholding family which have sufficient food and only 22.9 per cent of this category of households do not. Similarly, 41.4 per cent of the total households belonging to the medium size landholding category have sufficient food production.

The data in the case of control area, however show that all the three categories of land holding families do not possess sufficient food produced from their own land.

In the case of the project area the smaller the land holding size, the more the food deficiency. However, in the control area this trend is not applicable where total of 54.9 per cent do not have enough food. Of which medium size land holding families suffer most.

These data show that the project area is sound in terms of food sufficiency. There may be various reasons. The farmers in the project area have

practice of using improved varieties. Their main concentration is on lowland paddy, wheat and maize. They use combination of farm yard manure(FYM), chemical fertilizer and Dhaincha and they have better extension service. All these inputs may have a cumulative contribution on agricultural production.

Table 5.11: Food Sufficiency by Landholding Size

Landholding		Food Sufficiency				Chi-square Test  Obtained value = 4.04 DF = 1 Test at 5% significant level
		Project Area(n=87)		Control Area(n=82)		
Category	Size(Ropani)	fSH	fDH	fSH	fDH	
Small	<10	21.8	22.9	12.2	20.7	
Medium	10-20	41.4		31.7	32.9	
Large	>21	13.8		1.2	1.2	

n - subsample size, fSH - proportion of the food sufficient household, fDH - proportion of the food insufficient household.  
Source: Field Survey, 1994

Despite necessary land, medium size land holding families do not have enough food in the control area. It is because of large proportion of Bari Land (most of which is marginal land), and significant per cent of such land is related to rented-in land, which definitely does not give return as the owned low land.

This situation is reflected in the higher food deficiency. Thus a significant proportion of respondents are found to be engaged in labor and military. These are the major sources of employment, which fulfils their need of resources for buying both food and non-food items.

## 5.9 Farm and Off-farm Income

Although both farm and off-farm income encompass a wide variety of sources, but except variables taken for this analysis, others are insignificant from the point view of amount. The only major important ones are considered here for comparison.

### 5.9.1 Farm Income

The income from sales of paddy is far higher in the project area (Table A.4). The findings are similar in all cases except in the case of wheat and upland paddy. The sales of upland paddy is higher in the control area. This is because of higher production in the control area. Income from livestock is very

high in the project area. The higher income from milk and ghee must be because of improved breed, better animal husbandry and availability of fodder in the project area. The reason for better income from egg must be because of the higher poultry farming. It is because in the project area women who are involved in saving group can get credit for buying chicken.

These data show that people in the project area have higher tendency of selling agricultural produces. It can be related to the findings mentioned in the following chapters that both the productivity and production of main cereal crops are higher in the project area. It can be also related to the claim made in chapter 5.8 that the project area has more food sufficiency. Therefore they can sell the excess food stuff.

#### 5.9.2 Off-farm Income

The various sources of off-farm employment which could generate high income are rare in the both study areas. All of these opportunities are not different from the traditional occupation.

The figures in Table A.5 show the income from various off-farm sources. Since the number of people engaged in service sector is higher in the project area, higher income from this source is natural. Similar is the finding with income from business. Except these two sources, incomes are always higher in the control area. But these sources are minor, since they are related to inferior jobs like labor. Income from remittance is significantly higher in the control area, since a higher proportion of people in the control area are in military service.

Thus the nature of sources of off-farm income is clearly different in the two areas while the other needs more physical efforts than better education and experience. Obviously income from the first source becomes higher compared to the income from job like wage labor. These attributes give rise to the gap in income among various sources.

### 5.10 Expenses on Food and Non-food Items

Expenses on food items denote the purchase of cereal crops while expenses on non-food item denote the purchase of daily needs other than food. Analysis of the expenses on food and non-food items show very important socio-economic features of households. The first implies the insufficiency of food production while the latter shows the settlers attitude toward quality of life.

#### 5.10.1 Expenses on Food Items

Data in Table 5.12 present that average purchase of paddy is significantly higher in the control area than in the project area. Similar is the case with wheat and maize. Although the absolute figures do not look important, this can still be related to food deficiency in the control area. Expense on meat is

significantly higher in the project area. These data show that households have to purchase higher amount of basic food items in the control area. But the expenses on meat which is not basic food (in Nepalese rural perspective) is higher in the project area.

The higher standard deviation (even higher than the mean purchase) may be because of high difference in the quantity purchased. This can also be related to high deviation in landholding in both project and control area. It is because those who have less land must buy higher quantity of food.

Table 5.12: Average Expenses on Food Items

Items	Project Area		Control Area		% difference
	Mean	SD	Mean	SD	
Paddy	278.2	549.9	387.7	645.3	-39.4
Wheat	17.8	84.9	47.6	645.3	-166.8
Maize	58.5	200.0	113.4	206.2	-106.5
Meat	1416.0	983.0	1076.2	326.0	+31.6

+ sign denotes the data in favor of project area and vice-versa.  
Source: Field Survey, 1994

#### 5.10.2 Expenses on Non-food Items

The expenses on non-food items is just reverse of that on food items. Except in health, expenses in each case is higher in the project area (Table 5.13).

Respondents in the project area have spent 221% more on education than in the control area. These findings can be related to the family members educational attainment. This is also supported by claim made in chapter 5.4 that a bulk of population belongs to student category.

Very high standard deviation in education is because of expenses on higher education. There is extremely high difference between expenses on school and college education. Similarly, in the case of clothing and shoes, project people have significantly higher expenses.



However, the finding is surprising in case of expenses on health. The higher expenses on health denote relatively weak health condition in the control area where average people falling sick and average number of hospital visits is significantly higher. So these reasons should be responsible for excess household expenses in the control area.

Table 5.13: Average Expenses on Non-food Items

Items	Project Area		Control Area		% difference
	Mean	SD	Mean	SD	
Education	1988.3	2110.4	620.1	734.9	+221.0
Clothes	1827.9	915.5	1501.8	484.8	+21.7
Health	494.9	372.3	606.2	320.3	-22.5
SA	333.7	529.4	282.6	271.7	+18.1
Shoes	929.9	572.4	533.8	354.8	+74.2

+ Sign denotes the data in favor of project area and vice-versa.

SA - Social Activities

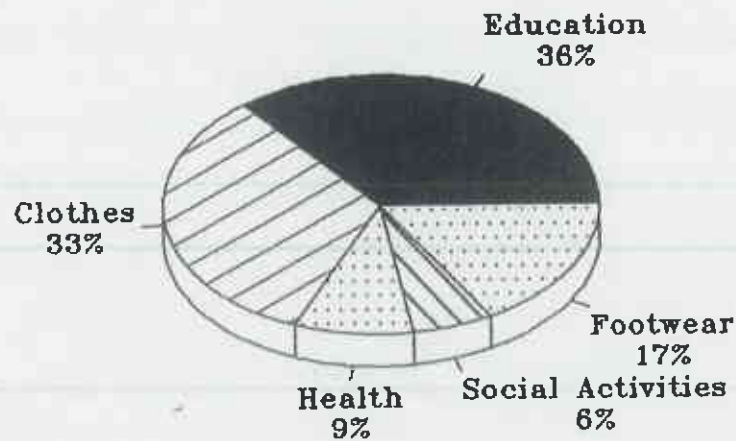
Source: Field Survey, 1994

On average project people spent 57.3 per cent higher in non-food items than in the control area. Therefore it can be said that people in the project area are enjoying better quality of life at least compared to those in the control area.

The expenditure pattern of the settlers is shown in Fig. 5.4 and 5.5. Out of total expenses the project people spent in the education twice as much in the control area while the proportion of expenses on the other areas are higher than those in the project area. Thus it is evident that the project people give higher importance in the education than the other aspects.

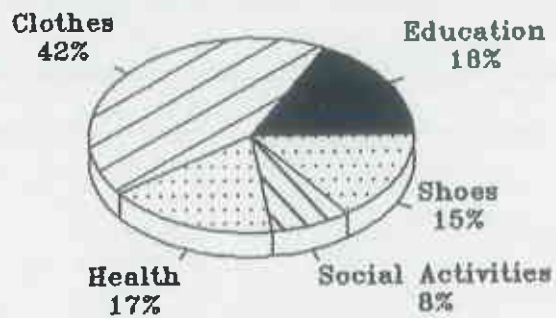


**Fig. 5.4: Expenditure Pattern on Non-food Items**  
Project Area



Source: Field Survey, 1994.

**Fig. 5.5: Expenditure Pattern on Non-food Items**  
Control Area



Source: Field Survey, 1994.

### 5.11 Total Average Income and Expenses

The following table shows the total average farm and off-farm income and total average expenses. It is evident from the figures that proportion of income is reverse in the two settlements. Regarding the expenses out of total income the project people spent 11% in the food items while the people in the control area spent 15%. The higher expenses on food items is due to relative higher insufficient food production in the control area. Similarly out of total average income the project people spent 35% on non-food items where as the people in the control area spent only 32%. The higher expenses on non-food items in the project area is due to the relative higher expenses on education than in the control area.

Table 5.14: Total Average Income and Total Average Expenses

Income and Expenses	Project Area	Control Area
Total Average Income	15949	10638
Total Average Expenses		
Food Items	1771(11)	1625(15)
Non-food Items	5575(35)	3445(32)

Figures in parenthesis show the proportion of total average income.

### 5.12 Summary

The study area is a mixed cultural society of different ethnic groups like Brahmin, Chettri, Newar, Gurung, Magar, Darai, Damai, Kami and Sarki. Except Damai, Kami and Sarki the other caste's settlements are mixed. Still the age-old value that these castes should not be touched is pervasive.

The average household size is 5.48 and 5.39 in the project and the control area respectively. However, age distribution shows that higher household size is because of already grown population not because of the new births. The economically active population is higher but dependency ratio is less in the project area than in the control area. The classification shows that small size household (parents and two kids) are found to be higher than the medium size households in the project area, while in the control area the proportion is nearly equal.

The absence of married family members in the age group of 10 -17 and higher proportion of unmarried members in the same group in the project area denote the tendency of late marriage practice unlike in the control area.

Except the traditional generation-old caste-specific professions, agriculture is the only dominant occupation across locations, castes and all classes of society. Although some of the households are engaged in service, teaching or business, they are still involved in agriculture in one or the other way. Among the respondents women are exclusively engaged in agriculture. Occupation of household members where bulk of population is engaged in agriculture is similar.

In the control area significant proportion of the members are engaged in selling labor and military service.

Food sufficiency is better in the project area. It is only small land owners who do not have enough food, but in the control area all the classes do not have enough food throughout the year despite larger landholding. Therefore, average expenses on food items is higher in the control area but the findings are reverse in the case of non-food items. The expenditure pattern shows that project people spend highest amount in the education while this trend is not applicable in the control area.

In line with sufficient food production in the project area the income from farm produce is higher while except income from service and business the off-farm income is higher in the control area.

## CHAPTER VI

### HEALTH CARE & FAMILY PLANNING

In Nepal one of the critical rural problem is widespread poor health of the people throughout the nation. Unless people are healthy they can't achieve the development targets. In this sense good health is pre-requisite for development. Therefore it is widely accepted that health sector is exigent for rural and over all development. Thus the NGO has endeavoured to provide facilities and at the same time to develop health awareness.

Nepalese rural areas where poverty is pervasive, is marked by lack of health awareness, inadequate health facilities, prevalence of communicable diseases, traditional harmful health practices (Jhankri Pratha), high birth rate, high maternal and child death rate, and bad sanitation. Therefore, "...there should be encouragement for the formation of non-governmental organizations and voluntary organizations that would be capable of assuring increased responsibility for economic and social advances (The South Commission Report, 1991. pp:80)". Thus the main health activities of NGO is discussed in the following sections.

#### 6.1 Immunisation Among the Households

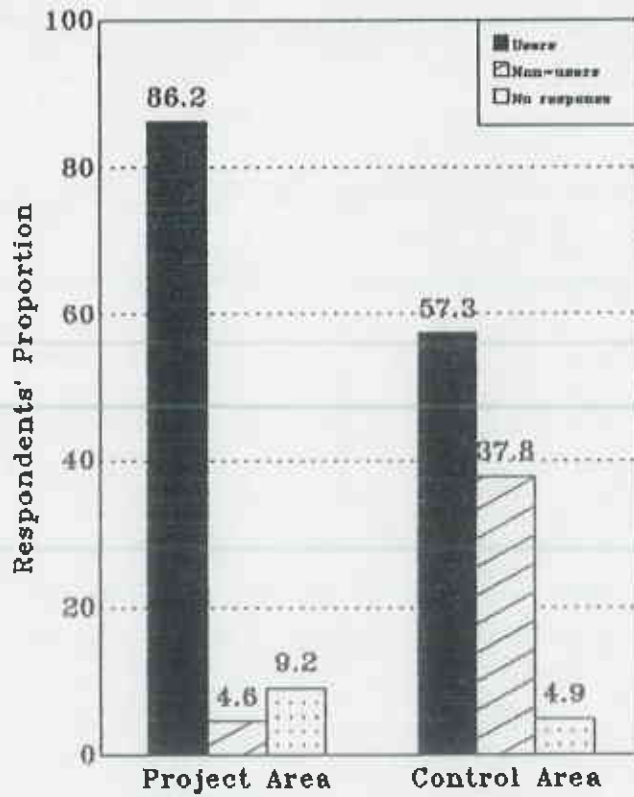
People in the project area are encouraged by the NGO activists to use vaccination. In the past the NGO itself used to provide all the services through mobile clinics but these days it has changed its strategy. Today NGO activists act as change agents and motivators who register the eligible children and motivate parents to vaccinate their children. They work in collaboration with the District Public Health Office (DPHO) and Health Post (HP) staff. The NGO also provides necessary health equipments to health posts. This program is effective since the NGO staff visit door-to-door to search for eligible children before the immunisation camp arrives.

Immunisation is highly successful in the project area where the user's proportion is significantly higher than in the control area. Similar results were obtained by one study conducted in Majhlakuri Bot and Taku Kot where "...the immunisation coverage was 90% and 80% respectively" (Poudyal, 1992, pp:51). The proportion of non-users is higher in the control area. However, the respondents who did not respond about the question are higher in the project area. Despite the NGO's continuous efforts, the existence of this situation is questionable. This situation is also explained by the individual cases of immunisation.

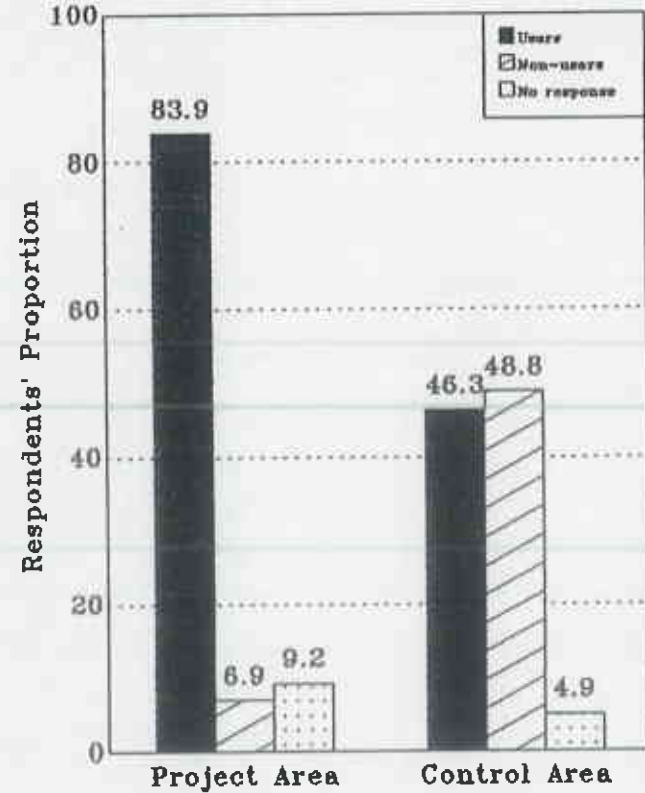
#### 6.2 Households Using BCG, DPT and Polio

In the project area 86.2 per cent of the households have used BCG compared to only 57.3 per cent in the control area (Fig. 6.1). The proportion of non-users (37.8 per cent) is far higher in the control area than in the project area. Despite the NGO's efforts, still 9.2 per cent of the households are not aware of BCG immunisation where this category is 4.9 in the control area.

Fig. 6.1: BCG Among Respondents Fig. 6.2: DPT Among Respondent

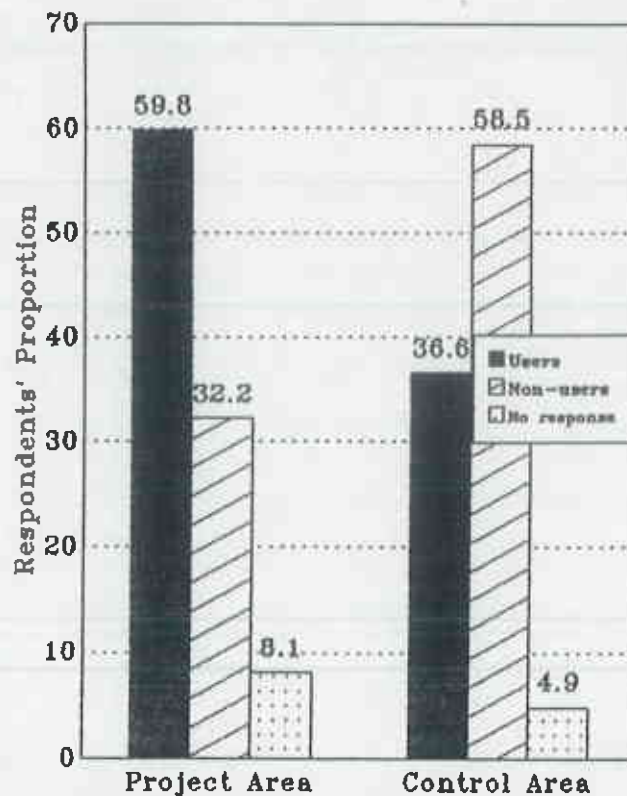


Source: Field Survey, 1994.



Source: Field Survey, 1994.

Fig. 6.3: Polio Among Respondents



Source: Field Survey, 1994



Overall situation of DPT users is presented in Fig. 6.2. In the project area, 83.9 per cent of the households have used DPT where this proportion is only 46.3 per cent in the control area. As such households using DPT is 81.1 per cent higher in the project area compared to the latter. The situation of DPT non-users is the reverse. The non-users proportion in the project area is far less than those in the control area.

Similarly, Fig. 6.3 reveals the use of Polio among households. Similar to the use of previous vaccination, the use of this oral drop is also widely used by project people. The situation of users and non-users is reverse in the two areas. The user's proportion is nearly double in the project area than the non-users but this situation is reverse in the control area. Again comparing the situation with in the settlements the users proportion is nearly twice as much in the project area.

The figures show that the situation is favourable to the project area. The NGO health activities, Women Development activities and the NFE classes may be the reason for the differences in the two areas through which respondents come into contact and get information. However, it is surprising that the proportion of households who are not aware about these facilities are unexpectedly higher in the project area. A strong reason for such situation is the isolated households where the NGO's health extension workers are not able to reach. Another possible reason is the children themselves who do not want to take immunisation.

So there is difference in the users in the two areas. The relatively less proportion of the users in the control area is natural because neither they have regular and reliable immunisation services nor are they aware of necessity of immunisation.

The approach of immunisation services has also played important role where the people in the control area have to either go to hospital or wait the government immunisation camps but due to irregularity and lack of information of such immunisation camps many people miss opportunity to immunise their children.

### 6.3 Immunisation and Health Condition of Children

Figures presented in Table 6.1 show the four different categories of children in terms of their health condition and immunisation. The table shows that 8.1 per cent of the children with immunisation have excellent health while this category of children is unavailable in the control area.

Similarly, 71.3 per cent of children in the project area with immunisation have good health while this figure is just 21.9 per cent in the control area. However, in the same condition proportion of children with fair health is higher in the control area.



Table 6.1: Immunisation and Health Condition of Child

Health condition	W	Project Area		Control Area		Correlation coefficient(r)
		%(n=87)	Score	%(n=82)	Score	
Very good	3.0	8.1	56.5	36.6	0.0	Obtained Correlation Coefficient In the project area, (r) = 0.44 In the control area, (r) = 0.42 Test at 5% significant level.
Good	1.5	71.3	106.9	21.9	54.9	
Fair	1.0	8.1	8.1	41.5	21.9	
NA	0.0	12.7	0.0	0.0	0.0	
Total		100.0	139.1	100.0	76.8	
Index		0.53		0.31		

n - subsample size, W - Weight, NA - Not applicable  
 Source: Field Survey, 1994

Since majority of the children have good health in the project area, it can be concluded that there is positive relation between immunisation and child health. The index calculated on the basis of child health condition, presents that it is extremely higher in the project area than in the control area.

This fact proves that the children of the project area are better off in terms of use of immunisation and health condition compared to the situation in the control area.

#### 6.4 Mother-Child Health (MCH) Services

Mobile clinics provide basic primary health care to children below 5 and pregnant & lactating women. Services like family planning, primary curative care for mother and children, health education and finally ante-natal and post-natal check-up are the services which are generally provided by these clinics.

In order to provide effective services to the maximum number of people the NGO has changed its strategy and work together with the District Public Health Office (DPHO), which helps the sustenance of the program.

Data presented in Fig. 6.4 show that 56.3 per cent of the households received such services from the NGO associated clinics in the project area while

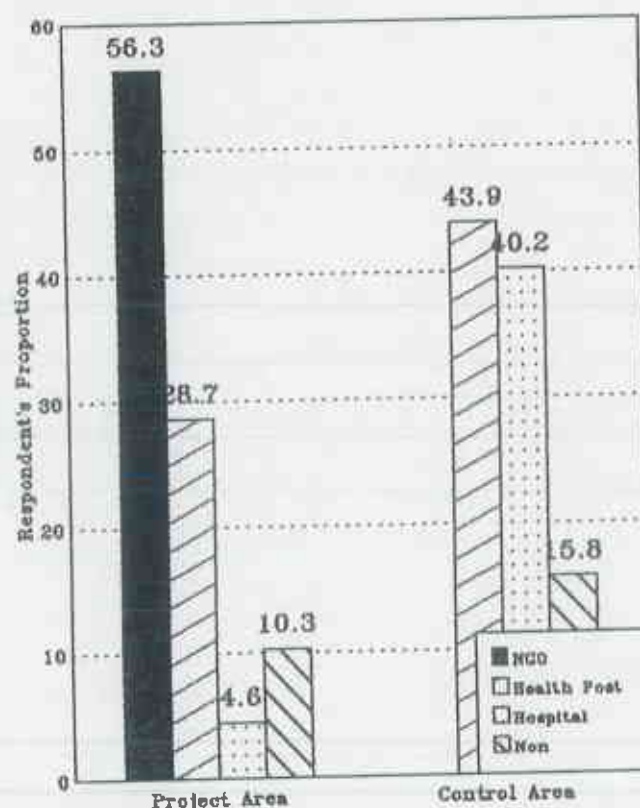
such service is totally absent in the control area. Only 28.7 per cent of the households received this service from health post in the project area where 43.9 per cent of the household in the control area received from health post.

Those who got this service from hospital is very high in the control area compared to the project area. The households getting no services is higher in the control area. These data show that for such services more than 50 per cent of the people depend on the NGO associated MCH clinics in the project area while in the control area 80 per cent depend on the health post or hospital. The reason for such differences is the NGO's health extension workers who visit the villages and assess need and provide their services.

Thus it is clear that the NGO is able to reach the needy people, while the majority of the households in the control area have to visit health post and hospital which necessarily needs time and money along with mental and physical efforts.

Such clinical service arranged by the NGO is important because in order to get hospital service people have either to go to Gorkha District Headquarters or Kathmandu. Even for health post services they have to visit Aarughat Bazaar.

Fig. 6.4: Sources of MCH Services



Source: Field Survey, 1994.

## 6.5 Awareness and Use of ENT Service

Eye, Nose and Throat treatment camp known as the ENT camp is occasionally arranged by both government and the NGO occasionally. The NGO hires experts and circulates notice by different media including local posters and local project members as messengers. Thus the information about such camp wide spreads in no time. For government agencies, the major media is radio. Due to lack of radio with many people such message can't reach the people who really need such services.

Awareness in these camps and uses of such opportunities are presented in Table 6.2.

Table 6.2: Awareness and Use of ENT Clinical Service

Category	Project Area		Control Area		Chi-square value
	Users	Unusers	Users	Unusers	
	%(n=52)	%(n=35)	%(n=14)	%(n=68)	Obtained value = 23.529 DF = 1 Tabulated value = 3.84 Test at 5% significant level
Aware	59.8	11.5	17.1	2.4	
Unaware		28.8		80.5	
Total	59.8	40.2	17.1	82.9	

n - population in the subsample; ENT - Ear, Nose and Throat clinics  
 Source: Field Survey, 1994

Out of total sampled households, 59.8 per cent were aware and used the facility while only 28.7 per cent were not aware. In the case of control area the aware and user's proportion is only 17.1 per cent of the total respondents, while 80.5 per cent of the total respondents were neither aware nor users.

An important remark is, this facility is provided (by the NGO) to the needy people regardless of physical boundary between project and non-project areas although the working station of such camp is found to be located in the project area. Therefore it is natural that this facility is used by the project people more than people in the control area.

The reason for availability of such services for higher proportion of people in the project area is fast and effective flow of information. This can be attributed to the regular and immediate contact with the beneficiaries, the field visit of the project staff and the members of the women development activities of the NGO. Similarly the members of the non-formal education classes also play important role in dissemination of such services.

## 6.6 Households Ability of Preparing Jeevan Jal

*Jeevan Jal* is a liquid prepared locally to cure diarrhoea. It is prepared by mixing salt, sugar and boiled water. Ability to prepare such liquid is very important because in the Nepalese rural areas diarrhoea is one of the major reason for higher child mortality rate.

Majority of the respondents in the project area knew how to prepare it. Comparing the intra situation in the project area, the proportion of the able people is comparatively higher than the unable while in the control area the proportion of able and unable households are nearly equal (Table 6.3).

Table 6.3: Households Ability to Prepare Jeevan Jal

Category	Project Area		Control Area		Chi-square test
	HH	%(n=87)	HH	%(n=82)	
Able	67	77.0	40	48.8	Obtained value = 6.813 DF = 1. Tabulated value = 3.84 Test at 5% significant level
Unable	20	22.9	42	51.2	

HH - frequency of household, n - subsample size  
Source: Field Survey, 1994

## 6.7 Ability to Handle Minor Health Problems

Similarly, ability to handle accidents of minor kinds and emergency prevention is quite favourable in the project area (Table 6.4), while the people in the control area do not even know the term 'first aid'. They have their own indigenous techniques of curing the injuries like bleeding or other kind of physical damages.

There are various reasons for such different situation in terms of respondents' ability. The important reason is the regular health training provided by the NGO. During the training various techniques are taught to trainees to cope with such health problems. Similarly, the NGO classes and regular meeting with the NGO's health extension staff are the other reasons.

The figures in Table 6.4 also show that higher proportion of respondents in the project area can deal with diarrhoeal problem. Those who can deal such minor diseases, in the control area are also higher when compared the situation within the control area. Their proportion is quite lower than those in the project area.

Table 6.4: Type of Illness that can be Handled by Settlements  
(Multiple Choice)

Illness	Project Area		Control Area	
	HH	%(n=87)	HH	%(n=82)
Diarrhoea	45	51.7	22	26.8
Cold	8	9.2	2	2.4
Both	13	14.9	4	4.9
First aid	11	12.6	0	0.0
Non	10	11.4	54	65.9

HH - frequency of household, n - subsample size

Source: Field Survey, 1994

Also the discussion with the trainees of the health training program revealed that they are trained to handle delivery cases (Sudeni training) which is extremely important in the case of emergency for which the NGO also provides the kit boxes to the trainees.

### 6.8 Use of Latrine

Latrine is another important factor that has important impact on the health of people. In the project area, people have been emphasised on the construction of sustainable latrine. Whatever the latrines are found in the project area, they are made up of materials available locally like wood, bamboo and thatch. Nothing is necessary

to buy except some nails and in some cases only few kilograms of cement. In the project area, majority of the people (almost 89 per cent) have used it. On the

### Box 1: Transfer of Technology Through Training: Another dimension of empowerment

*An young woman participant of the regular health training program, from an economically lower class of community, feels empowered. She says "I'm quite grateful to SEV (local name of the NGO). They have made us 'Gaon Ka Dactor' (village doctor) by providing various training". About her skill she added, "I can help people to treat diarrhoea, and in the time of delivery and even in the case of severe accidents, I can prevent the bleeding even if it is for some time. Also I can deal fever scientifically. It has changed my concept what I had prior to the training. Now on I don't believe in the Jhankri Pratha for treatment".*



other hand, in the control area majority of the respondents are found to be not using. During the field visit these two areas could also easily be distinguished by the sanitary condition (Table 6.5).

Table 6.5: Use of Latrine

Category	Project Area		Control Area		Z-test
	HH	%(n=87)	HH	%(n=82)	
Users	77	88.5	34	41.7	Obtained value = 6.68 Tabulated value = 1.96 Test at 5% significant level
Non-users	10	11.5	48	58.5	

HH - frequency of household, n - subsample size  
Source: Field Survey, 1994

Figures in Table A.9 show that in the project area even the people in the disadvantaged class are found to be widely using latrines. While the situation is quite different in the same category in the control area, even the so called superior class also doesn't have latrine. But surprisingly higher proportion of the GMD are found to be using them which can be attributed to their experience gained while they were out of the home.

## 6.9 Family Planning

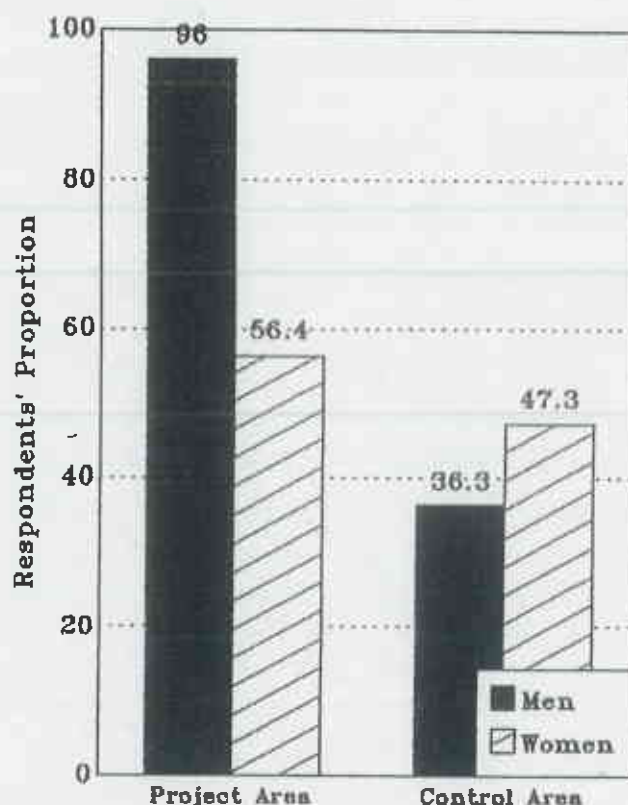
### 6.9.1 Use of Family Planning

It is a stylised fact that big family size is cause for many problems. So the program on family planning and child spacing are conducted in collaboration with the DPHO and Contraceptives Retail Service (CRS) Company. The depo-provera and condom are the widely accepted temporary family planning measures, however, the tendency of permanent family planning seems to be growing.

Among the male respondents, 96 per cent were found to be using family planning measures while this category is only 36.4 per cent in the control area (Fig. 6.5). Similarly, the proportion of women users is also higher by 19.2 per cent in the project area. The non-users however, are more in the control area than in the project area, which proves that the family planning measures are highly practised in the project area. The reason for higher level of adoption of these measures are again because of awareness, availability of measures and the timely consultation service by the NGO health staff.



Fig. 6.5: Users of Family Planning



Source: Field Survey, 1994.

#### 6.9.2 Type of Family Planning

The results of the study presented in Table 6.6 show that the type of family planning practised, was found to be mixed. In the project area majority of the men are found to be using permanent family planning measure while among the women, the use of temporary measure was found to be slightly higher.

Some of the respondents stated that the permanent measure is easy, however the temporary users gave different reasons like having small child or not having child yet, etc.

In the control area, among both the men and women respondents the permanent measure is popular. They claimed that once if the children are grown up, the permanent measure is free of all kinds of problems. Also in the control area the users of permanent measure is quite high compared to temporary measures.

In the both settlements, male respondent's proportion of using these measures is found to be higher than women. The reason for higher adoption of these measures among men respondents in the project area, was that women have various problems after they use family planning measures either temporary or permanent.

So they claim that they are able to convince their male counterparts to use it. Moreover, the proportion of men using such measures is far higher than in the control area. The situation however is different in the control area where women user's proportion is higher than that of their male counterparts in case of temporary measures, while the use of permanent is not so different.

Table 6.6: Type of Family Planning by Gender

Category	W	Project Area(n=87)		Control Area(n=82)	
		Men	Women	Men	Women
		%(n=25)	%(n=62)	%(n=44)	%(n=38)
Temporary	1	16.0(16)	29.0(29)	2.3(2.3)	18.4(18.4)
Permanent	2	80.0(160)	27.4(54.8)	34.1(68.2)	28.9(57.9)
NA	0	4.0(0)	43.6(0)	63.6(0)	52.6(0)
Total		100.0(176)	100.0(83.9)	100.0(70.5)	100.0(76.3)
Index		3.52	0.68	0.80	1.00
Weighted Index		2.44		0.90	

n - population in the subsample

Figures in parenthesis present the respective score

Source: Field survey, 1994

This fact is supported by index constructed which is shown in Table 6.6. Higher index in the project area implies inclination of both men and women toward the permanent measures while this situation is reverse in the control area. Moreover the proportion of those who did not respond is far higher in the control area.

There are various reasons for it. The most important factor is their less literacy status which hinders their accessibility to information. They also have less exposure with these measure unlike in the project area. They rarely come into contact with the health staff. Also another important factor is their shyness in expression.

### 6.9.3 Source of Family Planning Services

As shown in Table 6.7, in the project area almost all the users receive information from the NGO with few exception from government health extension staff. The picture is however, quite different in the control area, where the major source is found to be friends (informal source). In the both men and women cases, the proportion of 'friend' source is higher than the government sources.

Table 6.7: Source of Family Planning by Gender  
(Multiple Choice)

Sources	Project Area				Control Area			
	Men		Women		Men		Women	
	HH	%(n=25)	HH	%(n=62)	HH	%(n=44)	HH	%(n=38)
NGO	24	96.0	33	50.8		0.0		0.0
Govt.		0.0	2	3.1	7	15.9	8	21.1
Friends		0.0	3	4.6	9	20.5	10	26.3
NA	1	4.0	27	41.5	28	63.6	20	52.6

HH - frequency of Respondents, n - population in the subsample, Govt -Government  
Source: Field Survey, 1994

So 'friend' (informal) is seen to be very important source in the absence of other promising information disseminating channels where in the project area the NGO is seen to be playing very important role.

### 6.10 Availability of Clean Drinking Water and Health Condition of Child

As mentioned earlier, despite the provision of piped water supply system, very rarely this facility was available for people because of non-functioning of the supply system.

Figures in Table 6.8 show that 5.8 per cent of the households had children with very good health, having clean drinking water while such finding is not available in the control area. Even without clean drinking water 2.30 per cent households in the project area have children with very good health. The table also shows the higher proportion of the family in the project area, having children with good health compared to the control area. Partially these results can be attributed to literate mothers and availability of other medical facilities including regular Mother Child Health (MCH) clinical services in the project area.

The NGO is not involved in providing clean drinking water, but respondents in the project area know to clean water by either filtering (usually with clean piece of clothes) or simply using the boiled water which are safer than drinking water without processing.

The situation is not so favourable in the control area where only 25.6 per cent of the households have children with good health and 1.2 per cent have fair health condition with clean drinking water. Compared to it out of total households 29.3 per cent have children with good health and 42.7 per cent have fair totalling 72 % without clean drinking water. Therefore, the overall health condition and clean drinking water situation is better in the project area.

Table 6.8: Availability of Clean Drinking Water and Health Condition of Child

Health Condition of child	W	Clean Drinking Water				Obtained Correlation Coefficient Project area (r) = 0.10 Control area (r) = 0.33 Test at 5% significant level
		Project Area		Control Area		
		Available	Unavailable	Available	Unavailable	
		%(n=55)	%(n=32)	%(n=22)	%(n=60)	
Very-good	1.0	5.8(5.8)	2.3(2.3)	0.0(0)	0.0(0)	
Good	.55	49.4(27.2)	31.0(17.1)	25.6(14.1)	29.3(16.1)	
Fair	.10	6.9(0.7)	1.2(0.1)	1.2(0.1)	42.7(0.4)	
NA	.00	1.2(0)	2.3(0)		1.2(0)	
Total		33.7	19.5	14.2	16.5	
Index		0.6	0.6	0.6	0.3	

W - weight, n - population in the subsample, NA - Non Applicable  
 Source: Field Survey, 1994

### 6.11 Family Members Falling Sick and their Hospital Visits

The following table shows the overview of health condition of the study areas. As indicated by Table 6.9, in the project area, on an average 1.52 members suffered from various sickness last year which is 2.2 in the case of control area. Thus it is clear that the proportion of those who fell sick in the control area is higher by 42.8 per cent than in the project area.

Table 6.9: Average Number of People Falling Sick and Hospital Visits (04/1993 to 03/1994)

Items	Project Area		Control Area		Correlation value
	Average	SD	Average	SD	
Nos. of people falling sick	1.5	0.7	2.2	1.1	Obtained Correlation coefficient In the project area, (r) = 0.67 In the control area, (r) = 0.81 Test at 5% significant level.
Hospital visits	1.2	0.5	1.8	0.7	
Total	2.7		3.9	0.8	

SD - Standard Deviation

Source: Field Survey, 1994

Similarly, on an average 1.2 persons visited hospital for curing their illness in the project area while this figure is 1.8 for the people in the control area which is 44.3 per cent higher than in the project area. Thus it is clear from the table that both the average number of family members falling sick and their hospital visits for treatment is higher in the control area. This shows the better health condition in the project area. This finding has important implications and is closely associated with availability of health services like the MCH clinics, family planning services, immunisation, clean drinking water, use of latrine and above all better educational attainment.

### 6.12 Summary

In the project area, immunisation is highly successful. These services are provided by the NGO in collaboration with the DPHO and the HP for which NGO activists do very important job of searching eligible children to register before immunisation clinic arrives. This makes the coverage of immunisation better. The MCH clinical services are also provided in the same way.

People in the project area have better exposure with the ENT camps (both users and those having awareness). However this service is also available to the people in the control area.

Almost half of the respondents are found to be able to treat diarrhoea themselves where as such skill is less in the control area. Similar is the case with skills of handling other minor diseases. Surprisingly, the word 'first aid' is new for many in the control area.

Latrine is also widely found to be used in the project area, where even the DKS group is found in a significant proportion. People in the control area also use latrine but it is mainly concentrated in Brahmin and the GMD castes.

Family planning measures are widely used in both project areas and control area, however, users' proportion is higher in the project area. Likewise, in the project area women are able to convince their male counterparts to use permanent family planning measures.

The NGO is important source of information while in the control area, government-extension workers and 'friends' are the most important sources of information for the family planning measures.

Clean drinking water has a positive impact on child health. Many people in the project area either filter the water using piece of cloth or use boiled water.

As result of availability of these health facilities and awareness, the number of people falling sick and their number of hospital visits are found to be lower in the project area than in the control area.



## CHAPTER VII

### EDUCATION

Education is one of the important paradigm of development, which may have a multi-dimensional and multiplier effect in all other human activities. It can be one tool which can empower people. It is through education and training the poor become aware of their social entitlement and economic opportunities (IFAD, 1992).

New job opportunities are generally facilitated by good education. For women, good education may represent access to a 'good' marriage, and to a job outside agriculture. Education may thus provide women with heightened status and position within the locality. This also challenges the traditional role of women as subsidiary cultivators, as caretakers of the village yard and related functions (Lund, 1993. pp:19).

In Nepal, Gorkha District is believed to be relatively better off in terms of education. However the achievements in education may not be equal and similar across settlements, across ethnics groups or across all classes of people and gender. Thus, in this chapter educational attainment in the study area has been explored comparing the situation where the NGO is involved and where it is not. To start with, "Development catalyst the NGOs normally are engaged in education and organizing work as well as introducing new ideas and techniques to improve the production and marketing goods and/or to introduce income generating projects to enhance rural employment as well as other rural income generating activities at the local community level (UN/ICIRD, 1989. pp:76)".

#### 7.1 Family Member's Educational Attainment

In a rural setting simple literacy is essential and more important than higher education. The latter is neither applicable nor it is easily accessible for poor people. Only those who are better off can afford to get such education. Consequently, the analysis is based on the two major segments; one illiterate mass and the other the literate.

Literate people in the project area also include those who attended or are attending the Non-formal education classes and in both cases these (NFE graduates) are the people who can just read and write. It is noteworthy that among the NFE participants adult literate are the most. Therefore while calculating the index weight is given on the basis of these two factors. Figures in Table 7.1 shows that the situation of literate and illiterate people are the reverse in the two settlements. When gender is considered, the women in the control area are suffered most.

The index value shows that the situation is quite favorable in the project area where even the index of women is slightly higher than that of men. When the similar situation is compared in the control area, there is significant gap between the index of these two groups. This condition helps to infer that compared to the women in the project area, they are lagging behind in the control area. The reason for this situation becomes self-evident (Table 7.1) which shows that the higher score in the project area is because of literate women. The sole responsible factor for higher women literacy is the NGO's NFE classes.

Table 7.1: Difference in Educational Attainment (Based on Index)

Categories	Weight	Project Area		Control Area	
		Men %(f=254)	Women %(f=223)	Men %(f=227)	Women %(n=213)
Illiterate	0	9.1(0)	17.5(0)	48.1(0)	71.4(0)
Literate	1	90.9(90.9)	82.5(82.5)	51.9(51.9)	28.6(28.6)
Total		100.0(90.9)	100.0(82.5)	100.0(51.9)	100.0(28.6)
Index		0.35	0.37	0.23	0.13

f - population in the subsample  
Source: Field Survey, 1994

The data are further broken down and presented in detail in the Table 7.2 which shows the over all picture of the study area in terms of educational status. The hierarchy of education is divided into six categories from illiteracy to higher education.

Table 7.2: Household Member's Educational Attainment

Education Level	Project Area		Control Area	
	Men %(f=254)	Women %(f=223)	Men %(f=227)	Women %(f=213)
Illiterate	9.1	17.5	48.0	71.4
Literate	38.6	46.6	19.4	14.6
1-5 class	21.3	18.4	16.3	10.8
6-10 class	13.4	14.3	9.7	0.9
SLC passed	12.9	2.7	4.9	0.5
Above SLC	4.8		1.8	1.9

f - population in the subsample  
Source: Field Survey, 1994

The children in the project area have better schooling which is depicted

by the fact that in every category of schooling, the proportion is always higher in the project area. Also, with some exceptions the difference in proportion in each category between men and women is nominal unlike in the control area. This analysis reveals that by gender, men still have better educational attainment and by settlements project area is better off. Comparing the women groups across the settlements those in the project area are in a significantly better situation. This finding also helps to infer that the more adults are educated the more children have tendency to go to school.

## 7.2 Distribution of the Students Among Households.

As indicated in Table 7.3, nearly half of the total households do not have children who go to school in the control area but in the project area such household is only 13.8 per cent. In the project area, households with less than 3 students is very high. Similarly households having less than 4 is high but the proportion is nearly equal. These proportions in the control group are significantly less when compared with the project area and at the same time there is an absolute gap between the two categories of family.

Higher enrolment of students in the project area can be attributed to two main reasons. The first is relatively more literate parents who send their children to school and the second is the various educational programs run by the NGO. Comparing the index of the two areas, it is nearly 81 per cent higher in the project area than in the control area. Since higher index denotes better situation, the picture is better in the former case than in the latter case.

Table 7.3: Distribution of the Students Among the Households

Number of students	Weight	Project Area		Control Area	
		%(n=87)	Score	%(n=82)	Score
0	0	13.8	0.0	47.6	0.0
< 3	1	43.7	43.7	32.9	32.9
3 - 4	2	41.4	82.8	19.5	39.0
> 4	3	1.2	3.5		
Total		100.0	129.9	100.0	71.9
Index		0.50		0.29	

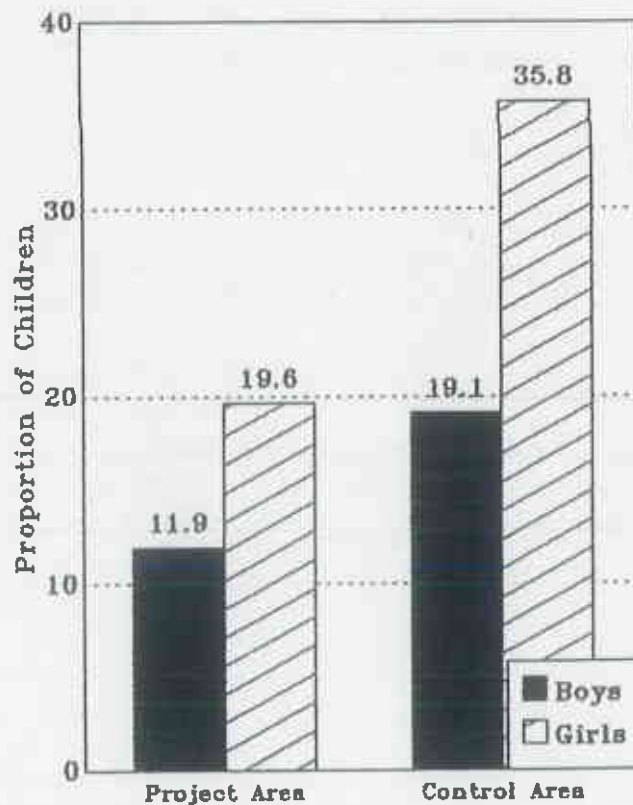
n - subsample size, The higher the index the larger the student number.  
Source: Field Survey, 1994

### 7.3 Out of School Children.

Out of school children are those who despite the school age do not go school. The findings are represented by Fig. 7.1 which shows the number of children aged 6 to 14 who are out of school. The figures show that in the project area out of 117 children only 11.9 per cent male and 19.6 per cent female do not go school while this situation is quite frustrating in case of control area where the male and female out of school children is 60.5 and 82.65 per cent higher than those in the project area.

These figures also show that the situation of female children is more serious in the control area since their proportion is higher when compared the two settlements. This result is not so severe in the project area. The reasons for less number of out of school children in the project area must be the literate parents, especially mothers. Also, this must be affected by the 'demonstration effect' from the neighbours.

**Fig. 7.1: Distribution of Out of School Children**



Source: Field Survey, 1994.

Although there is struggle within households even in the project area to send female children to school, the situation is favorable in the project area. At least it is important they realize significance of education. Field observation shows that it is the women who insists their children to go to school (see Box. 2). Therefore it is true that by educating mother the whole family can be encouraged to be educated.

#### 7.4 The Non-formal Education Classes

Education sector is the entry point of the NGO. Their philosophy is that only other programs can be successful when people are literate. Taking illiteracy as the root cause of many problems, the NGO has been intensively conducting the NFE classes.

These classes are run in the evening when household daily routines are over. In the past both men and women used to take part but these days (both the data and the field observation show that) mostly women are involved in these classes. There is no limitation in age for participants involved in such classes. Those who are not able to join formal education get this opportunity. The available data show that the age of the participants varied from 16 to 51.

Talking about the reason for education as its entry point co-ordinator of education sector of the NGO said, "Education is the point from where we start. We hope to make people literate, able to understand the changes going on, make them feel that there are various things they can do to change their life. For this, education is only the best starting point. Once if people are educated they can be responsive to change and can understand and accept the other development efforts that is being made. Merely loading technology can not bring about desired change and sustainable development. It vanishes in no time. And one should run after people each and every time, which is virtually impossible".

#### **Box 2: Impact of the NFE classes: An example of empowerment**

*One of the participant of the NFE classes said, "I feel that I have just opened my eyes. Before, it was dark. Now I can read and write. I even can sign my name when I go to bank. Previously I had to mark documents with my thumb. I didn't even used to know what was written in there. Today, at least I can read the amount and the date which is a great advantage for me although I can not understand many of the legal terms. Moreover I do not need any body for reading my letters or my documents. So today I feel empowered".*

"However, if they are able to understand, then they can be receptive to changes and only then transfer of technology can be expected to be successful.

Education have important impact in every aspect of life. For instance, they can take care of their health, their children's health and their education. They can adopt the agricultural innovations and many more. So education is the best media through which problems can be solved."

#### 7.4.1 Involvement in the NFE Classes

Figures in Table 7.4 show that a significant proportion of both men and women have been involved in the NFE classes in the project area while such opportunity is not available for the people in the control area. This has strong implications for other activities in the project people.

Among the women respondents 87.1 per cent were either attended or attending the NFE classes. The proportion of non-participants and non-respondents is quite low. No respondents, men or women in the control area were found who had such opportunity. Also, those who are not aware of the NFE classes are higher in the control area. Such case is found to be very rare in the project area

Table 7.4: Respondents Involved in the NFE Classes

Categories	Project Area		Control Area	
	Men %(n=25)	Women %(n=62)	Men %(n=44)	Women %(n=38)
Participants	92.0	87.1		
Nonparticipant	8.0	11.3	84.1	92.1
NA		1.6	15.9	7.9

n - subsample size, NA - Respondents not giving response.  
Source: Field Survey, 1994



Each of the NFE classes have 15-20 participants. The Naya Goreto and Jamarko are the series of books used for teaching. Education is however, not free. They have to pay Rs 37 for the first six months and in addition to that they have to buy their own stationery.

From the money collected, a fund is raised and handled by themselves. The expenses incurred for lanterns and the teacher's salary is paid by the NGO while the other necessary hardware like mattresses and the cottage they use to study are to be managed by the participating villagers. During the field survey the small cottages made of thatch and bamboo could be seen, which seemed to be sustainable and within the affordability of the villagers.

Assessment of student's performance is done after the classes are over which takes normally six months. Those who score 50 per cent of the total marks are considered literate and those below can continue taking additional classes.

The reason for higher adult women participation is that men have higher access to formal education, where for women this opportunity is very low and also the time when these classes are conducted is suitable for them. Thus, the environment of NFE classes itself encourages more women than men. Men are however not forbidden from joining such classes.

### 7.5 Post Literacy Classes

After the basic literacy classes, post literacy classes are introduced as a follow-up program. During these classes, participants are taught with advanced knowledge related to functional and income generating activities, including health, agricultural, and women development activities etc.

Those who are engaged in the literacy classes, if they have created fund and have sufficient number of members, then women development section of the NGO, intervenes to form women's group.

On inquiry about the impact of such classes key informants in the village

#### **Box 3: Awareness Development: A shining example**

*Explaining the situation when she had to fight with her husband to send her daughter to school, one of the respondents who is also member of NGO's NFE classes said, " Although I am just able to write my name, I realize importance of education. Thus, I do not want my daughter to be illiterate. So I send her to school, despite labor shortage. In the beginning, many times I had to struggle against my husband who used to tell that daughters have to leave home after they are married. So there is no need of teaching them. Rather they should be better trained in household and farm activities to make them able to be better daughter-in-law and wife.*

reported that the involvement of women in the NFE classes have created multi-dimensional impact in community. For instance, afforestation, village trail cleaning, and tap repairing & cleaning works have been started. The children are seen more cleaner and go to school more regularly than in the past. The spirit of cohesiveness has been increased in the community.

Talking about exceptional cases, one of the key informants said that some of the participants of the NFE classes who are not matured have the feeling that they are highly empowered and behave as if they no longer need the family. Therefore they suggest adding more practical contents to the study material which can develop sense of family belonging, responsibilities and duties.

#### 7.6 Relationship between Age and Capacity to take care Children's Education

The proportion of people who are able to take care of children's education is higher in the project area compared to the control area. However, the situation is the reverse in the control area. Figures in Table 7.5 reveal that the age group of 21-30 is the largest group able to take care of their children's education. Then it is the age group of below 20. The table also shows that the age group above 40 is less able.

Thus it is clear from the trend of the data that the older the age the less they possess the ability to take care of children's education but this trend is not applicable in the control area. This helps to make an important inference that education must have a strong impact on them. As seen already a large proportion of people are engaged in the NFE classes in the project area and at the same time the absence of such capacity in the control area must be because of lack of education.

Table 7.5: Age and Capacity to Take Care of Children's Education

Age Groups	Project Area				Control Area			
	Able		Unable		Able		Unable	
	HH	%(n=87)	HH	%(n=87)	HH	%(n=82)	HH	%(n=82)
Below 20	17	19.5	10	11.5				
21 - 30	33	37.9	3	3.5	2	2.4	16	19.5
31 - 40	3	3.5	12	13.8	2	2.4	29	35.4
Above 40	2	2.3	7	8.1	8	9.8	25	30.5

HH - frequency of household, n - subsample size

Source: Field Survey, 1994

Correlation co-efficient = -0.2161 DF of 169 Significant level 0.005

## 7.7 Summary

A higher proportion of people are illiterate in the control area where the situation of women (with exception) is more serious. But, the proportion of literate and after primary education is also higher in the project area.

Similarly children of 6-14 age group who do not go school is significantly higher in the control area and the situation is more serious in the case of female children. In both areas, families with two students are highest followed by households with 3-4 students. However this, proportion is less in the control area.

The index helps to infer that when sex is compared women are advantaged and when the settlements are compared the project area is better off. So women in the control area are doubly disadvantaged.

The NFE classes are seen to be responsible for the achievements in the project area. These classes are running successfully. Most women of various age groups are participating. Sustainability has been given attention, for all the resources have not been provided by the NGO while conducting such classes. Post literacy classes are also carried out which is basically a follow-up to the elementary NFE classes.

The interrelationship between age, education and capacity to take care of children's education is clear where the less the age the higher they are able and at the same time the higher they possess such capacity. But it should be noted that this trend is applicable only up to some age limit. Unlike the findings in the project area, it is quite different in the control area.

## CHAPTER VIII

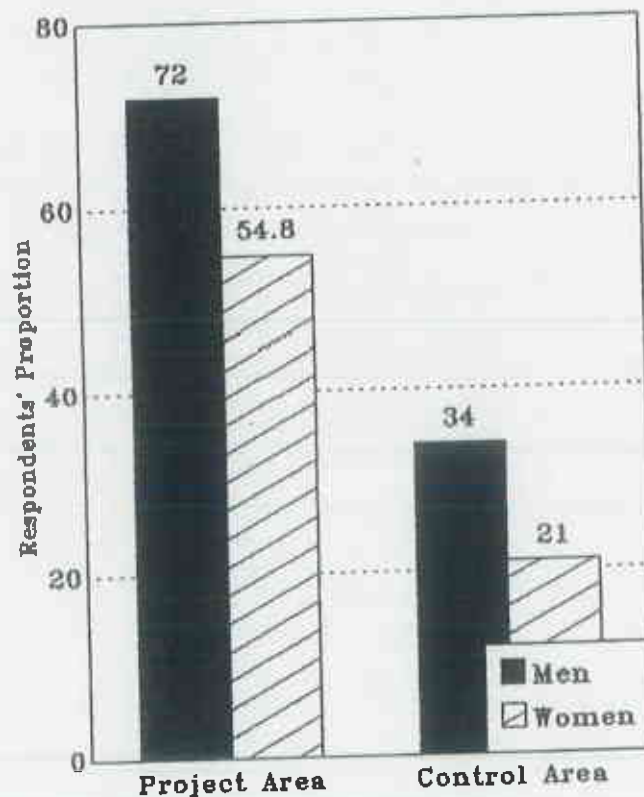
### AWARENESS IN LEGAL ASPECT

Awareness in legal matters is important aspect of empowerment. But, because of mass illiteracy regardless of gender people are not aware of their legal rights. The situation of women is worse than that of men. To see the awareness in legal aspects between sex and across locations, the following discussion is presented.

#### 8.1 Awareness in Legal Rights

In the project area, both men and women are more aware of their legal rights than those in the control area (Fig. 8.1). But when the situation within the project area is analysed then a substantial proportion of people are found who are not aware of such rights. Therefore, although the NGO conducts legal awareness campaigns form time to time, a lot of efforts have to be done to achieve the desired objectives.

Fig. 8.1: Awareness in Legal Rights



Source: Field Survey, 1994

Comparing across locations, these data look significantly higher but still the entire situation is not encouraging even in the project area, where almost one fourth of men and nearly half of the women are unaware of this issue.

Discussion with respondents revealed that the reasons responsible for existing awareness were not only the NGO activities. The slogan and speech of various political parties during the election campaign have also played important role in developing awareness especially in case of women's issues. Also the constitution of Nepal itself has made provision that at least 5 % of the total members of parliament should be from women. In addition, government has recently decided that there should be at least one women teacher in each school. Thus all these events have a cumulative impact in the awareness development regarding gender discrimination and legal rights.

## 8.2 Ability to Go to Court

Asking about ability to go to court provided some controversial results (Table 8.1). Higher proportion of men claimed that they can go to court. Some of the men audience gathered during the interview even reported that regardless of legal awareness every one should and will go to court if needed.

However, such confidence was not apparent among women. Only 27.4 per cent of women in the project area claimed that they can go to court where this proportion is only 15.8 per cent in the control area. Thus the project area seems to be better off compared to the control area but within the same area, these claims seem to have little value. It is because nearly 3/4th of the women respondents said that they can't go to court themselves. The situation is even worse in the control area. So whatever, the impressive data may be available in legal awareness development, this can not help unless people have their own spontaneous capacity to go to court in need either for family or non-family problems.

Table 8.1: Ability to go to Court

Gender	Project Area(n=87)		Control Area(n=82)		Chi-square test
	HH	A(row %)	HH	A(row %)	
Men	25	68.0	44	81.8	Obtained value = 19.558 DF = 1 Tabulated value = 3.84 Test at 0.05 significant level
Women	62	27.4	38	15.8	

HH - frequency of households, n - subsample size, A - Able  
Source: Field Survey, 1994

### 8.3 Perception that Law is in Favor of Men

Although the constitution in theory grants equal legal status to men and women, the laws relating to inheritance, property etc. discriminate against girl children and women (UNICEF, 1991, pp:39). Nepal is basically a male dominated society and culture where almost all the title deeds are entitled to men. It is only after 35 years of age, if a daughter remains unmarried then she is entitled to part of the heir right. Even then legal provisions are not clear. After marriage a daughter has virtually no right to her father's property. This age-old son-preference tradition has aggravated women's socio-economic condition. Thus they are not able to move ahead confidently. The conservative flaw that *the husband is the master of the family* is still prevalent.

The following table shows that in both areas, a higher proportion of both men and women are aware that the law has favored men.

Table 8.2: Perception that Law is in Favor of Men

Gender	Project Area(n=87)		Control Area(n=82)		Chi-square test
	HH	A(row %)	HH	A(row %)	
Men	25	92.0	44	95.5	Obtained value = 1.64 DF = 1 Tabulated value =3.84 Test at 0.05 significant level
Women	62	90.3	38	73.7	

HH - frequency of households, n - subsample size, A - Aware  
Source: Field Survey, 1994

A high proportion of both men and women are aware of this issue even in the control area where men proportion is even slightly higher than those in the project area. Compared to the entire situation in both areas the proportion of aware men is higher than that of women. This situation is relatively serious in the control area. However, the data help to infer that regardless of legal awareness campaign and regardless of sex and locations, the perception that the law has favored men is pervasive.

### 8.4 Reasons for not Demanding Equal Rights

To know the reasons for not demanding equal rights some relevant queries were done. The results are presented in Table 8.3.

Various mixed responses were received on this issue. In the project area, most of the men (52%) claimed that by allowing equal rights social order will be destroyed, while another 44 per cent showed the discipline is the main reason. In the control area, misapprehension and tradition were presented as the main reasons.



Interestingly, among the women in the project area, 59.7 per cent chose the discipline and 24.2 per cent misapprehension. In the control area 60.5 per cent women chose tradition as the reason and 39.5 per cent misapprehension.

Therefore there is fundamental difference between how the people in the two settlements responded. It is clear that in the project area respondents have emphasised misapprehension and discipline where in the control area the emphasis is on tradition. Thus, still the force of tradition is stronger in the control area.

Table 8.3: Reasons for not Demanding Equal Rights by Gender

Response	Project Area		Control Area	
	Men % (n=25)	Women % (n=62)	Men % (n=44)	Women % (n=38)
Misapprehension	52.0	24.2	36.4	39.5
Tradition	4.0	8.1	63.6	60.5
Discipline	44.0	59.7		
Non		8.1		

n - subsample size

Source: Field Survey, 1994

These responses are directly related to gender discrimination. They are affected by important tradition of 'son preference' and property rights. In South Asia especially in Nepal and India, the general feeling is that it is women who torture women and put barriers against their development. These evidences show that women population knowingly or unknowingly still support the men domination.

### 8.5 Attitude Toward Legal Awareness Campaign

Discussion with the local leaders and farmers revealed that they wonder whether the legal awareness training campaigns will really bring about the desired results or mislead and bring unnecessary tension between men and women and among household members. Some of the educated people like teachers also hold similar ideas. The reason for such possible outcomes is that still women are highly literate. All of a sudden, they now know that women are exploited by men and the law favors them. Partial knowledge like this, can make them rebellious and can create problems in a society. Some cases have been already seen where daughters or daughters-in-law do not obey their elders.

They put the view that these activities are pioneering and they feel privileged by such enlightenments. But they suggest that it is necessary to

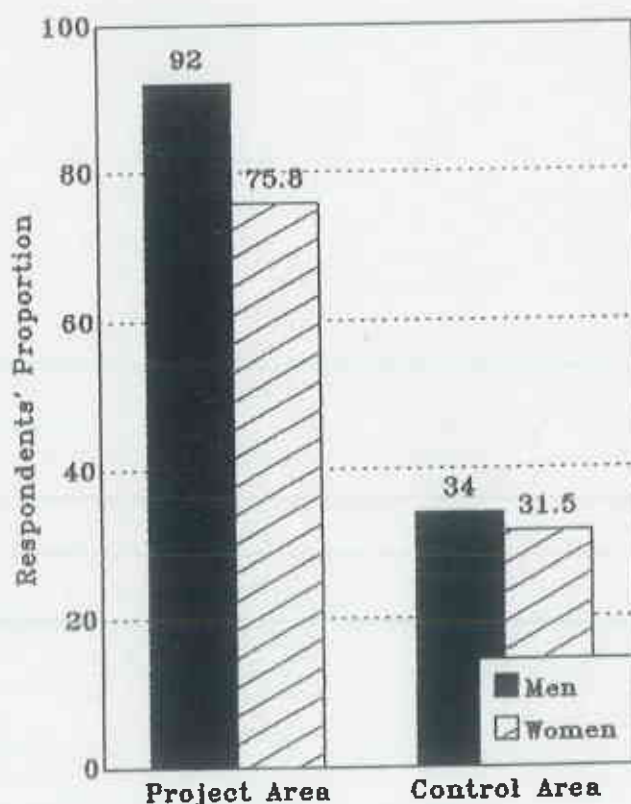
provide such awareness carefully, helping people avoid the counter impact on women.

### 8.6 Ability to Communicate with Officials

It is a weakness among people that they can't put their problems in front of officials either in government or in other related agencies. They prefer to stay away from bureaucracy which hinders their development. It is necessary that they talk with bureaucrats and make bureaucrats work for them.

Data presented in Fig. 8.2 show that in the project area both men and women who are able to communicate with officials when necessary are significantly higher compared to those in the control area.

Fig. 8.2 Ability to Communicate with Officials



Source: Field Survey, 1994

For women in the project area, the situation is far better unlike in the control area. Discussion with some of villagers in the project area revealed that the reason for such impressive results was the relationship with project

officials. Due to such continuous linkages with them, the project people feel less uncomfortable in communicating. In addition, many official (banking) procedures are no longer new to them. They easily contact these people and forward their problems. However in the control area, the majority can't communicate easily. They are shy to present their feeling, here it comes to be true what Robert Chambers says, "The household is isolated from the outside world. Its location is peripheral, either in an area remote from town and communications, or removed within the village from the centers of trading, discussion and information. Often illiterate ... its members either do not go to public meetings or go and do not speak. They do not receive advice from extension workers in agriculture or health..."

## 8.7 Summary

Women in the project area are more aware of their legal rights than before. The main reason is the legal awareness training programs organised by the NGO and the activities of the political parties after the restoration of democracy.

However, a majority of men and women are unable to go to court on their own. Especially women still lack this capacity. The situation is more serious in the control area where those who can not go to court is significantly higher.

Interestingly, in both study areas, the perception that men are favored by law is found to be significantly higher if compared with the unaware population.

Various reasons were given for not demanding equal rights. Men respondents in the project area claimed that apprehension and tradition will be upset while the majority of women put the view that it is apprehension and discipline which will be affected. However, in the control area high emphasis is given to tradition. As such there is a fundamental difference between the responses in the two settlements.

Ability to communicate with bureaucracy plays a significant role in development. People don't understand that the HP staff, family planning and agricultural extension workers are all provided by government. Even then they can't communicate and gain advantage from them. This situation is more serious in the control area.

However the results show that higher proportion of both men and women are able to communicate with officials in the project area.

## CHAPTER IX

### AGRICULTURE

Approximately 93 per cent of the people in the country depend on agriculture for their livelihood. Thus a lot of efforts have been done by the government to develop this sector ever since periodic planning started in 1956. Parallel to government programs, many of the semi-governmental and non-governmental organisations have also invested a lot of human and financial resources on its development. However, no substantial change has been seen especially in the hilly and remote areas of the kingdom. People still follow the same indigenous cropping technique and system with few exceptions.

Save the Children/US considers agriculture as one of the major components for income, employment and development and aims to increase productivity through locally initiated activities for the overall well-being of the community. As in other NGOs, community organizations and farmer groups are the major approaches to deliver the services where farmers are given training and opportunities for decision-making, planning and implementation of activities (Gurung, 1991. pp:4).

Thus, with these issues in mind, production, productivity, differences in farming approaches and availability of services have been examined in the perspectives of NGO involvement.

#### 9.1 Production of the Main Crops

If we compare the production of the major staples in the two areas (Table 9.1) except upland paddy in each case project area seems to be better. The average production of lowland paddy is more than fifty per cent higher in the project area. The reason may be use of improved variety, use of appropriate manure, better literate farmers and better extension service. In the control area the role of all these variables are less effective.

Table 9.1: Average Production of Main Crops (kg)

Crops	Project area	Control area	t-value	DF
Lowland Paddy	990.64	440	4.61*	167
Upland paddy	113.70	236.68	3.13*	167
Wheat	99.22	46.77	3.20*	71
Maize	476.12	271.76	5.98*	165
Soyabean	23.30	14.03	4.58*	148
Blackgram	29.35	16.98	4.90*	143

\* Test at 5% significant level

Source: Field Survey, 1994

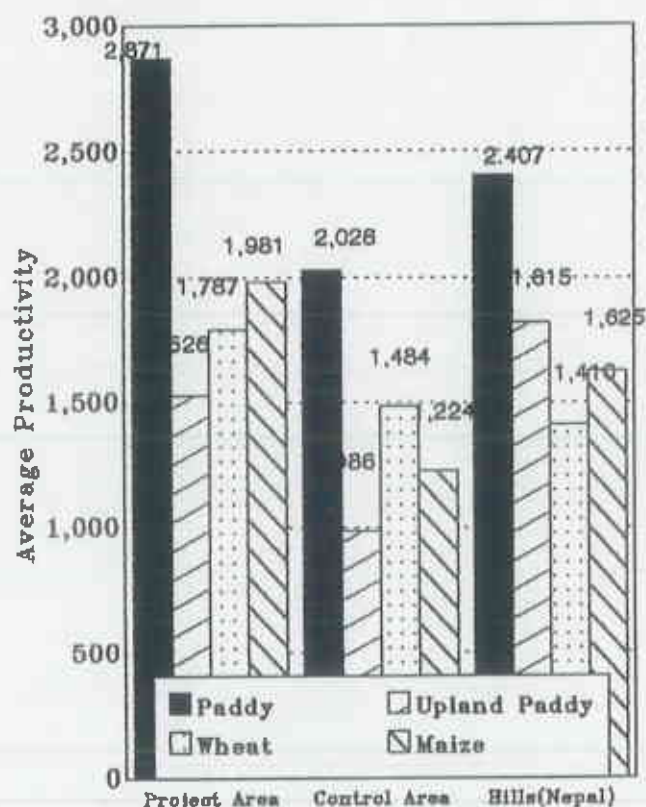
The situation of upland paddy is the reverse in the control area where its average production is 236.68 kg compared to 113.70 which is substantially higher. Project people may not care about this crop compared to the other major crops and they may have attracted to lowland paddy which gives more productivity. It can also be said that people in the project area are interested in the crops, having improved variety which gives more productivity, and have good market.

Unlike the situation in the control area average production of both wheat and maize is again substantially higher in the project area. The reason for it can be again attributed to those variables explained above.

## 9.2 Productivity of Major Crops

Productivity of major crops is compared to national figures where in all cases (except in case of upland paddy) it is significantly higher in the project area (Fig. 9.1). The productivity of rice in the project area is 19% higher than the national standard and 42 per cent higher than in the control area where it is 19 per cent lower than the national standard.

**Fig. 9.1: Average Productivity of Major Crops**



Source: Field Survey, 1994

Similarly, the findings are true in case of both wheat and maize, where the productivity of both is significantly higher in the project area compared to both national standard and that in the control area. In case of upland paddy, it is less in both locations. The reason may be that people are more inclined toward high yielding varieties.

Analysis of production and productivity both indicate that the project area is better off except in upland paddy. The NGO must be credited for this difference. The contribution of the NGO is obvious where it makes people aware of improved seeds, provides extension services, and necessary training etc.

### 9.3 Vegetable Production

In the study area green leafy vegetable and radish are commonly produced as a daily need. Almost all farmers produce them in the homestead or in the kitchen garden (Table 9.2).

Table 9.2: Average Production of Vegetables(in Kg)

Vegetables	Project Area	Control Area	T-value*	D.F.
Potato	42.81	20.39	3.48*	80
Onion	26.36	16.46	2.40*	50
Radish	49.86	44.37	1.43#	26
Leafy Vegetables	39.90	33.01	2.85*	155

\* significant at 95% confidence level

# insignificant at 95% confidence level

Source: Field Survey, 1994

Although the villagers in the project area are trained to use kitchen garden, very few households were found using the improved variety. Most of them use the seed, which they had grown during the last year.

The productivity of potato in the project area is near to national average while in the control area it is quite far below. In case of radish and leafy vegetable, it isn't significantly different in the two areas while in case of potato and onion, it is significantly different. The reason for this variance may be that radish and leafy vegetables are produced by almost all farmers and they are aware of its production since it is important, but potato and onion are grown by farmers who have irrigable land during winter and whose home is not far from the field. The case is similar with other important vegetable family crops, like potato and onion. People in the project area sell potato which is a minor source of income. They have better production because of use of improved variety, irrigation, extension service and of course the use of right combination and quantity of manure.



Table 9.3: Productivity of Vegetables

Crops	Productivity (kg/Aana)		Productivity(kg/ha)	
	Project Area	Control Area	Project Area	Control Area
Potato	15.56	12.69	4930	4060
Onion	15.32	13.49	4904	4319
Radish	40.86	39.26	13078	12564
Leafy Vegetables	29.34	27.50	9388	8803

Source: Field Survey, 1994

#### 9.4 Fruit Production

Despite a suitable climate for various sub-tropical fruits, not many impressive orchards are found. Farmers are practising fruit production for their home consumption only, no commercial farming was observed except with couple of progressive farmers.

Although, investigation about various fruits were done, only comparing information were available for guava, orange and banana (Table 9.4). The field observation also showed that orange and banana were attempted by some farmers to produce for commercial purpose. Guava production was nothing but a traditional practice. No improved variety of it were practised. Although some farmers were found growing pineapple and mango trees these mango trees were still young and will take another couple of years to bear fruit. Moreover, the number of such farmers was also less.

Table 9.4: Average Production of Fruits

Fruits	Project Area	Control Area	T-value	DF
Guava	2.1	9.9	-2.72*	167
Orange	50.7	20.9	1.50#	167
Banana	83.2	33.4	4.36*	167

\* significant at 95% confidence level

# insignificant at 95% confidence level

PA - Project Area, CA - Control Area

Source: Field Survey, 1994

Guava production is better in the control area which is 9.9 fruits per household compared to 2.1 in the project area. It is because no special attention is paid on the fruit like this. It is grown as natural process without any human effort.

Similarly the orange production was found to be 50.7 piece per household compared to 20.9 in the control area which is substantially higher and similar is the case with banana farming. The reasons for higher production of the fruits may be, use of improved variety and timely extension service in the project area.

Field observation shows that there are greater number of farmers interested in banana orchard than the other fruits. The reason given was that it takes relatively less period (around 18 months) for harvesting than other fruits and can be easily sold. Orange for instance, takes from 3 to 5 years to bear fruits. Also the market for banana is available. They can easily sell them in the local market or bring to Aarughat Bazaar.

Although a number of orange farmers are found in the project area only few exceptional farmers were found to be planting on large scale.

### 9.5 Livestock Rearing

Among Nepalese farmers livestock rearing is complementary to agricultural activities where it fulfils two major needs of farming system namely as main source of manure and as source of draft animal (In the southern Nepal, although he-buffalo is also used to plough land, in the hilly region ox is the only animal that is used for this purpose).

Figures in Table A.20 present the average number of livestock heads per household in terms of Average Livestock Unit (ALU) and Average Size Index (ASI) which are found to be 5.678 and 0.546 respectively in the study area as whole. However calculations for individual settlements is presented in Table 9.5. Figures indicate that ALU is 7.2 for project area and 4.04 in the control area. Similarly, ASI from the project area is 0.55 while it is 0.53 in the control area. Both higher value of ALU and ASI in the project area indicate that livestock rearing is better in the project area.

#### Box 4: Farmer's Innovation

*One of the farmer associated with the NGO has a relatively big orange orchard. He was suffering from kind of insect (shoot borer) which was responsible for the drying of branch in the orange plant. The farmer used many chemicals but he could not control it. Taking suggestion from local farmers he used the tobacco extract (tobacco juice mixed with water) but this experiment was also useless. At last he himself experimented with cow urine mixed with water. Today the farmer is satisfied with its result because he found that this mixture was able to kill the worm.*

Table 9.5: Average Size of Livestock Herd by Settlements  
(Multiple Choice)

Species	Weight	Project Area		Control Area	
		Heads	Score	Heads	Score
Cow	1.00	90	90.0	42	42.0
Buffalo	1.50	151	226.5	72	208.0
Oxen	1.00	108	108.0	82	82.0
Goat	0.40	229	91.6	72	28.8
Chicken	0.20	553	110.6	354	70.8
Total	4.10	1,131.00	626.70	622	431.6
ALU		7.20		4.04	
ASI		0.55		0.53	

ALU = Total Score/Sample size, ASI = Total Score/Total number  
Source: Field Survey, 1994

Further more, although average livestock herd is higher in the project area, the number of goat is extremely higher. The simple reason is that in the project area women member's accessibility in buying goat stud and chicken is easy. People who are involved in savings group, can either get credit for buying these livestock or can get young goat, working as member in the pressure groups. The poorest of poor (or disadvantaged class: GMD) also possess such animals in addition to their traditional practice of pig rearing.

Also livestock (especially cow and buffalo) is the source of milk. Cattle like goats, chicken and he-buffalo are the source of meat. Hence they can be used either for home consumption or for sale. Despite these important facts, livestock rearing is not done on a commercial basis. They are just reared as a traditional practice.

#### Box 5: Mobilising Grassroots People: An NGO within the NGO

*Sharing experience of women savings group, one of the members said, " I am involved in the gurup (Saving Group). We have 14 members and a fund of approximately Rs.5000. We collected it by various sources like working on wage, by performing Bhailo etc. From this fund members can borrow money to buy goats or chicken at the interest rate decided by the group. When one borrows from it, a pressure group is formed which closely watches the activity of the borrower, to detect whether she misutilises it. When young goats are produced, then they are given to the members of the pressure group. So the success of one person leads to the success of the others. In this way goat raising is becoming popular in our gaon (village).*

## 9.6 Average Livestock Produce

Livestock is the source of milk, ghee, meat and egg. It fulfils the daily needs of the households regarding dairy produces. The following table shows that milk production is higher in the project area than in the control area. The higher production in milk in the project area must be because of improved breed, better health care and availability of fodder. Also the proportion of household involved in milk production is higher in the control area.

Although some farmers had improved breed of buffalo, no goat or poultry farm were found of this variety in the whole study area.

Table 9.6: Average Livestock Produce  
(Multiple Choice)

Produce	Project Area			Control Area		
	HH	%(n=37)	Average Production	HH	%(n=32)	Average Production
Milk(litre)	68	78.2	170.6	48	58.5	99.2
Ghee(kg)	55	63.2	12.7	41	50.0	5.2
Egg	29	33.3	151.3	16	19.5	67.5

HH - frequency of households, n - subsample size  
Source: Field Survey, 1994

Among the POP (poorest of the poor), pig raising and poultry is popular. Some are also engaged in dairy production but because of pervasive superior caste feeling and caste distinction of untouchableness, they can hardly sell milk even if they produce it.

Data available also show that average milk production in the project area is higher than in the control area and similar is the situation with income and production of egg in the control area. Interestingly, very rare cases were found when the respondents sold any large livestock.

## 9.7 Households Practising Beekeeping

Bee keeping is a traditional enterprises practised by the respondents. It is one of the good source of income. The traditional way of beekeeping is either using wood-log or the wall. These techniques are less scientific and also these wood-log or the wall become difficult when extracting honey.

After the NGO's involvement, two fold advantage have been received by project people. On one hand, they are able to get training regarding beekeeping. On the other, they can buy scientific beehives (Newton-A) on subsidized price.

Also they are familiar with honey extractors to save honey from loss when extracted. In addition, extension service is available for farmers.

Despite NGOs great efforts only 40.2 percent of the households are practising beekeeping. Nevertheless this proportion is only 19.5 per cent in the project area (Table 9.7). However the proportion of non-practitioners is higher in the control area.

Table 9.7: Households Practising Beekeeping

Category of households	Project Area		Control Area		Chi-square value
	HH	%(n=87)	HH	%(n=82)	
Practitioner	35	40.2	16	19.5	Obtained value = 29.32 Tabulated value = 3.84 Test at 5% significant level
Non-practitioners	52	59.8	66	80.5	

HH - frequency of household, n - subsample size  
Source: Field Survey, 1994

Figures presented in Table 9.8 show that most of the beekeeping farmers get extension assistance from the NGO (74.3%) in the project area while 22.9 per cent do not get any. In the control area, 75 per cent get assistance from nowhere while only one case was found in the control area who received service from the NGO which advocates that the project people are privileged in terms of extension service in beekeeping.

Table 9.8: Sources of Assistance for Beekeeping  
(Multiple Choice)

Sources of assistance	Project Area		Control Area	
	HH	%(n=35)	HH	%(n=16)
NGO	26	74.3	1	6.3
GO-extension	1	2.9	3	18.8
Non	8	22.9	12	75.0

HH - frequency of household, n - subsample size  
Source: Field Survey, 1994

Also, out of total beekeeping farmers only 77.1 per cent were using the improved variety in the project area while in the control area only one farmer is found to be using improved variety. The rest are using local beehives as shown in Table 9.9. Therefore it is evident that people in the project area are aware about the improved variety of beehives.

Table 9.9: Variety of Beehives

Variety of beehives	Project Area		Control Area	
	HH	%(n=35)	HH	%(n=16)
Improved Variety	27	77.1	1	6.3
Local Variety	8	22.9	15	93.8

HH - frequency of household, n - subsample size

Source: Field Survey, 1994

### 9.8 Collection and Sales of Honey

Despite all efforts, production of honey is found to be meagre, although the data show that the results are favourable for the project area. The reason for low honey production may be insufficient orchards, and vegetable gardens or absence of jungle in the proximity.

Data in Table 9.10 show that 80 per cent of the practitioners produce 2-3 kg of honey per year compared to only 56.3 per cent in the control area. Very few farmers produce more than 3 kg. Data in Table 9.11 show that the average collection and sales of honey is seen to be higher in the project area but the produced quantity is not promising where average collection of honey is 2.4 per households in the project area while it is even less in the control area.

Although the production and sales of honey in the project area seems to be higher, when training, extension services (by the NGO) and utilisation of improved beehives are considered these results are not convincing.

Table 9.10: Households Collecting Honey (in Kg.)

Collection of honey	Project Area		Control Area	
	HH	%(n=35)	HH	%(n=16)
Less than 1	4	11.4	7	43.8
2 - 3	28	80.0	9	56.3
More than 3	3	8.6		

HH - frequency of household, n - subsample size

Source: Field Survey, 1994



Table-9.11: Average Collection and Sales of Honey

Items	Project Area		Control Area	
	HH	Average	HH	Average
Collection	35	2.4	16	1.6
Sales(Rs.)	31	118.7	8	56.3

HH - frequency of household

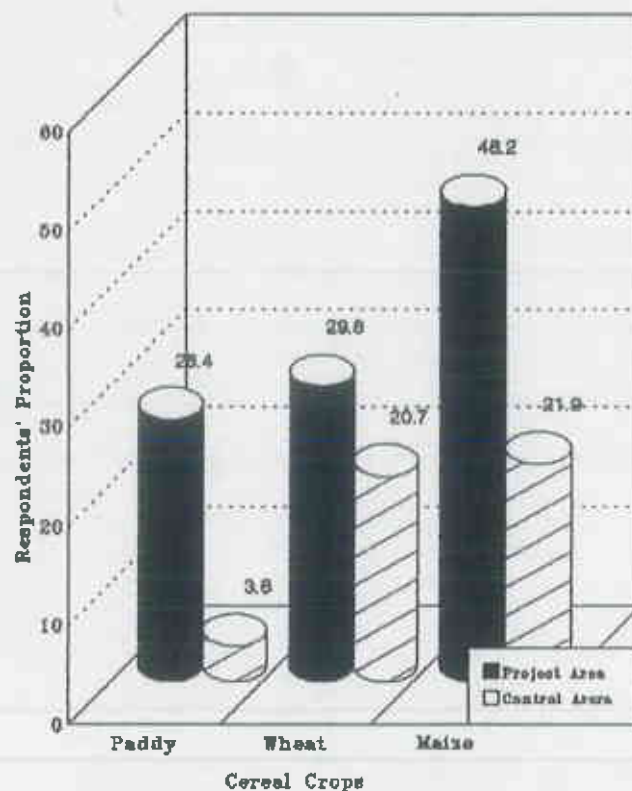
Source: Field Survey, 1994

### 9.9 Adoption of Improved Variety of Cereal Crops.

Use of traditional varieties is one reason for low productivity of cereal crops. Therefore introducing improved varieties of cereal crops has been a continuous effort of both governmental agencies and NGOs.

Realising the fact that food deficiency is prevalent in the study area, the strategy of distributing High Yielding Variety (HYV) seeds of paddy, wheat and

Fig. 9.2: Adoption of Improved Varieties Of Cereal Crops



Source: Field Survey, 1994

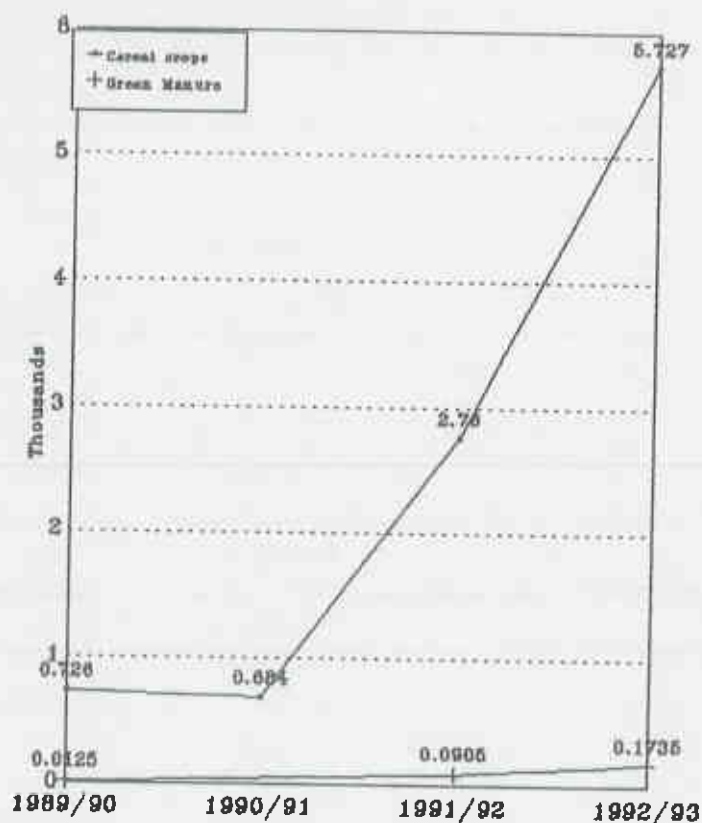
maize were implemented by Ilaka Office of the NGO. Therefore queries with local farmers were done about awareness, adoption, source of information and reasons for not using improved varieties.

Data in Fig. 9.2 show that only 26.4 per cent of the households had used improved variety of paddy where such proportion was only 3.6 in the control area.

The case of wheat is also similar where approximately 30 per cent of the respondents were aware and used improved varieties while this proportion is 20.7 in the control area.

Awareness and adoption of improved maize is better than the other two cereal crops. Maize is very popular with farmers. Data from the NGO site office also shows that the sales of (aggregate of all crops) such cereal crops is rapidly increasing since 1990 (Fig. 9.3).

Fig.9.3: Sales of Seeds



Source: NGO Ilaka Office, 1994

Available data show that the aggregate sales of such crops increased from 726 kg to 5727.5 kg in the whole project area. Informal seed multiplication activities have also contributed to widespread such improved seeds.

Discussion with farmers, revealed that the most popularly planted variety of paddy is Khumal-4 (recommended for middle hills). The reasons given are that along with its good yield it is relatively taller than other varieties which gives more residue for livestock and also its taste is quite similar to Pokhreli Masino (one of the best variety and popular throughout Nepal). Thus decision of adoption is not only affected by yield factor but by the taste and the residue of the crop as well.

With wheat there is mixed result in adoption between RR-21 and UP-262. However, discussion with farmers brought out the fact that because of bold grain size & better yield and color, UP-262 is replacing RR-21. Since the straw of wheat has hardly any important use in the hills, sole deciding factor is found to be its yield.

#### 9.10 Adoption of Fruit Plants

Although in some exceptional cases farmers were found to be practising improved varieties of pineapple, orange, lemon and other citrus family fruits, data available for comparison are only for citrus and banana. For easiness and coverage of all citrus family fruits, they are put in the heading 'citrus'.

Among the farmers, improved variety of banana is found to be very popular (Table 9.12). In both project and control area, improved variety of banana has been used. However, the scale of production in the project area is higher.

Giving reason for adoption of improved variety of banana, farmers reported that its yield is far higher than the local variety. Also its low height and better taste is another advantage. They also reported that banana of this variety has good market because of its taste.

Table 9.12: Adoption of Improved Variety of Fruits  
(Multiple Choice)

Produces	Project Area		Control Area		Z-value#
	HH	%(n=87)	HH	%(n=82)	
Citrus	44	50.6	22	26.8	3.2
Banana	65	74.7	40	48.8	3.5

# - Test at 5% significant level

HH - frequency of households, n - subsample size

Source: Field Survey, 1994

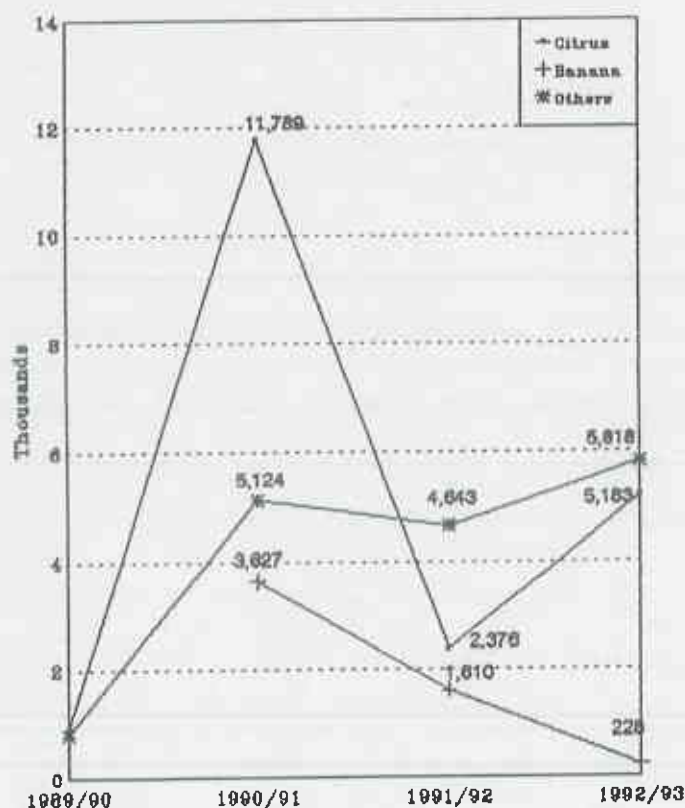
Similar reasons were reported for adoption of improved variety of oranges, but many of the farmers are not able to get full-fledged production because in the early stages the young fruits fall. So they are still not sure of its success.

While talking about lemon, farmers reported that there is no demand for it compared to oranges. They also said that they get better price for orange.

Despite fluctuation the sales of citrus-saplings is found to be increasing. The reason for this may be that in the beginning people planted a large number of plants and experimented with its success. As they can not add every year because of limited land resource, the decrease in sales in the following year is natural but again the sales is seen to be increasing. It may be that farmers may have planted the additional fruit seedlings to follow up where the young saplings could not survive (Fig. 9.4). The sales of banana saplings is found to be decreasing. The reason for this may be easiness in producing banana saplings by farmers themselves.

Also, during the field visit, some of the farmers reported that they buy banana saplings from neighbours. They do not need to go to the NGO or governmental agencies or nurseries.

Fig. 9.4: Sales of Fruit Saplings



Source: NGO Haka Office, 1994

### 9.11 Source of Awareness for Improved Varieties

Inquiry was done about the sources of awareness among the users and non-users (Table 9.13). In the project area only 3.4 per cent knew from governmental sources while in the control area a higher proportion of the respondents received information from governmental agencies. The findings are quite impressive in the project area, where 89.6 per cent reported that the NGO was the source of information. The NFE classes, the training and the day-to-day contact with the NGO staff were the means through which they are in touch with the NGO extension workers.

Interestingly, 8.5 per cent of the people in the control area also received information from the NGO. On inquiry about the channel through which they came into contact with the NGO staff, they reported, for those who have land in the periphery of the project area can easily come into contact with them. This shows that information doesn't have any physical boundary.

More interestingly, in the control area 'friends' are found to be very important source of information for the dissemination and which strongly motivates farmers to adopt improved variety of crops and fruits.

Table 9.13: Use of Improved Seeds and Sources of Awareness

Sources of awareness	Project Area				Control Area			
	Users		Non-users		Users		Non-users	
	HH	%(n=87)	HH	%(n=87)	HH	%(n=82)	HH	%(n=82)
GO-extension	3	3.45			27	32.93		
NGO	78	89.66			7	8.54		
Friends	1	1.14	1	1.14	18	21.94	3	3.66
Non			4	4.61	3	3.66	24	29.27

HH - frequency of household, n - subsample size

Source: Field Survey, 1994

### 9.12 Farmer's Choice of Manure

Regarding the organic farming practices Save the Children is intensively involved in promoting the green and compost manuring. Different agriculture activities are performed in the demonstration plots in the farmers field (Gurung, 1991. pp:4)

The different combinations of manure preferred by farmers have been presented in Table 9.14. The data indicate that people in the project area are highly inclined to the combination of chemical fertilizer and animal dung while the second higher proportion goes to those who prefer animal dung and Dhaincha (*Sesbania canabina*). While in the control area people are even not ware of Dhaincha.

Very few respondents prefer only chemical fertilizer while in the control area the number of those who prefer only chemical fertilizer is significant. Thus farmers in the project area are aware that only use of chemical fertilizer is harmful to soil. This fact is also supported by Gurung (1991), who writes, "NGO activities in agriculture are aware of degrading environmental condition caused by the use of chemical fertilizer, fungicides and insecticides, so considering these long term effects both on the quality of soil and agricultural production, different attempts are being made through the application of organic farming, green and compost manuring and others".

The second higher proportion goes to use of chemical and animal dung while very few used only animal dung.

In order to see the overall attitude of the farmers index is constructed. As higher weights are given to manure associated with Dhaincha and animal dung, the higher index shows better choice because both of these manure are environmentally sound.

From the table it is clear that in the project area, the index is higher than in the control area, which shows that farmers are more inclined toward the use of environmentally sound manure than chemical fertilizer.

The data from the NGO office shows that the demand of Dhaincha (green manure) is increasing from just 12.5 kg in 1989 to 173.5 kg by the end of 1992 (Fig. 19). There is slow increase in sales of seeds of this manure. The reason is the production and sales by the farmers themselves (SAVE, 1993).

Table 9.14: Choice of Manure

Combinations of fertilizer	W	Project Area		Control Area	
		%(n=87)	Score	%(n=82)	Score
Chemicals	1	2.3	2.3	34.2	34.2
Animal dung	1	12.6	12.6	19.5	19.5
Chemical+Animal dung	2	40.2	40.2	46.3	46.3
Dhaincha+Chemical+Animal dung	3	9.2	9.2		
Animal dung+Dhaincha	2	35.6	35.6		
Total		100.0	194.3	100.0	146.3
Index Value		0.74		0.59	

The higher the index value the better the choice. n - subsample size  
Source: Field Survey, 1994

Adding the proportion of respondents who use chemical fertilizer, animal dung and dhaincha we get the proportion as 51.7, 97.6 and 44.8 while in the control area 80.5 per cent use chemical and 65.8 per cent use animal dung.



These data also show the preference of environmentally safe manure in the project area. More use of chemical fertilizer in the control area must be because of the farmer's belief that the more the chemical fertilizer is used the more will be the production.

#### 9.13 Dissemination of Innovation through Farmers: An effective approach

For effective dissemination of innovation the NGO frequently arranges excursion for selected farmers to the areas where adoption of innovation has successfully taken place.

Through such action farmers come into contact and disseminate new experiments themselves. This technique is important because viewing is more impressive than just listening. In other words the visitor can directly watch the innovation practised by the farmer like him.

In such opportunities farmers can exchange problems and prospects. Unlike the agricultural scientists and extension workers, the local farmers share the experience in their own language and techniques which can be easily grasped by the observing farmers.

But no respondents in the control area reported having such experiences.

##### **Box 5: Success Story of Him Lal Bhatta: An advantage of field visit**

*He got an opportunity to visit Ilam District (arranged by the NGO) and knew about the cardamom farming. He got detail information required for its plantation from the local farmers. After his return, he experimented with several hundred plants in a slope but wet land beneath the natural spring. Previously this land was economically useless. Encouraged by its growth he increased the plants up to 3500 in the following year.*

*He hopes to harvest within two years unlike the necessary period of 3 years. He also hopes to sell cardamom for 200 to 300 rupees per kg. In his view it will be a handsome source of income. He suggests that if this crop can be grown by people who have such land, it can be a promising crop.*

#### 9.14 Transfer of Technology

One of the important objectives of the NGO, is to transfer technology to local farmers in order to ensure better production, better farming practices and ultimately to improve their living standard. So some aspects of this, especially extension service and agricultural training have been explored in the following discussion.

Actually whatever problems arises associated with different crops in the farmers field do not reach so fast to the government research center and similarly whatever different research findings come from these research centres do not go to the farmers' level immediately, so NGOs activities can bridge these gap (Gurung, 1991. pp:7).

### 9.14.1 Extension Service

Extension service is seen to be a strong media for technology transfer. Through this agricultural extension workers can contact farmers and can visit door-to-door probing their problems. In such situation, there will be no hindrance between the farmers and the resource person, provided that the farmer is interested, communicative and receptive to recommendation.

#### 9.14.1.1 Sources of extension services

As indicated in Table 9.15, among those who get such service from the NGO, 54.0 per cent get in need while 19.5 per cent do not. The figures related to government extension is however, very low.

In the control area, only 20.7 per cent receive government extension service at the time of need while 8.5 get such service but not when necessary. Also the figures present the fact that 9.2 per cent and 70.7 per cent of the household in the project and in the control area respectively get extension service from nowhere. Thus this table shows important information that the main source of extension service is the NGO in the project area while the government in the control area.

Table 9.15: Sources of Extension Service and Availability in Need  
(Multiple Choice)

Sources	Project Area				Control Area			
	Available		Unavailable		Available		Unavailable	
	HH	%(n=52)	HH	%(n=35)	HH	%(n=17)	HH	%(n=65)
NGO	47	54.0	17	19.5				
Government	5	5.7	10	11.5	17	20.7	7	8.5
NA			3	9.2			58	70.7

HH - frequency of household, n - population in the subsample

NA - Not Applicable

Source: Field Survey, 1994

#### 9.14.1.2 Frequency of extension service

The proportion of households getting regular service is higher in the project area. It is evident from Table 9.16 that fortnightly and monthly extension services are available from the NGO while this kind of service is absent in the control area. Despite the formation of farmers group & lead farmers, and scheduled regular meeting between agricultural extension workers and farmers, no respondents in the control area reported getting such extension services.

Data show that despite the NGO's effort, still there are some people who never got extension service or are completely unaware of it.

However, the table also shows that the index is higher in the project area compared to the control area which denotes that the people in the project area get more extension service.

Table 9.16: Frequency of Extension Service

Period	W	Project Area		Control Area		Statistics
		%(n=87)	Score	%(n=82)	Score	
Fortnightly	4.0	13.3	55.2			Obtained t-value = 8.77 DF = 167 Test at 5% significant level
Monthly	2.0	35.6	71.3			
Bi-monthly	1.0	28.3	28.3	21.9	21.9	
Not regular	0.5	17.2	3.6	10.9	5.5	
Never	0.0	2.3		55.0		
NA	0.0	2.3		12.1		
Total		100.0	161.3	100.0	27.4	
Index		0.46		0.08		

n - subsample size, W - Weight

The higher the index value better the situation

Source: Field Survey, 1994

#### 9.14.1.3 Gap between the extension agents and research center

For better implementation of farmer first and last concept in extension service, there should be regular contact between the extension workers and the research centers. Only then can innovation in research centre reach farmers and at the same time the farmers problem can reach to research center. But as the NGO lacks its own such facility there is gap between them. However, the NGO's extension workers serve villagers directly with whatever technical knowledge and experience they possess. More severe is the situation in the control area where even the farmers rarely get extension services although they are supposed to be served by the government extension workers. But, farmers reported that they rarely get the solutions to their new problems. This is because despite government's good research centers due to lack of continuous farmer-extension worker communication neither problems reach the research station nor the research results reach the farmer's field.

### 9.14.2 Agricultural Training

Merely distribution of improved seeds and plants can't bring about desired change. Farmers should be equipped with the knowledge about HYVs, the way they should be planted, cultivated and at the end the way they should be harvested. So to make the dissemination of HYVs sustainable for long-term in future, to get higher yield, to make farmers aware of the use of agricultural inputs, training is necessary. So the type of crop for which training has been received, the source of training, perception of trainees and effectiveness of training has been discussed in this section.

#### 9.14.2.1 Agricultural training by gender

Figures in Table 9.17 present that in each category it is the project women who are in higher proportion receiving training and similar is the situation with men trainees when compared with men in the control area. The table also shows that women involvement is higher in the daily necessities like cereal crops, vegetable production and kitchen gardening.

Table 9.17: Agricultural Training by Gender  
(Multiple Choice)

Crops	Project Area(n=87)				Control Area(n=82)			
	Men		Women		Men		Women	
	HH	%(n=25)	HH	%(n=62)	HH	%(n=44)	HH	%(n=38)
Cereal crops	19	21.84	43	49.42	12	14.63	12	14.63
Vegetables	19	21.84	45	51.72	12	14.63	12	14.63
Fruits	11	12.64	27	31.03	2	2.44	1	1.22
Beekeeping	8	9.20	25	28.74				
Livestock	8	9.20	12	13.79				
Kitchen gardening	21	24.13	50	57.47	2	2.44	1	1.22

HH - frequency of household, n - population in the subsample  
Source: Field Survey, 1994

The reasons for higher participation for women than men are the NGO's women development activities and the NFE classes which keep women in touch with the NGO. Obviously, it is the women who get more information and opportunities although in providing training the NGO doesn't have any pre-requisite or prejudice. Moreover, women are found to be more receptive and responsive in the project area.

However, the situation is totally different in the control area, where proportion of women trainees is relatively less than men.

Analysing the individual training, highest proportion of farmers in the project area have received training related to kitchen garden and vegetable followed by cereal crops production. Compared to this situation very few proportion in the project area have received such training. The table depicts that, although, some of the farmers in the control area have received training in various aspects but no households neither men nor women have received training in beekeeping and livestock.

On an inquiry about the source of training with the farmers in the control area, it was revealed that JT and JTA of the ADO were the resource persons. While in the project area almost all the respondents reported that the NGO was source of training. In fact, NGO Ilaka office looks like a training centre where every day training programs go on in one or the other way. Moreover, the training is systematically organised by the NGO either in its office or in the field. Such organisation makes the accessibility of the training higher. But, people in the control area, have to rely on government training which is usually neither in time nor organized systematically.

#### 9.14.2.2 Respondents' perception of training

Analysing the data it is evident that higher proportion of both men (88%) and women (79.0%) reported that these training were both useful and also used (Table 9.18). Only very few of the women reported that the training were useful but they were not able to apply it. Asking about the reasons for it, they revealed an important fact that neither they possess decision making capacity regarding the crop adoption nor can convince their men counterparts. They said that with some exception in majority of the cases it is the men household head who decides all the aspects of the farm management.

Table 9.18: Respondent's Perception of Training  
(Multiple Choice)

Perception	W	Project Area		Control Area	
		Men %(n=25)	Women %(n=65)	Men %(n=44)	Women %(n=38)
Useful and used	1.0	88.0(88.0)	79.0(79.0)	27.3(27.3)	28.9(28.9)
Useful but unused	0.5		3.2(1.6)		
NA	0.0	12.0(0.0)	17.7(0.0)	72.7(0.0)	71.1(0.0)
Total		100.0(88.0)	100.0(80.7)	100.0(27.3)	100.0(28.9)
Index		3.52	1.30	0.62	0.76
Weighted Index		2.41		0.69	

The higher the index, the better the perception. Figures in ( ) present score.  
Source: Field Survey, 1994

#### Test of statistic

T-value = 7.62 with DF = 167 and test at significant level of 5%



The index constructed for the analysis supports these findings. Mens in the project area have highest index when compared between the sex and the settlements. The reason for such high positive attitude must be because of their decision making capacity for adoption of new technology or HYVs. However, the proportion of those who didn't respond the inquiry, is higher in the control area which implies that people in the control area lack such opportunity.

#### 9.14.2.3 Effectiveness of training

The effectiveness of training in various aspects have been presented in Table 9.19. Compared to the project area, very little impact can be seen in the control area, where relatively less proportion of men and women are found to be applying the training which they had received.

In the control area highest (70.5%) proportion of the men didn't respond about the effectiveness of training while 15.9 per cent expressed that production have been increased after their training. From the women respondents similar responses were received.

Comparing the men respondents across the area, men in the project area had better perception regarding the effectiveness of training, and similar is the results with women in the project area.

Table 9.19: Effectiveness of Training  
(Multiple Choice)

Response	W	Project Area		Control Area	
		Men	Women	Men	Women
NA	0	12.0(0.0)	17.7(0.0)	70.5(0.0)	73.7(0.0)
Increased production	1	16.0(16.0)	24.2(24.2)	13.6(13.6)	13.2(13.2)
Improved skill	1	12.0(12.0)	11.3(11.3)		
Improved knowledge	1		4.8(4.8)	6.8(6.8)	5.3(5.3)
Improved skill and knowledge	2	16.0(32.0)	6.5(12.9)	0.0(0.0)	0.0(0.0)
All	3	44.0(132.0)	35.5(106.4)	6.8(20.5)	7.9(23.9)
Total		100.0(192.0)	100.0(159.7)	100.0(40.9)	100.0(42.4)
Index		2.56	1.16	0.31	0.37
Weighted Index		1.36		0.34	

Figures in parenthesis present score.

The higher the index, the more it is effective.

Source: Field Survey, 1994

#### Test statistics

t-value = 8.92, DF = 166 & test at significant level of 5%



## 9.15 Summary

### 9.15.1 Production and Productivity of Main Cereal Crops

In the project area the production of all the cereal crops is found to be significantly higher than in the control area except in the case of upland paddy. Similar is the findings with pulse family crops like soyabean and blackgram.

Productivity of paddy, maize and wheat is higher than the national standard while productivity of upland paddy is less than the national standard. But in each case, the productivity in the project area is higher than in the control area.

### 9.15.2 Production of Vegetables and Fruits

Although, vegetables like green leaf and radish are found to be produced by majority of the farmers, they are only produced for household consumption not for commercial purpose. Similarly potato and onion are produced by some farmers which are also rarely sold.

Regarding fruits, a couple of orange and banana orchards are found in the project area. What ever other kinds of fruits are produced they are found to be in very small scale and grown as tradition. No commercialisation has been done except in case of banana. Even orange farmers are not able to get its return in full-fledge.

### 9.15.3 Livestock

The important species of livestock found in the study area are cow, buffalo, oxen, goat and chicken. Average livestock unit (ALU) and average size index (ASI) both are higher in the project area. This is depicted by the average livestock holdings, which in each case is higher in the project area.

The difference in these indices is highly significant in case of buffalo and goat. But it is noteworthy that the availability of improved breed of any of these animals is rare in either of the settlements. The reasons for higher number of goats must be because of the involvement of women in the savings groups which can provide credit to its members to buy goats or chicken. In addition to that the NGO itself distributes goat studs through these saving groups.

### 9.15.4 Beekeeping

Proportion of households practising beekeeping is found to be higher in the project area than in the control area. Similar is the situation with the households having sources of assistance and collection of honey. But when the NGO's efforts like providing training, provision of improved beehives and figures related to practitioners and non-practitioners, are considered then both collection and earning from it possess little value. The reason for this may be

unavailability of the forest or orchards in the proximity.

#### 9.15.5 Adoption of Improved Variety

Farmers are found to be highly responsive to HYVs especially maize. In case of paddy and wheat, the proportion of adopters is higher compared to the control area, but if the non-users proportion is considered then such proportion carries little value. However, the data from the NGO Ilaka office shows that the demand of these HYVs is increasing.

In case of fruits, orange among citrus and banana have been adopted by farmers. Banana is even produced for commercial purposes by some farmers.

#### 9.15.6 Sources of Awareness

The sources of extension services are clearly different for two settlements. In the control area it is the government extension activists who introduced the improved varieties, while in the project area major credit goes to the NGO staff. Also in the control area information through friends is found to be important and effective too.

#### 9.15.7 Extension Service

The data as well as field observation show that the extension service is effective and available for the majority of the households in the project area. The government extension service is insignificant in the project area unlike its significance in the control area.

Similarly, frequency of extension service is better in the project area, where even fortnightly services are available in some cases for farmers in one or the other way (either through training or field visit of extension worker or visit by farmers to the NGO office) while only bi-monthly and irregular extension services are available in the control area.

#### 9.15.8 Agricultural Training

Although government extension workers and the NGO are continuously engaged in providing training to equip people with technical improvements and help them adopt new varieties and species, it is the NGO efforts which have been found to be most effective.

Respondents (more of women) perceived training as useful and used in the project area when compared across the sex and across the settlements. Similarly training is highly effective in the project area.

## CHAPTER X

### HYPOTHESES TESTING, CONCLUSIONS AND RECOMMENDATIONS

#### 10.1 Hypothesis Testing

In order to statistically verify the significance of these differences, the following hypotheses testing is done and to make it more clear and to test the individual components the same hypothesis is broken down into several parts where applicable.

##### 10.1.1 Socio-Economic Aspect

###### a. There is no difference in household size in the two settlements.

The detailed analysis about the household size has been discussed in Chapter 5.1.3. The average household size of the two settlements are found to be 5.48 and 5.39. This is higher in the project area. But this difference is not due to the new birth, rather the already grown population is responsible for this.

In addition, the obtained t-value (0.19) which is far less than the tabulated value (1.96) at 5 per cent confidence level (Table A.1). Therefore the obtained t-value falls in the acceptance region. Thus, the null hypothesis is accepted and confirmed as true.

###### b. The early marriage practice is not different in the two settlements.

The men and women were classified in two groups; 10-17 and 18-30 years (Table A.3). These groups were further divided married and unmarried.

According to data presented in the table, in the married 10-17 category, no members were found in the project area. Null hypothesis therefore is rejected for this category.

Similarly, in 10-17 years unmarried and 18-30 years married category the calculated t-value is less than tabulated value in both men and women cases. Therefore these values fall in the acceptance region confirming the acceptance of the null hypothesis.

Regarding the last category the null hypothesis is rejected in case of men while it is not rejected in case of women. This is because the obtained value is higher in the former case and lower in the latter case when they are compared with the tabulated value.

In conclusion as the test results are in favor of the project area it is concluded that there is difference in the early marriage practice.

###### c. The two settlements do not differ in terms of food deficiency.

Data presented in Table 5.11 show that the proportion of different category of farmers having food sufficiency is higher in the project area. To test this

hypothesis two sets of proportion are presented one having food sufficiency and the other not.

The chi-square value obtained from analysis is 4.04 with degrees of freedom of 1 but the tabulated value of chi-square at 5% significant level is 3.84. So the calculated value falls in the rejection region.

Therefore the null hypothesis that there is no difference in food deficiency in both areas is rejected.

d. Farm and off-farm income do not significantly differ in the two settlements.

i. Farm income

To test this hypothesis t-test was employed and the results are tabulated in the Table A.4. The obtained t-value is higher only in the case of paddy and banana. So t-value in these two cases fall in the rejection region. So categorically, the null hypothesis in the case of paddy and banana are rejected.

In all the remaining cases the obtained t-value falls in the acceptance region. Therefore, null hypotheses is accepted to be true and it is concluded that there is no significant difference in income from these sources. Reverse to these findings the income from upland paddy is higher in the control area.

ii. Off farm income

The obtained t-value is higher for service and business (Table A.5). So in these cases the t-value falls in the rejection region and thus categorically the null hypothesis is rejected. In cases of income from labor, the calculated values are higher than the tabulated value (1.96) which signifies that they fall in the rejection region confirming the rejection of the null hypothesis but the (-) sign categorically proves that the income from these sources are significantly higher in the control area. Regarding income from agro-labor and remittance, although it is higher since the t-value is less than tabulated, the null hypothesis is not rejected.

e. There is no difference in expenses on non-food items in the two settlements.

Education, clothes, health, and shoes are the variables which represent the basic needs of people while expenses on social activities denotes the expenses incurred during their cultural ceremonies.

To test this hypothesis t-test was employed for each category and results are tabulated in the Table A.6.

In the case of expenses on shoes (foot wear) and education as t-value is higher than the tabulated it falls in the rejection region. So in these cases the null hypotheses is rejected.

Similarly, the null hypothesis in the case of health is also rejected. But, presence of (-) sign denotes that the expenses are significantly higher in the control area.

However, the results of expenses on social activities helps to conclude the acceptance of null hypothesis as the t-value falls in the acceptance region at 5% significant level. So categorically, expenses on this item is not significantly different when compared between the settlements.

In conclusion the expenses in various non-food items are significantly different except in social activities.

#### 10.1.2 Health Aspect

##### a. The use of immunisation does not differ by settlements.

The individual tests were done for BCG, DPT and Polio using the same z-test and the z-values are listed in Tables A.7, A.8 and A.9.

In each case, the test was done at significance level of 0.05 for which tabulated value is 1.96 but the obtained z-value were 10.07, 5.33 and 3.03 for BCG, DPT and Polio respectively. So obtained values fall in the rejection region. Hence, the null hypothesis is rejected in each case.

##### b. There is no difference in availability and use of ENT services between the settlements.

To test this hypothesis chi-square test was employed assuming the null hypothesis as true (Table 6.2). The calculated value was 23.53 against the tabulated value of 3.84 at 0.05 significant level. Thus the obtained value falls in the rejection region confirming the rejection of the null hypothesis.

##### c. The use of family planning measures doesn't differ neither by gender nor by settlements.

The obtained value of chi-square test was 7.191 and tabulated value was 5.02 at 0.05 significant level which means the obtained value falls in the rejection region hence, the null hypothesis is rejected and the reverse of it is accepted and confirmed as true (Table A.12).

##### d. The number of household members falling sick and their number of hospital visits is not different.

To test this hypothesis t-test was employed separately (Table A.13). The t-value obtained were (-7.39 and -5.62) higher in both cases than the tabulated value at significant level of 5%. Thus the obtained value falls in the rejection region. Hence, the null hypothesis is rejected. However the (-) confirms the higher number of such people in the control area.



- e. There is no relationship between immunisation and health condition of child.

The test was done separately for the project and control area (Table 6.1). The obtained correlation coefficient ( $r$ ) in the case of project area is 0.44 while it is 0.42 in the latter case. There is positive relationship between these two variables in the both settlements but it is moderately strong and significantly different from zero.

Moreover both these calculated values are higher than the tabulated value which is less than 0.1946 (no value for coefficient of correlation is given beyond frequency of 100 in statistical table but the trend in the table shows that as the frequency goes on increasing the value of ' $r$ ' goes on decreasing). Thus they fall in the rejection region. So the null hypothesis is rejected in the case of both settlements. However, the higher coefficient in the former case shows the stronger relationship than in the latter case.

- f. There is no relationship between availability of clean drinking water and child health.

Two different tests were done for the project and control area. The obtained coefficients were 0.10 and 0.33 respectively (Table 6.8). These results are just opposite of each other. Although there is positive relationship in the both case but it is relatively stronger in the latter case.

In case of project area the result is in line with the other health facilities available in the project area, relatively better food sufficiency, better income and above all the better educational attainment must have influence over it. Reverse to these facts the control area is weak in terms of all these factors.

Moreover the obtained value in the case of the project area is less than the tabulated value. Thus it falls in the acceptance region while the coefficient in the case of the control area falls in the rejection. Therefore the null hypothesis is rejected and concludes that there is positive relationship between these variables in the control area.

- g. There is no relationship between the number of people falling sick and their hospital visits.

In order to see the relationship in both settlements, separate tests were employed. The obtained correlation coefficient for the project and control area were 0.67 and 0.81 respectively (Table 6.9). These values denote the strong relationship between these variables in the project area and it is more stronger in the control area.

Since these values are far higher than the tabulated value (which is less than 0.1946) they fall in the rejection region. Therefore the null hypothesis is rejected in both cases.



However, these values show the important fact between the two settlers. The higher coefficient in the control area means there is stronger relationship compared the project area which means their visit to hospital is more because of their illness while the settlers in the project area may go not only because of sickness but for other preventive cure too.

### 10.1.3 Educational Aspect

- a. There is no difference in the educational attainment between the two settlements.

To test this hypothesis contingency table was developed (Table A.14) by giving different weights to the different levels which ranged from 0 to 1.5. This is because in a rural setting and for rural development even primary education is very important. The more people are educated the more they have tendency to leave the village. So keeping these issues in mind the same weights are given for the education above five class.

The results show that the index in the case of men is higher in the project area (by 76%) and index for women is more higher (by 194%) than the respective figures in the control area.

The t-test employed to test this hypothesis based on these figures showed mix results (Table A.15). The test was done for each category by gender:

- i. In the case of men the t-value for illiteracy is -9.48 and tabulated t-value at 0.05 significant level is found to be 2.57. Thus the calculated value falls in the rejection region, which denotes the rejection of the null hypothesis. Hence illiterate men are not similar in both areas. The (-) sign denotes there are more such members in the control area.
- ii. Similar is the findings with the situation for women.
- iii. In the case of literate mass in both cases the calculated value is far higher than the tabulated value. Thus the calculated value falls in the rejection region. Therefore the null hypothesis is rejected.
- iv. Similar results are found in the case of SLC passed (men) and above SLC (men) which provides ground for the rejection of the null hypothesis.
- v. But the test results with the group of 1 to 5 and 6 to 10 classes (in the case of girls) is not different where the null hypothesis is not rejected. It is because in all cases except in 6-10 class (girls) the calculated t-value are 0.84, 1.88 and 1.39 which are less than the tabulated value at 95 per cent confidence level. So the null hypotheses in these cases are not rejected and concluded that there is no difference in this category. However the t-value in the case of 6-10 class (girls) is higher than the tabulated value at 95 per cent confidence level (3.13 vis a vis 1.96) which denotes the rejection of the null hypothesis.

Similar is the results with men who have passed SLC. But, there is no statistical difference among women of this category. Also similar is the result with those men who have educational attainment above SLC.

In conclusion, since the index of both men and women is higher and results of the majority of the individual tests are in favor of project area, it can be said that there is significant difference in the educational attainment between the settlements.

**b. Distribution of students among the households is similar in both settlements.**

Households are categorised on the basis of number of students from 0 to 4 and weight was given from 0 to 3 (Table 7.3). The results were found to be in favor of project area. The calculated index is higher by 72% in the project area. Thus the null hypothesis that the distribution of students are the same in both areas is rejected.

**c. The number of 'out of school' children is equal in both settlements.**

Data in Table A.17 show that the figures are higher in the control area. To test this hypothesis t-test was employed separately based on gender.

In the case of men the obtained value at 0.05 significant level is 1.963 while at the given condition the tabulated value is 1.96.

This signifies that the obtained value falls in the rejection region. Thus the null hypothesis is rejected and concluded that the number of men 'out of school' children is higher in the control area.

Similarly in the case of women the obtained value is also higher in the same condition. So it is concluded that the number of 'out of school' female children is not similar in both study areas.

**d. There is no relationship between age and capacity to take care of children's education.**

Data in Table 7.5 show that people of age group 20 to 30 (who are able) are found to be relatively higher in proportion, and unable proportion is relatively higher in the age group of more than 30. But in the control area the proportion is relatively higher in the age group above 40. At the same time with the increase in age the unable proportion also tend to increase.

However, the results show that coefficient of correlation is -0.2161 which denotes the weak relationship. Also the sign (-) shows the reverse relationship between the age and the capacity to take care children's education. However its reverse can not be generalised since this relation can be true only up to some age limit.

Also when the calculated correlation coefficient is compared at 5% significant level, the tabulated value is found to be less than 0.1946. Thus the

calculated coefficient is higher than the tabulated. This means that the calculated coefficient falls in the rejection region. Hence the null hypothesis is rejected and the reverse of it is confirmed as true.

#### 10.1.4 Legal Awareness Aspect

a. Awareness about legal rights is the same in both settlements.

To test this hypothesis chi-square test was employed and the obtained values are shown in Table A.18. The obtained chi-square value is 12.163 where the tabulated is 3.84 at 0.05 significant level. Thus it is clear that the obtained value falls in the rejection region. Hence the null hypothesis is rejected and concluded that the awareness of legal rights is not the same in the two settlements.

b. There is no difference in ability of households to go to court.

The responses are tabulated in the Table 8.1 where the chi-square value is seen to be 19.538 which is quite far higher than the tabulated, 3.84 at 0.05 significant level. Thus the calculated value falls in the rejection region confirming that there is difference in ability of households to go to court.

c. The perception that law has favored men is the same in both settlements.

The obtained results are tabulated in Table 8.2 which shows that the obtained chi-square value is 1.64 which is less than the tabulated value (3.84) at 95 per cent confidence level. Thus the null hypothesis is not rejected at 0.05 significant level. As the obtained value falls in the acceptance region. It proves that such perception is the same in the both settlements.

d. Ability to communicate with the officials is the same across the settlements.

The results presented in Table A.19 show that the obtained value (41.37) is quite far higher than the tabulated value at 0.05 significant level. So the obtained value falls in the rejection region. Thus the null hypothesis is rejected and it is concluded that such ability is not the same in the both settlements.

#### 10.1.5 Agriculture Aspect

a. The production of major crops is not different in the two areas.

To test this hypothesis, t-test was employed for each major crops like, lowland paddy, upland paddy, wheat, maize, soyabean and blackgram. The data show that in each case t-value is significant at 0.05 significant level in the project area (Table 9.1).

The higher obtained value (in all the cases) than the tabulated value show that it falls in the rejection. Thus the null hypothesis is rejected.

It is only in the case of upland paddy where t-value is negative. Since the calculated value is more than 1.96 at 0.05 significant level, the obtained value falls in the rejection region. But the negative t-value signifies the higher production in the control area. Hence the null hypothesis is rejected and it is concluded that the production of upland paddy is significantly higher in the control area.

**b. Average production of vegetable is similar in both areas.**

To test this hypothesis t-test was done for each vegetable production. The results (Table 9.2) show that it is in case of only radish where t-value is not significant, in remaining cases the t-value is always higher against tabulated value. Thus the null hypothesis is rejected in each of these cases except in the case of radish.

**c. The fruits production (guava, orange and banana) is the same in both areas.**

The employed t-test resulted that in the case of orange the production is not significant. In the case of banana obtained value is higher than the tabulated value at 5% significant level is 1.96 (Table 9.4). Thus the obtained value falls in the rejection.

Hence, the null hypothesis is rejected in the case of banana and guava while it is accepted in the case of orange but the (-) sign show the higher production of guava in the control area.

**d. The adoption of improved varieties is the same in both settlements.**

To test this hypotheses, z-test was employed and the results are found as following (Table A.21):

- i. In the case of paddy and maize the obtained z-value is higher than the tabulated value at 0.05 significant level thus the obtained value falls in the rejection region. Null hypothesis therefore in these cases is rejected. But the obtained value in the case of wheat is 1.52 which is less than tabulated value at 0.05 significance level. Thus the obtained z-value falls in the acceptance region. So it is concluded that in the case of adoption of wheat there is no significant difference between these two locations.
- ii. In the case of adoption of fruit plants the results from z-test show that the obtained z-value is higher than the tabulated value (1.96) at 0.05 significant level (Table 9.12). Thus this value falls in the rejection region confirming that there is difference in the adoption of fruit plants.

- e. The availability of extension service is not significantly different in the two settlements.

To test this hypothesis a contingency table was developed by giving weights to different categories of extension services and t-test was employed (Table 9.16).

The index is significantly higher in the project area which confirms the better extension service at the same time the obtained t-value of 8.77, is far higher than the tabulated t-value (1.96) at 5% significant level. This shows that the obtained value falls in the rejection region. Null hypothesis therefore is rejected.

- f. The opportunity of agricultural training doesn't differ in the two settlements.

Data presented in Table 9.17 show that in each case the proportion of trainees in the project area is higher. To test this hypothesis z-test was employed and the results are tabulated in Table A.22.

In each case obtained z-value is higher than the tabulated at 0.05 per cent significant level which falls in the rejection region. So null hypothesis is rejected.

- g. Respondents' in both settlements perceive training in the same way.

To test this hypothesis a contingency table was created giving weight to responses from 0 to 1. Then t-test was employed to find the results (Table 9.18).

The index value is higher in both cases (men and women) in the project area, which shows positive perception of respondents.

The obtained t-value (7.62) is higher than the tabulated (1.96 at 5% significant level) which falls in the rejection region. Therefore, the null hypothesis that people perceive training in the same way, is rejected.

- h. The effectiveness of training between the settlements is similar.

To test this hypothesis a contingency table was prepared (Table 9.19) giving different weights. Then t-test was employed.

The higher index value in the project area (both men and women) shows that training is more effective.

Also the obtained t-value 8.92 is found to be greater than the tabulated (1.96 at 5% significant level), which falls in the rejection region and hence null hypothesis is rejected. Therefore it is concluded that the effectiveness of training is not similar in the two settlements.



#### 10.1.6 Summary

Although there is difference in household size between the settlements, this difference is statistically insignificant while the finding is reverse in the case of household members' marital status. Similarly there is significant difference between the settlements in terms of food deficiency, farm income and off-farm income. The differences in income has been resulted in the significant difference in expenses on non-food items.

Similarly, the tests conducted show that there is significant difference in the availability, use and people's ability to handle different diseases.

The available correlation data show that people in the control area visit hospital more for treatment purpose than prevention.

The test carried out for education shows that there is significant difference in the attainment of education. This difference is distinct in both male and female cases.

Although there is no significant difference in people's perception that law is in favor of men, in all the remaining aspects there is significant difference between the respondents in the two settlements.

Except in the case of upland paddy the production is significantly different. Similar is the situation with banana production, adoption of HYVs, availability to extension service, opportunity, perception and effectiveness of agricultural training.

#### 10.2 Overall Summary in Brief

Although the generation-old caste discrimination is still pervasive, some relative changes have been seen in the project area. Tendency toward small household size, better marital status, higher farm income and higher expenses on education are noteworthy changes which denote the better socio-economic situation in the project area. However, due to lack of alternative employment opportunity people are forced to stick in agricultural activities.

Higher immunisation coverage, availability of more health services, capacity to deal sickness, use of latrine, and popularity of family planning measures have impact on health of people. Therefore, comparatively, people in the project area have good health.

Higher level of formal education, more student number, less out of school children are found in the project area. Similarly a large number of women of various age are found to be literate. These findings denote the better educational situation in the project area. The non-formal education is reason for such impressive educational status.

Men audience and respondents have higher confidence in reaching court than women. Despite the NGO efforts still a large number of women neither have such



confidence nor are aware of legal rights. People in the project area have different perception about legal rights than those in the control area.

Similarly the ability to communicate with the officials to solve problems is higher in the project area. The NFE classes, regular training programs and frequent contact with the health and agricultural extension workers are some important reasons for such situation.

Although a higher level of both production and productivity have been seen in the case of major cereal crops except the upland paddy, still many of the farmers do not use HYVs. Also despite the favorable climatic condition for the fruits and vegetables no commercialisation can be seen.

Although goat raising is found in almost all houses no noteworthy income has been noticed. Similar is the situation with the income from sales of large animals.

However, better extension service, availability of training and improved seeds are some of the NGO activities which have played important role in awareness generation as well as in increasing production.

### 10.3 Conclusions

#### 10.3.1 Socio-economic Aspect

The majority of occupations are in agriculture and allied activities. Only those who are better-off in terms of education are able to get service. In the absence of alternative job opportunity, people (especially youngsters of GMD castes) are forced to join military or work as labor. Women are exclusively dependent on agriculture with nominal exception in the project area. People are not able to change the occupation because they have no opportunity. This factor has a strong bearing on income generation.

In the project area, attitudes towards social factors like marriage and family size has been changed. They do not encourage early marriage practice nor do they prefer large family size. The issue of family size can be linked to the NGO's family planning activities which have made people aware of its importance. This is also related to the higher economically active population and less dependency.

They have better quality of life at least compared with the people in the control area since their expenses are higher in education and other daily necessities like clothes and shoes. This may also have been influenced by their better farm and off-farm income. Income from minor off-farm sources like labor is higher in the control area, which shows the relatively low employment opportunity.

#### 10.3.2 Health Care and Family Planning Aspect

Immunisation is largely successful in the project area, but still more efforts have to be made to find eligible children. They do not initiate themselves. Thus, still dependency is prevalent. The present success and achievements are due to the NGO health workers. But at the same time the contribution of the governmental health workers can't be overlooked.

The NGO has provided both MCH and family planning services to people in the project area and these activities are relatively successful. They are also seen to be sustainable because they work in collaboration with the government health staff.

People's awareness and empowerment can be seen when they are able to handle minor problems using new methods. A higher proportion of toilet users for instance, is one of outcome of this awareness.

Availability of health services and people's awareness are reflected in their overall health condition. For instance, in the project area both people falling sick and the number of hospital visits are less than those in the control area.

### 10.3.3 Educational Aspect

Education is the entry point for the NGO. After the success of the NFE classes, Women Development Section of the NGO organizes NFE graduates. Through them, health and agricultural activities are conducted. Each activity is linked with another, developing a chain of consequences.

The success of the NFE classes are seen in the formation of savings groups, which organizes community development work. They are also engaged in afforestation and natural resources management in their vicinity.

The higher number of students in the project area is because of a higher level of parental educational attainment. The lower number of both male and female 'out of school' children is also because of this factor. Similarly, a higher proportion of respondents who are capable of taking care of their children's education is also because of higher literacy.

### 10.3.4 Legal Awareness Aspect

The NGO has endeavoured to make people aware of the law which has produced positive results with some exceptions. This is also affected by activities of political parties and government. Awareness in all aspects has been reflected in their reasons for not demanding equal rights. The confidence to communicate with bureaucracy is also an outcome of these activities.

The difference in attitudes between the two study areas about not demanding equal rights implies that the legal awareness campaign has influenced people but it takes time to reach all the target group. It may take even longer time to change their deep-rooted attitudes which, knowingly or unknowingly, accepts male domination.

### 10.3.5 Agricultural Aspect

Agricultural produces are diversified and produced by each household. This is one characteristic of a subsistence economy which denotes the absence of commercial production.

Livestock rearing is a complementary part of the larger agriculture system. So each household possesses livestock species of one kind or another. Livestock is necessary for providing milk, meat, manure and is the only source of draft animal power. No commercialisation can be seen except in some cases when milk is found to be sold in the study area. However, this practice is also at nominal scale.

Beekeeping is a traditional occupation. Despite the possession of improved beehives and availability of better extension service in the project area, no substantial change in income from beekeeping can be seen.

In the project area, the adoption of HYVs is relatively higher. To some extent it has contributed to a higher level of production which is reflected in food sufficiency. Still, there are a lot of people who depend on local varieties.

Despite the continuous efforts of the NGO, except some farmers, majority are not able to produce either fruits or vegetables on a commercial basis. Field observation shows that there is wide scope for commercial farming. Citrus fruits are not grown widely nor have many farmers adopted improved varieties except oranges. The trend toward banana farming is growing which will certainly need a better market in the future.

No commercial poultry or livestock farming is found. Although a couple of goats are seen, almost all the houses in the project area are just starting. It seems that people still strive hard for survival so they are not oriented to commercial raising.

The project beneficiaries have received a wide variety of training and extension service. Because of continuous training, program the NGO Ilaka office looks like a training institute.

Although awareness in many agricultural aspects has been developed, their impact is not significant except for a few major crops and fruits like banana and orange.

So all the analysis done reveal that "Education" is a successful entry point for various components implemented by the NGO. A higher proportion of adoption of agricultural innovations, higher level of both production and productivity, use of environmentally sound manure, and initiation in commercial production (of banana and orange) is due to better education and awareness.

Better health status, higher proportion of healthy children, extensive use of family planning measures, better immunisation, and use of latrines must be due to better formal and informal education in the project area.

The different socio-economic picture seen in marriage practice, fewer number of children below six years of age, small household size, better occupation, less food deficiency and higher expenses for education is also due to better education.

#### 10.3.6 Summary

It seems that success in all human endeavours depend on education. All the variables analysed are related to education in one way or another. People are more aware in every aspect, where the educational attainment is higher. Thus it is clear that education, although has less direct effect, it has indirect but multidimensional and cumulative multiplier effect on human resource development. Therefore the NGO strategy of making education an entry point is appropriate and effective (Fig. 10.1).

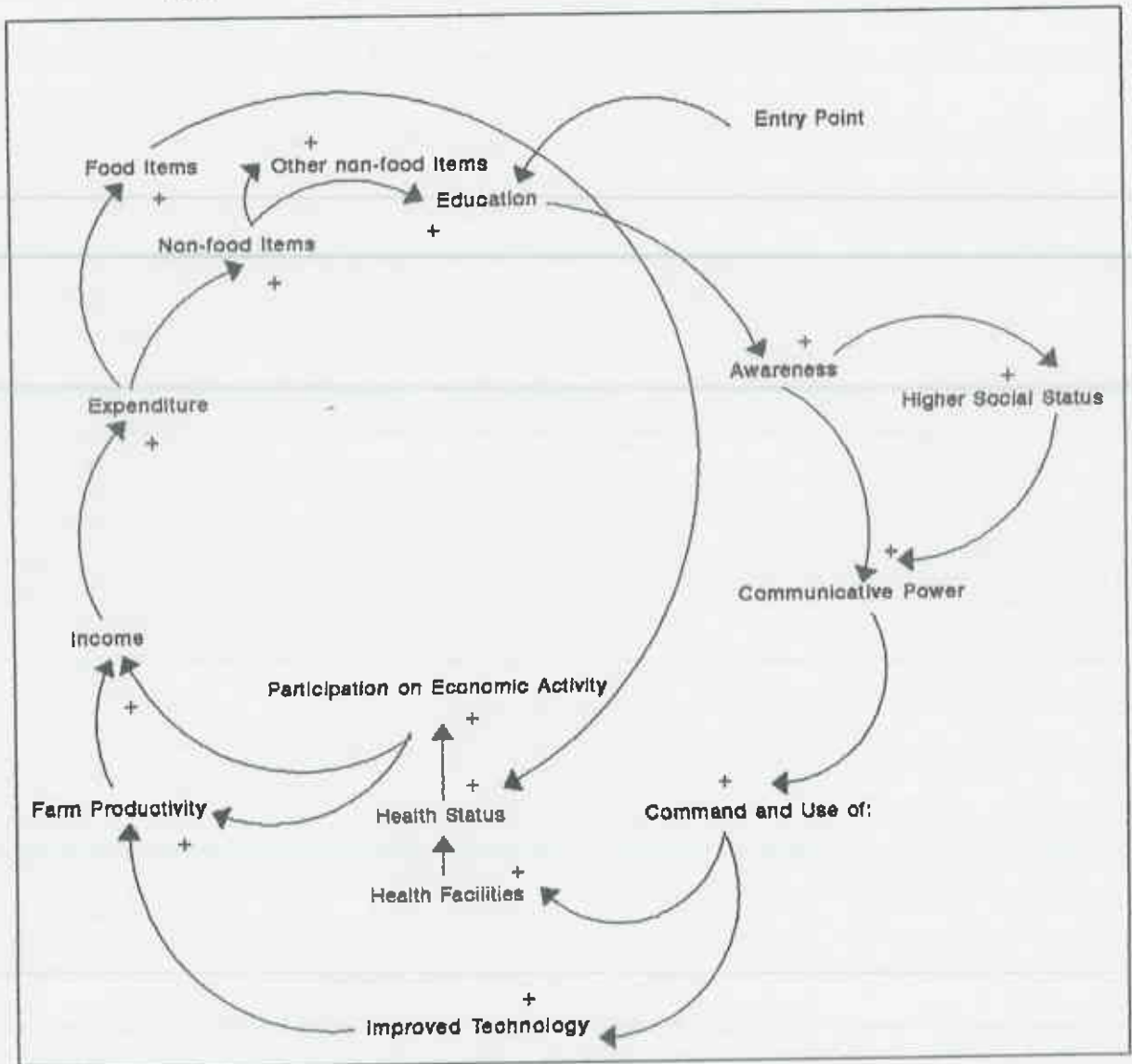
The NGO is working in every sector of development in an integrated rural development approach. People are responsive to the NGO activities. Higher involvement in the NFE classes, training in women development, agricultural, health activities and child care and extension activities support this conjecture.

The NGO is trying to act largely as a change agent rather than involving in all aspects of development. Especially it is trying to make people contribute in terms of fund or local materials, whatever small quantity may it be. This trend is good from the point view of sustainability. This is reflected in the construction of the place (hut) where the NFE classes are conducted. Similar, is the findings with the health services provided to people.

The NGO has endeavoured to motivate people to participate in local problems like agricultural and natural resources management, community environment development, management of saving groups and women's development activities. This is another dimension of development and empowerment.

On the basis of all the differences found between the two settlements it can be concluded that although concrete change is not seen in the living standard of the settlers, its developmental activities are largely successful in awareness development and thus have contributed toward empowerment.

Fig. 10.1: Cause and Effect Relationship Among NGO Activities





#### 10.4 Recommendations

From the study of the various components implemented by the NGO in the study area some recommendations are made for the NGO, government, agricultural scientists and for further research.

##### 10.4.1 Recommendation for the NGO

###### 10.4.1.1 Occupation

People in both project area and control area have no effective non-farm income generating activities. Whatever off-farm income generating activities they have, all are related to traditional activities. Joining the armed services is the only opportunity available for those who are lucky.

Similarly, tailoring although it is done in both areas, is not professionalised. No wide scope is available to the people involved in this occupation. Neither do they have enough raw materials nor have the necessary machines in condition.

*As a catalyst to change, the NGO must strive for the introduction of off-farm income generating activities and train farmers as entrepreneurs and establish small processing units for bananas. Also, it is necessary to develop skills of tailors.*

In order to generate income through alternative source, small farmers in ridges should be encouraged and supported to establish cottage industries specialising in manufacturing goods using bamboo as material. This plant is available in ample quantity especially in the project area. This is a recommendation for other similar areas in the country (see Thapa and Weber, 1990, pp:242).

###### 10.4.1.2 Impressive source of income: Cardamom

One of the interesting findings during the field visit was a successful farmer producing cardamom, which needs neither fertile land nor plain. Only some wet land is enough. The inter-plantation of Uttis (*Atrus Nepalensis*) and banana provide shade for the plants which conserve soil.

Also at the same time the trees of Uttis fulfils the demand of timber even if it is of low quality. Thus cardamom farming has a multi-dimensional impact. The most important fact is that the stream side of the hills, which is virtually useless, can be used for this purpose and can produce a good income for poor farmers.

*The NGO has scope to introduce this crop to other farmers also. Prior to doing so, a detailed study is necessary to identify suitable locations.*

#### 10.4.1.3 Diffusion of dhaincha: economically sound and environmentally safe manure

In the project area, Dhaincha has been introduced by the project and is highly favored by farmers. This manure is cheap and environmentally sound. However, sample data show that many people are still unaware of it.

*Therefore the NGO has much scope to diffuse the knowledge of Dhaincha among farmers.*

#### 10.4.1.4 Diffusion of wheat

People are aware of improved varieties. However very few people are practising wheat production. Wheat, if properly cultivated and produced, can help to fulfil food deficiency instead of keeping the lowland fallow.

*Thus the NGO has a much larger scope in this regard to help people to ensure food sufficiency. Simple discussion between the wheat producing and non-producing farmers can bring about positive results. Thus the NGO can arrange a village-based workshop for the farmers using improved variety practitioners as resource persons.*

#### 10.4.1.5 Diffusion of vegetable seeds and fruit plants

Regarding vegetable and fruits production, no remarkable improvement has been attained. Growing green leafy vegetables and radish seems like a tradition so the present vegetable production is affected by need rather than change. No other vegetables like cauliflower and cabbage were found to be growing.

Like wise improved varieties of mango and orange are planted only by few farmers. As the climate of area is suitable for these fruits and vegetables, the NGO can work a lot to diffuse these improved varieties among the farmers.

#### 10.4.1.6 Encouraging farmers to plant fruit plants for commercial production

Nepal's middle hills are suitable ecological belt for fruit production. Some evidence of its potential success can be seen in the field. Fruit production can back up the subsistence rural economy and in the future can give rise to small scale rural industrialisation. When a large number of farmers start to produce fruits in these areas only then they can benefit from economies of scale and encourage agglomeration economies.

*Depending upon these facts, the NGO is recommended to train more farmers to grow various kinds of fruits on a commercial basis.*

#### 10.4.1.7 Market mechanism

Presently, a severe problem in marketing of fruits like banana and orange can not be seen. But the farmers have trend of producing these crops on a commercial scale, so these problems are likely to occur in the future.

Therefore, " ...effective marketing mechanism should be developed" in order to facilitate the farmers. This type of recommendation was also made by Ojha and Weber (1992) in a similar study in Dhading District.

#### 10.4.1.8 Formation of farmers group

Unless people can sell their produce, they can not have a sustainable source of income. In many cases, the sales of their produce is not possible due to the lack of a market center. *So formation of local farmers groups in the villages would be desirable to facilitate people to sell their produce and at the same time purchase their daily necessities saving money and time.*

#### 10.4.1.9 The NFE classes

Although the NFE classes are highly successful among women and disadvantaged classes, this has two adverse effects. Despite the NGO's sustainable approach and least assistance, the dependency seems to be increasing. People don't have the capacity to continue the NFE classes after the termination of the NGO assistance.

In almost all of the NFE classes only women are found to be participating. This can create a counter impact on the family. Some local leaders are already alert to this problem.

*The NGO can improve these deficiencies easily. Regarding the first problem it can introduce the idea of self-sustenance through the classes. Regarding the second problem, instead of only women, it should also encourage men as well. While developing courses, more practical content should be added. Efforts should be made to foster social harmony.*

#### 10.4.1.10 Legal awareness campaign

*While providing a legal awareness campaign, a soft and safe way should be approached rather than rhetorical & revolutionary. Especially the target group should be equipped with the thought that men and women are complementary to each other. The best way to teach issues related to legal rights is through the NFE classes because these women can understand better than those who are not exposed to such an environment.*

*In the end, during the data collection, it was revealed that the people in the control area have great expectations that the project will be extended to their villages. The NGO, therefore, is recommended to extend at least its NFE classes to the control area.*

#### 10.4.1.11 Bottom-Bottom approach for effective technology transfer

People talk about the bottom-up approach for bringing greater participation to the grass-roots for planning and other developmental activities. Still, the top-down approach is pervasive. For an effective participation, a new technique, the bottom-bottom (here it denotes transfer of technology from a farmer to another) approach, is proposed where the poor farmers themselves disseminate new

experiments, discuss their problems, prospects, experiences, requirements, limitations and then decide to adopt (or not to any) progressive practices.

This approach can be successful where farmers have an opportunity to be exposed to new systems, techniques and environment. It can be effective, since unlike the agricultural scientists and extension workers, the local farmers share the experience in their own language and techniques which can be easily grasped.

Three phases are necessary for implementation of this approach (Fig. 10.2) The first phase involves the field visit for the selected farmers in areas where farmers have practised the innovations.

The second phase is related to organisation of village based workshop with the triangular participation of the NGO supported local farmers' group (formed by the help of the NGO) as facilitator, the progressive farmers as resource persons and these farmers as participants.

In the end, the NGO supported local farmers' group can ensure adoption of innovation by monitoring them. Providing necessary assistance is the responsibility of the NGO.

#### 10.4.1.12 Filling the gap between extension workers and the research center

The NGO neither has its own research laboratory nor has continuous communication with the agricultural scientists (Fig. 10.3). But, such a facility is necessary to solve problems. *It can ensure such arrangement by co-ordinating its activities with the national or regional agricultural research centers.*

Fig. 10.2: Bottom-Bottom Approach For Dissemination of Innovation

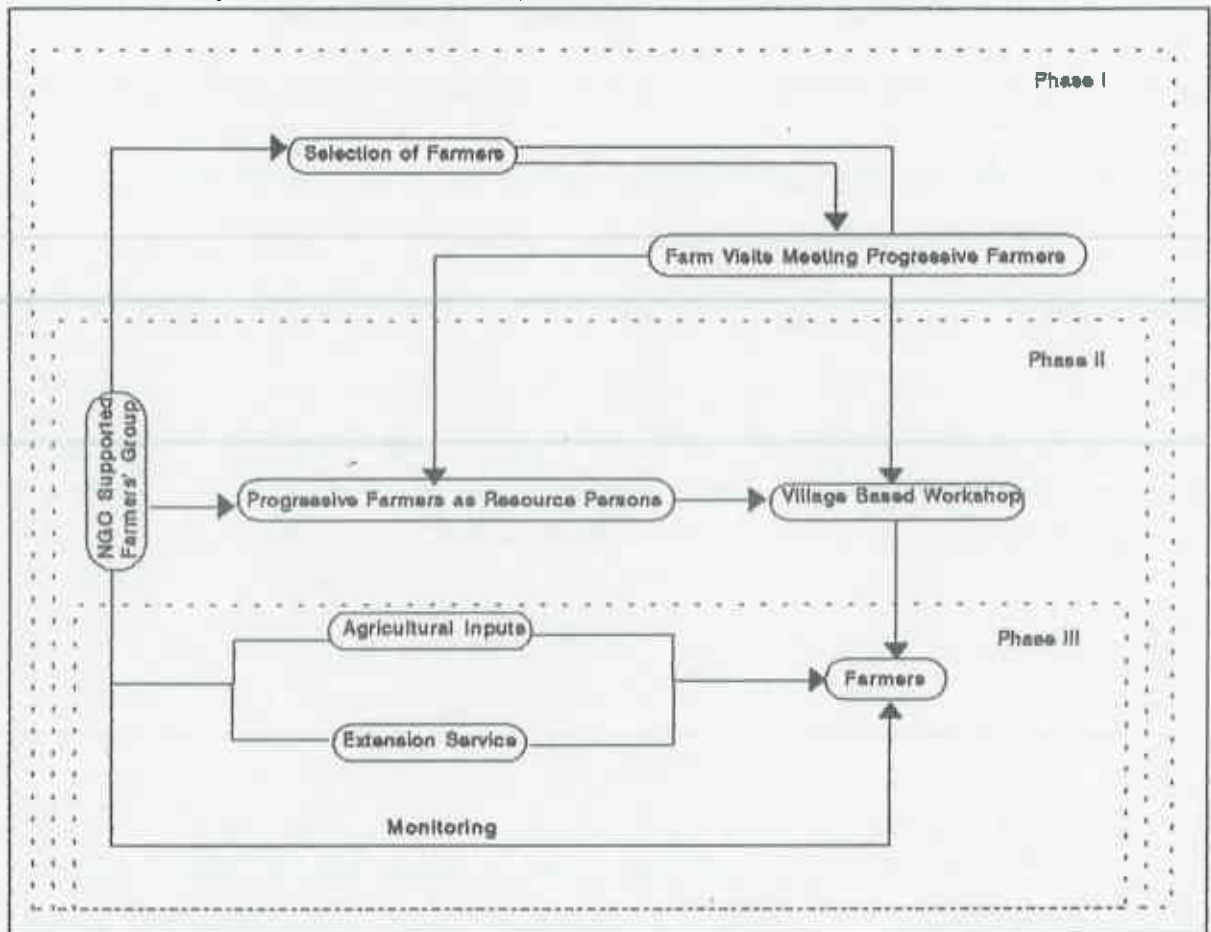
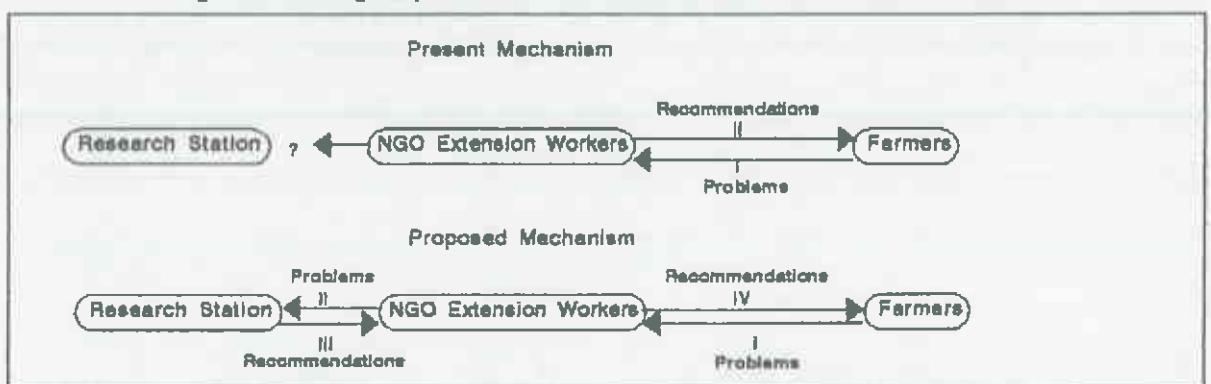


Fig. 10.3: Filling Gap Between Extension Workers And Research Centers



#### 10.4.2 Recommendations to the Government

People in this area have severe problems of transportation. Even they don't have a safe foot trail. *To ease their livelihood and to extend marketing opportunities, provision of road transportation is essential.*

#### 6.3.3 Recommendations to the Agricultural Scientists

During the field visit some problems were seen which may be especially important for agricultural scientists.

Farmers who have orange orchards face the problem of fall of young fruits. Also some farmers have solved the problem of shoot borer worm by indigenous techniques but it is still not reliable.

Similarly, farmers face the problem of banana trees falling when they bear fruits especially before some weeks of harvest. Farmers treat this problem by using wooden supports which is not effective.

*So agricultural scientists are recommended to carry out research in these problems.*

In a couple of places, coffee plants were seen to be very healthy and growing very fast. *So a thorough study is necessary to find the feasibility of this crop. If it can be produced then it can be made another major source of income.*

#### 6.3.4 Recommendations for Further Research

1. One of the important issues on which the NGOs in Nepal is criticised is their financial aspect. Many times it is commented that they have unnecessary expenses. Therefore a cost-benefit analysis should be done to measure the real benefit of all these endeavours.
2. This study was meant to compare the project and control area to see the difference in issues explained earlier. To find a better picture about the NGO's effectiveness, a study comparing two different NGO-projects is necessary.
3. This study didn't cover women's development activities of the project. It is recommended to study this aspect to find the impact and contribution on poor women.
4. As farmers have a tendency to produce oranges and bananas, a study focused on the marketing opportunity is very much needed.



5. The NGO is largely involved in providing training on various aspects. Every day various kinds of training can be seen in operation. To find out the detailed picture of effectiveness of such training, a separate study is necessary which can be advantageous one for the NGO and the trainees.
6. The NGO project office covers 12 village development committee areas, but this research was carried out only in the VDCs which are not far from the project site office. Therefore, for a better exploration and comparison, the same study can be carried out in other remote places like Thumi and Manbu.

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ANNEX A  
OBJECTIVE-WISE HYPOTHESES

# Objectives and Hypotheses

Objectives	Hypotheses
<p>a:</p> <p>To analyze the current socio-economic condition of the people in the study area.</p>	<p>There is no significant difference between settlements in the project and control groups in terms of:</p> <ul style="list-style-type: none"> <li>a. family size</li> <li>b. early marriage practice</li> <li>c. food deficiency</li> <li>d. expenses on non-food items</li> <li>e. farm and off-farm income</li> </ul>
<p>b.</p> <p>To assess the availability and utilisation of health services.</p>	<p>i. There is no significant difference between the settlements in the project and control groups in terms of:</p> <ul style="list-style-type: none"> <li>a. use of immunisation</li> <li>b. use of family planning</li> <li>c. availability and use of ENT services</li> <li>d. number household member fell sick and their number of hospital visits</li> </ul> <p>ii. There is no relationship between:</p> <ul style="list-style-type: none"> <li>a. immunisation and health condition of child</li> <li>c. the number of people falling sick and their hospital visits</li> <li>c. the availability of drinking water and child health</li> </ul>
<p>c.</p> <p>To investigate the difference in the educational status between project and control groups</p>	<ul style="list-style-type: none"> <li>a. There is no difference in the educational attainment neither by settlements nor by gender.</li> <li>b. The distribution of the students among the households is similar in the both settlements.</li> <li>c. The number of 'out of school children is equal in the both areas.</li> <li>d. There is no relationship between respondents' age and capacity to take care of children's education.</li> </ul>
<p>d.</p> <p>To examine the legal awareness among the people</p>	<p>There is no significant difference between the settlements in the project and control groups in terms of respondents':</p> <ul style="list-style-type: none"> <li>a. awareness about legal rights.</li> <li>b. ability to go to court.</li> <li>c. perception that law has favoured male</li> <li>d. the ability communicate</li> </ul>
<p>e.</p> <p>To study the effectiveness of the project's agricultural activities</p>	<p>There is no significant difference between the settlements in terms of :</p> <ul style="list-style-type: none"> <li>a. average production of major cereal crops</li> <li>b. average vegetable production</li> <li>c. the fruit production</li> <li>d. availability of agricultural training</li> <li>d. respondents' perception towards agricultural training</li> <li>e. effectiveness of training.</li> </ul>



**ANNEX B**  
**SUPPLEMENTARY TABLES**

Table A.1: Respondents' Household Size

Category	Class	Study Area	Project Area	Control Area	T-value  Obtained = 0.19 and Tabulated = 1.96 Test at 5% significant level.
		%(N=169)	%(n=87)	%(n=82)	
Small	< 5	53.85	56.32	51.22	
Medium	5 - 8	45.56	42.53	48.78	
Large	> 8	0.59	1.15		

N - Total Sample Size, n - subsample size  
Source: field Survey, 1994

Table A.2: Marital Status of the Family Members Between the Age Group of 10 - 30

Age group & marital status	Project Area (n=223)		Control Area (n=194)	
	Men% (f=124)	Women (f=99)	Men (f=100)	Women (f=94)
10-17 years Married			7.00	12.76
10-17 years Unmarried	41.13	42.42	39.00	28.74
18-30 years Married	25.81	33.33	37.00	45.73
18-30 years Unmarried	33.06	24.25	17.00	12.77

n - population in the subsample, f - frequency of subsample  
Source: Field Survey, 1994

Table A.3: T-test Results Obtained From Various Categories of Marital Status

Age group & marital status	Men	Women
	T-value	T-value
10-17 years married		
10-17 years unmarried	0.97*	1.61*
18-30 years married	1.01*	1.56*
18-30 years unmarried	2.52#	1.52*

\* Test insignificant at 95 % confidence level, # Test significant at 95 % confidence level

Table A.4: Average Farm Income

Crops	Average Income		T-value
	Project Area	Control Area	
Paddy	1876.31	441.41	3.65#
Wheat	103.74	97.90	1.14*
Upland Paddy	123.20	177.90	-2.06#
Maize	590.60	392.05	1.37*
Orange	143.05	118.79	1.13*
Banana	849.23	425.41	3.86#
Milk	2720.00	1587.00	
Ghee	635.00	260.00	
Egg	226.00	101.00	

\* Test insignificant at 95 % confidence level,

# Test significant at 95 % confidence level

Source: Field Survey, 1994

Table A.5: Average Off-farm Income

Sources of Income	Area		T-value
	Project	Control	
Service: Men	4934	1751	3.00#
Business	1550	235	2.30#
Tailoring	362	522	-1.00*
Labor: Men	644	1348	-3.73#
: Women	333	648	-2.12#
Agro-labor	242	437	-1.75*
Remittance	742	2098	-1.92*

\* Test insignificant at 95 % confidence level,

# Test significant at 95 % confidence level

Source: Field Survey, 1994

Table A.6: T-test Results Obtained From Different Expenses on Non-food Items

Sources	T-value
Education	5.56#
Clothes	2.87#
Health	-2.08#
Social activities	0.78*
Shoes	5.37#

\* Test insignificant at 95 % confidence level

# Test significant at 95 % confidence level

Table A.7: Households Using BCG Among the Children

Category	Project Area		Control Area		Z-test
	HH	%(n=87)	HH	%(n=82)	
Users	75	86.2	47	57.3	Obtained Z-value =10.07 & Tabulated value = 1.96 Test at 5% significant level
Non-users	4	4.6	31	37.8	
NA	8	9.2	4	4.9	

HH - frequency of household, n - subsample size

NA - Number of houses without response.

Source: Field Survey, 1994

Table A.8: Households Using DPT Among the Children

Category	Project Area		Control Area		Z-test
	HH	%(n=87)	HH	%(n=82)	
Users	73	83.9	38	46.3	Obtained value = 5.33 Tabulated value = 1.96 Test at 5% significant level
Non-users	6	6.9	40	48.8	
NA	8	9.2	4	4.9	

HH - frequency of household, n - subsample size

NA - Number of houses without response.

Source: Field Survey, 1994

Table A.9: Households Using Polio Among the Children

Category	Project Area		Control Area		Z-test
	HH	%(n=87)	HH	%(n=82)	
Users	52	59.8	30	36.6	Obtained value= 3.03 Tabulated value = 1.96 Test at 5% significant level
Non-users	28	32.2	48	58.5	
NA	7	8.1	4	4.9	

HH - frequency of household, n - subsample size,

NA - Number of houses without response.

Source: Field Survey, 1994

Table A.10: Sources of MCH Services  
(Multiple Choice)

Sources	Project Area	Control Area
	%(n=87)	%(n=82)
NGO	56.3	0.0
Health post	28.7	43.9
Government Hospital	4.6	40.2
Non	10.3	15.8

n - subsample size  
Source: Field Survey, 1994

Table A.11: Use of Toilets by Ethnic Groups

Ethnic Groups	Project Area(n=87)		Control Area(n=82)	
	f	U(row %)	f	U(row %)
Brhamin	32	33.33	20	14.63
Chettri	16	17.24	6	2.44
Newars	6	6.90	14	8.54
GMD	8	9.20	20	13.41
DKS	25	21.84	22	2.44

f - Total fequency of respective caste, U - users  
NA - Frequency of the household without response.  
Source: Field Survey, 1994



Table A.12: Respondents Using Family Planning

Category	Project Area		Control Area		Chi-square value
	Men %(n=25)	Women %(n=62)	Men %(n=44)	Women %(n=38)	Obtained value = 7.191 DF = 1 Test at 5% significant level
Users	96.0	56.4	36.4	47.3	
Non-users	4.0	43.6	63.6	52.6	
Total	100.0	100.0	100.0	100.0	

n - population in the subsample

Source: Field Survey, 1994

Table A.13: T-test Results for Family Members Falling Sick and Their Hospital Visits

Categories	T-value
Nos. members falling sick	-7.39#
Nos. of hospital visits	-5.62#

# Test significant at 95 % confidence level

Table A.14: Family Member's Educational Attainment

Education Level	Weight	Project Area		Control Area	
		Men %(f=254)	Female %(f=223)	Men %(f=227)	Women %(f=213)
Illiterate	0	9.1(0)	17.5(0)	48.0(0)	71.4(0)
Literate*	1	38.6(38.6)	46.6(46.6)	19.4(19.4)	14.6(14.6)
1-5 class	1.2	21.3(25.5)	18.4(22.1)	16.3(19.6)	10.3(12.9)
6-10 class	1.5	13.4(20.1)	14.8(22.2)	9.7(14.5)	0.9(1.4)
SLC passed	1.5	12.9(19.5)	2.7(4.0)	4.9(7.3)	0.5(0.7)
Above SLC	1.5	4.8(7.1)		1.8(2.6)	1.9(2.8)
Total		100.0(110.8)	100.0(94.9)	100.0(63.4)	100.0(32.5)
Index		1.11	0.94	0.63	0.32
Weighted Index		1.03		0.48	

W - Weight, f - population in the subsample  
 Figures in parenthesis show the score of index.  
 The higher the index the better the educational attainment.  
 Source: Field Survey, 1994

Table A.15: T-test Results for Family Member's Educational Attainment

Education level	Men	Women
	T-value	T-value
Illiterate	-9.48#	-11.06#
Literate	5.45#	10.72#
1 - 5 class	0.84*	1.88*
6 - 10 class	1.39*	3.13#
SLC passed	2.97#	1.86*
Above SLC	1.86*	

\* Test insignificant at 95 % confidence level

# Test significant at 95 % confidence level

Table A.16: Distribution of Out of School Children (age 6 - 14)

Gender	Project Area		Control Area	
	HH	%(f=117)	HH	%(f=120)
Men	14	11.9	23	19.1
Women	23	19.6	43	35.8

HH - frequency of household, f - population in the subsample

Source: Field Survey, 1994

Table A.17: T-test Results for Out of School Children

Gender	T-value
Men	-1.93*
Women	-2.361#

\* Test insignificant at 95% & and # significant at 95% confidence level

Table A.18: Awareness of Legal Rights by Gender

Gender	Project Area(n=87)		Control Area(n=82)		Chi-square value
	HH	A(row %)	HH	A(row %)	
Men	25	72.0	44	34.0	Obtained value = 12.163 DF = 1 Tabulated value = 3.84 Test at 5% significant level
Women	62	54.8	38	21.0	

HH - frequency of households, n - subsample size, A - Aware  
Source: Field Survey, 1994

Table A.19: Ability to Communicate with Officials in Need

Gender	Project Area(n=87)		Control Area(n=82)		Chi-square test
	HH	A(row %)	HH	A(row %)	
Men	25	92.0	44	34.0	Obtained value = 19.062 DF = 1 Tabulated value = 3.84 Test at 5% significant level
Female	62	75.8	38	31.5	

HH - frequency of household, n - subsample size, A - Able  
Source: Field Survey, 1994

Table A.20: Average size of livestock herd

Species	Weight	Heads	Score
Cow	1.00	132.0	132.0
Buffalo	1.50	223.0	334.5
Oxen	1.00	190.0	190.0
Goat	0.40	301.0	120.4
Chicken	0.20	907.0	181.4
Total		1,753.0	958.3
ALU		5.67	
ASI		0.546	

Source: Field Survey, 1994

Table A.21: Adoption of Improved Seeds

Crops	Project Area		Control Area		Z-Value#
	HH	%(n=87)	HH	%(n=82)	
Paddy	23	26.4	3	3.6	4.07
Wheat	26	29.8	17	20.7	1.52
Maize	42	48.2	18	21.9	3.71

# - Test at 5% significant level, HH - frequency of households,  
n - subsample size  
Source: Field Survey, 1994

Table A.22: T-test Results for Various Training

Types of Training	Calculated Z-value	Tabulated Z-value	Significant Level
Cereal crops	5.54#	1.96	0.05
Vegetables	5.94#	1.96	0.05
Fruits	6.09#	1.96	0.05
Beekeeping	3.05#	1.96	0.05
Livestock	6.26#	1.96	0.05
Kitchen gardening	9.86#	1.96	0.05

\* Test insignificant at 95 % confidence level

Annex C  
CO-ORDINATION SCHEMA



Parameters	Complex Variables	Simple Variables	Value	Source
Demography	Caste/ Ethnicity	-Caste/ Ethnic -Groups	-Brahmin -Chettri -Newar -Gurung /Magar/Darai -Damai/Kami/Sarki	Question're
	Population	-Age -Sex -Household - Size -Marital Status	-Year -Male/Female -No.  -Married /Unmarried/Widow	Question're
	Education	-Formal	-Illiterate -Literate -1-5 class -6-10 class -SLC passed -Above SLC	Question're
		Non-formal	-Gender -Level -Time -Distance -Subjects	Question're
Occupation		-Major	-Agriculture -Service -Student -Teaching -Business -Tailoring -Labor -Military	Question're
		-Minor	-Agriculture -Business -Tailoring -Agrolabor -Wage Labor -Cottage Industrial activity -Others	Question're

**Landholding**

Land	Uses	-Total Land -Cultivated Land -Pasture -Orchard -Others	Area in Ropani do do do do	Question're
	Tenure	-Ownership -Leasehold -Tenancy	Area in Ropani do do	Question're
	Type	-Irrigated -Unirrigated	Area in Ropani do	Question're

**Income and Expenses**

Production	Crops	-Food Sufficiency	Yes/No	Question're
Income	Farm income	-Paddy -Maize -Wheat -Vegetables -Fruits -Livestock - Produce	Rs. do do do do do	Question're
	Off-farm Income	-Service -Busines -Teaching -Labor -Tailoring -Pension/ Remittance	Rs. do do do do do	Question're
Expenses	Food Items	-Paddy -Wheat -Maize -Meat	Rs. do do do	Question're
	Non-food Items	-Education -Clothes -Health -Social Activities -Footwear	Rs. do do do do	Question're

Health Care and Family Planning

Health Care	Immunisation	-BCG -DPT -Polio -Source	Yes/No do do Name	Question're
	MCH Services From	-Govt. Hospital -Health post -NGO Affiliated Clinics	Yes/No do do do	Question're
	Family Planning	-Permanent -Temporary	Yes/No do	Question're
		Sources: -Govt. Hospital -Health post -NGO Affiliated Clinics	Yes/No do do do	Question're
	ENT Service	-Aware -Use -Source	Yes/No do Name	Question're
		-Ability to deal	Name of sickness	Question're
	Drinking Water	-Tap water -Natural spring -Boiled -Filtered -Unprocessed	Yes/No do do do do	Question're
	Latrine	-Use	Yes/No	Question're

### Legal Awareness Aspect

Legal Matters		-Legal Rights -Source	-Yes/No -Name	Question're
		-ability to go to court	Yes/No	Question're
	Perception to law	-Favor to: male female	Yes/No do	Question're
	Reasons for not demanding equal rights	-Social disorder -Discipline Tradition	Yes/No do do	Question're

### Transfer of Technology

Transfer of Technology	Extension Service	-Source -Frequency	-Name -No.	Question're
Training	Type	-Cereal Crops -Vegetables -Kitchen Garden -Beekeeping -Fruits -Livestock	-Name Yes/No do do do do	Question're
	Perception Effectiveness	-Useful -Unused -Increased production -Improved skill -Improved knowledge -All	do do do do do do	

# Agriculture

Farm Crops	Paddy Maize Wheat Soyabean Blackgram Millet Mustard Guava Orange Banana Tomato Potato Onion Green Leafy Others	-Area -Variety -Quantity (Produced and Sold) -Sales -Inputs	-Ropani -Improve/local -kg.  -Rs. -Rs.	Question're
Cost of Production	Land Preparation	-Levelling -Ploughing -Harrowing	Mandays do do	Question're
	Seed	-Purchased -Own	Rs. Rs.	Question're
	Fertilizer	-Chemical -Organic -Others	Rs. Rs. Rs.	Question're
	Labors	-Household -Exchange -Hired	Nos. do do	Question're
livestock		-Name of species	Nos.	Question're
	Income from sale	-Milk -Ghee -Egg -Live animal	Rs. do do do	Question're

Beekeeping	Variety  Honey Production	-Number -Quantity (Produced and sold) -Income -Extension Service	-Improved/ Local -Quantity -Quantity  -Rs -Yes/No	Question're
Adoption of improved varieties	Paddy Wheat Maize Fruits Vegetables	Variety do do do do	Name do do do do	Question're



ANNEX D  
SURVEY QUESTIONNAIRE

# QUESTIONNAIRE

Interviewer: HH Number :  
Respondent : Date :  
VDC : Ward No :

## Information From The household Head

Q.1 Please state your caste:

- a. Brahmin d. Gurung/Magar/Darai
- b. Chettri e. Damai/Kami/Sarki
- c. Newar f. Others(specify)

Q.2 Please state who are the family members presently living in your household.  
READ OUT & RECORD THE ANSWERS AS APPROPRIATE

HH head & members Q.2	Sex Q.3	Age Q.4	Health Condition Q.5	Marital Status Q.6	Educational Level Q.7	Occupation Q.8 & Q.9	
						Major	Minor

Q.3 Please specify the sex of each HH member.

Q.4 How old each HH member is ?

Q.5 What is the health condition of each HH member?

- 1 - Healthy 2 - Unhealthy

Q.6 What is the marital status of each HH member?

- M - Married W - Widow S - Separated
- U - Unmarried D - Divorced O - Others

Q.7 What is the educational level of each HH member?

- 1 - Illiterate 2 - Literate 3 - Primary (1-5) class 5 - SLC
- 4 - Secondary(6-10) class
- 6 - Above SLC

Q.8 What is the major occupation of each HH member?

- 1 - Agriculture 2 - Service 3 - Wage/Agro-labour
- 4 - Student 5 - Teaching 5 - Business
- 6. Military 8 - Tailoring 9 - Others(specify)

Q.9 What are the minor occupations of each HH member?

- 1 - Agro/wage labour 2 - Teaching 3 - Business
- 4 - Tailoring 5 - Cottage industrial activity
- 6 - Others

Q.10 Please state the type of landownership you have?  
**READ OUT THE LIST & RECORD THE RESPONSE AS APPROPRIATE**  
**(MULTIPLE CHOICE)**

Land Under cultivation(Ropanis)	Lowland(khet)		Upland(Bari)	
	Irrigated	Unirrigated	Irrigated	Unirrigated
1. Owned: Low Land Up Land 2. Rented in Land 3. Rented out Land 4. Land in other use 5. Unused Fallow Land				

**FOOD SUFFICIENCY AND PROCUREMENT**

Q.11 Was your farm production sufficient to feed your household members?  
 Yes \\_\_\_\ No \\_\_\_\ Go to Q.15

Q.12 What food items did you buy last year?  
**READ OUT THE LIST AND RECORD RESPONSE AS APPROPRIATE**  
**(MULTIPLE CHOICE)**

Items Q.12	Tick off	Purchase Q.13		Amount expended Q.14
		Quantity	Unit	
1.Rice 2.Wheat 3.Maize 4.Pulse 5.Milk 6.Meat 7.Vegetables 8.Fruits 9.Other(Specify)				

Q.13 How much did you procure?  
 Q.14 How much did you spend for it?

Q.15 What produces did you buy last year?

READ OUT THE LIST AND RECORD RESPONSE AS APPROPRIATE (MULTIPLE CHOICE)

Items Q.15	Tick off	Purchase Q.16		Amount expended Q.17
		Quantity	Unit	
1.Rice 2.Wheat 3.Maize 4.Pulse 5.Milk 6.Meat 7.Vegetables 8.Fruits 9.Other(Specify)				

Q.16 How much did you sell?

Q.17 How much did you earn from each sell?

#### EXPENDITURE ON NON-FOOD ITEMS

Q.18 What non-food items did you buy last year?

READ OUT THE LIST AND RECORD THE RESPONSE AS APPROPRIATE (MULTIPLE CHOICE)

Items Q.18	Tick off	Quantity Q.19	Value(Rs) Q.20
1. Clothes 2. Education 3. Health 4. Social Activities 5. Travel 6. Recreation 7. Footwear 8. Labour hiring 9. Animal Hiring 10.Buy agricultural inputs 11.Others			

Q.19 How much quantity did you buy?

Q.20 How much cash (value) did you spend for buying each items?

Q.21 What are your other sources of income?  
 READ OUT THE ITEMS & RECORD AS APPROPRIATE  
 (MULTIPLE CHOICE)

Sources Q.21	Tick Off		Amount of Income(Annually) Q.22	
	Male	Female	Male	Female
1. Business 2. Services 3. Teaching 4. Labour 5. Agri-labour 6. Firewood sales 7. Remittances 8. Pension 9. Animal rented 10. Bamboo produces 11. Tailoring/Pottery 12. Others				

Q.22 How much amount you earn from each source?

Q.23 Had you been running any cottage industry during the last agricultural year?

Yes \\_\_\_\ Continue Q. 24 No \\_\_\_\ Go to Q.27

Q.24 What type of cottage industry had you been running?

READ OUT THE ITEMS & RECORD AS APPROPRIATE  
 (MULTIPLE CHOICE)

Items Q.24	Tick off		Amount from sales Q.25	
	Male	Female	Male	Female
1. Hosiery & wearing 2. Basket making 3. Furniture making 4. Metal Handicraft 5. Pottery 6. Paper making 7. Brick/tile making 8. Wine making 9. Shoe making 10. Others(specify)				

Q.25 How much cash did you earn from each sales?

Q.26 Who encouraged you to start such work?

READ OUT LIST & TICK OFF RESPONSE (MULTIPLE CHOICE)

NGO ☐ ☐  
 Government extension workers ☐ ☐  
 Others(Specify) ☐ ☐

#### HEALTH ISSUES

Q.27 Did any HH members fell sick last year?

Yes \\_\_\_\ Continue Q.28 No \\_\_\_\ Go to Q.32

Q.28 What is the number of such members?

Q.29 What was the illness for it?

- a. b.
- c. d.

Q.30 How many times did they visit hospital? \\_\\_\ \

Q.31 What was the reason for hospital visit?

Tick off (MULTIPLE CHOICE)

- a. For treatment of the disease \\_\\_\ \
- b. For preventive measure \\_\\_\ \

Q.32 Do you clean water before you drink?

Yes \\_\\_\ \ Continue Q.33 No. \\_\\_\ \ Go to Q.33 How do you clean it?

- a. Boiling
- b. Filtering

Q.34 What kinds of vaccination you have given to your children?

- a. b.
- c. d.

Q.35 What is the health condition of your children's health?

Health Condition

- a. Very Good
- b. Good
- c. Fair

Q.36 What is the source of such vaccination?

- a. The NGO associated clinics b. Health post
- c. Hospital d. Visiting health clinics

Q.37 How do you get MCH services?

Yes \\_\\_\ \ Continue Q.38 No. \\_\\_\ \ Go to Q.39

Q.38 What is the source of such services?

- a. The NGO associated clinics b. Health post
- c. Hospital d. Visiting health clinics

Q.39 Do you use family planning measures?

Yes \\_\\_\ \ Continue Q.40 No. \\_\\_\ \ Go to Q.43

Q.40 What is the type of family planning?

- a. Permanent b. Temporary

Q.41 What is the source of such services?

- a. The NGO associated clinics b. Health post
- c. Hospital d. Visiting health clinics

Q.42 What is your opinion about the family planning?

- a. Improves health b. Easy to work
- c. Improvement in child health d. all

Q.43 What are reasons for not using family planning measures?

Q.44 Do you know about the ENT clinics?

Yes \\_\\_\ \ Continue Q.45 No. \\_\\_\ \ Go to Q.46

Q.45 Do have made use of these clinics? a. Yes b. No

Q.46 Do you know how to prepare Jeevan Jal? a. Yes b. No

Q.47 Which of the illness you can handle?

- a. b.
- c. d.

Q.48 Do you use latrine? a. Yes b. No



## EDUCATION

Q.49 What type of educational facilities are available for you?  
RED OUT THE TYPES & RECORD THE RESPONSE AS APPROPRIATE

Type Q.49	Members Q.50		Time Q.51	Period Q.52	Distance Q.53	Subjects Q.54	Level Q.55
	Male	Female					
1.Non-formal 2.Adult							

Q.50 How many members of family have attended/attending this programme?

Q.51 What time do they have to attend the classes?

M - Morning

D - Day

E - Evening

N - Night

Q.52 How many hours do they have to study per day?

Q.53 How long they have to walk for study(in minutes)?

Q.54 What are the subjects taught in the NFE classes?

Q.55 Up to what level they provide education?

R - Can read

W - can write

B - Can both read and write

Q.56 Are the study materials provided by the programme?

READ OUT THE ITEMS &RECORD RESPONSE AS APPROPRIATE  
(MULTIPLE CHOICE)

Items Q.56	Tick off	Amount to pay Q.57
1.Book 2.Copy 3.Others(specify)		

Q.57 How much fee you have to pay for them? Rs.\_\_\_\_\_

Q.58 Are you satisfied with the program?

Yes \\_\\_\ \ Continue Q.59

No \\_\\_\ \ Go to Q.56

Q.59 What is your level of satisfaction?

H - Highly satisfied

S - Satisfied

I - Indifferent

u - Unsatisfied

Q.60 If unsatisfied what are the reasons for dissatisfaction?

1 -

2 -

3 -

Q.61 Can you apply the acquired knowledge of education in your daily life?

Yes \\_\\_\ \

No \\_\\_\ \ Continue Q.64

Q.62 What are the reasons that hinder the application of such knowledge of education?

- |     |     |
|-----|-----|
| 1 - | 4 - |
| 2 - | 5 - |
| 3 - | 6 - |

Q.63 Can you take care of your children's education? a. Yes b. No

#### LEGAL AWARENESS

Q.64 Do you know your legal rights?

Yes \\_\_\_\ Continue Q.65 No \\_\_\_\ Go to Q.66

Q.65 What is source of such knowledge?

- |                   |                          |
|-------------------|--------------------------|
| a. NGO activities | b. Government activities |
| c. Self/Friends   |                          |

Q.66 Are you able to go to court? a. Yes b. No

Q.67 Do you think that law has favoured male? a. Yes b. No

Q.68 Do you want equal rights? a. Yes b. No

Q.69 If not why?

- |    |    |
|----|----|
| a. | b. |
| c. | d. |

Q.70 Can you consult the concerned authorities when you face problems?

Yes \\_\_\_\ No \\_\_\_\

#### AGRICULTURAL INFORMATION

Q.71 What were the cereal crops that you grew last agricultural year?

READ OUT THE LISTED ITEMS & RECORD AS APPROPRIATE (MULTIPLE CHOICE)

Crops Q.71	Area Covered Q.72		Prod'n Qty. Q.73	Sold Qty. Q.74	Income From Sale Q.75	Cost of the Prod'n Q.76
	Local	Improve				
1.Paddy 2.Wheat 3.Upland 4.Paddy 5.Maize 6.Millet 7.Pea 8.Mustard						

Q.72 How much area was covered by the crops that you grew?

Q.73 How much quantity of each crop was produced?

Q.74 How much quantity did you sell?

Q.75 How much cash did you earn from each sales?

Q.76 What was the cost of each produce?

Q.77 What were the vegetables you grew last agricultural year?

READ OUT THE CROPS & RECORD THE RESPONSE AS APPROPRIATE  
(MULTIPLE CHOICE)

Crops Q.77	Production Q.78	Cost of Production(Rs) Q.79	Income from Sales Q.80
1. Potato 2. Onion 3. Radish 4. Brinjal 5. Chilli 6. Cauliflower 7. Cabbage 8. Soyabean 9. Green mustard 10. Lady's finger 11. Pumpkin 12. Cucumber 13. others			

Q.78 How much quantity of each crop did you produced?

A.79 How much did you invest for each enterprise?

Q.80 How much cash did you earn from vegetable sales?

Q.81 Which of the fruit crops that you grew last agricultural year?

READ OUT THE TABLE & RECORD THE RESPONSE AS APPROPRIATE  
(MULTIPLE CHOICE)

Fruits Q.81	Tick off	Produced Quantity Q.82	Cost of Produce Q.83	Amount from sales Q.84
1. Pineapple 2. Orange 3. Lemon 4. Peach 5. Mango 6. Guava 7. Jackfruit 8. Banana 9. Others				

Q.82 how much quantity did you produce?

Q.83 What is the cost of the produce?

Q.84 How much cash did you earn from each sales?

INFORMATION ABOUT LIVESTOCK

Q.85 Had you kept any livestock in the last agriculture year?

Yes \\_\_\_\ Continue Q. 86 No \\_\_\_\ Go to Q.90

Q.86 What breed of livestock did you have in the last year?

READ OUT THE LIST & RECORD THE RESPONSE AS APPROPRIATE (MULTIPLE CHOICE)

Livestock Species Q.86	Tick off	Number Q.87		Value of each species Q.88	Income from Sales Q.89
		Local	Improved		
1.Cow 2.Buffalo 3.Oxen 4.Goat 5.Chicken 6.Sheep 7.Pig 8.Others					

Q.87 Please state the number of each livestock?

Q.88 What is the value of each species?

Q.89 How much cash did you earn from the sales of these animals?

Q.90 What are the other agricultural incomes?

READ OUT THE ITEMS AND RECORD THE RESPONSE  
(MULTIPLE CHOICE)

Source Q.90	Tick off	Qt. Produced Q.91	Income Q.92
1.Fresh milk 2.Milk produce 3.Eggs 4.Honey 5.Others			

Q.91 How much of each item did you produce?

Q.92 How much cash did you earn from each sales?

BEE KEEPING

Q.93 Did you have beekeeping during last year?

Yes \\_\_\_\ Continue Q.94 No \\_\_\_\ Go to Q.102

Q.94 How many bee-hives did you have? \_\_\_No(s).

Q.95 How many hives were of traditional and how many of modern?

Traditional \_\_\_No(s) Modern \_\_\_No(s).

Q.96 How much honey & wax did you collect last agricultural year?

Honey \_\_\_kg Wax \_\_\_kg.

Q.97 How much cash did you earn by selling honey & wax?

Rs\_\_\_\_\_from Honey & Rs\_\_\_\_\_from Wax.

Q.98 How much money did you invest for it? Rs\_\_\_\_\_

Q.99 Please mention any four problems about bee-keeping.

- |     |     |
|-----|-----|
| 1 - | 2 - |
| 3 - | 4 - |

Q.100 Which agency helped you to start this?\_\_\_\_\_

Q.101 What kinds of service did you get?

- |             |                      |
|-------------|----------------------|
| a. Training | b. Extension Service |
| c. Beehives | d. Others            |

Q.102 From where did you acquire the following agriculture inputs?

READ OUT THE LIST AND TICK OFF THE RESPONSE

(MULTIPLE CHOICE)

Agriculture inputs	NGO	AIC	Village shops	Others (Specify)
1.Seed				
2.Fertilizer				
3.Pesticides				
4.Appliances				

Q.103 Is there any problem in the availability of improved inputs?

Yes\\_\_\_\ Continue Q.104      No \\_\_\_\ Go to Q.105

Q.104 Please state the problems .

- |     |     |
|-----|-----|
| 1 - | 4 - |
| 2 - | 5 - |
| 3 - | 6 - |

Q.105 Which of the combination of manure do you use?

- Chemicals
- Animal Dung
- Chemical+Animal dung
- Dhaincha+Chemical+Animal dung
- Animal dung+Dhaincha

#### TRANSFER OF TECHNOLOGY

Q.106 Is there extension services available for you?

Yes\\_\_\_\ Continue Q.107      No \\_\_\_\ Go to Q.110

Q.107 What is the source of these services?

Tick Off AS APPROPRIATE (MULTIPLE CHOICE)

- |                                     |                          |
|-------------------------------------|--------------------------|
| a. The NGO extension workers        | <input type="checkbox"/> |
| b. The Government extension workers | <input type="checkbox"/> |
| c. Others                           | <input type="checkbox"/> |

Q.108 What is the frequency of such services?

Tick Off AS APPROPRIATE

(MULTIPLE CHOICE)

- a. fortnightly
- b. monthly
- c. bi-monthly
- d. not regular
- e. Never

☐

☐

☐

☐

☐

Q.109 Do you meet them when you need? a. Yes

b. No

Q.110 Have you received any training?

Yes ☐ \ Continue Q. 111

No ☐ \ Go to Q.117

Q.111 What are the enterprises for which you have received training and what were the methods used in training?

READ OUT THE LIST AND RECORD THE RESPONSE

(MULTIPLE CHOICE)

Enterprises Q.111	Tick off	Methods used Q.112					
		Home visit	Field visit	Printed material	Demonstr ation	Exhibit ion	Others
1.Cereal							
2.Crops							
3.Vegetables							
4.Fruit							
5.gardening							
6.Livestock							
7.Occupational work							
8.Others							

Q.112 How were the training provided?

Q.113 Who provided the training?

TICK OFF AS APPROPRIATE

(MULTIPLE CHOICE)

NGO

Government Extension Workers

Private sector

☐

☐

☐

Q.114 Were the training programs useful for you?

TICK OFF AS APPROPRIATE

(MULTIPLE CHOICE)

Useful and used

Useful but not used

Neither useful nor used

No response

☐

☐

☐

☐

Q.115 How was the training effective?

TICK OFF AS APPROPRIATE

(MULTIPLE CHOICE)

Has increased production

Has increased skill

Has increased knowledge

Is appropriate to the need

☐

☐

☐

☐



Q.116 In which enterprise you require more training and of what duration?

TICK OFF AS APPROPRIATE (MULTIPLE CHOICE)

Enterprise	Week long	Month long
1.Cereal crop		
2.Vegetable farming		
3.Livestock farming		
4.Others (Specify)		

Q.117 Did you apply improved farm practices during last agricultural year?

Yes\\_\_\_\ Continue Q.118 No\\_\_\_\

Q.118 What are the enterprises and agricultural activities you are aware of about its improved practices?

READ OUT THE LIST AND RECORD THE RESPONSE  
(MULTIPLE CHOICE)

Improved practices Q.118	Tick off	Awareness Q.119	Adopted Q.120	Not adopted Q.121
1. Paddy				
2. Maize				
3. Wheat				
4. Mustard				
5. Potato				
6. Vegetables (specify)				
7. Fertilizer				
8. Pesticides				
9. Weedcides				
10.Others				

Q.119 What are the improved practices that you are aware of?

Q.120 Have you adopted these practices which you are aware of?

Yes\\_\_\_\ Continue Q.121 No\\_\_\_\

Q.121 Which were the crops you did not adopt in spite of awareness?

Q.122 What are the reasons for adoption?

READ OUT THE REASONS & RECORD THE RESPONSE  
(MULTIPLE CHOICE)

Reasons Q.122	Tick off
1.More Yield 2.Good taste 3.Better market 4.Less investment 5.Timely harvest 6.Others(specify)	

Q.123 What are the reasons for non-adoption?

READ OUT THE REASONS & RECORD THE RESPONSE  
(MULTIPLE CHOICE)

Reasons Q.123	TICK off
1.Less yield 2.No market 3.High investment 4.Late harvest 5.Others (specify)	

ANNEX E  
FORMULA FOR INDEX

1 Formulation of index for educational attainment

$$IEA = \frac{\sum_{i=1}^{n-6} \sum_{i=1}^n WSI + \sum_{i=1}^n WSL + \sum_{i=1}^n WSP + \sum_{i=1}^n WSH + \sum_{i=1}^n WSS + \sum_{i=1}^n WSA}{PS}$$

Where,

IEA = Index of family members Educational Attainment

WSI = Weighted Score for Illiterate members

WSL = Weighted Score for Literate members

WSP = Weighted Score for members having Primary education

WSH = Weighted Score for members having High school education

WSS = Weighted Score for members who have passed SLC

WSA = Weighted Score for members who have education Above SLC

PS = Perfect Score

2 Formulation of index for child health

$$ICH = \frac{\sum_{i=1}^{n-4} \sum_{i=1}^n WSVGH + \sum_{i=1}^n WSGH + \sum_{i=1}^n WSFH + \sum_{i=1}^n WSNA}{PS}$$

Where,

ICH = Index for Child Health

WSVGH = Weighted Score for Very Good Health

WSGH = Weighted Score for Good Health

WSFH = Weighted Score for Fair Health

WSNA = Weighted Score for non Applicable

PS = Perfect Score

### 3 Formulation of index for type of family planning measures used

$$ITF = \frac{\sum_{i=1}^{n-3} \sum_{i=1}^n WSTM + \sum_{i=1}^n WSPM + \sum_{i=1}^n WSNA}{PS}$$

Where,

ITF = Index for Type of Family planning measures used

WSTM = Weighted Score for Temporary Measures

WPM = Weighted Score for Permanent Measures

WPM = Weighted Score for non application

### 4 Formulation of index for frequency of extension service

$$IFES = \frac{\sum_{i=1}^{n-6} \sum_{i=1}^n WSFES + \sum_{i=1}^n WSMES + \sum_{i=1}^n WSBES + \sum_{i=1}^n WSNR + \sum_{i=1}^n WSN + \sum_{i=1}^n W}{PS}$$

Where,

IFES = Index of Frequency of Extension Service

WSFES = Weighted Score of Fortnightly Extension Service

WSMES = Weighted Score of Monthly Extension Service

WSBES = Weighted Score of Bi-monthly Extension Service

WSNR = Weighted Score of extension service but Not Regular

WSN = Weighted Score from the category which Never received extension service

W = Weighted Score from the category which did Not respond About the extension service

### 5 Formulation of index for choice of manure

$$ICM = \frac{\sum_{i=1}^{n-5} \sum_{i=1}^n WSC + \sum_{i=1}^n WSD + \sum_{i=1}^n WSCA + \sum_{i=1}^n WSDCA + \sum_{i=1}^n WSAD}{100}$$

Where,

ICM = Index for Choice of Manure

WSC = Weighted Score for respondents Choosing only chemical fertilizer

WSD = Weighted Score for respondents choosing only animal Dung

WSSCA = Weighted Score for respondents choosing only Chemical fertilizer and Animal dung

WSDCA = Weighted Score for respondents choosing only Dhaincha, chemical fertilizer and Animal dung

WSAD = Weighted Score for responses choosing only Animal Dung and dhaincha

6 Formulation of index for respondents perception toward training

$$IRPT = \frac{\sum_{i=1}^{n-3} \sum_{i=1}^n WSUU + \sum_{i=1}^n WSUU_n + \sum_{i=1}^n WSNA}{PS}$$

Where,

IRPT = Index for Respondents Perception Toward training

WSUU = Weighted Score for responses reporting training as Useful and Used

WSUU<sub>n</sub> = Weighted Score for responses reporting training as Useful but not Used

WSNA = Weighted Score for respondents whom training is Not Applicable

7 Formulation of index for measuring effectiveness of training

$$IET = \frac{\sum_{i=1}^{n-6} \sum_{i=1}^n WSIP + \sum_{i=1}^n WSIS + \sum_{i=1}^n WSIK + \sum_{i=1}^n WSA + \sum_{i=1}^n WSISK + \sum_{i=1}^n WSNA}{PS}$$

Where,

IET = Index for Effectiveness of Training

WSIP = Weighted Score for Improved Production

WSIS = Weighted Score for Increased Skill

WSIK = Weighted Score for Increased Knowledge

WSA = Weighted Score for All

WSISK = Weighted Score for Increased Skill and Knowledge

WSNA = Weighted Score for Not Applicable responses

8. Formulation of index for measuring effectiveness of training

$$IDSAH = \frac{\sum_{i=1}^{n-4} \sum_{i=1}^n WSN + \sum_{i=1}^n WSLtt + \sum_{i=1}^n WSuf + \sum_{i=1}^n WSMfr}{PS}$$

Where,

IDSAH = Index of Distribution of Students Among Households

WSN = Weighted score for households without Students

WSLtt = Weighted score for households with Students Less Than Three

WSuf = Weighted score for households with students Up to Four in number

WSMf = Weighted score for households with students More than Four in number



**ANNEX F**  
**PHOTOGRAPHIC ESSAY**



Way to Study Area: A pedestrian's walkway or stream?



The Study Area, Where Life is Extremely Difficult



Alienated Settlements Where Poor live: Unaware of development taking place elsewhere



Draining Stream for Fishing:  
An evidence of lack of employment and alternative source of income



Participating People in a Health Training Program



Using Sustainable Latrine: An effort toward healthy environment





Encouraging Children to Attend School



Non-formal Education Classes: A strong media for empowering people



An Impressive Banana Orchard

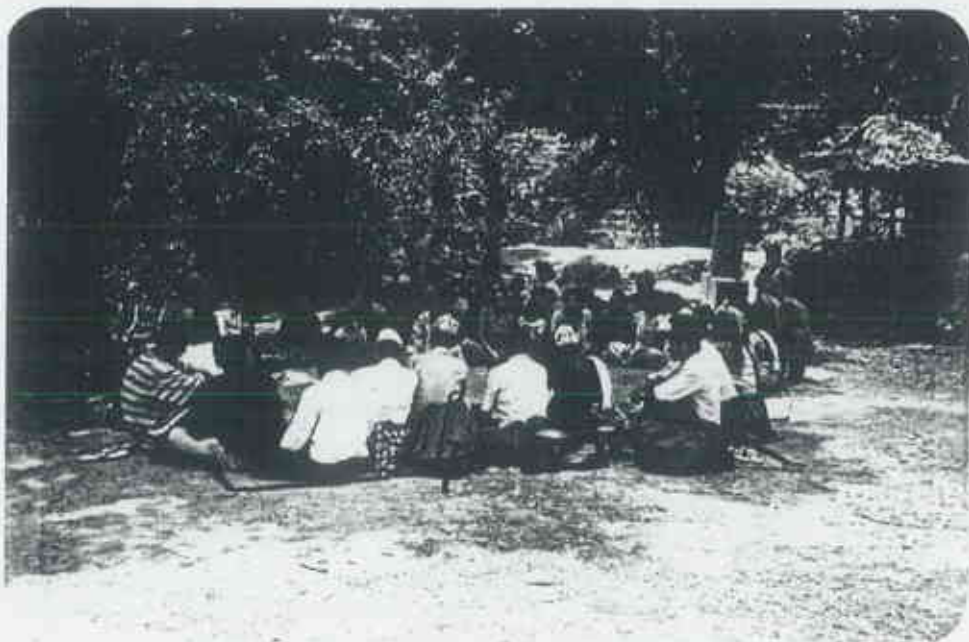


A Motivated Agricultural Extension Worker with a Farmer in an Orange Orchard





Cardamom Farming: A handsome source of income



An Example of Bottom-Bottom Approach: Local farmers sharing experience