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Report
on
Rapati Baseline Survey

MAIN TEXT

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FOREWORD

This report summarizes the findings of the Rapati Baseline Survey. The report covers four main areas namely the demographic, economic, social and environmental concerns. An attempt is made to highlight the existing conditions among rural households over these various concerns. The reportings of the existing situation of the households are conducted over the five administrative districts of the zone and household type which is based upon the total cultivated land owned by households. In few places the reporting is done over ethnic groups.

The first chapter of this report makes an endeavor to familiarize the users as well as the readers of the sample design, estimation technique and data editing. Furthermore the limitations of the study as well as the data set is also documented with a view to acquaint the readers.

A good deal of time, manpower as well as funds have been utilized to help publish the report and its appendix volume. In this connection APROSC expresses its sincere thanks to all those who have extended help to complete this work. The cooperation provided by the CDOs, the pradhan panchas and personnels of various institutions specially during the field survey has been highly appreciated.

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Dr. Ram Prakash Yadav
Executive Director

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Summary of Findings

The estimated population of Rapati is 850,819 distributed among 128,955 households. The average household size of Dang is 8.15 members and 6.01 members for the four hill districts. The sex ratio (male/female) is in the order of 1.02 for the zone. Over 60 percent of the households fall in either the sub-marginal/ landless or marginal farm category and about five percent are large farm households. Households distribution by income class intervals reveals that more than 85 percent of the households have incomes less than or equal to Rs.1,000 per annum and less than five percent have incomes more than Rs.2,000 per annum.

About 6.7 percent of the population were estimated to migrate seasonally. Of the total migrating members maximum reported seeking for jobs. The data also reveals that the migration flow was from north to south, with a large portion going to India. Figures on permanent migration also reveals that the movement was from north to south. Eight percent of the households reported to have immigrated to their present localities in the last 25 years, out of which about 87 percent moved from within the zone and 13 percent from outside. Out-migrating members were reported highest for Dang and lowest for Rukum.

The average number of children ever born to married women aged (15-49) years is about 3.57 for Rapati, out of which roughly 30 percent die. Infant mortality rate estimated for 2033-34 is about 173 per thousand births, while the national average is 152 per thousand births (Nepal Fertility Survey, 1976, Ministry of Health/HMG).

On categorising the total cultivated land according to irrigation status, 24 percent is found perennially irrigated, 37 percent monsoon irrigated and the rest is non-irrigated. Of the total perennially irrigated (24%), 17 percent accounts for khet and 7 percent for pakho land.

Dang accounts for about 66 percent of the total cultivated area and the remaining four hill districts 34 percent only. Cultivated land is seen extremly unevenly distributed, because sub-marginal household account for 24 percent of the total households but own only two percent of the cultivated area, whereas, 43 percent of the total cultivated area is owned by about five percent large farm households.

For Rapati as a whole, land owned per household is estimated to be about half a hectare and the highest is in Dang (1.429 hectare) and lowest is in Pyuthan (0.172 hectare). Land operated per household is marginally higher (0.642 hectare) in Rapati.

The yield rate of major crops, namely paddy, wheat and maize is observed higher in the hill districts than in Dang.

The cattle population is found highest among other livestock in Rapati. Dang accounts for nearly one third of total cattle population of the zone. The pig population is concentrated mainly in Dang.

Ghee production is the most common cottage industry activity which engages nearly 34 percent households mostly of ethnic group A (Brahmins, Chhetries etc.) followed by dry ginger production (26%), coarse cloth (11.8%), bamboo and cane products (10.1%) and intoxicants (4.7%).

The average cash income (Rs.1798) per household is about 57 percent of the adjusted income (Rs.3140) of Rapati. Households of Dang and Pyuthan districts have higher average income (both adjusted and cash income) than that of the other districts. Income levels are lowest in Rukum.

Both adjusted and cash income are found to be an increasing functio. of the land owned. Medium and large farm household's per capita income exceeds the zonal average, whereas, the other type of households are seen to have lower than the zonal average.

The average annual expenditure of households in Rapati is about Rs.1690, with Dang households spending on an average fifty percent more (Rs.2530) and Rukum households nearly fifty percent less (Rs.880).

Households in the zone reported taking loans more for social purposes (marriage, death etc.) than other purposes, in terms of amount (Rs.). But clearly, in terms of percentage of households borrowing, consumption loan was reported by about 12 percent of the households. For majority of the households, the source of loans was institutional rather than non-institutional.

The literacy rate in Rapati is estimated to be 22.1 percent, with Dang having a higher rate than the hill districts. The male literacy rate is found to be six times greater than the female literacy rate, and the source of literacy for more than two thirds of the literate population is reported as formal school.

The apparent enrollment ratio, without specifying the level of school is greater for males (48.7%) than females (9.9%). It is highest in Dang and among the large farm households. The

real enrollment ratio on the other hand are 11.9 percent (males) and 4.2 percent (females).

Over 23 percent of the population of six years and above of the zone have received formal education. About 14.3 percent of males and 2.3 percent of the females reported having completed class 4, 2.3 percent of the males and 0.1 percent of the females have completed the high school level. Literacy and both enrollment rates are positively correlated with larger farm households.

Family planning awareness is somewhat higher in the hill districts than in Dang.

The survey findings reveals that on an average 25.3 percent of all households in Rapati have participated in identified public projects. Only 24 percent of the households reported having participated in village assembly.

About 85 percent of the households were aware of improved seeds but only 18 percent had used them. Similarly 82 percent and 81 percent of the households were aware of chemical fertilizer and insecticides respectively but its use was confined to about only 9 and 8 percent of the households. Here too the correlation between large farm households and use of modern agri-inputs was apparent.

Informations collected on time spent collecting water, firewood, tree fodder etc. revealed that there was considerable variation among the district. Firewood collection time was highest in Dang, whereas for water, it was highest in Rukum. Water logging problem in fields was less of a problem in Rapati than either compared to landslides, floods and bank erosion and

terrace repair. Clearly the hill districts face a greater problem regarding landslides, and terrace repair than Dang. As much as 36 percent of the respondents mentioned that their land had been damaged by landslides or floods. The average land damaged by these calamities was reported highest in Dang than the hill districts, however.

More than 59 percent of the households reported that there was more landslides and floods now than five years ago. Concerning travel time collecting firewood and fodder, over 78 percent of household reported that it took more time now than five years ago. Households (46%) further reported that production (agricultural) had also decreased due to these environmental hazards. Clearly the environment, based upon these results, was deteriorating faster in the hills than in Dang.

About 44 percent of Rapati households indicated a desire to plant fodder and other trees in public land and about 43 percent had heard about the government's plan to develop panchayat forests, panchayat protected or contract forests, with Dang households indicating the greatest desire. In Dang about 50 percent of the households used cowdung as fuel, but in the hill districts this average was about five percent only.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The design, formulation and impact evaluation of projects in Nepal are all severely constrained by the lack of relevant data. Data pertaining to the household level is virtually nil. Most projects intending to benefit rural households therefore are faced initially with the task of generating their own primary data base before being able to proceed further with monitoring or impact evaluation.

An integrated rural development project is being launched in the Rapati Zone of the Far Western Development Region with the broad objective of raising the quality of life* of the population of that area.

Rapati Zone is comprised of the five administrative districts of Dang, Rolpa, Sallyan, Pyuthan and Rukum. The estimated population of the zone is roughly 0.85 million and the per capita income is well below the national average of Rs.1300. Agriculture is by far the predominant economic activity with livestock rearing and cottage industries as major supplementary activities. Seasonal migration has been increasing, originating from the north and moving towards the south. Environmental degradation is another serious problem in the region which households have been facing.**

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* The term quality of life has a very broad meaning and is used to mean any one of the following: well-being, welfare or state of development.

** For further details on the background of the project area refer to the "Integrated Rural Development Project - Rapati", APROSC 1980.

This baseline survey report is an attempt to provide a general profile of the inhabitants of the zone and major aspects of their way of life. The report attempts to identify major areas of concern and quantify variables that are both pertinent and measurable. Such variables will form one basis for monitoring the project over a considerable period of time and, hopefully, improve the value of project evaluation of the IRDP-Rapati.

This chapter provides a synopsis of the methodology used in the study subsequent to the completion of the field survey work.* An attempt is also made to identify and assess the limitations of the data set, estimation techniques, data analysis and the study itself. In the concluding portion of this chapter limitations of survey measurement are summarized and possible areas for resurvey or further study are recommended.

It will be noticed throughout this report that the data analysis is done as simply as possible. Since the primary aim of this study was to provide a basis for project monitoring, no attempt has been made to go beyond reporting simple arithmetic means. One advantage of a large sample, as in the present case, is that, the simple arithmetic means are in themselves meaningful guides. Moreover no attempt has been made to develop indicators for various social concerns. It is, however, not suggested that subsequent analysis should not be conducted with the existing data set. As a matter of fact, it is strongly recommended that many of the issues that have been highlighted in the various chapters that follow require further analysis, and research. Given the large sample size and range of data included in the survey, this report has necessarily been limited in both depth and scope.

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* For details on the survey design refer to "Survey Design and Field Implementation: Rapati Baseline", APROSC November 1979.

1.2 Objectives of the Baseline Study

Except for census and agricultural data at the macro level, socio-economic data on Rapati Zone is severely limited. Integrated rural development projects such as the Rapati project basically aim at improvements in all the major sectors of the economy with a view to bringing about balanced growth in income and employment opportunities. Given the diversified nature of the rural economy, with deteriorating agricultural productivity, high rates of out-migration, low levels of education opportunity, high rates of infant and child mortality, lack of productive employment opportunities, and acute problems of transport and communications, the idea of development based in projects in isolation must be questioned. Development projects responding to this set of needs, however, are by their nature complex. This complexity is compounded if the major instrumentalities chosen to carry out the projects are th separate governm nt agencies and departments. Such an approach can create a wide gap between the allocation and provision of resources and the intended results and beneficiaries. The effective monitoring of discrete program's operational efficacy will not assume that either singular or multiple results are being achieved in the life of the rural people.

Resources are scarce, however, and some criteria for initial and continual project implementation are necessary. What are the most urgent needs of the rural population, and who among the rural population are in most need of assistance ? Several years after the initial implementation of the project, we must also know if the quality of life of the rural poor has improved or changed ? Has there been any development and an

equitable sharing of benefits ? Economic history has revealed that although development is a continuous process, it has inherent problems which are extremely difficult to identify apriori.

Keeping these issues in view the baseline survey has been designed to fulfill the following objectives:

i) provide a quantitative basis for project development analysis and monitoring;

ii) assist in the delineation of the receivers and non-receivers of project benefits; and

iii) provide a basis for the quantitative evaluation of changes in selected indicators of project impact.

1.3 Scope of the Baseline Study

One of the most serious tasks faced by researchers dealing with integrated projects is the identification of the information needed. The scope of such projects is multi-dimensional in nature and a careful delineation of the scope of needed information is essential. The scope of the present baseline survey encompasses information on household demographic characteristics, agriculture, income and expenditure, education and awareness of limited improved agricultural practices and awareness of environment and physical resources. The selection of these tyres of data was based on priorities among project objectives and on the ability of survey research to accurately measure desired variables. Based upon the various classifications used (see the following section on method of analysis) the analysis of the baseline survey will cover the following main concerns namely:

i) Demographic Concerns: This part of the questionnaire presents information on the demographic characteristics of household. It covers age and sex distribution of household members, information relating to seasonal and permanent migration, and fertility and mortality.

ii) Economic Concerns: This section covers household ownership of land, by type of land and irrigation status, production and yield rates of various crops, livestock and horticultural practices, cottage industry, income, expenditure and credit.

iii) Social Concerns: Literacy status and educational attainment by sex of household members, awareness of improved agricultural practices, people's participation in development and felt needs of sample households are contained in this section.

iv) Resource and Environment Concerns: This part of the questionnaire presents informations on drinking water, fuelwood, fodder etc. availability and time required to collect these needs. Information is also presented in household awareness of the physical environment. For this purpose, such information as cutting of river banks due to floods, depletion of forest resources etc. are discussed.

1.4 Method of Analysis

In the preceeding section four major concerns have been identified which will form the basis of our report. Here we will briefly outline the method of analysis. The method of analysis is conducted on a comparative basis i.e. within

clustered social categories and by districts. In other words, our main effort will be to answer 'what is the situation?' for any given variable within the scope of the survey, by social categories, and administrative units.

In order to answer the question 'what is the situation', cross-tables are used to reveal the existing situation pertaining to different concerns. In examining welfare or quality of life issues, one cannot expect that each and every individual of the society in question will enjoy the same qualitative or quantitative levels. At the same time it is also not possible to identify the welfare of each and every individual within a society. Hence the question of the choice of social groups becomes relevant. Given the nature of the society in Rapati Zone a satisfactory division of the total population into meaningful social groups has to be made. In this process some groups which are negligible in size have been included in larger categories of groups.

We therefore consider a number of different identification units. Given the predominance of agriculture in the zone, the fundamental unit of identification of the social group (sampled households) is based upon land endowment or in other words, the land owned by a households. The intervals required for the classification of households into different types of household i.e. sub-marginal/landless, marginal, small, medium and large farm households shall be based upon similar intervals previously defined by the National Planning Commission.

The other unit of identification used is based upon the ethnicity of households, since, it is believed that ethnicity of households give rise to differences in values, attitudes, tastes,

social customs, and economic practices. This identification unit, however, is not used as widely as landholdings.

Besides these two identification units, a third category will be reported on a limited scale based upon income class intervals. The concept of per capita household adjusted income shall be made use of.

In some instances these identification unit are not considered over districts but over the entire zone. For instance, in analysing the fertility and mortality classification of the social groups by various units, the magnitude of the variables in each cell would become very low and the results obtained will often be misleading. In most cases the reporting will be done on the basis of districts and types of households.

1.5 Sample Design

The design of Rapati Baseline Survey was primarily intended to provide estimates of different characteristic (demographic, economic, social, etc.) of the household population of Rapati Zone.

In the past little attention has been given to obtaining a good sample and drawing sound conclusions from the results. This does not matter so long as the characteristic for which we are sampling is homogeneous, where any kind of sample gives almost the same results. But when the characteristic is far from homogeneous, as is often the case in the rural areas of Nepal, the method by which the sample is obtained becomes important. There are a variety of designs by which the sample may be selected depending upon the availability of prior information, the precision required, and time and funds available for the survey.

In this study, a three stage cluster sampling design was applied because this introduces a flexibility into the sampling procedures which is lacking in simpler methods. It enables existing divisions and sub-divisions of the total population to be taken as sampling units at different stages. The construction of third-stage frame (households selection) is necessary only at the selected second stage units (wards selection) and the construction of second stage frame is necessary only for the selected first stage units (panchayats selection). This means a great saving in operational costs and time. Thus, in sampling households from Rapati, it is an almost impossible task from the point of view of cost and time to take a simple random sample.

The sample of households was selected in three stages using equal probability. First panchayats within the five districts were selected randomly, then, with equal probabilities two out of the nine wards in each sample panchayat and third, randomly selecting a pre-specified number of households for interviewing from each sampled ward. The number of sample panchayats and number of sample households were set so as to yield a sample, which was allocated proportionately according to the number of households (1971 census) in each district of the Rapati Zone. The sample yielded a prespecified total number of interviews and in order to accomplish this, the probability of selection was allowed to vary.

However, if the size of clusters (wards) were known before the survey, the selection of clusters could be made with a probability proportional to size (PPS) and selection within clusters with probability inversely proportional to size. Size measures, in this case, would be the number of household in the

clusters (wards). In this way larger cluster would have a greater probability of selection, but once selected, the households within it would have a smaller probability of being selected. By balancing the probabilities of selections at the different stages, an equal probability sample of households can be maintained over the allocation of the sample and its total size. The use of PPS in situations where relatively good information on clusters is available can provide far more precise results, e.g. estimated with smaller sampling errors, and moreover the system is self-weighting.

The other important task on the sample design for the Rapati Baseline Survey was the determination of sample size and the combination of panchayats, wards and households to obtain a most suitable design. The determination of sample size is important because if the sample taken is too small the estimate may not be reliable and on the other hand if the sample taken is too large, resources (time, manpower and funds) are unnecessarily wasted. It was a difficult task because very little information was known about the characteristics of the households population of Rapati Zone. The characteristic used in this procedure was land owned by households as reported in the 1971 Agricultural Sample Census (ASC).

The synopsis of the procedure used is as follows:*

i) a sample size was calculated by using land owned by households as reported in the 1971 ASC and allowing for a error limit of ten percent, yielding a 90 percent confidence level;

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* Refer here to previous APROSC report for more details in design, sampling and survey implementation.

ii) the number of panchayats for each district was obtained and 20 percent of the panchayats were randomly selected as the first stage unit;

iii) two out of nine wards of each selected panchayat were randomly selected; and

iv) a prespecified number of households (20 in most cases) were randomly selected from each selected ward.

1.6 Estimation Technique

All of the statistics reported in the present report are estimates derived from survey sample data. In this section we report the estimation technique and its possible limitations.

The estimation technique utilized is a standard techniquo and involves the following major inputs: a complete listing of all households in a ward is of utmost important. Prior to the field survey supervisors of field survey teams were trained to conduct this task, the details of which are documented in the report mentioned earlier.

First, the ward level multiplier (W) is obtained which is equal to the total number of households in the ward divided by the number of sampled households. The factor (W) thus obtained, multiplied by the value (X) of a variable obtained from the sample, gives the ward level estimate i.e. (WX).

Second, the panchayat level multiplier is equal to the number of wards in a panchayat divided by the sampled wards, which is two in all cases. Since there are nine wards in a panchayat, the panchayat level multiplier is always 4.5. The panchayat level estimate is then obtained by multiplying the ward level estimate by 4.5 i.e. 4.5 (WX).

Finally, the district level multiplier (D) is obtained similarly by calculating the ratio of the total number of panchayats in a district to total selected panchayats. This factor, for all districts, is in the neighborhood of 5. The district level estimate is then derived by multiplying the panchayat level estimate i.e. ((4.5) D.W.X.).

One possible limitation of this estimation procedure lies in the accuracy of the information collected by supervisors on the total number of households in a ward. If the number of households has been underreported, the consequence is that the district level estimates will also be under-reported and vice-versa if households are over-reported in a ward. The later, however, is less likely than the former, specially in the hilly regions of the survey area, which are characterized by a scattered distribution of household dwellings. Since it was not possible to go from one household to another in order to count how many households there were in a ward, the available voters list were updated in the presence of a group of villagers and in most cases in the presence of the Pradhan and/or Upa-Pradhan Pancha. The panchayats, wards and households selected in each district and the number of households in the selected ward are given in the Appendix to this chapter.

1.7 Data Editing

During the pre-survey training conducted in Kathmandu, another important task assigned to the supervisors was the field editing of the questionnaires. Though we believe that the supervidors did their task well, yet under remote conditions, and lack of bright lights (electricity), the editing conducted

at the field level required further editing. A second editing phase was conducted at APROSC itself. This part of the editing consisted essentially of rechecking codes and consistency in their use. A computer programmer from the National Computer Center (NCC) was deputed to APROSC to check such issues. The questionnaires were then sent to NCC for punching. Punching errors, and consistency checks were finally done and the cards were then put onto two tapes, one consisting of household information, the other panchayat level information.

The tapes were then taken to Calcutta for further analysis. Prior to running the tapes, a further editing was requested, and it was found that errors still existed. We report below the errors revealed at this stage and corrective actions taken.

1. Grain codes were missing and abnormal figures on grain and livestock prices on panchayat tapes were reported. The panchayat level questionnaires was sent from Kathmandu and grain codes and corresponding prices were recorded to correct the figures. No records were dropped.

2. Abnormal figures on converted land quantities were reported in the household data tape for a specific measurement code (Hal/Paate-Kodalo). Corrective actions were taken and no records were dropped.

3. Recordwise count within household and within ward of household data revealed invalid record types and extraneous records. There were 20 card types for each households. Ten households had to be dropped.

5. The data on other crops (minor crops) was found to be abnormal and programs analysing this data were not run on the tape.

6. Finally range checks were done on income, expenditure and land owned and operated by households. Variables that did not fall in the assigned range were not run on the tapes. For the hills, on land owned and operated a maximum of 5 hectares was allowed for each land type entry. For the terai, the maximum allowed was 15 hectares. On income and expenditure, the maximum allowed was Rs.99,999 for each entry. This range check was conducted in order to check if abnormal figures still existed during punching. Records were, however, not dropped out.

1.8 Limitations of the Study and Data Set

No study is free of limitations. A variety of constraints are always at work and all research work in this sense becomes a constrained optimization exercise. How do we satisfy the objectives to the best of our understanding and utilizing the resources available ? While every effort will generally be made to account for problems that are known to exist, it will not be an exaggeration to say that every field visit has its own package of surprises, - both practical and theoretical. Furthermore when research is conducted over a difficult heterogeneous geographical space, like the hilly areas of Nepal, the problems become ever more complex. Inspite of these limitations, our research endeavours must go on and it is only through these continuing efforts that we can hope to gradually improve the quality of our data and research work. In so far as the limitations of this study and data set are concerned, they are briefly discussed below.

a. Sampling Basis

For sampling purposes the land holdings of households as reported in the National Agricultural Sample Survey, 1971, has been used as the sampling characteristics. The survey was, however, launched in December 1978. During the seven years it is reasonable to assume that the ownership pattern of land holdings, especially in the hills, may have changed given the increasing population in the hills and the increasing rate of out-migration. This may distorts the required sample size. Since no alternative land holding figures existed, there was no choice but to use the 1971 figures.

b. Sensitive Information

There are some types of information, particularly those relating to deaths in the family, which households are unwilling to report or answer. Besides deaths, there may be others which vary from household to households. Specially in Rukum and Rolpa farmers were unwilling to respond to questions regarding the number of children who had died before the age of five. Given the cultural and religious background of the population under study, one survey of this type will not establish the validity of such sensitive information. Similarly the lack of a national level vital registration system compounds the problems of checking the valid range of the survey's estimates on sensitive information.

c. Communication Problems

The Rapati Zone constitutes many ethnic groups whose own language is not Nepali. The questionnaire was in Nepali and this undoubtedly caused communication problems, specially among

the Tharu community in Dang. Also in Rukum and Rolpa the local equivalent to various terms used in the questionnaire was quite different than what was used by the local people. Hence a great deal of flexibility was called for in the choice of words and expressions, possibly at the cost of scientific rigour and precision.

d. Uncooperative, Apathetic Respondents

The extent to which a survey can illicit reasonably accurate information depends both upon the design and management of the survey as well as the willingness of the respondent to participate in the survey. The latter aspect depends upon a whole host of factors, not least of which is the perceptions of the people regarding the objectives of the study. Under circumstances where research studies only build up expectations, with little future consequences, the willingness to impart actual facts may be less than if conditions were otherwise. It is difficult to say to what extent this survey suffers from this problem, but it cannot be ruled out totally in view of the little that has been caccomplished over the past decades of development promises to the people.

e. Non-Upgraded Land - Records

In most of the hill districts of Nepal cadastral surveys has not been conducted. Eons ago households owning land were issued certificates based upon a variety of classifications for tax purposes. Over this period there has been a considerable degree of change in ownership and households. New lands have also been brought under cultivation. Households, specially in the hills are not aware of the amount of land they hold in terms

of the various units that we have used to identifying land holdings. Undoubtedly rough conversions are possible, but these are themselves suspect, as the basis of the conversion factors are unclear.

f. Conceptual Superimposition

In most of the rural areas of Nepal, households essentially consume most of what they produce. Except for commodities such as clothes, salt, kerosene, sugar, etc. households are not extensively involved in market transactions that involve money, and whatever is harvested is brought home, gradually consumed and seldom measured. Thus prices, production and income figures are totally new concepts to the rural people and much of them are generally derived through extensive prompting on the part of the field enumerators.

g. Unexplored Interrelationships

While writing the report, many interrelationships are apparent among the variables, but have not been explored. To do so now would be to go beyond the objectives of the baseline study. Awealth of issues and problems have come up, yet quite often these are only highlighted. To look at these issues would be the subject matter for other studies. It is, however, felt that whatever little has been accomplished in the study, it will provide ample room to generate "issues", enabling us to help create a stronger data base for Rapati Zone and at the same time aid us further in our understanding of and efforts to provide effective assistance to the rural poor.

1.9 Conclusions

This chapter has highlighted the design of the baseline survey study subsequent to the field implementation. It has elaborated upon various phases incorporating collation, analyses and the presentation of the results. Some of the limitations of the information have also been reported. All of this has been recorded to familiarize as well as caution readers and others interested in carrying out further research with this data set. It also serves to highlight some of the general problems involved in conducting field surveys in the Nepalese context.

There are problems regarding the measurement of variables, besides those that have already been mentioned. The baseline survey attempted to gather information on the daily consumption of water, fuelwood, and foddor. Households seldom measure the consumption of these goods. Besides, there are problems in using imputed values due to considerable variations in the volumes of vessels and baskets (like gagree and doko) and the amounts that can be carried by individuals. Absence of uniformity creates problems in deriving standard conversion factors in a survey of this nature For these reasons, little reporting on production, and related activities exists.

Income and price data are also problemmatical. Other studies have reported that incomes are generally under-estimated. Income figures given here may also deviate from the actuals for similar reasons. Moreover, the prices used here for converting physical production to value terms are based upon the panchayat prices of various crops. No account has been taken of these price variations among panchayats making it difficult to arrive

at inter-panchayat (and hence district) differences in the levels of relative incomes (adjusted income) of households.

Estimates of time by rural households does not generally correspond to hours and minutes. They evaluate time in blocks and the units vary widely. For instance, it is common to use time blocks like before lunch, after lunch and evening. Porters talk about porter-days. Others talk about "kosh" which is a highly elastic measure of length, ranging from time taken by a hankerchief to dry (on a wet day ?) or a pine torch to burn out ! Under such circumstances the concepts of hours and minutes are at least nebulous in rural areas at the present time. It is, therefore, impossible to judge whether their estimates are upward or downward biased.

Finally, in a cross-section survey like this one, information collected cannot be free from measurement errors on non-sampling errors. The former can be corrected after a period of time based upon regular and carefully conducted sample surveys in various territorial units, and among different population groups. Regarding the non-sampling errors, all that can be said at the moment, is that, it can be gradually reduced over time by providing more careful training of field enumerators and supervisors, and the adaptation of the survey-kit to suit the local environment in terms of language, terms, activities, etc.

APPENDIX - A

Selected Panchayats, Wards And Household

District: Dang

Total Panchayats: 42

Selected Panchayats: 9

Weight Factor to District Level: 42/9

Selected Panchayats	Selected Wards	Total Number of House-holds in the Ward	Total Selected Households
1. Luharpani	3	74	20
	1	92	20
2. Manpur	4	130	20
	6	105	20
3. Sonpur	9	65	20
	3	79	20
4. Dhanauri	3	154	20
	9	155	19
5. Gangadi	3	29	20
	2	31	20
6. Koilabas	9	78	19
	6	23	15
7. Matheria	5	66	19
	8	166	20
8. Ghorai	6	124	19
	7	72	20
9. Lithang*	1	12	2
	2	22	10
	3	13	2
	4	16	5
	5	19	8
	6	16	6
	7	22	6
	8	7	1

* Since the number of households in each ward was very low, the sample was spread over the entire panchayat, excluding ward number 9, which was not selected on account of field conditions.

District: Rolpa

Total Panchayats: 52

Selected Panchayats: 10

Weight Factor to District Level: 52/10

Selected Panchayats	Selected Wards	Total Number of Household in the Ward	Total Selected Households
1. Pakhapani	1	64	18
	3	76	18
2. Mirul	2	64	18
	5	40	17
3. Aruwa	1	84	18
	2	84	18
4. Rugha	8	41	18
	1	34	17
5. Thumikot	6	55	18
	2	36	18
6. Dansedhawang	8	41	18
	5	67	18
7. Harjang	1	41	18
	3	44	18
8. Sorma	1	35	18
	9	30	18
9. Jogithar	1	50	18
	2	55	18
10. Sewang	3	73	16
	1	96	16

District: Sallyan

Total Panchayats: 42

Selected Panchayats: 8

Weight Factor to District Level: 42/8

Selected Panchayats	Selected Wards	Total Number of Households in the Ward	Total Selected Households
1. Khalanga	9	109	19
	3	74	16
2. Ghajaripipal	7	84	20
	8	44	19
3. Syurath	4	60	20
	8	94	20
4. Badagaun	4	90	20
	5	76	20
5. Kajeri	6	62	19
	7	81	20
6. Darmakot	1	68	19
	4	47	20
7. Falwang (Chitedada)	7	58	20
	4	53	19
8. Laxmipur	1	85	20
	7	59	20

District: Pyuthan

Total Panchayats: 49

Selected Panchayats: 10

Weight Factor to District Level: 49/10

Selected Panchayats	Selected Wards	Total Number of Households in the Ward	Total Selected Households
1. Khalanga	6	94	16
	9	112	16
2. Upalcraspur	4	25	16
	1	33	16
3. Bejuli	5	38	16
	2	44	16
4. Chaurpani	2	41	16
	8	46	15
5. Tusara	4	72	16
	8	101	15
6. Lung	3	51	16
	7	51	16
7. Sayuliwang	6	44	16
	8	35	16
8. Argha	2	48	16
	1	117	16
9. Bagaymarot	2	81	16
	4	42	14
10. Markawang	1	25	16
	4	29	16

District: Rukum

Total Panchayats: 31

Selected Panchayats: 6

Weight Factor to District Level: 31/6

Selected Panchayats	Selected Wards	Total Number of Household in the Ward	Total Selected Households
1. Ranma	4	31	20
	5	29	21
2. Gotamsal	3	81	21
	5	55	21
3. Sayla Pakha	1	75	21
	4	105	20
4. Kotjahari (Jaharikot)	1	86	19
	5	69	23
5. Hukam	2	27	21
	5	26	21
6. Pokhara	4	98	21
	1	58	21

CHAPTER 2

DEMOGRAPHIC CONCERNS

2.1 Population and Household

This section of the report presents information as the population and household distribution of Rapati Zone. Repeated changes in the district, panchayat, and ward boundaries since the last census in 1971 not only made sampling difficult (see introduction) but also have constrained attempts to estimate population figures on the basis of census and sample - census data. All estimates are based upon the baseline survey unless otherwise mentioned.

a. Household and Family

Household is defined here as composed of a family and others (permanent servants or others in the household not related by blood) who live together and generally share a common kitchen. A single person is treated as a household provided he or she maintains a separate kitchen. During the survey any members reported to be away for more than a year were not included. Total members of the household is considered as household size. On the other hand, a family is defined as a group of persons all of whom are related by blood, marriage or adoption and who generally share a common kitchen. Total members of the family is considered as family size. Therefore the family size can be less than or equal to but not greater than the household size.

b. Type of Household

Based upon the total land owned by households, they have been classified into five different groups. This classification uses similar categories of land holdings as that done by the National Planning Commission. The following table highlights the classification. Landless households are not separately reported and fall under sub-marginal households. It should be noted here that only land owned and used for cultivation is considered. Homelots and the like are not considered in this classification scheme.

Table 2.1.1

Household Classification

Type of Household	Land Holdings (ha.)	
	Hills	Terai
Sub-marginal	Below 0.001	Below 0.1
Marginal	0.001-0.2036	0.1-1.02
Small	0.2036-0.5090	1.02-2.38
Medium	0.5090-1.0180	2.38-5.10
Large	Above 1.0180	Above 5.10

c. Ethnic Group

Households have been classified into various ethnic groups as follows:

Group A: Brahmins, Thakuri, Chhetri (including Matawali) and Sanyashi (including Giri, Puri, Bharati).

Group B: Tamang, Lama, Magar, Gurung, Limbu, Rai, Chantel and Gharti.

Group C: Newar, Thakali, Bhote and Tharu.

Group D: Sunar, Kami, Damai (Kushle), Sarki (Chamar), Pode, Badi, Gaine, Kasain, Kumale and Dhobi.

Group E: Others that do not fall in one of the above groups.

The classification of Group C may appear to be quite strange. For the purpose of this study, it so happens that where Newars are found Tharus, Thakali and Bhotes are not found in significant numbers. For example in Dang, Group C would include basically the Tharus as Newars and other groups are not found in significant numbers. Throughout the text, whenever reporting is done on ethnic groups, it will be referred as Group A, Group B etc.

d. Population and Household Distribution

The total estimated population of Rapati Zone is 850,819, distributed among 128,954 households, in early 1979 at the time the survey was conducted. The average household size is 6.59. Table 2.1.2 below reports the distribution of population and households by districts. Dang constitutes the highest percentage of population as well as households and Rukum the lowest. It is also noticed that Dang has the highest average household size of 8.15 and Rukum the lowest of 5.34.

Table 2.1.2

Population And Household Distribution In Rapati - Baseline Estimates

District	Total Pop.	% of Pop.	No. of Households	% of Households	Average Household-Size
Dang	260,589	30.63	31,940	24.76	8.15
Rolpa	174,582	20.52	27,835	21.58	6.27
Sallyan	172,013	20.22	27,157	21.05	6.33
Pyuthan	151,660	17.83	24,812	19.24	6.12
Rukum	91,975	10.81	17,210	13.34	5.34
Rapati	850,819	100.00	128,955	100.00	6.59

There are considerable discrepancies between this data and that obtained by adjusting other sources. The estimated population of the entire zone does not appear to be much different from

other sources. But considering the population distribution among districts, differences appear. In Table 2.1.3 below the different estimates are reported.

Table 2.1.3

Different Estimated 1979 Population Of Rapati And Its Distribution

District	Annual Growth Rate 1/	Baseline Estimate	Population Estimate-1 2/	Population Estimate-2 3/
Dang	3.75	260,589	218,166	214,191
Rolpa	2.12	174,582	190,623	187,891
Sallyan	2.15	172,013	165,823	163,423
Pyuthan	2.13	151,660	160,757	158,449
Rukum	2.19	91,975	113,105	111,457
Rapati	2.53	850,819	848,474	835,411

Source: 1971 Census Results and 1976 Sample Census Results, Central Bureau of Statistics.

1/ This was computed using the 1971 census results and the 1976 sample census results.

2/ The base population used is the 1971 census figures, projected with the growth rates in column 1 to arrive at 1979 estimates.

3/ The base population is the 1976 sample census results.

Table 2.1.3 reveals the differences that appear between the baseline estimates and other estimates. It is interesting to note that household size in all except Rukum district have gone down when the 1976 sample-census figures are compared with those of 1971 census. Table 2.1.4 below reports the average household size reported in the 1971 census, the 1976 sample-census and the baseline estimates. It is difficult to explain why census data indicates that household size has declined in Rapati over a period of about only 5 years, whereas, the baseline estimates show a larger household size for all districts. Given the large number of Tharu families, which are well known to have a large household size, one would expect a larger household size in Dang than that

reported by the census or the sample census. There is a substantial difference in total population figures for Rukum between the various estimates presented in Table 2.1.3 above, though household size (Table 2.1.4) in Rukum is not seen to be too much different in the three sources. Throughout this report, it should be kept in mind that zonal averages reflect too little weight-age on Rukum.

Table 2.1.4

Average Household Size From Different Sources In Rapati

District	1971 Census	1976 Sample Census	Baseline Estimates
Dang	6.47	5.62	8.15
Rolpa	5.46	5.44	6.27
Sallyan	5.67	4.34	6.33
Pyuthan	5.56	5.30	6.11
Rukum	5.07	5.21	5.34
Rapati	5.67	5.17	6.59

Source: Same as Table 2.1.3.

Note: Household size is calculated by dividing total population by the total number of households for 1971 and 1976 sources.

The survey data reveals that as much as 48 percent of the population of the zone are below 17 years of age. For the country as a whole, the median age is about 22 year according to the 1971 population census. Estimates of the baseline survey show approximately the same median age. The sex-ratio for Rapati is in the order of 1.02. In all districts the sex-ratio is above one, except for Sallyan where the ratio is 0.99 (Table 2.1.5).

Table 2.1.5

Percentage Distribution Of Household Members By Age, Sex And District

District/Age	Dang		Rolpa		Sallyan		Pyuthan		Rukum	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0-4 years	7.83	9.20	7.15	6.54	8.09	8.52	7.52	5.46	7.55	9.29
5-9 years	8.19	8.34	6.69	6.89	6.73	7.66	6.83	7.53	6.56	8.77
10-16 years	8.84	7.55	8.82	8.97	8.78	7.37	8.58	8.36	9.24	6.15
17-23 years	10.81	11.46	11.68	11.29	12.60	13.05	10.00	9.97	9.98	11.57
30-59 years	12.12	11.52	13.08	13.43	11.[illegible]	11.23	13.95	13.77	14.79	11.84
60 +	2.46	1.67	3.51	1.75	1.68	1.76	4.26	3.47	2.10	1.94
Total	50.25	49.75	50.93	49.07	49.86	50.14	51.18	48.82	50.47	49.52

Table 2.1.6 below reports the distribution of households by household size. 44 percent of all households in the zone fall in the 4-6 household member group and another 26 percent fall in the 7-9 group. In Dang about 5 percent of households are seen to have more than 21 members.

Table 2.1.6

Percentage Distribution Of Households By Household Size And Distric

District/Size Group	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
1-3 members	10.42	14.19	21.05	18.99	20.37	17.0
4-6 "	49.32	46.18	40.65	40.62	51.61	44.4
7-9 "	22.30	29.88	22.69	29.28	23.74	25.5
10-12 "	10.96	5.83	10.88	6.86	2.09	7.3
13-15 "	4.34	2.62	2.84	2.84	1.04	2.7
16-20 "	3.68	1.25	2.13	1.33	1.13	1.9
21 + "	5.02	-	-	-	-	1.0

As many as 40.99 percent of all households in Dang are reported to own less than 0.10 hectares of land. In other words 40.99 percent of households in Dang fall in the sub-marginal category, which includes landless households as well. This figure looks rather high, however, the following should be noted here. During the panchayat and ward selection for Dang, Koilabas Panchayat was randomly selected in the sample and two wards (numbers 6 and 7) were therein selected, also randomly. The survey reveals that all households interviewed reported having owned no land. Projecting these figures to the panchayat level, we get 4,304 households which has considerably raised the number of households in the sub-marginal group. Marginal households are seen to be the predominant category in three districts (Table 2.1.7). In Rukum, however, as high as 42.84 percent of all households fall in the small farm category. Large farm households in all districts constitute the lowest percentage.

Table 2.1.7

Percentage Distribution Of Households By Type Of Household And District

District/Type of Households	Dang		Rolpa		Sallyan		Pyuthan		Rukum	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sub-marginal	13093	40.99	3510	12.61	4334	16.00	7952	32.05	1737	10.09
Marginal	9594	30.04	13513	48.55	10812	39.82	9851	39.70	5279	30.67
Small	4505	14.14	7388	26.54	7683	28.13	5076	24.46	7327	42.84
Medium	2378	7.45	1944	6.98	2994	11.02	1400	5.64	2067	12.01
Large	2370	7.42	1460	5.25	1334	4.92	533	2.15	800	4.65
Total	31940	100.00	27835	100.00	27157	100.00	24812	100.00	17210	100.00

Households were further classified by ethnic group. Table 2.1.8 below reports the ethnic group distribution. Ethnic group A is seen to comprise the highest percentage in all the hill districts. In Dang, ethnic group C is seen to be the largest group (39.30%). In Rolpa and Pyuthan, ethnic group B is seen to be the second largest group, whereas in Sallyan and Rukum ethnic group D or the occupational caste group are second largest.

Table 2.1.8

Percentage Distribution Of Households By Ethnic Group And District

District/ Ethnic Groups	Dang		Rolpa		Sallyan		Pyuthan		Rukum	
	No.	%	No.	%	No.	%	No.	%	No.	%
Group A	10884	34.08	11852	42.58	16169	59.54	13547	54.60	8653	50.28
Group B	3421	10.71	9707	34.87	3329	12.26	5975	24.08	2779	16.15
Group C	12232	39.30	57	0.20	135	0.50	1352	5.45	70	0.41
Group D	3798	11.89	6064	21.79	7051	25.96	3740	15.07	5167	30.02
Group E	1606	5.03	155	0.56	472	1.74	199	0.80	541	3.14
Rapati	31941	100.00	27835	100.00	27157	100.00	24812	100.00	17210	100.00

Distribution of households by per capita income reveals a different picture of Rapati Zone. Let it be noted here that in computing the per capita income of households, the family rather than household size has been used as a basis. Moreover, the income is adjusted income, which includes the value of total agricultural produce of the household, in addition to cash income. Table 2.1.9 below reports on the distribution of households by per capita income for Rapati.

Table 2.1.9

Percentage Distribution Of Households By Per Capita Income And District

District/Income Class		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
0-500	(Rs./Yr.)	60.28	60.66	61.51	45.04	61.34	59.05
501-1000		19.25	20.00	24.52	34.69	32.46	26.18
1001-1500		10.69	3.60	5.63	11.38	3.65	6.99
1501-2000		3.94	4.95	1.10	4.25	1.27	3.10
2000-3000		2.03	3.80	0.80	2.86	-	1.89
3000 +		3.79	6.98	0.20	1.76	-	2.79

As much as 59 percent of all households in Rapati, according to the baseline estimates fall in the per capita income group of Rs.0-500 and about 3 percent in the highest range of Rs.3000 and over. The estimates further reveal that among the five districts Rolpa reports the second largest percentage of households in the per capita income group of Rs.0-500 and highest in the group of Rs.3000 and over, suggesting the widest income disparity among the five districts.

Examining per capita income according to land owned (type of household), it can be seen that there is a consistent correlation which confirms the sampling assumption that size of holding is directly related to income (Table 2.1.10). However,

the widespread distribution of per capita income by household throughout the income levels, and the relatively small differences between sub-marginal/landless, marginal and small farmers suggests that variation in per capita income - particularly among the 86.18 percent of the population in the bottom three categories (sub-marginal, marginal and small) is less dependent on land assets than is usually assumed. Marginal, sub-marginal and landless households apparently are likely to have per capita incomes the same as small farmers and one third of them do in fact have incomes which exceed one third of the medium and large farmers. As in examined in the later section on income, this is most probably indicative of the important role played by non-farm income in the zone.

Table 2.1.10

Percentage Distribution Of Household By Per Capita Income And Type Of Household

Type of Household/ Income Class (Rs.)	Sub-marginal	Marginal	Small	Medium	Large	Rapati
0-500	64.24	61.07	60.82	45.88	36.25	59.06
501-1000	25.85	23.01	25.18	29.73	33.07	26.18
1001-1500	4.03	6.80	7.46	12.43	16.33	6.99
1501-2000	2.71	3.69	1.90	4.99	4.58	3.10
2001-3000	2.41	1.89	2.18	1.39	2.19	1.90
3000 +	0.72	3.35	2.45	5.57	7.57	2.80
% of Households	22.82	37.63	25.73	8.61	5.02	100.00

2.2 Seasonal Migration

The baseline survey collected information on seasonal migration of households in the zone. In general, seasonal migration in Nepal has been thought to be increasing, especially migration originating from the hill regions of Nepal and moving towards the south. Declining agricultural productivity, rapidly increasing population and the unavailability of employment opportunities in many parts of Nepal have been reported as reasons forcing people to migrate, generally towards the south, to gainfully occupy themselves for a few months in order to supplement the family incomes. This section attempts to investigate some of these issues in relation to the Rapati Zone.

Seasonal migration is used here to refer to a period of at least one month absence of any household member. If a member was absent more than once for more than a month, only the longest period of absence during the last one year is recorded. Permanent migration refers to households that have migrated permanently into or away from the village surveyed.

According to the baseline estimates, 6.41 percent of the total population of Rapati reported seasonal migration within the last year (2034 Poush to 2035 Poush). Of the total (54,716) migrating members 72.0 percent (or 39,384) were males and 28.0 percent (15,332) were females. Table 2.2.1 below reports on the percentage of migrating household members by destination and sex for the five districts. The maximum percentage of migrants from all districts reported India as their destination (37%). Moreover as high as 37.0 percent of all migrants reported destinations not specified by the questionnaire. Apparently such members were not willing to disclose their destinations or did not understand

the categories provided. Also 3.6 percent reported to have gone to foreign countries other tha India. This is likely to be the males that have gone into British Army. We notice that except for Rolpa and Sallyan no females have reported "foreign countries" as their destination.

Marginal farm households report the highest seasonal migration (Table 2.2.2). Of the total reported seasonal migration 37 percent is accounted for by marginal farm households, followed by small farm household (28%), then the sub-marginal group (17%) and medium farm households (12%) and finally large farm households (6%).

Table 2.2.3 below reports on household member's purpose of seasonal migration. Twelve different purposes were identified and respondents were asked to mention the purpose of going and the period of absence. The period of absence reported is actually "average household months absent" i.e. the total number of months absent for all migrating household members.

Rolpa reports the highest (31.92%) migration. Note that this is reporting households only and not members. Sallyan is seen to have reported (20.32%), Dang (19.15%), Pyuthan (16.89%) and finally Rukum (11.71%). The row total reveals that of all seasonal migrating households, 29.90 percent reported looking for job of unknown description i.e. when leaving their homes they were not sure of what type of job they could get. For Rolpa, Sallyan and Rukum, the average household months absent (AHMA) for households that reported "unknown labor" is about 11.09 percent (Table 2.2.4) household months, which is fairly high. For Dang the AHMA is 10.17 percent and 635 households (11.24%) reported members having migrated looking for jobs of

unknown description. For Pyuthan AHMA is 15.38 percent and 370 households (7.48%) have reported. If we consider the following purposes jointly namely, agricultural tenant (own land), agricultural labor, porter, construction labor and labor of unknown job description, this accounts for as much as 62 percent of households reporting seasonal migration outside their localities to look for employment. This provides a rough indication of the gravity of the unemployment situation in the zone. We also notice that 5 percent of households reported married women having gone to their parent's home or maiti and the average household months absent is 7.34 months.

Judging the seasonal migration situation by the types of households, Table 2.2.5 reveals that marginal farm households constitute as much as 36.71 percent of all migrating households. This is followed by small farm households. Large farm households constitute only 5.74 percent of migrating households. Sub-marginal households account for 11.84 percent of migrating households Table 2.2.6 reports on average household months absent by type of household.

Ethnic group A accounts for as much as 55 percent of migrating households, followed ethnic group D and ethnic group B. The other two groups i.e. C and E account for only 3 percent (Table 2.2.7).

Table 2.2.1

Percentage Distribution Of Seasonally Migrating Household Member By Sex, Destination And District

Districts/ Destinations	Dang		Rolpa		Sallyan		Pyuthan		Rukum		Rapati	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1. District Centre	3.42	0.90	0.36	-	1.98	0.97	0.91	-	3.67	-	1.77	0.44
2. Kathmandu etc.	12.82	-	0.62	-	2.40	-	1.55	-	2.10	-	3.41	-
3. Project Hills	8.10	-	0.33	0.52	1.10	-	1.41	1.79	1.43	-	2.07	0.39
4. Project Terai	8.11	1.35	2.62	-	6.33	4.00	1.43	0.56	1.55	-	4.38	1.55
5. Non-Project Hill Area	-	-	-	0.41	2.51	-	-	2.82	1.60	-	0.94	0.49
6. Rural Terai	2.92	-	-	-	1.13	-	1.67	2.23	1.81	1.81	1.23	0.49
7. Urban Terai	3.44	1.75	3.49	-	4.39	0.53	5.86	0.72	8.24	-	4.58	0.54
8. India	23.23	0.76	50.00	4.45	16.57	1.28	54.44	-	36.89	2.92	34.59	2.13
9. Foreign	6.44	-	1.37	0.80	2.73	0.53	5.77	-	1.55	-	3.21	0.40
10. Others	12.80	15.15	15.45	19.58	21.27	32.28	8.57	10.27	14.41	22.02	15.80	21.59
Total reported	81.29	18.71	74.24	25.76	60.41	39.59	81.61	18.39	73.25	26.75	71.98	28.02

Table 2.2.2

Percentage Distribution Of Seasonally Migrating Household Member By Sex, Destination And Type Of Household

Type of Households/ Destinations	Sub-marginal		Marginal		Small		Medium		Large		Rapati	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1. District Centre	1.89	2.59	1.65	-	2.49	-	1.26	-	-	-	1.77	0.44
2. Kathmandu etc.	0.92	-	0.49	-	2.80	-	10.19	-	17.29	-	3.41	-
3. Project Hills	3.84	-	2.28	-	-	0.44	2.22	2.24	4.96	-	2.07	0.39
4. Project Terai	5.68	0.43	5.50	0.67	4.49	3.51	1.03	2.11	-	-	4.38	1.55
5. Non-Project Hill Area	-	-	0.46	0.33	2.76	1.33	-	-	-	-	0.94	0.49
6. Rural Terai	1.99	-	1.57	1.32	1.11	-	-	-	-	-	1.23	0.49
7. Urban Terai	5.07	2.59	3.37	-	3.42	-	-	-	24.02	1.51	4.58	0.54
8. India	24.01	1.84	36.99	2.54	41.12	2.78	26.47	-	35.51	1.60	34.59	2.13
9. Foreign	4.85	0.96	4.16	0.36	1.24	-	3.34	-	1.65	1.65	3.21	0.40
10. Others	22.20	21.14	17.02	21.29	10.93	21.58	17.93	33.21	8.94	2.87	15.80	21.59
Total reported	70.45	29.55	73.49	26.51	70.36	29.64	62.44	37.56	92.37	7.63	71.98	28.02

Table 2.2.3

Percentage Distribution Of Seasonally Migrating Households By Purpose Of Leaving And District

Districts/Purposes		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
1. Seeking civil service		11.20	-	3.48	8.79	6.57	5.11
2. Indian or British Army		4.78	6.05	-	26.44	3.24	7.69
3. Agricultural tenant		3.01	7.56	16.41	-	5.73	6.99
4. Agricultural labor		2.80	23.00	13.50	-	-	10.63
5. Porter		-	3.40	1.18	-	-	1.33
6. Maiti or Parent's Home		17.88	-	-	9.33	-	5.00
7. Construction labor		13.29	10.77	28.74	5.90	3.53	13.23
8. Labor of Unknown job description		11.24	47.49	20.24	7.48	61.57	29.90
9. Looking for Permanent Living		-	-	1.50	-	6.08	1.02
10. Household Goods purchase		-	1.17	1.50	-	13.28	2.23
11. Education		20.60	-	4.08	12.67	-	6.91
12. Others		15.20	0.56	9.37	29.39	-	9.96
Total		100.00	100.00	100.00	100.00	100.00	100.00
Total Migrating Household	No.	5651	2421	5998	4984	4984	29510
	%	17.69	33.85	22.09	20.08	28.96	22.88
Migrants as % of total migrants		19.15	31.92	20.32	16.89	11.71	100.00

Table 2.2.4

Average Household Months Absent Of Seasonally Migrating Households By Purpose Of Leaving And District

Districts/Purposes	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
1. Seeking civil service	6.17	-	11.97	6.06	13.77	8.09
2. Indian or British Army	13.64	19.80	-	13.92	5.17	14.93
3. Agricultural tenant	6.01	16.46	7.03	-	11.46	10.97
4. Agricultural labor	10.53	11.31	7.54	-	-	10.30
5. Porter	-	8.21	1.00	-	-	6.90
6. Maiti or Parent's home	2.92	-	-	17.69	-	7.34
7. Construction labor	5.04	11.50	4.26	12.28	4.48	6.91
8. Labor of Unknown job description	18.17	10.16	10.46	15.38	10.53	11.09
9. Looking for Permanent living	-	-	21.94	-	18.01	19.20
10. Household goods purchase	-	23.02	2.00	-	0.35	4.36
11. Education	6.51	-	13.12	13.16	-	9.36
12. Others	10.53	16.07	12.86	13.74	-	12.67

Table 2.2.5

Percentage Distribution Of Seasonally Migrating Households By Purpose Of Leaving And Type Of Household

Type of Households/ Purposes	Sub-Marginal	Marginal	Small	Medium	Large	Rapati
1. Seeking civil service	11.65	1.20	5.76	8.51	6.25	5.10
2. Indian or British Army	10.22	5.5	10.46	10.39	-	7.69
3. Agricultural tenant	-	8.52	10.14	-	6.59	6.99
4. Agricultural labor	23.93	18.11	3.52	-	-	10.03
5. Porter	-	0.77	3.22	-	-	1.33
6. Maiti or Parent's home	5.35	3.17	2.13	-	24.47	5.00
7. Construction labor	12.36	15.49	8.13	31.37	2.56	13.23
8. Labor of unknown job description	16.60	28.84	41.50	19.62	21.41	29.90
9. Looking for Permanent living	-	1.94	-	2.97	-	1.02
10. Household goods purchase	-	-	5.74	-	8.30	2.23
11. Education	8.96	3.28	2.15	2.67	42.09	6.91
12. Others	10.93	13.18	7.26	-	16.83	9.96
Total	100.00	100.00	100.00	100.00	100.00	100.00
Total Migrating Household No.	3494	10834	9572	3032	2578	29510
Total Migrating Household %	11.40	22.08	29.93	9.48	14.98	22.88
Migrants as % of total migrants	11.84	36.71	32.44	10.27	8.74	100.00

Table 2.2.6

Average Household Months Absent Of Seasonally Migrating Households By Purpose Of Leaving And Type Of Household

Type of Household/ Purposes	Sub-Marginal	Marginal	Small	Medium	Large	Rapati
1. Seeking civil service	4.57	4.98	10.56	8.14	19.47	8.09
2. Indian or British Army	17.09	13.66	16.90	13.44	-	14.93
3. Agricultural tenant	-	25 21	8.68	-	6.01	10.97
4. Agricultural labor	9.64	10.61	10.06	-	-	10.30
5. Porter	-	4.01	7.68	-	-	6.90
6. Maiti or Parent's home	6.53	14.08	-	8.73	-	7.34
7. Construction labor	4.09	11.24	7.26	8.26	17.07	6.91
8. Labor of unknown job description	11.42	12.64	9.96	11.40	5.04	11.09
9. Looking for permanent living	-	18.01	-	21.94	-	19.20
10. Household goods purchase	-	-	1.62	-	23.02	4.36
11. Education	10.56	7.63	8.03	18.08	9.06	9.36
12. Others	8.25	18.84	10.78	-	13.53	12.67

Table 2.2.7

Percentage Distribution Of Seasonally Migrating Households By Purpose Of Leaving And Ethnic Group

Ethnic Group/ Purposes	'Group A	'Group B	'Group C	'Group D	'Group E	'Rapati
1. Seeking civil service	8.56	1.58	-	-	9.55	5.10
2. Indian or British Army	10.16	8.17	18.68	1.16	-	7.69
3. Agricultural tenant	5.24	3.00	-	14.95	-	6.99
4. Agricultural labor	7.36	17.93	28.11	11.76	-	10.63
5. Porter	0.96	4.43	-	-	-	1.33
6. Maiti or Parent's home	9.10	7.57	18.33	3.08	3.65	5.00
7. Construction labor	8.63	21.54	-	18.92	7.02	13.23
8. Labor of unknown job description	26.33	29.24	34.88	37.35	47.47	29.90
9. Looking for permanent living	1.85	-	-	-	-	1.02
10. Household goods purchase	1.36	2.07	-	4.67	-	2.23
11. Education	12.06	1.58	-	-	-	6.91
12. Others	12.94	3.46	-	8.10	32.30	9.96
Total	100.00	100.00	100.00	100.00	100.00	100.00
Total migrating household No.	16218	5325	562	7049	356	29510
%	26.54	21.12	4.06	27.30	11.97	22.88
Migrants as % of total migrarts	54.96	18.04	1.90	23.89	1.21	100.00

2.3 Permanent Migration

The baseline study tried to identify the number of households that had migrated into their present village for each district as well as the number of family members who have permanently migrated to settle in other areas. As it is not possible to collect reliable information on household out-migration from survey of this type (that depends on family members remaining behind) and hence population change due to migration can not be measured from this study. However, the study gives some informations on the types of household that migrated permanently, their origins, and year they migrated.

a. In-Migration

Out of the total households (128,955) of Rapati Zone 8 percent (10,299) reported they had immigrated to their present localities in the last 25 years, 3.4 percent (4369) reported having immigrated more than 25 years ago. Here, immigration refers to the households immigrating from the places other than the villages they were living in at the time of survey. Of those immigrating households 86.7 percent reported having moved from within zone and only 13.3 percent from outside the zone or project area. The following table (2.3.1) shows the percentage distribution of immigrating households from different places by district.

Table 2.3.1

Percentage Distribution Of Immigrated Households By Former Place Of Residence And District

Place/ Districts	Hill Project Area	Hill Non-Project Area	Terai Project Area	Terai Non-Project Area	India	Other Places	Total immigrants	% of immigrants from Total HH
Dang	61.9	1.6	29.3	1.6	5.6	-	100.0	33.7
Rolpa	87.7	12.3	-	-	-	-	100.0	1.6
Sallyan	74.3	8.5	4.3	5.4	-	7.5	100.0	6.7
Pyuthan	58.7	26.2	-	-	9.1	6.0	100.0	4.6
Rukum	81.6	5.2	-	-	-	13.1	100.0	3.1
Rapati	64.7	4.8	22.0	1.8	4.8	1.9	100.0	11.4

The last column of the above table indicates that the percentage of immigrants is highest in Dang, that is 33.7 percent of the total existing households, whereas the lowest is in Rolpa (1.6%). The second highest percentage of immigrants is in Sallyan at 6.5 percent followed by Pyuthan (4.6%) and Rukum (3.1%) respectively.

Among the households of Dang which have migrated to the district, 61.9 percent reported having come from the hill districts of Rapati showing household movement from north to south while 29.3 percent were households from other villages within the district. Only 8.8 percent of the immigrating households reported that they had migrated from outside Rapati, of which two thirds were from India. It is found that all the household (5.6% : Table 2.3.1) who had immigrated into Dang from India fall in the sub-marginal/landless category. No households reported having immigrated from India in hill districts other than Pyuthan, where 9.1 percent reported to have come from India and another 26.2 percent immigrated from outside Rapati (i.e. hill non-project area).

On analysing the total immigrants according to their agricultural land holding size it is found that a large proportion (43.9%) fall in the landless category. The absolute number then decreases as the size of holdings increase with only 5.3 percent found in the large farm group (Table 2.3.2). However, when the percentage of migrant households is examined in light of the number of households in each category, it becomes apparent that although the sub-marginal/landless account for the largest number, large and medium farm households have more frequently migrated than marginal and small farm households.

Table 2.3.2

Percentage Distribution Of Immigrated Households By Type Of Households

Migrated Households/ Type of Households	Percentage Distribution of Migrated Households	Migrated HH as % of Total Households	Percentage Distribution of Type of HH
Sub-marginal/ landless	43.9	23.7	21.0
Marginal	26.4	38.0	7.9
Small	16.1	24.8	7.4
Medium	8.3	8.5	11.2
Large	5.3	5.0	11.9
Rapati	100.0	100.0	11.4

Table 2.3.3 presented below reflects that inmigration of larger land holding households from outside Rapati is nill and that it is the remaining groups of household that inmigrated from outside Rapati.

Table 2.3.3

Percentage Distribution Of Immigrated Households By Place Of Origin And Type Of Household

Type of Household/ Place of Origin	Sub-Marginal	Marginal	Small	Medium	Large	Rapati
Hill Project Area	55.5	69.2	68.6	88.2	68.9	64.7
Hill Non-Project Area	3.3	6.6	10.3	-	-	4.8
Terai Project Area	29.2	15.0	15.9	11.8	31.1	22.0
Terai Non-project Area	2.7	2.6	-	-	-	1.6
India	9.3	1.3	0.2	-	-	1.8
Others	-	5.3	3.0	-	-	1.9
Rapati	100.0	100.0	100.0	100.0	100.0	100.0

On looking at immigrants in each district as a percentage of total immigrant as shown in the last column of the table given below (Table 2.3.4) Dang has the highest percentage (81.6%) which is about four times greater than the total of all remaining four hill districts of the zone.

Table 2.3.4

Percentage Distribution Of Permanently Immigrated Households By Year Of Migration And District

Years/ Districts	0-1 Year	1-3 Years	3-5 Years	5-8 Years	8-25 Years	Total
Dang	5.1	13.0	1.9	20.1	59.8	100.0
Rolpa	-	-	-	-	100.0	100.0
Sallyan	11.2	-	-	16.9	71.9	100.0
Pyuthan	23.2	-	14.1	-	62.7	100.0
Rukum	100.0	-	-	-	-	100.0
Rapati	7.8	10.6	2.0	18.4	61.2	100.0

The percentage distribution of inmigrants of Rapati over the last 25 years shows that 7.8 percent inmigrated last year only. The percentage distribution of inmigrants of Dang over the last 25 years does not differ much. On the other hand,

in Rolpa no immigration was reported in the last 8 years and in Rukum, households reported immigration only in the last year. Such discrepancies in the percentage distribution of immigrants in hill districts over the last 25 years may be because there were few households in our sample that had actually inmigrated.

b. Out-Migration

According to the baseline estimate, 3.3 percent of the total households reported that at least one member had out-migrated permanently in the last 25 years, which comprises about 1.9 percent of the existing population of the zone. The distribution of households reporting members permanently migrating out over the last 25 years is given below (Table 2.3.5).

Table 2.3.5

Percentage Distribution Of Households Reporting At Least One Member Having Out-Migrated In The Last 25 Years

Years/ Districts	0-1 Years	1-3 Years	3-5 Years	5-8 Years	8-25 Years	Total	% of HH Reporting Out-Migrants (0-25) years
Dang	13.5	13.0	19.8	12.5	41.2	100.0	4.3
Rolpa	8.5	14.9	9.8	36.3	30.5	100.0	3.0
Sallyan	9.9	-	17.9	51.9	20.3	100.0	3.3
Pyuthan	31.3	6.0	-	-	62.7	100.0	3.5
Rukum	-	-	-	-	100.0	100.0	1.6
Rapati	14.5	8.3	12.1	22.2	42.9	100.0	3.3

It is clear from the last column of the table that the percentage of households reporting members out-migrating is highest in Dang and lowest in Rukum. However the differences are very small in comparison to the differences observed by districts in percentages of immigrants. Also the relative percentage of out-migration of the last year is high in most cases except in Rukum.

Further information was also collected from households concerning the number of members that had out-migrated permanently. Table 2.3.6 below reports on the distribution of members that had out-migrated permanently from their original homes.

Table 2.3.6

Percentage Distribution Of Permanently Out-Migrated Members In The Last 25-Years By Districts

Years/ Districts	0-1 Years	1-3 Years	3-5 Years	5-8 Years	8-25 Years	Total	% of Out-Migrated Members as % of T. Pop.
Dang	17.3	14.5	23.1	6.9	38.2	100.0	2.4
Rolpa	12.2	18.2	4.7	53.1	11.7	100.0	2.0
Sallyan	6.6	-	27.6	59.0	6.7	100.0	1.0
Pyuthan	29.9	10.0	-	-	60.1	100.0	2.0
Rukum	-	-	-	-	-	100.0	0.5
Rapati	16.3	11.6	14.7	24.1	33.3	100.0	1.9

The percentage of households reporting at least one member migrated (Table 2.3.7, Column 1) and the percentage of migrating members (Column 2), reveals that these percentages are ~~inversely~~ related to the size of holding, except for the sub-marginal households.

Table 2.3.7

Percentage Distribution Of Households Reporting Out-Migrating Members And Out-Migrated Household Member By Type Of Household

Out-Migration/ Type of Household	% of Household Reporting Member Out-Migrants	% of Out-Migrated Household Member	% of Household Reporting Member Out-Migrants from Corresponding Total HH	% of Out-Migrated Household Members from Corresponding Total population
Sub-marginal	21.9	18.6	3.1	1.5
Marginal	31.4	37.4	2.7	2.1
Small	30.6	25.4	4.1	1.9
Medium	10.5	13.9	4.2	2.6
Large	5.6	4.6	3.6	1.2
Rapati	100.0	100.0	3.3	1.9

2.4 Fertility

This section highlights some aspects of fertility in Rapti Zone. A separate section in the questionnaire was devoted to information concerning children ever born to married women, and children born in the last five years and those that had died, were still born, etc. It should be mentioned here that the problems eliciting a proper responses in this section were made known by supervisors immediately after their return from the field survey. Farmers in Rukum and Rolpa specially were frequently disturbed when asked to recall the number of children who had died before the age of five. Despite the bias introduced by respondent reactions such as this, it is hoped that the measures of fertility and mortality presented will provide some idea of fertility and mortality characteristics in Rapti Zone.

a. Fertility Measurement

Fertility is one of the basic components of population change and has always been a matter of serious concern. There are a number of different measures of fertility used for different purposes. Definitions for the different measures of fertility presented here are given below:

Crude birth rate (CBR): the ratio of the number of births during a specified year to the total population in mid-year multiplied by 1,000.

Child-women ratio (CWR): the ratio of the number of children aged (0-4) years to the total number of women aged (15-49) years multiplied by 1,000.

General fertility rate (GFR): the number of births that occur in a year per 1,000 women of child bearing age (15-49).

Age-specific fertility rate (ASFR): the number of births that occur in a year per 1,000 women in a particular age group. Age-specific birth rates for any year are obtained by dividing the number of births to mothers of each age in that year by the number of women of the same age in the total population at that date multiplied by 1,000.

Marital general fertility rate (MGFR): the number of births that occur in a year per 1,000 married women of particular age group. Marital age specific fertility rate for any age is obtained by dividing the number of births to mothers of each age in a particular year by the number of married women of this age in the population at that date multiplied by 1,000.

b. Fertility by Age

The number of births in any population is dependent on the age and sex distribution of the female population. Age specific measures are important because the rate of child bearing is not uniform throughout all ages. The reproductive age span of a women is considered generally to extend over a period of about 35 years, that is from age 15 to 49. The rate of child bearing is low at ages under 20. It rises to a peak at ages between 20-24 and 25-29, when almost all women are married and fecundity is at high levels. After age 30, the fecundity of women gradually declines and vanishes at about 50. The following table (2.4.1) presents the fertility rate and marital status of women of child bearing age of Rapti Zone.

Table 2.4.1

Age Specific Fertility Rate, Marital Age Specific Fertility Rate And Percentage Of Ever Married Women In Rapati Zone

Age Group	ASFR Per 1000 women	MSFR Per 1000 women	Percentage of Ever Married Women
15-19	136	274	49.5
20-24	200	221	90.6
25-29	202	210	96.0
30-34	101	103	98.1
35-39	112	114	98.0
40-44	105	105	100.0
45-49	162	162	99.4

The first column of Table 2.4.1 presents age specific fertility rates calculated for Kamali Zone from the information collected on children born in the survey year. The data indicates lower fertility in (15-19) age group and then it rises and reaches a peak at ages between (20-24) and then decreases at age group (30-34). Beyond age group (30-34) the fertility rates show a rather unrealistic trend, which cannot be explained at this juncture.

A similar trend is observed looking at marital age specific fertility rates in Column 2. This data shows the highest marital fertility rate in the (15-19) age group whereas the Nepal Fertility Survey (NFS) 1976 reported it as highest in (20-24) age group for hills and mountains and in the (25-29) age group for the terai.

The third column reveals the percentage of ever married women for different age groups of women in the child bearing period. Nearly 50 percent of women are found to have been married in the age group (15-19) and 90.6 percent in the (20-24) age group. Almost 98 percent of women are reported having been married by the time they reach the age group (30-34). Unfortunately age at marriage cannot be computed from the information collected. A comparison of this data with NFS 1976 data, however, implies that the mean age at marriage could be expected to be a little more than 15 years.

c. Fertility by Districts

Table 2.4.2

Various Fertility Measures In Rapati Zone By District

Districts	CBR	CWR	GFR	MGFR	TFR	MTFR
Dang	36.4	763	146	164	4920	4855
Rolpa	39.0	561	134	162	4390	4840
Sallyan	50.4	713	174	193	6975	7515
Pyuthan	57.3	574	125	155	4125	5115
Rukum	58.5	736	215	236	6580	9045
Rapati	42.3	673	153	176	5100	5950

Table 2.4.2 reveals the highest fertility level in Rukum followed by Sallyan. However, the CWR is found highest in Dang. Although fertility is interrelated with many factors and it is difficult to explain the inter-relations without more detailed studies, some information may be used to interpret the data. In the family planning awareness section of this report only 3.8 percent of households in Rukum reported having known someone in the village that had used family planning. The same figure is 47.7 percent in Pyuthan followed by 31.5 percent in Dang. This may partially explain the higher fertility reported in Rukum.

d. Fertility by Size of Holding

Table 2.4.3 shows the highest fertility rate among medium farm households. The different measures of fertility show different levels of association with other types of households. It can be noticed, however, that the magnitudes of fertility measures do not show much variation among the sub-marginal, marginal, small and large household types (Table 2.4.3).

Table 2.4.3

Various Fertility Measures In Rapati Zone By Type of Household

Type of Household	CBR	GFR	MGFR	TFR	MTFR
Sub-marginal	36.7	145	164	4920	5820
Marginal	41.9	150	176	4785	5850
Small	41.0	141	162	4875	5585
Medium	57.5	218	249	7380	8170
Large	45.3	147	168	4730	5420
Rapati	42.3	153	176	5100	5950

e. Fertility by Ethnic Groups

Various fertility measures by different ethnic groups are presented in Table 2.4.4 below.

Table 2.4.4

Various Fertility Measures In Rapati Zone By Ethnic Group

Ethnic Group	CBR	CWR	GFR	MGFR	TFR	MTFR
Group A	43.3	670	157	180	5300	6110
Group B	40.3	480	108	126	4450	5480
Group C	41.9	770	167	187	5585	6145
Group D	41.4	680	144	165	5160	6350
Group E	27.8	657	103	106	3130	3280
Rapati	42.3	646	153	176	5100	5950

This table shows the lowest fertility rate by all types of fertility measure except the CWR among ethnic group E. The CBR is found highest among ethnic group A but all the remaining measures are found highest among ethnic group C.

2.5 Mortality

Mortality, the second basic component of population change, is expressed by measuring crude death rates or infant death rates. In most studies it is found, however, that these rates are underreported and some adjustment has to be made. Therefore, it is felt that reporting mortality without making a more thorough study may not have much value. However, an attempt is made to estimate the mortality level from the information on children ever born and children still alive per thousand ever married women (12-49 years). Similarly, to estimate infant mortality, information on children born and died in the last five years is used. The infant mortality rate was initially calculated for five years prior to the survey, but the mortality rate prior to last three years is found to be very low. This may be due to a lack of memory by respondents or factors such as that mentioned earlier. Because of this, the infant mortality over the last three years is presented in this report.

a. Mortality Estimated from Children Born and Still Alive

Table 2.5.1 below compares the average number of children ever born and still alive to ever married women of (15-49) years. The table reveals that almost 30 percent of the children of Rapati ever born have since died.

The percentage of children that have died is found to be lowest in Pyuthan and to differ little among the remaining four districts.

Table 2.5.1

Average Number Of Children Ever Born And Still Alive For Ever Married Women Of (15-49) Years By District

Districts	Average Number of Children Ever Born	Still Alive	Percentage of Children died
Dang	3.70	2.58	30.49
Rolpa	3.41	2.34	31.22
Sallyan	3.71	2.59	30.18
Pyuthan	3.30	2.48	24.83
Rukum	3.58	2.45	31.58
Rapati	3.57	2.50	29.86

Table 2.5.2 below presents the average number of children ever born and still alive to ever married women of (15-49) years belonging to different household category by size of holding.

Table 2.5.2

Average Number Of Children Ever Born And Still Alive For Ever Married Women Of (15-49) Years By Type Of Household

Type of Household	Average Number of Children Ever Born	Still Alive	Percentage of Children died
Sub-marginal	3.96	2.79	29.61
Marginal	3.50	2.41	31.98
Small	3.47	2.37	31.72
Medium	3.24	2.41	25.83
Large	3.55	2.70	23.88

As can be seen from the above table the percentage of children who have died is highest (31.98%) among the marginal land holding group followed by small and sub-marginal. It is lowest for the largest holding group.

b. Infant Mortality Rate

The infant mortality rate for Rapati averaged over the last three years is estimated at 168 deaths per 1000 births. The infant mortality is found highest (172) in the last year (2033-34 B.S.) and lowest (162) in the first year (2031-32). The data reveals an increasing mortality rate over the last three years, which may be due to respondents memory failure, an unwillingness to report the death of their children or other factors.

The infant mortality rate of Rapati over the last three years by district, type of household and ethnic are presented below in Tables 2.5.3, 2.5.4 and 2.5.5 respectively:

Table 2.5.3

Infant Mortality Rates For Rapati Over The Last Three Years By Type Of Household

Year/Type of Household	2033-34	2032-33	2031-32	Average
Sub-marginal	316	200	242	249
Marginal	190	144	111	142
Small	45	198	141	131
Medium	185	146	170	169
Large	130	125	231	169
Rapati	173	170	162	168

Table 2.5.4

Infant Mortality Rates In Rapati Zone Over the Last Three Years By Ethnic Group

Year/Ethnic Group	2033-34	2032-33	2031-32	Average
Group A	232	161	153	177
Group B	65	163	218	137
Group C	198	229	166	189
Group D	152	177	142	154
Group E	-		157	105
Rapati	173	170	162	168

Table 2.5.5

Infant Mortality Rates In Rapati Zone Over Last Three Years By District

Year/District	2033-34	2032-33	2031-32	Average
Dang	399	208	154	213
Rolpa	49	130	170	112
Sallyan	307	227	244	256
Pyuthan	79	203	102	121
Rukum	1.1	67	100	97
Rapati	173	170	162	168

CHAPTER 3

ECONOMIC CONCERNS

3.1 Agriculture

a. Land Use and its Distribution

Land was pre-classified into five categories depending upon the degree of terracing and the availability of irrigation. The land categories are as follows: (a) irrigated throughout the year paddy land; (b) monsoon irrigated paddy land; (c) non-irrigated paddy land; (d) irrigated slope land; and (e) non-irrigated slope land. The sum of (a), (b) and (c) above provide an estimate of total khet land and the sum of (d) and (e) pakho land.

Table 3.1.1 below reports the area of each type of land for the five districts of the zone. Each type has been further classified into area actually owned and area operated. The table reveals that land under monsoon irrigation is most prevalent and accounts for about 37 percent of the total. It can be noticed that percentage of area owned is slightly less than the area operated. Non-irrigated pakho land (36%) accounts for almost the same amount of land as that under monsoon irrigation. As is brought out more clearly in the individual columns, where each type of land is reported by district, this large amount of pakho land reflects the hilly nature of most of the zone. One further notices that about 24 percent of the total area under cultivation is perennially irrigated out of which about 17 percent accounts for khet land (type 1) and another 7 percent pakho land (type 4). Type 3, i.e. non-irrigated paddy land accounts for only about 1.4 percent of the total area under cultivation.

The last two columns of Table 3.1.1 reveal other salient features of the zone's agriculture. While Dang accounts for about 25 percent of all households in the zone at the same time Dang

Table 3.1.1

Distribution Of Cultivated Land By Type Of Land And District

Land Type/ Districts		Perennially Irrigated paddy land	Monsoon Irrg. paddy land	Non-Irrigated paddy land	Irrigated Slope land	Non-irrigated Slope land	Total	in hectare Total Household (%)
Dang	Owned	6663 (56.82)[1]	22581 (86.25)	330 (34.41)	4874 (93.37)	11411 (43.40)	45659 (65.09)	24.76
	Operated	8035 (57.78)	22971 (86.60)	621 (49.68)	5751 (94.33)	14920 (49.81)	57297 (69.22)	
Rolpa	Owned	555 (4.73)	598 (3.85)	288 (30.03)	49 (0.94)	5577 (21.21)	7467 (10.64)	21.05
	Operated	563 (4.05)	1057 (3.35)	288 (23.04)	49 (0.80)	5578 (18.62)	7535 (9.10)	
Sallyan	Owned	3105 (26.48)	1514 (5.83)	322 (33.58)	88 (1.69)	2640 (10.04)	7669 (10.93)	21.05
	Operated	3726 (26.79)	1546 (4.90)	322 (25.76)	88 (1.44)	2723 (9.09)	8405 (10.15)	
Pyuthan	Owned	943 (8.04)	594 (2.29)	19 (1.98)	209 (4.00)	2463 (9.37)	4228 (6.03)	19.24
	Operated	1018 (7.32)	631 (2.00)	19 (1.52)	209 (3.43)	2491 (8.32)	4368 (5.28)	
Rukum	Owned	460 (3.92)	163 (1.78)	-	-	4200 (15.98)	5123 (7.30)	13.34
	Operated	565 (4.06)	365 (1.16)	-	-	4241 (14.16)	5171 (6.25)	
Rapati	Owned	11726 (16.72)[2]	25950 (36.99)	959 (1.37)	5220 (7.44)	26291 (37.48)	70146 (100)	99.97[3]
	Operated	13907 (16.80)[2]	31770 (38.14)	1250 (1.51)	6097 (7.37)	29953 (36.19)	82777 (100)	

1/ Figures in parentheses are percentage of column totals corresponding to each type of land.

2/ The figures in this row are percentage of total of the last but one column.

3/ Does not add to 100 percent due to rounding.

accounts for about 66 percent of total cultivated area. Rolpa and Sallyan account for about 43 percent of the total households, but have only about 22 percent of the total cultivated area. Pyuthan, on the other hand, with 19 percent of the households accounts for only about 5.5 percent of the total. 13.34 percent of the zone's households in Rukum share 6.5 percent of the total cultivated area.

Although land holdings statistics are very unreliable in cadastrally unsurveyed areas, these statistics reveal a very skewed land distribution in the zone. Within the hill districts alone, however land distribution is much more even. The four hill districts of Rapati accounts for about 75 percent of the total number of households but when it comes to total cultivated area, these four hill districts account for about only 33 percent. Some of this difference would be reduced if it is assumed that the hill districts (which lack cadastral surveys) are significantly more under-reported than Dang. An attempt is therefore made to estimate total cultivated area for each district, on the basis of cropped area as reported by households, which is reported in the appendix to this section.

Table 3.1.2 presents the land distribution by types of households. The last two rows of Table 3.1.2 are the same as that of the earlier table. Here the last two columns are of more interest because they reveal the striking disparity of land distribution in Rapati Zone.

Sub-marginal/landless farm households account for 24 percent of total households in the zone. These households own only about 2 percent of the total cultivated area. One notices that about 43 percent of total cultivated area is owned by large farm households while they account for only 5 percent of the

Table 3.1.2

Distribution Of Cultivated Land By Type Of Land And Household

Land Type	District	Perennially Irrigated Paddy Land	Monsoon Irrg. Paddy Land	Non-Irrigated Paddy Land	Irrigated Slope Land	Non-irrigated Slope Land	Total	Total Households (%)
Sub-marginal	Owned	470 (4.00)[1]	497 (11.92)	-	-	371 (1.4)	1338 (1.91)	23.76
	Operated	2771 (19.92)	6367 (20.17)	44 (33.52)	473 (7.76)	3675 (12.27)	13330 (16.10)	
Marginal	Owned	1927 (16.92)	2171 (8.37)	78 (8.14)	860 (16.48)	3574 (13.59)	8610 (12.27)	38.04
	Operated	2553 (18.36)	4721 (14.95)	147 (11.76)	1179 (19.34)	4563 (15.23)	13163 (15.90)	
Small	Owned	2383 (20.32)	3981 (15.34)	203 (21.19)	1785 (34.10)	7779 (29.59)	16131 (23.00)	24.83
	Operated	2629 (18.90)	4962 (15.12)	229 (18.32)	1870 (30.67)	8490 (28.34)	18180 (21.96)	
Medium	Owned	3687 (31.44)	3866 (14.80)	311 (32.46)	1923 (36.84)	4334 (16.48)	14121 (20.13)	8.36
	Operated	3420 (24.59)	3213 (10.18)	313 (25.04)	1923 (31.54)	4398 (14.68)	13267 (16.03)	
Large	Owned	3259 (27.29)	15435 (59.48)	366 (38.20)	652 (12.49)	10233 (38.92)	29945 (42.69)	5.04
	Operated	2534 (18.22)	12307 (38.98)	517 (41.36)	652 (10.69)	8827 (29.47)	24837 (30.00)	
Rapabi	Owned	11726 (16.72)[2]	26950 (36.99)	958 (1.37)	5220 (7.44)	26291 (37.48)	70145 (100)	100.03[3]
	Operated	13908 (16.80)[2]	31570 (38.14)	1250 (1.51)	6097 (7.37)	29953 (36.18)	82778 (100)	

1/ Figures in parentheses are percentage of column totals corresponding to each type of land.

2/ The figures in this row are percentage of total of the last but one column.

3/ Does not add to 100 percent due to rounding.

total number of households. Even though our classification of household is based upon actual cultivated land owned, the figures in Table 3.1.2 reveals that land, which is assumed to be the primary resource for livelihood in a rural agricultural community like that of Rapati, is extremely unevenly distributed.

Furthermore looking at the figures on land operated in Table 3.1.2 sub-marginal/landless households operate about 19 percent of the total cultivated area. This is leased-in usually from other households owning more land than they cultivate themselves. One further notices that, large farm households, though own about 43 percent of the total cultivated area, operate only about 26 percent of the total cultivated area. If we assume that the difference between land owned and land operated to indicate an optimum allocation of land among households, it is evident from the statistics presented in Table 3.1.2 that on the average small, medium, and large farm households have more land than the optimum requirement, whereas sub-marginal/landless and marginal farm households have less land than would be optimal. It appears that an optimum allocation of land is associated with small farm households where total land owned and operated are more or less equal. However, given the preliminary nature of the survey this conclusion requires further supporting research. At the same time it should be noted that while this argument does not answer whether the current allocation if optimized, would be sufficient to meet household food requirements. The argument here focuses only on the distribution of land as an asset.

b. Land Fragmentation and per Household Distribution

The number of parcels of land in a district provide an idea on the degree of land fragmentation. Table 3.1.3 below provides a proxy of land fragmentation in various districts of

Table 3.1.3

Land Fragmentation And Land Owned And Operated Per Household By District

Land/Districts	Parcels		Total Land Owned		Total Land Operated		Land Owned per Household	Land Operated per Household
	Number	%	Area	%	Area	%		
Dang	252170	42.21	45659	65.09	57297	69.22	1.429	1.794
Rolpa	115274	19.30	7467	10.64	7535	9.10	0.268	0.271
Sallyan	112027	18.75	7669	10.93	8405	10.15	0.282	0.309
Pyuthan	62453	10.45	4228	6.03	4368	5.28	0.172	0.178
Rukum	55501	9.29	5123	7.30	5171	6.25	0.300	0.301
Rapati	597425	100.00	70146	100.00	82777	100.00	0.544	0.642

Rapati. Note however that the number of parcels reported in the table accounts for both land owned and operated and hence it is very likely that double counting is possible. This double counting may not seriously distort our assumption in that the data presented will provide an idea of the degree of fragmentation on a comparative scale over the districts and households concerned. We proceed with this assumption however.

Given more land in Dang, and the nature of holdings which is already seen to be highly skewed one expects larger land fragmentation in Dang relative to other districts. This is supported by the data presented in Table 3.1.3 below. The data further reveals that the degree of fragmentation decreases as the total area cultivated decreases. In Rukum where land for cultivation is relatively less, the degree of fragmentation is also seen to be lower compared to other districts that have more cultivated area.

For Rapati as a whole, land owned per household is estimated to be about half a hectare (Table 3.1.3). The highest average holding is reported for Dang (1.429 hectares) and the lowest for Pyuthan (0.172 hectares). Land operated on the other hand is marginally higher (0.642 hectare) with Dang accounting again for the highest amount (1.794 hectares) and Pyuthan the lowest. It can be noticed that land owned per household and land operated per household in the four hill districts are more or less the same, once again revealing that land distribution (based on comparing owned vs. operated) in the four hill district is more or less optimum.

Table 3.1.4 below reports this information by type of household. It appears that land fragmentation among the second type of household is highest. Large farm households rank third

Table 3.1.4

Land Fragmentation And Land Owned And Operated Per Household By Type Of Household

Land/ Type of Households	Parcels Number	%	Total Land Owned Area	%	Total Land Operated Area	%	Land Owned per Household	Land Operated per household
Sub-marginal	64949	10.87	1388	1.91	13330	16.10	0.044	0.435
Marginal	163895	27.43	8610	12.27	13163	15.90	0.176	0.268
Small	155584	26.04	16131	23.00	18180	21.96	0.504	0.568
Medium	96632	16.17	14121	20.13	13267	16.03	1.503	1.230
Large	116364	19.48	29965	42.69	24837	30.00	4.609	3.823
Rapati	597424	100.00	70145	100.00	82778	100.00	0.544	0.642

in terms of land fragmentation. The degree of fragmentation is least among the first type of household, the sub-marginal group.

The last two columns of Table 3.1.4 show the comparison of per household land owned and operated for each type of household. If we take the ratio of land owned by large farm households and sub-marginal farm households, the ratio tells us how much more land large farm owns compared to sub-marginal households. This ratio works out to be roughly 105 and means that the average landholding of large farm households is about 105 times more than that of sub-marginal farm households. Similarly, the mean ratio of operated area is only about 8 and indicates that if households were to own land which they operate, the inequality in land distribution would be reduced significantly.

c. Crop Production and Yield Rates

Table 3.1.5 reports on the various crops grown and yield rates in the zone by districts. Considering the three major crops, namely paddy, wheat and maize, the table reveals that the yield rate of paddy and maize is higher in the hill districts than in Dang. The yield rate of wheat is seen to be highest in Rolpa. These yield rates are obtained by dividing total reported production of the crops by area under each crop. Production by improved or local varieties of seed was not reported.

A comparison of the yields rate estimates of the baseline (Table 3.1.5) and that reported in Table 3.1.6 and 3.1.7 based on Department of Agriculture estimates, clearly shows a considerable degree of discrepency. The yield rates estimated from the baseline survey appear to be particularly low for cash crops.

In surveys of this nature i.e. a cross section survey, where farmers have to recall information on area sown, total production, etc. it is difficult to obtain reliable estimates. This is further compounded by the fact that in rural areas, where production is essentially home consumed, production is not usually measured in standard units. These reasons may explain why the yields rates for various crops reported in Table 3.1.5 are surprisingly low.

It is recommended that to arrive at more reliable and consistent estimates, it is necessary that sample areas be chosen and intensive surveys be conducted. Such a survey would have to accurately measure areas sown and measure total production by sample cuttings carried out by surveyors present during the harvest season.

Table 3.1.5

Estimated Area, Production And Yield Rate Of Cereals And Cash Crops By District.

Land in ha.; Production in metric tons; Yield rate in kg/ha.

Types of Grain/ District	Paddy	Wheat	Maize	Millet	Barley	Buckwheat	Mustard	Pulses	Tobacco	Sugarcane	Potato	Soyabean
Dang												
Land	36404	6179	20468	4632	4094	3511	10497	7839	1100	708	2219	806
Production	46219	5575	12630	599	1703	1355	2907	495	165	14	674	16
Yield rate	1270	902	617	129	416	386	277	63	59	20	304	20
Rolpa												
Land	2022	3376	5080	544	3379	30	25	22			81	129
Production	3708	4087	9119	1395	4057	17	23	5			13	120
Yield rate	1834	1211	1795	1477	1201	568	935	248			164	931
Sallyan												
Land	6288	7540	3465	761	407		155				166	149
Production	11849	5918	7376	1674	305		39				53	126
Yield rate	1384	785	2129	2199	750		252				319	845
Pyuthan												
Land	2411	5610	6738	1558	3241	26	871				153	114
Production	7960	2574	9126	2109	3024	19	207				237	96
Yield rate	3302	459	1354	1077	933	747	238				1548	846
Rukum												
Land	1551	6755	6568	594	394	10	36				88	40
Production	2398	4537	8170	612	388	4	25				103	26
Yield rate	1546	672	1244	1030	984	411	687				1168	643
Rapati												
Land	48676	29460	42319	8889	11515	3577	11584	7861		708	2710	1238
Production	72135	22692	46421	6388	9476	1396	3201	500		14	1548	384
Yield rate	1482	770	1097	719	823	390	276	64		20	571	310

Table 3.1.6

Yield Rates Of Selected Cereal Crops In Rapati Zone

In kg/ha.

	Paddy	Wheat	Maize	Barley	Millet
Dang	1,920	850	1,438	622	1,000
Rolpa	2,359	750	1,927	800	1,277
Sallyan	2,355	1,200	1,910	792	750
Pyuthan	2,759	1,000	1,040	1,090	1,020
Rukum	2,175	700	1,913	800	1,277

Source: Agricultural Statistics of Nepal, 1977, Department of FAMS, MFA/HMG.

APPENDIX - B

Estimation of Cultivated Area : Cropped Area Approach[1/]

In the absence of cadastral survey records, the estimation of actual cultivated area is bound to encounter many problems, especially in the hills. In Rapati Zone, cadastral surveys have been completed only in Dang. A cadastral survey has recently been started in Sallyan. Although the cadastral survey has been completed in Dang, the lack of reliable monitoring taking into account new land brought into cultivation (due to deforestation and other types of encroachment), means that the available cadastral survey figures for Dang are probably an underestimation. The cultivated area is estimated to be increasing at an annual rate of 1 to 1.5 percent per year of the total cultivated area.

The present baseline study which has attempted to estimate the cultivated land area of the zone through a statistically representative sample survey is not thought to have come out with very reliable estimates. The most serious factor biasing survey results is that the land units and areas reported by farmers are likely to be those written in the land certificates. These figures do not indicate current actual holdings. These certificates were distributed a long time ago for the purpose of collecting land taxes. Over the years farmers have expanded their land boundaries to occupy more marginal and shruby land which is not accounted for in these records. Therefore, it is difficult for farmers to actually account for the total area they cultivate.

An indirect approach has therefore been used to estimate the total cultivated area in each district. It is believed that although farmers cannot account for total area, they can roughly

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1/ This section is based on discussions with Mr. Madav Karki. Agronomist in IRDP, Rapati.

account for the area under different crops that they have planted. This approach also suffers from problems, but it is believed that it will have corrective value in addition to other land data. This method is called the cropped area approach and uses the following assumptions.

- The cropping year is divided into two seasons, viz. (a) monsoon season (Barkhe) and (b) winter season (Hiuende). This applies to all but the most northernly areas of Rapati Zone.

- During the monsoon season farmers crop almost 100 percent of area available to them in order to make maximum utilization of the rain water. This leads us to assume that the area occupied by transplanted paddy (in the hills) and in some cases broadcast paddy (in Dang), would be khet type of cultivated land. Similarly maize, millet and summer pulses are monsoon crops grown on pakho land, though millet and pulses are generally either relayed or mixed with maize crop. Field observations have revealed that in Dang, millet is both relayed and grown as sole crop. In Sallyan and Pyuthan, relaying is more common.

- It has therefore been assumed that 50 percent of the millet area is sole cropped in Dang, Sallyan and Pyuthan and 100 percent in Rolpa and Rukum. Similarly 25 percent of summer pulses are sole cropped in Dang, Sallyan and Pyuthan and 50 percent in Rolpa and Rukum. Therefore the pakho type cultivated area would be the sum of the adjusted areas under the various crops mentioned above.

- In higher hills, naked barley, barley and potato are cropped during summer and autumn. Therefore in these regions, cropped area has to account for the area under these crops as well.

Using these assumptions, the area cultivated in the five districts has been estimated as follows:

Dang

Total cultivated area = Total area under maize + total area under paddy + 25 percent area under pulses + 50 percent area under millet.

Sallyan and Pyuthan

Total cultivated area = Total area under maize + total area under paddy + 50 percent area under millet + 25 percent area under pulses + 25 percent area under potato.

Rolpa and Rukum

Total cultivated area = Total area under maize + total area under paddy + total area under millet + 50 percent area under pulses + 75 percent area under potato + 25 percent area under barley.

Table - A below reports on the estimates based on the respondents estimates of area and Table - B on estimates derived by considering the various cropping areas mentioned above. Comparing the results in the last columns of Table - A and B the estimates show differences for Dang, Rolpa, Sallyan, Pyuthan and Rukum, respectively of 6.7 percent, 18.97 percent, 21.08 percent, 132.84 percent and 71.71 percent. For Rapati as a whole this difference worked out to be about 20 percent. These differences point out the fact that for at least Pyuthan and Rukum, the data presented in Table - A are significant under-estimates, whereas

for Sallyan and Rolpa, the estimates must be considered satisfactory, given the fact that no cadastral survey has been conducted so far. For Dang both estimates prove to be consistent. One further estimate based upon the Agricultural Statistics of Nepal (ASN) 1977, on total cultivated area is presented in Table - C below. The methodology used to produce this table is the same as that used for deriving the estimates in Table - B, except that pulses have not been accounted for because the ASN does not report on area under pulses.

The estimates produced in Table - C do not tally with the estimates presented above. Comparing these estimates with those reported in Table - A, the variations are as follows: -23.62 percent, 6.13 percent, -27.18 percent, 153.38 percent and 39.32 percent respectively for Dang, Rolpa, Sallyan, Pyuthan, and Rukum. For Rapati as a whole the variation is -6.37 percent. Given these inconsistencies, it is difficult to say anything conclusive on the total land cultivated in Rapati Zone. An intensive sample survey utilizing physical measurements is required to arrive at more consistent estimates.

Table - A

Estimates Of Cultivated Land In Rapati By Type Of Household And District

In ha.

	Sub-marginal		Marginal		Small		Medium		Large		Total	
	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
Dang	13,028	22.75	8.919	15.56	9,437	16.47	7,665	13.38	18,249	31.85	57,297	69.22
Rolpa	42	0.56	1,363	18.09	2,269	30.11	1,376	18.26	2,486	32.99	7,536	9.10
Sallyan	116	1,38	1,406	16.73	2,609	31.04	1,960	23.32	2,314	27.53	8,405	10.15
Pyuthan	57	1,31	944	21.62	1,563	35.79	973	22.28	827	18.94	4,367	5.28
Rukum	87	1.68	534	10.33	2,301	44.50	1,288	24.91	961	18.58	5,171	6.25
Rapati	13,330	16.10	13,166	15.91	18,179	21.96	13,265	16.02	24,837	30.00	82,778	100.00

Table - B

Alternate Estimates Of Cultivated Land In Rapati By Type Of Household And District

In ha.

Type of Households/ Districts	Sub-marginal		Marginal		Small		Medium		Large		Total	
	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
Dang	16607.00	27.16	12428.75	20.33	7501.00	12.27	7079.75	11.58	17531.25	28.67	61147.75	61.56
Rolpa	311.25	3.47	2507.63	27.97	2944.25	32.84	1568.55	17.50	1633.88	18.22	8965.55	9.02
Sallyan	685.50	6.74	1988.85	19.54	3025.25	29.73	2236.28	21.98	2240.50	22.02	10176.38	10.24
Pyuthan	2456.00	24.15	3622.75	35.63	2178.25	21.42	1154.25	11.35	757.00	7.44	10168.25	10.24
Rukum	418.50	4.71	3688.75	41.54	2668.25	30.05	1383.00	15.58	720.50	8.11	8879.25	8.94
Rapati	20478.25	20.61	24236.75	24.40	18317.25	18.44	13421.83	13.51	22883.13	23.03	99337.18	100.00

Table - C

Estimates On Cultivated Land For Rapati Derived From Agricultural Statistics Of Nepal, 1977

Area/Districts	Area	%
Dang	43765	56.47
Rolpa	5488	7.08
Sallyan	11710	15.11
Pyuthan	11065	14.28
Rukum	5480	7.07
Rapati	77508	100.00

3.2 Livestock

After agriculture, livestock-rearing is the most importa economic activity in the zone. Livestock provides the chief sourc of power for almost all agricultural operations such as ploughing, harvesting and the transporting of produce. In addition it provides milk, hides, wool, and meat on which some of the existing cottage industries survive. Finally, cattle dung provides the chief source of nitrogen to the fields and a significant source of fuel in Dang.

Table 3.2.1 reports the estimated population of various livestock in the zone by districts. The cattle population is the highest in the zone. Dang accounts for nearly 33 percent of the total cattle population in the zone (Table 3.2.2). The number of cows is higher than the bullock population in all the districts. The distribution of buffaloes in the five districts reveals that female buffaloes number more than 6 times the population of male buffaloes. The large number of male buffaloes in Dang is due to the fact that they are used as a substitute for bullocks in farming and transport activities, whereas in the hill districts, such is not the case. She-buffaloes are used entirely for milking and calf-rearing throughout the zone.

The pig population is concentrated in Dang, where they are consumed for meat. In other districts the pig population is relatively low. Pigs are reared by only a few castes in the zone such as the Tharus, and Magars, as revealed in Table 3.2.5, which presents the average livestock holdings per household by ethnic group.

The sheep population is generally expected to be higher in Rukum which has a favorable climate for these animals compared to the other districts. The survey estimates, however, show that as much as 46.54 percent of the sheep population is concentrated in Dang whereas Rukum accounts for only 18.84 percent. It is possible that the randomly selected panchayats in Rukum were not representative with respect to sheep raising. Table 3.2.2 below reveals that Dang has the highest percentage of all types of remaining livestock and poultry birds in the zone.

Table 3.2.1

Estimated Livestock And Poultry Birds Population By District

(In Thousands)

Districts/ Livestock	Dang	Rolpa	Salyan	Pyuthan	Rukum	Rapati
Cattle						
Cows	147.008	27.430	70.886	52.245	39.517	407.086
Bullocks	89.138	60.723	66.814	38.194	29.662	284.531
Buffaloes						
She	50.688	30.986	19.076	81.234	90.392	272.376
He	31.168	3.867	1.593	2.896	3.744	43.268
Sheep	46.665	14.847	13.337	6.540	18.891	100.280
Goats	51.600	55.980	77.068	46.184	28.414	259.246
Pigs	34.465	2.285	1.341	0.229	0.179	38.499
Chickens	204.324	78.741	111.270	54.253	38.518	487.106
Ducks	7.393	-	1.421	-	-	8.814
Pigeons	48.161	0.666	1.202	2.336	0.414	52.779
Horses	2.102	1.589	1.911	0.383	0.210	6.195

Table 3.2.2

Percentage Distribution Of Livestock And Poultry Birds Population By District

District/ Livestock	Dang	Rolpa	Sallyan	Pyuthan	Rukum
Cattle					
Cows	36.11	23.93	17.11	12.84	9.71
Bullocks	31.33	21.34	23.48	13.42	10.43
Buffaloes					
She	18.61	11.38	7.00	29.82	33.19
He	72.04	8.94	3.68	6.69	8.65
Sheep	46.54	14.80	13.60	6.52	18.84
Goats	19.90	21.59	29.73	17.82	10.96
Pigs	89.52	5.94	3.48	0.59	0.47
Chickens	41.95	16.17	22.84	11.14	7.90
Ducks	83.88	-	16.12	-	-
Pigeons	91.25	1.26	2.28	4.43	0.78
Horses	33.93	25.65	30.85	6.18	3.39

Table 3.2.3

Average Number Of Livestock Holdings Per Household By District

Districts	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Cattle	7.39	5.68	5.0	3.64	4.02	5.16
Buffaloes	2.56	1.25	0.76	3.35	3.47	2.66
Sheep	1.46	0.53	0.49	0.26	1.10	0.77
Goats	1.62	2.01	2.84	1.86	1.65	1.99
Pigs	1.08	0.01	0.05	0.01	0.01	0.25
Chickens	6.40	2.83	4.09	2.19	2.24	3.55
Ducks	0.23	-	0.05	-	-	0.07
Pigeons	1.51	0.02	0.04	0.09	0.02	0.34
Horses	0.07	0.06	0.07	0.02	0.01	0.04

Table 3.2.4

Average Number Of Livestock Population Per Household By Type Of Household

Type of Households	Sub-Marginal	Marginal	Small	Medium	Large	Rapati
Cattle	3.43	4.80	5.89	3.77	9.30	5.16
Buffaloes	1.17	1.24	2.07	4.96	6.36	2.66
Sheep	0.35	0.42	0.67	0.44	1.69	0.77
Goats	1.45	1.66	2.01	2.83	4.97	1.99
Pigs	0.57	0.22	0.17	0.18	0.47	0.25
Chickens	3.68	2.46	3.31	6.33	7.57	3.55
Ducks	0.03	-	0.06	0 08	0.76	0.07
Pigeons	1.13	0.10	0.22	0.20	0.59	0.34
Horses	0.03	0.04	0.05	0.09	0.07	0.04

Table 3.2.5

Average Number Of Livestock Holdings Per Household by Ethnic Group

Ethnic Groups	Group A	Group B	Group C	Group D	Group E
Cattle	5.57	6.87	6.52	3.84	4.03
Buffaloes	3.35	1.83	2.58	0.87	1.19
Sheep	0.41	1.17	2.68	0.83	0.03
Goats	2.48	2.38	1.15	0.30	3.62
Pigs	0.02	0.09	2.42	0.10	0.02
Chickens	3.22	3.47	8.58	2.92	2.83
Ducks	0.11	-	0.13	-	..
Pigeons	0.05	0.02	3.48	0.03	0.05
Horses	0.04	0.03	0.09	0.02	-

3.3 Horticulture and Vegetables

a. Horticulture

Samples households were asked about the number and type of fruit trees they had growing on their land and the income generated in the survey year from the sale of fruit. More than thirty-two different type of fruit trees, depending upon the climatic conditions, were reported. Only 16 type of fruit trees, however, were reported by more than one percent of the total household. Most of the households of Rapati Zone have, however, maintained a few fruit trees.

Table 3.3.1 indicates that the main type of fruits grown in the zone are bananas, oranges, mangoes, guava, peach, papaya and lime. Of these the most common is banana, which is grown by 44.8 percent of the total households of Rapati. This is true for all the districts and is more than fifty percent of the households in Dang, Sallyan and Rukum reported growing bananas.

In Dang, mango, guava, and papaya are reported by almost one third of the households. In the hill districts, orange, guava, lime, and peach are reported by a majority of reporting households.

Table 3.3.2 shows the percentages of different types of households growing various type of fruit trees. It is clearly seen from the table that extent of fruit cultivation increases with the size of holding. Percentage reporting banana tree is maximum for all type of household with a variation from 38.9 percent in the sub-marginal category to 58.0 percent in large households. Besides banana, guava, mango, orange or lime is reported by a high percentage of all types of households.

Table 3.3.3 reveals that the number of fruit trees of improved varieties is comparatively less than local varieties in most of the types. But in some type of fruits like apple, litchi, masaum (sweet lime) and plum, the number of improved varieties exceeds local varieties. This may occur because these are not traditional fruits of Rapati and the government has introduced improved variety recently.

The table further reveals that only insignificant numbers of improved varieties of banana, melon, bimiro, kafal and grapes etc. are recorded in the survey. Of the total fruit tree grown in Rapati it is estimated that about 83 percent are of local varieties and 17 percent are of improved varieties. About 45 percent of the total fruit trees are reported to be fruit bearing. The number of banana trees per reporting household of Rapati is highest (12 per household) followed by orange (4), litchi, melon, mango and guava (nearly 3 each). In general, the number of fruit trees per household is observed to be higher in Dang, Sallyan and Pyuthan and lower in Rukum and Rolpa.

Table 3.3.4 gives the average number of different fruit trees by type of household. The table reveals the least number of fruit trees per reporting household for sub-marginal households and the highest for large households.

Despite the potential for horticulture development, based in climatic and topographic conditions, the contribution of horticulture is found insignificant in the economy of Rapati. The yield of fruit bearing trees is poor due to unscientific methods of fruit cultivation. Of the total production, the major portion is self-consumed. The annual income per reporting household from the sale of different fruits is presented in Table 3.3.5 (district-wise and Table 3.3.6 (by type of household).

b. Vegetables

Information on the types of vegetables cultivated and income generated from sales of vegetables in Rapati were collected in the baseline study. It is found that in general vegetables are cultivated in small scale kitchen gardens. Most of the households cultivated vegetables only for home consumption purposes and the income generated from the sale of vegetables is found insignificant.

However, twenty-five different varieties of vegetables were reported by the sampled households. Of these, cucumber, pumpkin, mustard greens, radish, clocosia (pidalu), karela, timur and chillies, cabbage, chichinda and turmeric are the most commonly reported.

Table 3.3.7 below reveals that about 80 percent of the households of Rapati have grown cucumber, pumpkin, mustard green and less than 4 percent have grown carrot, barela and palungo. Vegetables like mustard greens, pumpkins and cucumber are reported by almost three fourths of the households of each district whereas cauliflowers, peas and beans are reported by a comparatively greater percentage of household of Dang and Pyuthan than in other districts.

Table 3.3.8 below shows the percentages of different types of households growing various types of vegetables.

Table 3.3.1

Percentage Distribution Of Households Growing Fruit Trees By Type Of Fruit Tree And District

District/ Type of Fruit	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Mango	31.76	2.40	26.28	20.94	7.56	18.96
Guava	34.87	11.45	39.08	20.83	10.12	24.58
Papaya	34.71	22.8	9.42	5.11	6.22	12.89
Jackfruit	14.53	0.39	2.33	1.38	1.03	4.58
Lemon	10.95	1.44	16.94	7.88	1.03	8.25
Banana	54.55	24.73	57.91	36.16	50.98	44.82
Lime	18.35	9.10	30.91	15.22	10.43	17.34
Apricot	0.89	-	0.33	0.45	-	0.38
Pear	2.57	0.74	10.18	2.37	0.81	3.50
Litchi	1.06	-	0.76	0.90	-	0.59
Orange	1.45	22.03	47.19	14.21	13.74	19.62
Apple	0.36	1.33	4.39	2.20	0.35	1.77
Pineapple	1.06	0.20	1.26	0.64	0.40	0.75
Walnut	-	3.37	0.75	0.79	2.77	1.41
Peach	12.15	15.23	14.69	27.98	13.10	16.52
Plum	0.49	0.63	1.94	3.50	0.60	1.42
Melon	0.21	-	-	0.28	-	0.10
Pomegranate	4.17	0.36	6.85	3.38	5.72	3.97
Lapsi	0.52	-	0.25	0.45	-	0.27
Kafal	-	0.74	0.76	0.24	0.48	0.43
Pomelo	0.30	1.00	1.25	0.45	0.48	0.70
Big orange	-	-	-	-	0.68	0.01
Bimiro	1.16	0.38	5.88	0.47	0.37	1.68
Grapes	0.44	-	-	0.28	-	0.16
Sweet orange	1.18	0.38	1.77	1.39	-	1.01

Table 3.3.2

Percentage Distribution of Households Growing Fruit Trees By Type Of Fruit Trees And Type Of Household

Type of Households/ Type of Fruit Trees	Sub-marginal	Marginal	Small	Medium	Large	Rapati
Mango	13.61	18.31	16.28	28.11	47.08	18.96
Guave	22.21	23.50	24.43	27.10	40.39	24.58
Papaya	13.23	9.83	10.66	22.05	30.11	12.89
Jackfruit	3.23	2.36	4.00	10.58	20.50	4.58
Lemon	5.04	5.92	8.98	11.40	32.05	8.25
Banana	39.90	43.93	47.37	50.10	57.98	44.82
Lime	13.78	13.91	18.95	22.04	44.24	17.34
Apricot	-	0.58	0.28	1.04	-	0.38
Pear	1.32	1.90	4.22	5.93	18.30	3.50
Litchi	-	0.22	-	2.61	5.83	0.59
Orange	13.52	16.91	24.97	32.25	21.52	19.62
Apple	0.79	1.35	1.53	3.55	7.79	1.77
Pineapple	-	0.80	0.21	1.54	5.25	0.75
Walnut	1.23	1.01	2.25	1.14	1.52	1.41
Peach	11.43	20.27	15.60	12 93	22.75	16.62
Plum	1.21	0.72	1.70	1.93	5.45	1.42
Melon	-	0.14	-	-	1.05	0.10
Pomegranate	3.17	2.40	2.76	4.79	24.16	3.97
Lapsi	0.55	-	-	1.68	-	0.27
Kafal	0.37	0.12	0.38	1.79	1.06	0.43
Pomelo	-	10.48	0.90	1.55	13.37	0.70
Big orange	-	-	0.32	-	-	0.01
Bimiro	1.31	1.04	0.79	2.20	11.74	1.68
Grapes	-	0.14	-	-	2.20	0.16
Sweet orange	0.36	0.82	0.63	1.04	7.39	1.01

Table 3.3.3

Average Number Of Fruit Trees Per Thousand Reporting Households, By Type Of Fruit Trees And District.

Types of fruit/trees/ Districts	Dang			Rolpa			Sallyan			Pyuthan			Rukum			Rapati		
	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.
Mango	30	3500	1390	-	1210	200	130	1780	870	140	1790	1170	-	1670	50	220	2870	1300
Guava	20	2260	1280	-	1320	1090	-	3100	2620	150	3400	2470	-	1950	1060	30	2890	2320
Papaya	40	2120	1800	-	1440	550	-	1400	740	-	1630	1120	-	1120	530	20	2390	1590
Jackfruit	1220	2150	260		4000	-	670	670	-	-	1000	580	390	2430	-	1050	1890	2900
Lemon	50	1850	610	-	3660	2580	90	1570	530	580	1940	580	-	1000	-	190	1700	660
Banana	-	8980	2430	-	8080	4780	20	11250	5910	20	12370	3950	-	9350	3380	-	12360	5570
Lime	-	1850	680	-	1260	760	10	1810	-	70	2200	640	-	1950	680	20	1670	860
Apricot	-	7960	-	-	-	-	-	1000	-	1990	-	-	-	-	-	400	1790	-
Pear	-	1170	200	-	1470	-	-	1290	690	490	690	320	500	500	-	90	1120	520
Litchi	-	1000	-	-	-	-	-	-	-	12450	-	-	-	-	-	4920	3440	790
Orange	-	1300	170	-	2790	690	650	4800	770	700	2450	640	-	2270	1040	600	4390	790
Apple	1000	-	-	-	2330	380	1470	1310	90	2160	720	200	-	6430	-	1400	1240	1170
Pineapple	-	2500	-	-	4010	4010	-	3340	1580	-	5420	1710	-	1000	-	200	2370	1270
Walnut	-	-	-	1940	1100	610	-	1320	-	-	1500	-	-	1220	630	730	1230	380
Peach	-	1260	1260	-	1340	810	-	1540	1070	70	1510	1220	30	1700	1030	60	1510	1080
Plum	-	1000	-	-	1000	-	180	1270	1070	660	920	1150	-	1000	1000	570	94	860
Melon	-	13550	13550	-	-	-	-	-	-	-	2010	2010	-	-	-	-	3110	2710
Pomegranate	100	2290	1430	-	2000	2000	110	1670	1080	-	1280	1110	460	1210	600	210	1530	970
Lapsi	-	1000	-	-	-	-	-	1010	1000	1000	-	-	-	-	-	120	270	70
Kafal	-	-	-	-	5680	-	-	2320	670	-	1000	-	-	1000	-	-	2710	220
Pomelo	4470	1000	2030	-	1000	500	-	1000	1000	1990	-	-	-	1000	1000	630	660	630
Big orange	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	1000	-	200	200
Bimiro	-	4360	2160	-	9980	9980	-	1890	1410	-	7320	1190	-	4000	-	-	3310	2030
Grapes	-	13000	-	-	-	-	-	-	-	-	1000	-	-	-	-	-	2800	-
Sweet orange	21100	540	1716C	-	1000	1000	1712	12890	17540	2690	520	18450	-	-	-	25220	3360	15320

Table 3.3.4

Average Number Of Fruit Trees Per Thousand Reporting Households By Type Of Fruit Trees And Type Of Household

Type of Households/ Type of Fruit Trees	Sub-marginal			Marginal			Small			Medium			Large			Rapati		
	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.	Imp.	Local	Fruit bearg.
Mango	700	1580	840	70	1740	670	40	2100	1060	170	3550	1370	100	5300	255	220	2870	5730
Guava	-	1740	1220	60	2690	1840	-	2500	2040	-	3160	2700	110	4340	378	30	2890	2720
Papaya	-	2020	1330	110	1740	1210	-	2200	1170	-	2740	1570	-	3210	268	20	2390	1590
Jackfruit	440	1030	290	910	2800	150	-	1300	380	190	2510	350	130	1700	29	1050	1890	290
Lemon	120	1180	680	100	2240	410	190	1400	510	550	1430	520	-	2230	117	190	1700	660
Banana	-	6900	2760		9670	3560	20	10000	5100	-	11510	4700	-	23670	1165	-	12360	5570
Lime	-	250	40	10	1460	-	-	1600	680	90	1730	480	-	3200	139	20	1067	860
Apricot	-	-	-	-	7960	-	-	1000	-	1990	-	-	-	-	-	400	1790	-
Pear	-	1000	670	70	1030	210	-	1300	590	350	990	730	60	1310	48	90	1120	520
Litchi	-	-	-	23910	16160	3980	-	-	-	400	600	-	290	450	-	4920	3440	790
Orange	380	3060	480	510	3190	540	380	2300	900	1430	4750	1250	340	7620	80	600	4390	790
Apple	1810	1080	-	1500	1150	210	560	1570	-	2040	1380	-	1090	1030	44	1400	1240	1170
Pineapple	-	-	-	-	3720	690	1000	1000	-	-	4670	4670	-	2500	100	200	2370	1270
Walnut	-	1260	38	3660	1200	660	-	1150	600	-	1540	-	-	1000	300	730	1230	380
Peach	40	1540	1200	-	1340	950	10	1560	1440	250	1230	720	-	1920	110	60	1510	1080
Plum	-	1360	290	-	1000	570	240	1060	550	2610	-	-	-	1310	91	570	940	860
Melon	-	-	-	-	2000	-	-	-	-	-	-	-	-	13560	1356	-	3110	2710
Pomegranate	-	1160	840	-	1430	620	310	1440	1140	630	1070	420	140	2550	182	210	1530	970
Lapsi	-	1000	-	-	-	-	-	-	-	620	380	380	-	-	-	120	270	70
Kafal	-	1000	-	-	1000	-	-	1570	1140	-	6050	-	-	3770	-	-	2710	220
Pomelo	-	-	-	1850	1000	840	-	1000	1000	1340	330	330	-	1000	100	630	660	630
Big orange	-	-	-	-	-	-	-	1000	1000	-	-	-	-	-	-	-	200	200
Bimiro	-	5050	4360	-	4090	2200	-	3930	1090	-	1850	1380	-	1660	92	-	3310	2030
Grapes	-	-	-	-	1000	-	-	-	-	-	-	-	-	13000	-	-	2800	-
Sweet orange	57490	350	57840	4690	6120	5590	42400	3350	-	398	-	-	17570	6990	13180	25220	3360	15320

Table 3.3.5

Average Income From Sales Of Fruits Per Thousand Reporting Households By Type Of Fruit Trees And District

District/ Type of Fruit Tree	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Mango	840	-	8200	10080	-	5730
Guava	3060	340	40	1000	-	2720
Papaya	2300	-	-	-	-	2620
Jackfruit	-	-	-	-	-	
Lemon	2020	-	1760	-	-	1270
Banana	50160	14620	4700	14300	1030	3573
Lime	340	-	1930	70	-	880
Apricot	-	-	-	-	-	-
Pear	-	-	1339	10270	-	8100
Litchi	-	-	-	-	-	-
Orange	-	4340	11440	6610	11900	8950
Apple	-	-	-	-	-	-
Pineapple	-	-	-	-	-	-
Walnut	-	-	-	-	-	-
Peach	-	-	-	30	-	-
Plum	-	-	-	-	-	-
Melon	-	-	-	-	-	-
Pomegranate	-	-	3640	-	-	1060
Lapsi	-	-	-	-	-	-
Kafal	-	-	-	-	-	-
Pomelo	810	-	-	-	-	190
Big orange	-	-	-	-	-	-
Bimiro		-	-	-	-	-
Grapes	-	-	-	-	-	-
Sweet orange	-	-	7000	-	-	-

Table 3.3.6

Average Income From Sales Of Fruits Per Thousand Reporting Households By Type Of Fruit Trees And Type Of Household

Type of Households/ Type of Fruit Trees	Sub-marginal	Marginal	Small	Medium	Large	Rapati
Mango	-	3550	4960	0.33	19.830	5730
Guava	20	470	130	-	13.000	2720
Papaya	-	-	-	-	13.080	262
Jackfruit	-	-	-	-	-	-
Lemon	-	2430	-	-	3910	1270
Banana	-	8150	7720	13668	6920	35730
Lime	-	640	1410	233	-	880
Apricot	-	-	-	-	-	-
Pear	4040	650	15710	399	9330	8100
Litchi	-	-	-	-	-	-
Orange	7280	5370	10540	1715	4410	8950
Apple	-	-	-	-	-	-
Pineapple	-	-	-	-	-	-
Walnut	-	-	-	-	-	-
Peach	-	-	40	-	-	-
Plum	-	-	-	-	-	-
Melon	-	-	-	-	-	-
Pomegranate	-	-	-	-	5340	1060
Lapsi	-	-	-	-	-	-
Kafal	-	-	-	-	-	-
Pomelo	-	330	-	-	-	190
Big orange	-	-	-	-	-	-
Bimiro	-	-	-	-	-	-
Grapes	-	-	-	-	-	-
Sweet orange	-	66160	14130	-		45330

Table 3.3.7

Percentage Distribution Of Households Growing Vegetables By Type Of Vegetables And District.

Districts/ Type of Vegetables	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Radish and turnip	76.63	59.16	68.71	68.76	55.69	65.79
Onions	27.23	9.65	44.16	21.76	23.87	25.33
Mustard green	81.78	85.22	75.19	89.15	60.16	78.30
Tomato	42.29	31.16	51.11	63.69	28.96	43.44
Clocosia	64.00	56.84	64.27	60.18	66.57	62.37
Corriander	50.18	10.05	47.28	19.35	14.82	28.34
Timur and chilliee	56.39	70.83	62.22	81.61	49.68	64.15
Peas and beans	24.38	1.34	3.66	9.95	5.09	8.89
Cabbage	64.66	69.68	47.28	65.24	39.06	57.13
Ginger	21.18	6.44	65.15	21.25	22.02	27.21
Garlic	53.01	27.13	49.80	26.05	39.23	39.04
Cauliflower	26.70	1.77	12.03	30.51	3.42	14.89
Mustard, green (rayo)	55.18	71.08	49.91	59.07	33.51	59.75
Pumpkin	78.64	83.19	80.40	87.52	68.18	79.38
Green vegetables	7.22	45.89	58.68	46.96	28.51	37.45
Turmeric	59.56	44.21	68.16	63.65	37.24	54.55
Carrot	4.34	0.82	5.06	3.45	2.76	3.29
Bottle Gourd	62.69	3.43	23.12	31.93	24.70	29.17
Gourd	72.08	6.91	25.86	47.34	32.90	37.02
Bittle Gourd	74.32	63.72	70.98	80.34	52.11	68.49
Chichinda	75.41	27.70	68.55	67.02	53.86	58.51
Cucumber	79.30	86.45	79.18	85.93	75.53	81.28
Eskush	2.79	1.89	4.24	4.51	0.94	2.87
Barela	-	-	2.69	3.48	0.71	2.27
Spinach leaves	-	-	0.25	0.65	-	0.45

Table 3.3.8

Percentage Distribution Of Households Growing Vegetables By Type Of Vegetables And Type Of Household

Type of Household/ Type of Vegetable	Sub-marginal	Marginal	Small	Medium	Large	Rapati
Radish and turnip	61.08	68.28	66.55	70.91	78.59	65.79
Onions	20.28	23.28	26.48	33.13	49.44	25.33
Mustard green	72.92	82.13	69.23	84.98	92.20	78.30
Tomato	34.57	46.61	43.07	52.81	60.34	43.44
	49.68	59.52	67.34	79.84	85.35	62.37
Corriander	25.95	22.96	32.56	48.18	58.80	28.34
Timur and chilliee	49.14	67.06	61.64	67.14	74.83	64.15
Peas and beans	6.74	7.32	9.51	13.73	35.80	8.89
Cabbage	57.12	55.61	46.63	68.99	83.53	57.18
Ginger	18.97	28.45	30.46	33.84	33.15	27.21
Garlic	33.44	35.75	40.60	57.86	64.88	39.04
Cauliflower	11.24	13.19	15.74	25.22	42.74	14.89
Mustard green (rayo)	52.61	51.03	57.77	63.70	75.08	59.75
Pumpkin	73.49	82.43	78.80	87.23	92.17	79.58
Green vegetables	52.86	50.48	50.48	61.56	70.68	37.45
Turmeric	52.24	53.70	57.32	66.45	64.45	64.55
Carrot	2.73	2.27	4.15	3.50	10.27	3.29
Bottle gourd (lauka)	36.82	31.34	27.03	35.64	53.26	29.17
Gourd	39.60	34.55	32.98	53.03	62.11	37.02
Bittle Gourd	63.20	71.93	65.99	81.04	83.65	68.49
Chichinda	59.20	55.85	54.48	75.06	81.02	58.51
Cucumber	75.03	82.13	80.76	91.57	95.92	81.28
Eskush	3.12	2.16	3.28	4.80	4.08	2.87
Barela	0.50	2.07	1.33	-	1.88	2.27
Spinach leaves	-	0.33	-	0.64	-	0.45

3.4 Cottage Industry

Cottage industries are an important activity among rural households. Information was collected from households concerning different activities, they were involved in, raw material purchased and estimated income earned. This section reports the findings of the survey on these subjects.

Table 3.4.1 lists the top eight cottage industries in the zone, based upon the zonal level frequencies of households reporting such activities.

Table 3.4.1

Frequency Distribution Of Households Engaged In Cottage Industries By Type Of Industry And District

District/Cottage Industry	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Ghee	7,595	9,104	5,293	15,300	6,476	43,770 (33.94)
Dry Ginger	2,942	83	12,471	583	153	16,232 (12.59)
Coarse Cloth	-	8,994	77	4,805	1,317	15,193 (11.78)
Bamboo and Cane Products	3,488	2,896	2,686	3,319	1,942	14,341 (11.12)
Intoxicants	3,459	911	1,450	6,562	590	12,972 (10.06)
Woolen Cloth	-	3,033	55	1,632	1,343	6,063 (4.70)
Honey	1,068	1,373	826	1,400	1,240	5,907 (4.58)
Iron Products	553	1,651	1,317	947	971	5,439 (4.22)
Total number of households in each district	31,940 (24.77)	27,835 (21.85)	27,157 (21.06)	24,813 (19.24)	17,210 (13.34)	128,955 (100.00)

Note: Figures in brackets are percentage of total number of households.

The nearly 34 percent of households engaged in ghee production makes this by for the most common cottage industry in the zone. In Pyuthan more than 50 percent of the households are engaged in making ghee, either for self-consumption or for marketing. After ghee-making, dry ginger production comes second with about 13 percent of households in the zone engaged in this activity. In Sallyan this practice is seen to be much more common than among other districts with nearly 50 percent of households engaged. Coarse cloth and bamboo and cane products and intoxicants rank third, fourth and fifth respectively, with the number of households engaged in these activities in the zone not much less than dry ginger production. In Dang no households reported being engaged in making coarse cloth and in Sallyan only 77 households reported this activity. In Rolpa, however, about 33 percent of households are engaged in this activity. The frequencies of households engaged in bamboo and cane products is quite uniform throughout the five districts of the zone. Households engaged in making intoxicants have a very skewed frequency distribution. In Pyuthan nearly 35 percent of households and in Rolpa and Rukum only about 3 percent of households are engaged. Making woolen cloth, honey and iron products rank respectively sixth, seventh and eight and percentage of households engaged in these activities are also more or less uniform throughout the zone.

In Table 3.4.2 the information presented in Table 3.4.1 is presented according to ethnic groups. As high as 70 percent of ghee-making households fall in ethnic group A, which, consists of Brahmins, Thakuris, Chhetries and Sanyashis. This works out to be roughly 50 percent of the households in this group.

Table 3.4.2

Distribution Of Households Engaged In Major Cottage Industry Activities By Ethnic Group

Ethnic Group/Cottage Industry	Group A	Group B	Group C	Group D	Group E	Rapati
Ghee	30,002	7,623	1,986	3,369	768	43,770 (33.94)
Dry Ginger	9,871	3,340	83	2,396	543	16,232 (12,58)
Coarse Cloth	1,979	9,956	242	2,963	53	15,193 (11.78)
Bamboo and Cane Products	5,688	4,985	2,333	1,130	205	14,341 (10.05)
Intoxicants Woolen Cloth	1,113	5,472	3,799	2,578	70	12,972 (4.70)
Woolen Cloth	717	4,712	264	370	-	6,063 (4.70)
Honey	3,581	1,588	201	519	18	5,907 (4.58)
Iron Products	-	166	1,569	3,704	-	5,439 (4.21)
Total number of households in ethnic group	61,105 (47.38)	25,211 (19.55)	13,846 (10.73)	25,820 (20.02)	2,973 (2.30)	128,955 (100.00)

Note: Figures in brackets are percentages of total number of households.

This table reveals how specializations change among the various ethnic groups considered. For instance, among ethnic group A ghee-making, dry ginger, bamboo and cane products and honey may be assumed to be their specializations. Similarly, among ethnic group B, coarse cloth, woolen cloth and intoxicants is seen to be more common than other activities. Among ethnic group C, one does not notice any activity that can be identified as their specialized trade, whereas among ethnic group D, which consists of occupational castes, iron products (i.e. black smiths) is seen to be their specialized trade.

The raw material requirements for many cottage industries in the zone are found to be farm based or local resources which need not be purchased. The results presented in Table 3.4.3 and 3.4.4

below supports this. Ghee-making requires no purchased inputs throughout the five districts of the zone. Where drying ginger is practiced, households purchase some raw materials, and the income earned is fairly substantial. It is seen that only for iron products do households have to purchase raw materials in all districts. This is true because iron is not locally available and has to be imported.

Table 3.4.3

Average Income From Sales And Average Cost Of Raw Material Purchased By Activity And District Per Reporting Household

Figures in Rs.

Districts/ Activity	Dang		Rolpa		Sallyan		Pyuthan		Rukum		Rapati	
	Income	Purchase	I	P	I	P	I	P	I	P	I	P
Ghee	117	-	216	-	281	-	63	-	325	-	170	-
Dry Ginger	420	9	-	-	545	10	371	56	-	-	508	11
Coarse Cloth	-	-	24	2	45	-	1	-	40	-	19	1
Bamboo and Cane Products	28	-	11	-	11	1	41	1	28	-	24	-
Intoxicants	-	-	42	-	-	-	3	-	90		10	-
Woolen Cloth	-	-	43	-	30	-	30	-	174	18	69	6
Honey	4	-	68	-	2	-	5	-	123	-	44	-
Iron Products	1182	932	205	32	280	53	111	42	271	17	318	127

(-) indicates either non-reported or negligible numbers.

Table 3.4.4

Average Household Income From Sale And Average Cost Of Raw Materials Purchased By Activity And By Ethnic Group Per Reporting Household

Figures in Rs.

Ethnic Group/ Cottage Industry	Group A		Group B		Group C		Group D		Group E		Rapati	
	Income	Purchase	I	P	I	P	I	P	I	P	I	P
Ghee	183	-	140	-	157	-	126	-	169	-	170	-
Dry Ginger	528	12	511	13	474	10	354	-	560	3	508	11
Coarse Cloth	24	11	22	-	14	-	3	-	-	-	19	1
Bamboo and Cane Products	7	-	20	-	31	2	120	-	-	-	24	-
Intoxicants	40	5	12	-	-	-	-	-	-	-	8	-
Woolen cloth	17	8	70	6	159	-	81	7	-	-	69	6
Honey	54	-	32	-	41	-	-	-	-	-	44	-
Iron Products	-	-	-	-	234	44	367	168	-	-	318	127

(-) indicates either non-reported or negligible numbers.

3.5 Income

Two measures of household income have been calculated from the data collected in the baseline study. In addition to "cash income", "adjusted income" (AI) is considered which includes the value of the total production of cereals and cash crops added to an adjusted figure for cash income. The former is computed by multiplying total production of cereals and cash crops as reported by the household by the corresponding prices existing in the panchayat. Only the important cereal grains and cash crops are considered. It is to be noted that due to the limitation of information, the value of minor crops intercropped with major crops or separately grown, and the costs of cultivation are not accounted for. However from the total production of crops, 15 percent is deducted to allow for seed, wastage, etc. Second, cash income i.e. all money inflow into the household is separately considered. All income reported is the annual income of households.

a. Cash Income

Information was requested on 21 different sources of cash income, grouped into 11 different categories as follows:

1) Agricultural income - the cash income derived by selling a part of the total production of cereals and cash crops i.e. marketable surplus.

2) Livestock income - income derived from the sales of livestock products, excluding ghee.

3) Horticulture and vegetable income - income from sales of fruits and/or vegetables.

4) Trade and business - income from the sales of cottage industry products including income from sales of ghee, income from business enterprises such as hotel, tea shop, bhatti etc. income from contracts for bhatti, rakshi etc.

5)	Wages -	income in the form of agricultural wages received by household members (does not include family labor), income earned as construction laborer, other daily wage income (e.g. porter).
6)	Services -	income from government services (civil, police, etc. pertaining to Nepal only), from British or Indian Army and police services, special services such as priest, gaine, damai, jhankri, etc. + other services.
7)	Sales of assets -	income from the sale of land, sale of house, yard, ornaments, jewellery etc.
8)	Interests and rent -	from interests and land rent, house-rent and loan repayment.
9)	Transfer payment -	wealth remitted by members living away from home, and pensions.
10)	Debts -	funds from loans taken in the last one year.
11)	Others -	other sources not captured above.

The sum of these 11 groups listed above give the total cash income of households.

b. Adjusted Income

The total value of major cereals and cash crops produced by the households plus cash income, with certain adjustments, gives the adjusted income. To arrive at the adjusted income the additions and deductions made are as follows:

i) since income from agriculture (i.e. sale of grains, cash crops) is a part of the total agricultural production of households, this amount is deducted from cash income.

ii) rent and wages paid in kind by households are first expressed in value terms and are then deducted from the value of total production.

iii) the value of rent and wages received in kind by household are added to total production.

Thus adjusted income equals value of cereals and cash crops produced + value of rent and wages received in kind - value of rent and wages paid in kind + cash income - cash income from agricultural sales (i.e. marketed surplus). In arriving at adjusted income and cash income, income sources such as the sale of assets and debts are also considered. Strictly speaking, it may not be appropriate to include these. But since these are an inflow to the household's stream of income it is included in the analysis and will subsequently be dropped out in dealing with farm and non-farm incomes of household which will be separately reported.

c. Farm and Non-Farm Cash Income

Farm and non-farm income is computed on the basis of cash income only. Farm income include : income from agriculture (i.e. sales of grain), income from livestock and horticulture and or vegetables. The other categories reported under cash income are considered non-farm income, excluding income from sale of assets and money borrowed.

d. Findings

1. Adjusted Income

It is important to note that in surveys of this nature households usually under-report their incomes. Information gatherers must attempt to obtain the annual income of households at a single point in time for the past year. Households may not be able to account for the total income they have received, particularly when the bulk of the surveyed households do not have

a fixed or continuous income source. The income reported is only that which the household, at the time of survey, was able or willing to recall. The data should, therefore, be taken with this qualification in mind. Moreover since cereal grain and cash crop prices vary from panchayat to panchayat, this also leads to fluctuations in the per household adjusted incomes reported.

In Table 3.5.1 below, the adjusted income* and cash per household are reported separately by districts. The average adjusted income per household of Rapati is estimated at Rs.3140 and cash income at Rs.1798, which is about 57 percent of the adjusted income per household. In Dang and Pyuthan districts both averages (adjusted and cash income per household) are higher than the Rapati average, whereas in the remaining three districts both averages are lower than the zonal averages. In Dang 66 percent of household income is in cash and in Pyuthan it is about 54 percent. For Dang the higher level of adjusted income is seen to be associated with the land operated as is highlighted in Table 3.5.2 below, where the average area of land owned (1.429 ha.) and land operated (1.794 ha.) per household is fairly high compared to the zonal averages of 0.544 ha. (owned) and 0.642 ha. (operated). But for Pyuthan, this association between adjusted income per household and land owned and operated per household is not marked.** Both land owned (0.172 ha.) and land operated

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* Note that the adjusted income takes into account rents and wages, both received and paid in kind by households. See (b) above.

** It should be pointed out here that in Section 3.1 above (Table 3.1.3), land owned and operated by Pyuthan households is suspected to be fairly under-reported. In the appendix to that section (Table - B), the alternative estimate of land cultivated based on cropped area, reveals that in Pyuthan cultivated area per household works out to be higher (0.41 ha.) than reported earlier (0.172 ha.). If such is the case, then the higher levels of income in Pyuthan may be explained by this factor.

(0.178 ha.) per household are below the zonal averages (Table 3.5.2). In Dang, the high percent of cash income may be due to the fact that the average area of land operated by households is fairly large, in a relative sence, and households may be producing more and selling more.

Table 3.5.1

Adjusted Income And Cash Income Per Household By District

(In Rs.)

District	Adjusted Income Per Household (1)	Cash Income Per Household (2)	(2) as percent of (1)
Dang	4528	2983	66.0
Rolpa	2128	1061	49.8
Sallyan	2865	1506	52.6
Pyuthan	3798	2035	53.6
Rukum	2378	883	37.1
Rapati	3140	1798	57.26

The figures in Table 3.5.1 further show that the lowest adjusted income per household is in Rolpa District - only about 68 percent of the zonal average. Cash income per household is, however, not lowest in Rolpa and it accounts for about 50 percent of the adjusted income per household. The lowest cash income per household is reported in Rukum, which is only 49 percent of the zonal average of Rs.1798.

Table 3.5.2

Land Owned And Operated Per Household By District

(In ha.)

Districts	(1) Land Owned	(2) Land Operated	(2/1)
Dang	1.429	1.794	1.25
Rolpa	0.268	0.271	1.01
Sallyan	0.282	0.309	1.10
Pyuthan	0.172	0.178	1.03
Rukum	0.300	0.301	1.00
Rapati	0.544	0.642	1.18

Table 3.5.3

Adjusted Income And Cash Income Per Household By Type of Household

Type of Household	(1) Adjusted Income Per Household	(2) Cash Income Per Household	(2) as percent of (1)
Sub-marginal	2,322	1,208	52
Marginal	2,678	1,448	55
Small	2,57[illegible]	1,680	65
Medium	5,246	2,689	51
Large	7,383	4,168	56
Rapati	3,140	1,798	57

The distribution of the adjusted and cash incomes per household shown in Table 3.5.3 above demonstrate that both adjusted and cash incomes are an increasing function of the land owned (type of household). Sub-marginal, marginal and small farm households are seen to have per capita incomes (both adjusted and cash) lower than the zonal average of Rs.3140 and Rs.1798, whereas medium and large farm household's per capita incomes (adjusted and cash) far exceed the zonal average. The table further reveals that, the correlation between land owned by households and adjusted income per household is slightly

distorted in case of small farm households, whose adjusted income (per household) is observed to be lower than the marginal farm households. This point, however, cannot be explained here and calls for further detailed analyses. For district comparison purposes, the average land owned and operated by households by household type is presented in Table 3.5.4 below.

Table 3.5.4

Land Owned And Operated Per Household By Type Of Household

(In ha.)

Type of Household	(1) Land Owned	(2) Land Operated	(2/1)
Sub-marginal	0.044	0.435	9.89
Marginal	0.176	0.268	1.52
Small	0.504	0.568	1.13
Medium	1.503	1.230	0.82
Large	4.609	3.823	0.83
Rapati	0.544	0.642	1.18

2. Cash Income

Table 3.5.5 reports the breakdown of household cash income for each of the five districts. The last row of this table presents the average cash income of households from various sources for the zone as a whole. Of the average per household cash income of Rs.1798, cash income from services accounts for 19.4 percent of the total cash income and is the highest single source. Cash income from trade and business accounts for 14.3 percent followed by agriculture (i.e. marketed surplus) at 13.9 percent. In a predominantly agricultural setting like that of Rapati, one might expect cash income from agriculture to account for the largest amount of income among the various sources. This low level of cash income

Table 3.5.5

Distribution Of Average Household Cash Income By Source Of Income And District
(In percent of total and average amount in Rs.)

Type of Income/ District	Agri-culture	Lives-tock	Veg. & Hort.	Trade & Business	Wages	Services	Sales of Assets	Interest & Rent	Transfer Payments	Debts	Others	Total
Dang												
% of total income	26.7	4.9	.2	9.9	5.4	13.0	17.8	2.9	3.2	11.4	4.5	100.0
Average income/HH	799	147	7	295	162	389	534	88	96	343	135	2995
Rolpa												
% of total income	3.4	12.2	.2	15.3	21.0	11.6	6.4	3.7	10.9	9.8	6.0	100.0
Average income/HH	37	130	2	162	222	123	68	39	111	104	640	1060
Sallyan												
% of total income	4.0	5.9	2.4	28.4	17.5	26.7	3.0	.5	1.5	4.9	5.1	100.0
Average income/HH	61	89	36	428	268	402	45	9	23	73	78	1506
Pyuthan												
% of total income	6.4	10.7	.7	6.7	8.7	31.9	15.8	1.3	13.2	1.6	3.0	100.0
Average income/HH	130	218	15	136	177	648	322	26	270	32	61	2035
Rukum												
% of total income	5.8	9.7	.7	27.0	18.9	13.4	7.2	1.8	5.7	8.5	1.3	100.0
Average income/HH	51	86	6	238	167	118	64	16	51	75	12	886
Rapati												
% of total income	13.9	7.6	.7	14.3	11.2	19.4	12.6	2.1	6.2	7.7	4.3	100.0
Average income/HH	250	136	13	256	201	348	227	39	111	139	77	1798

contributed by agriculture indicates that among the households in the zone, there hardly exists any marketable surplus and bulk of production is consumed by producers.

These results are more interesting when compared among districts. In Dang, income from agricultural sales is much higher than in other districts, accounting for nearly 27 percent of cash income. In Pyuthan the survey estimates show only 6.4 percent being contributed by agriculture to total cash income. Other districts report still lower percentages. This supports the previous argument that a low level of cash income from agricultural sale reflects a low level of marketable surplus among households particularly in the hills.

Cash income from livestock shows slightly less variation among districts, with Rolpa reporting the highest (12.2%) and Dang reporting the lowest (4.9%). In the hill districts income from livestock is higher than that from agriculture. Inspite of the higher percentage share of livestock income in the hill districts, absolute per household income from livestock in Dang is still higher than in most of the hill districts.

Income from horticulture and vegetables is very negligible in all the districts and accounts for less than one percent.

In Sallyan District, cash income from trade and business is relatively high (Rs.428 or 28.4%). In Rolpa, it is 15.3 percent and in Rukum it is 27 percent of total cash income. Share of income from wages is seen to be lowest in Dang (5.4%) and highest in Rolpa (21%). Pyuthan reports the highest share of income from services (32%) and transfer payments (13.2%).

The distribution of income from various sources reveals a good degree of variations among districts. These estimates of sources of income per household, however, do not say anything about how income is distributed among the various types of households. Table 3.5.6 presents data on the distribution of income sources by type (size of land holdings) of households. The share of income from agriculture is expected to be higher among larger farm households than smaller farm households. The first column of Table 3.5.6 supports this argument. Sub-marginal farm households, however, are seen to have a higher share of income from the sale of grains (agriculture) than marginal farm households, in total income. Even though our classification of households is based upon total cultivated land owned per household, how much land households operate helps explain the higher agricultural income of sub-marginal households than marginal households. In an earlier Section (3.1) it has been shown that sub-marginal farm households own only about 2 percent of the total cultivated area but operate area as much as 16 percent. Moreover on a per household basis, land operated by sub-marginal households is also seen to be greater than that operated by marginal farm households.

Figures in land owned and operated per household by type of household are reported in Table 3.5.4 above. It is seen that, marginal farm households own nearly four times more land than sub-marginal farm households, but, on the other hand sub-marginal farm households operated about 1.62 times more land than the marginal households. This factor may therefore explain why sub-marginal households have a higher share of agricultural income than the marginal farm households.

Table 3.5.6

Percentage Distribution Of Average Household Cash Income By Source Of Income And Type Of Household
(In percent of total and average amount in Rs.)

Type of Income/ Type of Household	Agri-culture	Lives-tock	Veg. & Hort.	Trade & Business	Wages	Services	Sales of Assets	Interest & Rent	Transfer Payments	Debts	Others	Total
Sub-marginal												
% of total income	9.4	9.3	.4	19.0	16.5	18.6	8.7	1.2	4.5	10.4	2.0	100.0
Average income/HH	141	139	6	286	248	279	131	18	67	157	30	1502
Marginal												
% of total income	8.0	5.9	.9	13.0	13.5	15.1	15.4	.7	6.9	9.8	11.0	100.0
Average income/HH	121	88	13	196	203	227	231	11	104	144	164	1502
Small												
% of total income	10.7	9.3	.8	17.4	11.4	24.4	8.4	1.2	9.0	6.2	1.1	100.0
Average income/HH	169	146	12	274	179	383	132	19	142	97	17	1570
Medium												
% of total income	21.0	9.0	1.1	13.8	6.9	27.9	8.2	.8	5.4	4.9	1.0	100.0
Average income/HH	555	238	28	362	183	735	217	21	141	128	26	2634
Large												
% of total income	31.7	5.2	.7	6.0	1.9	15.1	22.1	9.1	3.3	4.7	.3	100.0
Average income/HH	1638	270	34	310	97	778	1135	469	168	243	16	5158
Rapati												
% of total income	13.9	7.6	.7	14.3	11.2	19.4	12.6	2.1	6.2	7.7	4.3	100.0
Average income/HH	250	136	13	256	201	348	227	39	111	139	77	1798

Beyond marginal farm households, the share of agricultural income begins to increase rapidly as land owned by households increases (Table 3.5.4).

It is to be expected that income from wages and its share in total income to be lowest among large farm households. This is well supported, and per household wage income as well as its share in total income is seen to decrease gradually from sub-marginal to large farm households.

Judging from the consistent share of total income from livestock it appears that livestock practices are not confined to any particular household type, but common to all of them.

The level of income from the sale of assets indicates that a good deal of asset transfer is taking place in Rapati Zone. It is not possible to specify exactly the amount of land involved in this asset transfer, but it is expected to be largest among the various assets considered - land, house, yard, ornaments, jewellery, etc. Per household income from the sale of assets for the zone as a whole is about Rs.227 accounting for 12.6 percent of total cash income. Table 3.5.6 points out that in Dang 17.8 percent of cash income is from sale of assets. In Pyuthan, this figure is also rather high at 15.8 percent. Income from sale of assets when compared with per household cash expenditure (see section on Expenditure) on the purchase of assets reveals an interesting fact. Here the purchase of assets includes the purchase of land, ornaments, jewellery, livestock, etc. The average per household cash expenditure was estimated to be Rs.230 which is about the same as per household cash income (Rs.227) from sale of assets. This implies that bulk of the asset transfer is taking place within the zone.

3. Farm and Non-Farm Cash Income

This section briefly discusses average farm and non-farm cash income per household. Farm income is considered to be income from agriculture (sale of grains and cash crops), income from livestock (sale of livestock products, excluding ghee) and income from horticulture and vegetables. Note that while considering farm income, account is not taken of purchased inputs and other related costs. Non-farm income includes the following sources; trade and business, wages, services, interest and rent, transfer payments and other sources. Income from the sale of assets and debts have not been considered under non-farm income, even though these two sources contribute substantially to household income (see Tables 3.5.5 and 3.5.6). These are separately reported under sale of assets and loans.

In Table 3.5.7 below the average household income by the three sources is presented for the five districts of Rapati. Farm income is about 22 percent of total cash income and non-farm income accounts for about 57 percent. It can be noticed that about 20 percent of cash income is accounted for by income from sale of assets, and loans taken, which is fairly high. Among districts, however, the distribution of income by these sources is slightly different. In the four hill districts farm income does not account for more than about 18 percent of cash income, whereas in Dang, farm income is as high as 32 percent. Non-farm income in the hill districts appears to be more important than farm income as indicated by Table 3.5.7 below, since at least 65 percent of cash income is contributed by sources other than farms. In Dang on the other hand, non-farm income sources contribute less proportionately to total per household cash incomes.

Income from sale of asset and loans as can be noticed from the table is also important. In Dang, it contributed about 29 percent to total per household cash income. In Rolpa, Pyuthan and Rukum, this source is estimated to be contributing nearly as much as farm income. It should be noted here that whether this is a continuous source to household cash income cannot be answered at this stage, specially from a cross-section survey as the present one is. We should, however, expect, at least theoretically, that this source is not likely to be continuous, but rather discrete in nature.

Table 3.5.7

Average Farm And Non-Farm Cash Income Per Household By District

(In Rs.)

Districts/Type of Income	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Farm Income	953 (31.82)	169 (15.93)	185 (12.20)	363 (17.84)	143 (16.19)	400 (22.25)
Non-Farm Income	1163 (38.93)	722 (68.05)	1202 (79.81)	1318 (64.77)	601 (68.08)	1032 (57.40)
Sale of Assets and Loans	876 (29.25)	170 (16.02)	119 (7.90)	354 (17.39)	139 (15.74)	366 (20.36)
Average cash income	2995 (100.00)	1061 (100.00)	1506 (100.00)	2035 (100.00)	883 (100.00)	1798 (100.00)

Note: Figures in brackets are percentages of respective columns.

This data pooled for the zone over the five type of household is presented in Table 3.5.8. One notices that farm income's share to total income ranges from 15 percent (marginal farm households) to 38 percent (large farm households). Among all types of households except for large the ratio of non-farm income to farm income is greater than one. The gap between farm and non-farm income rapidly drops from 44 percent among small households to - 2 percent among large households where farm income exceeds non-farm income.

These results reveal that households in all the five districts have to rely more on non-farm sources for cash than farm sources. This reliance for cash income on non-farm sources holds for all but the largest land owning households.

Table 3.5.8

Average Farm And Non-Farm Cash Income Per Household By Type Of Household

(In Rs.)

Type of Household/ Type of Income	Sub-Marginal	Marginal	Small	Medium	Large	Rapati
Farm Income	286 (19.03)	222 (14.79)	328 (20.89)	821 (31.16)	1942 (37.64)	400 (22.25)
Non-Farm Income	928 (61.78)	908 (61.12)	1014 (64.59)	1469 (55.77)	1839 (35.65)	1032 (57.40)
Income from Sale of Assets and Loans Taken	288 (19.19)	375 (25.00)	228 (14.52)	345 (13.08)	1378 (26.71)	366 (20.36)
Average Cash Income (Rapati)	1502 (100.00)	1502 (100.00)	1570 (100.00)	2634 (100.00)	5159 (100.00)	1798 (100.00)

Note: Figures in brackets are percentages of respective columns.

3.6 Expenditure

Information on cash expenditures of households was collected in 16 different expenditure categories each of which was further divided into various sub-heads. This was done to help respondents to recall expenditures made in the past one year. For example, under the category, food stuff, the enumerator would remind the respondent of the various items that could fall in this category such as, purchase of food material, salt, sugar, vegetables, meat etc. No attempt was made to collect information on each of such items separately, but only the total expenses on food stuffs.

The sixteen different categories have been lumped into fourteen groups for the purpose of analysis. Table 3.6.1 below reports the households expenditure breakdown for the five districts. The survey estimates shows the annual average expenditure of households in Dang to be the highest and that in Rukum to be the lowest. The average in Dang is about three times the average expenditure of Rukum households. The zone's average annual expenditure is roughly Rs.1690, Rolpa and Rukum households report a lower amount than this, whereas Sallyan and Pyuthan's average expenditure is not significantly higher than the average.

In Rapati Zone as much as 29 percent of total expenditure is spent for clothing. Expenditure on food stuffs comes second at 22 percent of total expenditures. What should be noted here is that these figures do not account for self-produced and consumed grain, and livestock products. If this is taken into account, expenditure on food stuffs would be considerably higher. Purchase of assets (land, livestock, pots and pans,

jewellery etc.), is roughly a 14 percent share of average household expenditures, followed by expenditures on feasts and funerals (10%).

The relative importance of various expenditure categories by districts vary considerably from zonal averages. In Dang, for instance, the share of food stuffs ranks third in the overall household expenditure pattern. In Rolpa, Sallyan and Rukum the results are similar to zonal averages, but one notices that in Rukum expenditure on clothing is twice as great as expenditure on food stuffs. Again, in Rukum, children's education expenses ranks third in the overall household expenditure. In Pyuthan on the other hand food expenses are higher than clothing expenses.

In Table 3.6.2 the average expenditures of households by type of households is presented. It is seen from this table that the share of expenditure on food stuff is greater among household with less land than among households with more land. The average expenditure per household on food stuffs is seen to be higher among sub-marginal households, than either marginal or small household. Comparing expenditure share on food stuffs and clothing reveals that among large households, the later is twice as high as the former. Expenses on farm maintenance and agri-inputs are considerably higher for households owning more land than for households with little land. Expenditure on education and its share of total expenses is seen to have a strong positive correlation with larger farm households. It also appears that smaller farm households are spending a larger percentage of their expenditure on asset accumulation than larger farm households, although the absolute amounts are less.

Table 3.6.1

Percentage Distribution Of Household Expenditure And Per Household Expenditure By Type Of Expenditure And District

In '000 Rs.

Type of Expenditure/ Districts	Food Stuff	Farm Maintenance & Ag. Inputs	Education	Health	Fuel	Trans-port & Commu-nication	Taxes & Litigation	Drinks & Cigarettes	House Maintenance	Purchase of assets	Festival Funerals	Dev. Subscription	Loss from Bus. & Cottage Industry	Clothing	Total
Dang															
% of Total Exp.	15.29	4.64	8.34	4.19	4.59	1.77	5.71	1.64	1.47	16.89	9.15	0.93	0.09	25.91	100.00
Average expenditure	0.39	0.10	0.21	0.10	0.11	0.04	0	0.04	0.03	0.43	0.23	0.02	-	0.65	2.53
Rolpa															
% of Total Exp.	24.50	1.83	1.68	2.14	0.81	1.04	5.93	2.13	0.54	17.34	9.90	0.66	0.64	31.85	99.92
Average expenditure	0.27	-	0.01	0.02	-	0.01	0.06	0.02	-	0.19	0.11	-	-	0.35	1.11
Sallyan															
% of Total Exp.	24.57	2.05	2.89	3.27	1.14	0.59	6.79	1.[illegible]	1.59	10.80	9.01	1.80	0.48	[illegible]	[illegible]
Average expenditure	0.43	0.03	0.05	0.05	0.02	0.01	0.15	0.03	0.02	0.19	0.16	0.03	-	0.55	1.78
Pyuthan															
% of Total Exp.	31.72	3.01	2.17	1.41	2.23	0.36	1.03	5.20	1.62	12.78	12.68	0.07	0.41	25.31	100.00
Average expenditure	0.54	0.05	0.03	0.02	0.03	-	0.01	0.09	0.02	0.21	0.21	-	-	0.43	1.71
Rukum															
% of Total Exp.	20.61	1.08	9.85	0.98	1.02	0.02	1.88	1.50	0.21	7.70	9.17	2.98	-	43.61	100.00
Average expenditure	0.17	-	0.08	-	-	-	0.01	0.01	-	0.06	0.07	0.02	-	0.37	[illegible]
Rapati															
% of Total Exp.	22.24	2.74	5.08	2.93	2.58	1.01	5.25	2.47	1.31	14.17	9.92	1.06	0.31	28.93	100.00
Average expenditure	0.38	0.04	0.08	0.04	0.04	0.01	0.08	0.04	0.01	0.23	0.16	0.01	-	0.48	1.69

(-) denote insignificant amounts.

Table 3.6.2

Percentage Distribution Of Housenold Expenditure And Per Household Expenditure By Type Of Expenditure And Type Of Household

In '000 Rs.

Type of Expenditure/ Type of Household	'Food 'stuff	'Clo- 'thing	'Farm 'Mainte- 'nance and 'Ag.Inputs	'Educa- 'tion	'Health	Fuel	'Trans- 'port & 'Communi- 'cation	'Taxes '& Li- 'tiga- 'tion	'Drinks 'and 'Cigar- 'rettes	'House 'Mainte- 'nance	'Purcha- 'se of 'HH 'assets	'Festi- 'vals & 'Fune- 'rals	'Dev. 'Subs- 'crip- 'tion	'Loss 'from 'Buss. '& C.I.	'Total 'Total
Sub-marginal															
% of total expenditure	31.81	26.13	1.82	2.67	2.55	4.56	0.60	4.59	2.91	0.96	11.16	9.80	0.31	0.12	99.99
Average expenditure	0.40	0.08	0.01	0.03	0.01	0.01	-	0.01	0.04	-	0.03	0.03	-	-	1.24
Marginal															
% of total expenditure	23.88	28.47	1.71	1.49	2.51	1.97	0.99	4.26	2.46	2.40	18.38	-	1.12	0.37	100.00
Average expenditure	0.32	0.38	0.02	0.02	0.03	0.03	0.01	0.05	0.05	0.03	0.24	0.14	0.01	-	1.36
Small															
% of total expenditure	20.00	32.09	1.96	2.79	3.67	1.72	0.81	5.93	2.33	0.34	16.95	10.05	0.92	0.45	99.99
Average expenditure	0.32	0.51	0.03	0.04	0.05	0.02	0.01	0.09	0.03	-	0.27	0.15	0.01	-	1.59
Medium															
% of total expenditure	20.32	30.54	3.95	3.48	4.08	2.75	0.33	6.24	3.49	1.88	9.58	11.54	1.19	0.57	99.94
Average expenditure	0.53	0.79	0.10	0.09	0.10	0.07	-	0.16	0.09	0.04	0.25	0.30	0.03	0.01	2.61
Large															
% of total expenditure	13.18	26.89	5.96	19.64	2.12	2.70	2.37	6.10	1.35	0.51	8.89	8.34	1.89	-	99.94
Average expenditure	0.68	1.39	0.30	1.02	0.11	0.14	0.12	0.31	0.07	0.02	0.46	0.43	0.89	-	5.19
Rapati															
% of total expenditure	22.24	28.93	2.74	5.08	2.93	2.57	1.01	5.25	2.47	1.31	14.17	9.92	1.06	0.31	100.00
Average expenditure	0.38	0.48	0.04	0.09	0.04	0.04	0.01	0.08	0.03	0.09	0.24	0.17	0.01	-	1.70

(-) denote insignificant amounts.

3.7 Credit

This section reports on the loans taken by households for various purposes and sources. Six purposes were pre-identified, and source of loan could be either institutional or non-institutional Non-institutional loans taken in kind was asked to be estimated in rupees and this is what is reported. The period reported covers the 12 months preceeding the survey date (January-February 1979).

a. Consumption Loan

Loans for consumption were the most frequent reported. 11.81 percent of households reported having taken loans for consumption in the last twelve months. The average loan per borrowing household was estimated to be Rs.970 and the average interest rate charged was 16.54 percent. Even though consumption loan were reported by the most households, the average amount borrowed and interest charged on these loans were not the highest. The average amount borrowed is reported to be highest for "death or social rites and customs". The interest charged on this type of loan is fairly high (17.84%) but not the highest. In terms of

five districts is not, however, even. The lowest interest (9.55%) was charged in Dang and the highest (22.95%) in Sallyan. It may be that where food is relatively more abundant, as in Dang, and relatively so in Pyuthan, that the interest charged on consumption loan is also less. In the remaining three hill districts, where food is more scarce, interest rates on consumption loan is also reported to be higher. There appears to be a positive association between food availability and low interest rate.

b. Production and Livestock Loan (reported as farming and animal rearing)

The percentage of borrowing households and average interest charged does not show much variation among districts, but amount borrowed does. The lowest amount borrowed was in Rolpa (Rs.757) and the highest in Rukum (Rs.4036). The higher amount borrowed in Rukum may reflect the relative popularity of sheep rearing. It is, however not possible to disaggregate this data to reach a more conclusive argument.

c. Land Purchase

The amount borrowed is uniformly the highest in this category. On the other hand, the percentage of households borrowing is relatively low, with the highest reported for Rolpa (3.99%) and lowest for Rukum (1.36%).

d. House Construction, Purchase or Repair

As the amount borrowed for this purpose indicates, which is relatively very little (range Rs.25 - Rs.588), the purpose of borrowing appears to be more for repair work than either construction or purchase. But the interest charged is uniformly high.

e. Marriage and Death or Social Rites and Customs

Though the number of households borrowing for marriage purpose is reported to be low, the amounts are fairly high and interest rates are undoubtedly on the higher side, except in Dang. The high interest rate in the four hill districts may reflect the stronger bargaining power of money-lenders, where cash is more scarc This can be generally expected true in other cases where loans are borrowed for social, religious cases. We notice the same trend on loans borrowed for death or social rites and customs.

f. Loans by Sources in the Last 12 Months

The various loans obtained by households were further classified by the sources. Two major sources were considered, institutional and non-institutional. Non-institutional was further split into non-institutional loans in kind and cash. Also a few responses were grouped under "other". The results are presented in Table 3.7.2 below.

The main source of borrowing reported was through institutions. Institutions here includes all official sources such as the Agricultural Development Bank, and Sajhas. As much as 18.38 percent of households had borrowed from institutional sources. The average interest rate was reported to be 15.57 percent and the average amount borrowed per borrowing household was Rs.1217. Non-institutional in kind was reported to be the second major source. The amount borrowed (kind converted into cash) however is the least, though interest on such loan is the highest (17.33%). Cash borrowing households from non-institutional sources is the least, but amount borrowed ranks second (Rs.1160), and appears to be rather strange. It may be the case here that households were unwilling to disclose the actual interest rate they have to bare.

Table 3.7.1

Purposewise Loans Taken By Households In The Last Twelve Months By District

Purpose/ Districts		Consumption	Farming/Animal Rearing	Land Purchase etc.	House, Repair Purchase etc.	Marriage	Death or Social Rites and Custom	Others
Dang	% of borrowing households	13.69	5.39	1.82	-	1.22	0.75	1.29
	Av. per borrowing HH (Rs.)	880.39	873.76	1159.71	-	826.93	362.37	3524.42
	Average interest rate	9.55	12.82	12.23	-	9.99	7.09	14.16
Rolpa	% of borrowing households	13.29	5.60	3.99	0.26	1.45	0.56	0.65
	Av. per borrowing HH (Rs.)	838.95	757.07	1410.29	297.92	1481.26	1224.75	1045.03
	Average interest rate	17.25	12.42	19.60	25.00	22.28	21.63	25.00
Sallyan	% of borrowing households	8.58	3.74	2.85	1.02	2.42	1.81	1.63
	Av. per borrowing HH (Rs.)	1123.27	1096.36	1400.21	587.76	1615.68	2724.01	2242.74
	Average interest rate	22.95	15.68	23.12	21.99	19.45	22.50	20.17
Pyuthan	% of borrowing households	12.14	3.76	3.49	0.90	0.95	1.25	0.92
	Av. per borrowing HH (Rs.)	1127.65	2466.93	2010.49	300.83	1086.09	1434.42	234.66
	Average interest rate	12.85	12.72	15.66	9.99	15.59	12.99	15.99
Rukum	% of borrowing households	10.58	2.03	1.36	0.41	0.56	0.54	0.35
	Av. per borrowing HH (Rs.)	993.69	4035.64	1233.30	24.39	1251.71	712.92	393.98
	Average interest rate	20.10	13.32	19.39	24.97	20.99	25.00	-
Rapati	% of borrowing households	11.81	4.32	2.76	0.49	1.38	1.00	1.03
	Av. per borrowing HH (Rs.)	969.93	1346.25	1501.31	394.06	1322.76	1648.27	2044.67
	Average interest rate	16.54	13.39	18.00	20.48	17.66	17.84	18.83

Table 3.7.2

Average Amount Borrowed By Households In The Last Twelve Months By Source And District

Source/District		'Non-institutional' in Kind	'Institutional'	'Non-institutional' in Cash	Others
Dang	Percentage of loan borrowing households	8.31	14.63	1.42	-
	Average amount (Rs.) per borrowing households	760.02	1198.85	812.72	-
	Average interest rate	11.98	10.49	15.04	-
Rolpa	Percentage of loan borrowing households	1.85	23.75	0.19	-
	Average amount (Rs.) per borrowing households	897.16	958.80	1508.49	-
	Average interest rate	15.03	17.55	10.99	-
Sallyan	Percentage of loan borrowing households	1.56	19.55	0.69	0.24
	Average amount (Rs.) per borrowing households	1026.30	1395.45	2550.00	748.73
	Average interest rate	23.51	21.57	14.99	20.99
Pyuthan	Percentage of loan borrowing households	1.42	20.53	1.05	0.40
	Average amount (Rs.) per borrowing households	428.44	1272.05	524.94	15034.09
	Average interest rate	12.05	13.53	15.99	12.00
Rukum	Percentage of loan borrowing households	1.93	11.74	1.62	-
	Average amount (Rs.) per borrowing households	950.93	1489.78	1312.75	-
	Average interest rate	24.09	14.73	14.99	-
Rapati	Percentage of loan borrowing households	3.32	18.38	0.96	0.17
	Average amount (Rs.) per borrowing households	790.55	1216.58	1159.87	6926.99
	Average interest rate	17.33	15.57	14.30	16.50

CHAPTER 4

SOCIAL CONCERNS

4.1 Literacy and Education

There are several ways of measuring educational status as an indicator of social development and each has advantages. In this report, an attempt is made to quantify educational status in three different ways: (a) literacy rate; (b) school enrollment ratio; and (c) the highest educational level passed by any household member. All these measures of educational status are classified by sex for each district, type of household and ethnic group in the Rapati Zone.

(a) Literacy Status

The survey estimates show that 22.1 percent of the total population 6 years and above in age of Rapati Zone are literate. The percentage of literate males (37.6%) is found to be six times higher than the percentage of literate females (6.1%). The source of literacy for more than two thirds of the literate population of both sexes was reported as formal school. These literacy rates for each district by sex and source of literacy are presented in Table 4.1.1.

Table 4.1.1

Percentage Distribution Of Literate Household Members 6 Years And Above By Source Of Literacy, Sex And Districts.

District/Literacy Sources		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
School	Male	31.0	18.7	27.8	32.8	14.6	26.5
	Female	8.7	2.9	2.6	3.2	2.1	4.6
	Total	20.2	10.9	15.6	18.1	8.6	15.7
Household	Male	9.6	11.1	11.7	11.2	8.1	10.5
	Female	2.6	1.0	2.3	0.3	0.3	1.5
	Total	6.2	6.1	7.0	5.8	4.4	6.1
Army	Male	0.1	0.9	0.2	1.2	-	0.5
	Female	-	-	-	-	-	-
	Total	-	0.5	0.1	0.6	-	0.2
Foreign Country	Male	-	-	-	0.2	0.1	0.1
	Female	-	-	0.1	-	-	-
	Total	-	-	-	0.1	-	-
Total Literate	Male	40.7	30.8	40.6	45.4	22.8	37.6
	Female	11.3	3.9	5.0	3.5	2.4	6.1
	Total	26.5	17.5	22.7	24.5	13.0	22.1

The above table reveals that the literacy rate is highest in Dang (26.5%), and lowest in Rolpa (13.0%). The literacy rate in the three districts of Dang, Pyuthan and Sallyan do not reveal marked differences. The male literacy rate is seen to be the highest in Pyuthan (45.4%) while the female rate is significantly higher in Dang (11.3%) than in the other four districts. Table 4.1.1 above also shows that schools have contributed most significantly to the levels of literacy among households.

It is generally believed that among many other factors, literacy status is directly proportional to economic status. This correlation is supported by the statistics presented in Table 4.1.2 below, to the extent that land owned reflects economic status.

Table 4.1.2

Percentage Distribution Of Literate Household Members 6 Years And Above By Source Of Literacy, Sex And Type Of Household

Type of Household/ Literacy Source		Sub-marginal	Marginal	Small	Medium	Large	Rapati
School	Male	19.1	23.9	25.6	36.2	52.6	26.5
	Female	3.5	2.3	3.0	7.5	19.2	4.5
	Total	11.5	13.5	14.2	21.9	36.1	15.7
Household	Male	7.8	8.7	12.0	14.0	17.6	10.5
	Female	0.9	0.7	1.9	2.3	5.4	1.5
	Total	4.4	4.9	6.9	8.1	11.6	6.1
Army	Male	0.4	0.2	0.8	1.0	-	0.5
	Female	-	-	-	-	-	-
	Total	0.2	0.1	0.4	0.5	-	0.2
Foreign Country	Male	-	-	0.2	-	-	0.1
	Female	-	-	0.1	-	-	-
	Total	-	-	0.1	-	-	-
Total Literate	Male	27.2	32.9	38.6	51.2	70.2	37.6
	Female	4.4	3.0	4.9	9.8	24.6	6.0
	Total	16.1	18.5	21.7	30.5	47.8	22.0

It is clear from the above table that the literacy rate for both sexes among the five types of household increases as the size of holding increases, except in the case of female literacy among marginal farm households which is lower (3.0%) than that of the sub-marginal/landless (4.4%). Although statistical tests are necessary to guage the degree of correlation, it would appear that this correlation between literacy and land holdings is more significant than that between income and land holdings. In addition an increase in economic status (as reflected by the types of household) is associated with an increase in female literacy. In other words, the disparity between male and female literacy rates is highest in the marginal farm household category and lowest (2.9%) in the large farm household category.

Since literacy status is elsewhere found to be influenced by many factors such as social and economic status, occupation of the household, etc., an attempt is made to analyse the total literacy of household members by ethnic group in the following table (4.1.3).

Table 4.1.3

Percentage Distribution Of Literate Household Members By Source Of Literacy, Sex And Ethnic Group

Ethnic Group/ Literacy Source		'Group A	'Group B	'Group C	'Group D	'Group E	'Rapati
School	Male	35.8	23.2	17.4	13.0	40.0	26.5
	Female	6.8	5.0	1.1	0.7	11.4	4.5
	Total	17.1	14.4	9.3	5.0	26.6	15.7
Household	Male	13.5	8.8	9.3	5.3	12.9	10.5
	Female	2.5	0.8	0.7	0.6	3.5	1.5
	Total	8.1	5.1	5.0	3.0	8.5	6.1
Army	Male	0.4	1.4	-	0.1	-	0.5
	Female	-	-	-	-	-	-
	Total	0.2	0.7	-	-	-	0.2
Foreign Country	Male	0.1	0.1	-	-	-	0.1
	Female	-	0.1	-	-	-	-
	Total	0.1	-	-	-	-	-
Total Literate	Male	49.8	33.5	26.7	18.4	52.9	37.6
	Female	9.3	5.9	1.8	1.3	14.9	6.0
	Total	29.9	20 1	14.3	9.8	35.1	22.0

Aside from the "others" ethnic group (E) (which is composed of miscellaneous and non-reporting households), Table 4.1.3 reveals a clear association of literacy status with social status. The higher status ethnic groups are considerably more literate than those lower on the social scale. Interestingly, this association also holds for female literacy despite the widely held assumption that the higher status Hindu castes place more restrictions on their women. The literacy rate for Tharu and occupational caste women is appallingly low, suggesting that they are the highest priority target group for this sector.

It is also found that 1.4 percent of the males of ethnic group B (Magars, etc.) reported the source of their literacy as the Army followed by Brahman-Chhetris and occupational castes (0.4% and 0.1% respectively). This reflects the fact that the (Magar, etc.) ethnic group is traditionally recruited for military service.

(b) School Enrollment Ratio

School education in Nepal is classified into three levels -- namely primary, lower secondary and secondary level. Under the New Education Plan, primary education extends from class 1-3 and the children of 6-8 years age are expected to be enrolled at this level. Similarly the lower secondary extends from class 4-7 and secondary from class 8-10. Children of (9-12) years and (13-15) years are expected to be enrolled in these levels respectively.

The school enrollment ratio is defined as the ratio of number of students of the particular age-group enrolled at a specified level to the total population of that particular age group multiplied by 100.

That is,

$$\text{Enrollment ratio} = \frac{\text{No. of students of the particular age-group enrolled at specified level}}{\text{Population of that particular age-group}} \times 100$$

The above equation gives the real enrollment ratio at any particular level. But if we ignore the age of students and calculate the enrollment ratio simply by dividing the total

students enrolled at any level by the population of the age-group defined for that level than we have the apparent enrollment ratio.*

The targeted 64 percent primary enrollment ratio of the New Education Plan represents only the apparent enrollment ratio. However, it is important to calculate both types of enrollment ratios to get a true picture of the enrollment pattern.

Table 4.1.4 below represents the apparent enrollment ratio at different levels of schooling by districts. For Rapati as a whole the school enrollment ratio, without specifying the level of school, is estimated to be 48.7 for males and 9.9 for females. The apparent enrollment rate at the primary level is as high as 103.9 percent for males and 20.9 percent for females but it decreases sharply at the lower secondary level (30.8% for males and 2.6% for females) and secondary level 13.6 percent male and 3.5 percent females. It should be noted that the percentages of male enrollment at the primary level exceeding 100 shows that the number of males enrolled at the primary level is higher than the size of the age-groups of males expected to be enrolled in the primary level. Moreover, it is surprising that the female enrollment ratio is found to be lower at lower secondary level than at the secondary level.

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* Apparent Enrollment Ratio = $\frac{\text{No. of students enrolled at specified level}}{\text{Population of age-group defined for the level}} \times 100$

Table 4.1.4

Percentage Distribution Of Apparent Enrollment By Level Of School, Sex And District

District/Enrollment Level		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Enrolled in Primary Level	Male	89.6	104.4	102.4	118.6	58.6	103.9
	Female	28.3	19.8	21.8	12.7	12.3	20.9
	Total	58.3	61.1	56.0	63.3	34.0	56.3
Enrolled in Lower Secondary Level	Male	30.6	24.7	35.8	33.8	27.6	30.8
	Female	5.5	0.0	3.5	2.2	0.0	2.6
	Total	19.5	12.4	24.2	17.7	17.7	17.6
Enrolled in Secondary Level	Male	24.8	6.0	13.6	12.0	7.7	13.6
	Female	4.8	2.3	5.6	2.1	0.0	3.3
	Total	15.1	4.0	9.6	7.1	5.1	8.6
Total enrolled in School	Male	51.6	45.9	50.2	54.4	33.6	48.7
	Female	15.1	7.2	10.8	5.8	5.5	9.9
	Total	34.3	26.1	30.2	29.8	20.1	29.5

On the whole, school enrollment is found highest in Dang followed by Sallyan and Pyuthan. However primary enrollment is found highest in Pyuthan followed by Rolpa and Sallyan, while female enrollment is still highest in Dang. As would be expected from information on literacy status, Rukum has the lowest primary enrollment and total enrollment rate. But if we look at the enrollment at the lower secondary and secondary level, Rolpa is seen to have the lowest level. The above table shows that female enrollment at the lower secondary level in both Rolpa and Rukum is zero. This is likely a function of the sample, such that the lack of reported enrollment is related to the small size of this cell.

The real enrollment ratio of Rapati Zone by district, is shown in the Table 4.1.5 presented below. On the basis of this ratio, only 11.9 percent of the males and 4.2 percent of the females of (6-15) years are found to be enrolled. The table

reveals that 24.5 percent of the males and 8.9 percent of the females of (6-8) years are enrolled in primary level. Similarly, 6.9 percent of the males, 1.3 percent of the females of (9-12) years, 2.8 percent of the males and 1.0 percent of the females of (13-15) years are found enrolled in lower secondary and secondary levels respectively. Thus, if we compare the real and apparent enrollment ratios (Table 4.1.4 and Table 4.1.5) the difference gives the percentages of under-aged and over-aged enrollment. Also it is found that the percentage of under-aged enrollment is negligible in comparison to over-aged enrollment.

Table 4.1.5

Percentage Distribution Of Real Enrollment By Level Of School, Sex And District

District/Enrollment Level		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
(6-8) years Student Enrolled in Primary Level	Male	31.3	20.3	17.1	37.5	4.0	24.5
	Female	11.8	5.7	10.8	6.7	5.2	8.9
	Total	21.3	12.8	13.5	21.4	4.6	16.3
(9-12)yrs. Student Enrolled in Lower Secondary Level	Male	9.1	4.1	4.6	11.1	2.8	6.9
	Female	3.4	0.0	0.0	1.4	0.0	1.3
	Total	6.6	2.0	2.9	6.1	1.5	4.3
(13-15) years Student Enrolled in Secondary Level	Male	3.7	2.2	1.9	3.5	2.8	2.8
	Female	4.3	0.0	0.0	0.0	0.0	1.0
	Total	4.0	1.0	0.9	1.8	1.8	2.0
(6-15) years Student Enrolled in School	Male	16.4	8.9	7.7	17.3	3.3	11.9
	Female	7.2	1.9	4.2	2.9	2.3	4.2
	Total	12.0	5.3	5.9	9.9	2.8	8.1

Total enrollment is highest in Dang, followed by Pyuthan and Sallyan. However, the primary and lower secondary enrollment are more or less equal for Dang and Pyuthan followed by Sallyan and Rolpa, with Rukum by far the lowest. In contrast, secondary level enrollment in descending order is as follows: Dang, Pyuthan, Rukum, Rolpa, and finally Sallyan. Table 4.1.5 further reveals that no

females of (9-12) years are enrolled in lower secondary except in Dang and Syuthan. Moreover only 4.3 percent of the females of Dang of (13-15) years are found enrolled in the secondary level.

Table 4.1.6 shows the apparent enrollment ratio by sex and type of household. As was seen in the case of literacy status, the enrollment ratio is found to be higher with the increase in the size of holdings. In some cases, the data is not as would be expected by normal distribution. For instance, in the case of small farm households no female enrollment is recorded at lower secondary level whereas 4.3 percent females are found enrolled at secondary level. In general, it is found that as the level of school increases the enrollment ratio decreases.

Table 4.1.6

Percentage Distribution Of School Going Children
By Apparent Enrollment Level, Sex And Type of Household

Type of Household/ Enrollment Level		Sub-Marginal	Marginal	Small	Medium	Large	Rapati
Enrolled in Primary	Male	71.8	99.8	97.8	117.8	123.5	103.9
	Female	9.4	14.3	18.0	31.8	92.0	20.9
	Total	37.0	57.7	52.2	71.7	109.2	56.3
Enrolled in Lower Secondary	Male	18.3	26.1	33.4	43.3	75.9	30.8
	Female	1.4	0.5	0.0	7.9	17.2	2.6
	Total	10.7	14.4	16.4	26.8	47.2	17.6
Enrolled in Secondary	Male	9.0	6.1	9.3	41.7	46.2	13.6
	Female	2.9	3.3	4.3	0.0	6.9	3.3
	Total	6.1	4.7	7.1	19.0	27.7	8.6
Total enrolled in School	Male	34.1	46.6	46.1	68.9	88.3	48.7
	Female	5.1	6.2	7.9	15.7	43.1	9.9
	Total	19.7	27.2	26.4	12.1	67.0	29.5

The above table indicates a remarkable increase in the percentage of female enrolled from large farm households in comparison to other categories.

Analysis of the real enrollment ratio at different level of school by type of household shows that the variation among different types of households is very similar to that revealed by the apparent enrollment ratio.

Table 4.1.7

Percentage Distribution Of Real Enrollment By Level Of School, Sex And Type Of Household

Type of Household/ Enrollment Level		Sub-Marginal	Marginal	Small	Medium	Large	Rapati
(6-8) years Student Enrolled in Primary Level	Male	17.2	28.4	16.4	29.7	45.5	24.5
	Female	4.5	6.6	8.2	7.8	41.1	8.9
	Total	10.1	17.7	11.7	16.7	43.5	16.3
(9-12) yrs. student Enrolled in Lower Secondary Level	Male	3.6	0.7	9.0	10.6	18.7	6.9
	Female	0.3	0.0	0.0	5.1	10.0	1.3
	Total	2.1	2.5	4.5	6.9	14.4	4.3
(13-15) years Student Enrolled in Secondary Level	Male	3.5	1.5	3.9	4.5	0.0	2.6
	Female	1.3	0.0	1.7	0.0	4.0	1.0
	Total	2.4	0.8	2.9	2.1	1.9	2.0
(6-15) years Student Enrolled in School	Male	8.1	12.0	9.8	16.3	25.2	11.9
	Female	2.3	2.4	3.6	5.0	20.3	4.2
	Total	5.2	7.4	6.6	10.5	22.9	8.1

Table 4.1.8 shows the overall enrollment ratios among the different type of ethnic groups. Aside from the anomolous category of "others" (E) the highest overall enrollment ratio is found among ethnic group A which consists of Brahman, Chhetri, Thakuri etc. The lowest enrollment ratio is observed among the Tharu, etc. ethnic group (C) and in slight contrast to the data on literacy, the occupational castes (D) report the second lowest level.

Table 4.1.8

Percentage Distribution Of Apparent Enrollment By Level Of School, Sex And Ethnic Group

Ethnic Group/ Enrollment Level		'Group A	'Group B	'Group C	'Group D	'Group E	'Rapati
Enrolled in Primary	Male	119.0	127.4	41.3	76.0	93.5	103.9
	Female	24.0	24.0	1.1	6.5	32.3	20.9
	Total	75.7	68.1	20.2	38.4	66.6	56.3
Enrolled in Lower Secondary	Male	43.3	20.6	21.8	13.4	68.9	30.8
	Female	3.6	0.0	0.4	1.7	16.8	2.6
	Total	24.0	12.5	10.6	8.0	39.1	17.6
Enrolled in Secondary	Male	21.1	10.2	4.6	5.7	8.0	13.6
	Female	3.6	2.5	0.0	1.8	0.0	3.3
	Total	12.8	6.3	2.5	3.7	4.2	8.6
Total enrolled in School	Male	63.7	46.1	27.1	30.4	70.6	48.7
	Female	15.2	10.9	0.7	3.5	20.0	9.9
	Total	39.9	28.9	13.6	17.0	45.1	29.5

The above table further confirms that less than one percent of the females among the Tharus are enrolled in school whereas the female enrollment percentage among the Brahman - Chhetris is 15.2

Table 4.1.9 presented below reinforces the conclusion that the highest real enrollment rate is among ethnic group A, while the occupational castes move back to the lowest position. This distribution of enrollment rate among various ethnic groups seems more reasonable than the distribution of apparent enrollment rate (Table 4.1.8).

Table 4.1.9

Percentage Distribution Of Real Enrollment By Level Of School, Sex And Ethnic Group

Ethnic Group/ Enrollment Level		'Group A	'Group B	'Group C	'Group D	'Group E	'Rapati
(6-8) years	Male	32.0	21.9	23.4	13.2	20.5	24.5
Student Enrolled	Female	15.6	10.4	0.7	0.2	13.7	8.9
in Primary Level	Total	23.6	15.2	11.6	6.1	17.5	16.7
(9-12) yrs. student	Male	10.6	6.7	3.5	1.0	6.8	6.9
Enrolled in Lower	Female	2.7	0.0	0.0	0.0	2.5	1.3
Secondary Level	Total	6.8	4.0	1.7	0.5	4.3	4.3
(13-15) years	Male	4.0	3.5	1.8	0.0	8.0	2.8
Student Enrolled	Female	2.3	0.0	0.0	0.0	0.0	1.0
in Secordary Level	Total	3.2	1.7	1.0	0.0	4.2	2.0
(6-15) years	Male	16.2	9.9	10.2	4.4	13.3	11.9
Student Enrolled	Female	7.4	3.9	0.3	0.1	6.1	4.2
in School	Total	11.9	6.9	5.2	2.3	9.7	8.1

On comparing overall real enrollment and apparent enrollment, the maximum percentage of over-aged students are found among ethnic group E but at the primary level the percentage of over-aged is highest among the Brahman-Chhetris, (Ethnic Group A).

(c) Educational Attainment

The educational level passed by each household member of 6 years and over was recorded and classified into five groups. Household members with no formal education or who have not passed even class 1 are placed in group 1. The second group consists of all those who have completed class 1, 2 and 3. Similarly the third group refers to those who have completed class 4, 5, 6 and 7, the fourth to those that have completed class 8, 9 and 10 and finally the fifth group accounts for all that have completed the School Leaving Certificate (SLC) or higher.

The survey estimates reveal that as many as three fourths of the population of 6 years and over of Rapati Zone had never received formal education i.e. never attended school. Of those that have received formal education males account for 38.5 percent and females only 7.3 percent. However only 14.3 percent of the males and 1.7 percent of the females reported having completed class 4, and only 2.3 percent of the males and 0.1 percent of the females reported having completed the SLC level (Table 4.1.10 below).

Table 4.1.10

Percentage Distribution Of Household Members By Educational Attainment, Sex And District

Districts/Educational Level		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Without Formal Education	Male	58.7	68.9	58.9	53.9	72.1	61.5
	Female	88.7	95.6	94.8	96.1	87.3	92.7
	Total	73.2	82.2	76.9	71.9	79.5	76.8
Class 1-3 Completed	Male	25.4	21.9	25.5	27.9	19.2	24.2
	Female	7.7	3.3	4.1	2.8	11.8	5.6
	Total	16.8	12.7	14.2	15.4	15.6	15.0
Class 4-7 Completed	Male	9.7	7.2	12.0	12.4	5.9	9.6
	Female	2.7	0.4	0.9	1.0	0.6	1.3
	Total	6.3	3.8	6.2	6.7	3.3	5.5
Class 8-10 Completed	Male	3.3	0.9	2.7	3.4	1.3	2.4
	Female	0.6	0.1	0.2	0.1	0.2	0.3
	Total	2.0	0.5	1.3	1.7	0.8	1.4
SLC and Above	Male	3.0	1.1	2.8	2.5	1.5	2.3
	Female	0.2	0.2	0.0	0.0	0.1	0.1
	Total	1.6	0.7	1.3	1.2	0.8	1.2

Looking at the percentage of household member's educational attainment (Table 4.1.10), it is found highest in Dang for all levels except for the third group, where Pyuthan has the highest percentage. Columns 2 through 5 of Table 4.1.10 reveal that the percentage of household members having formal education varies from 26.8 percent

(Dang) to 27.8 percent (Rolpa). However, if we look at these figures s x-wise, the percentage of females that have received formal education is highest in Rukum (16.4%) and lowest in Pyuthan (3.9%).

Table 4.1.11 below reveals that half of the total large farm household population received formal education whereas the corresponding percentage is only 16.3 percent for the sub-marginal/ landless category. The percentage of household members having received formal education consistently increases with the increase in size of holdings. It is evident from the last column of Table (4.1.11) that less than one percent of household members of all types of household except the large farm households have passed the SLC level. For the large farm households, 6.6 percent of household members were reported to have completed SLC. This is remarkably high in comparison to other types of households.

Table 4.1.11

Percentage Distribution Of Household Members By Educational Level Passed, Sex, And Type Of Household

Type of Household/ Educational Level		Sub-marginal	Marginal	Small	Medium	Large	Rapati
Without Formal Education	Male	72.5	66.2	59.9	47.2	28.5	61.5
	Female	95.5	96.7	92.1	88.9	72.7	92.7
	Total	83.7	81.0	76.1	68.1	50.2	76.8
Class 1-3 Completed	Male	18.3	22.5	25.1	32.9	36.8	24.2
	Female	3.4	2.5	7.0	8.2	17.2	5.6
	Total	11.1	12.8	16.0	20.5	27.2	15.0
Class 4-7 Completed	Male	6.6	8.7	11.2	12.5	13.8	9.6
	Female	0.6	0.5	0.5	2.9	8.2	1.3
	Total	3.7	4.7	5.8	7.7	11.0	5.5
Class 8-10 Completed	Male	1.7	1.1	2.0	5.6	8.2	2.4
	Female	0.4	0.0	0.3	0.0	1.6	0.3
	Total	1.1	0.6	1.2	2.8	4.9	1.4
SLC and Above	Male	0.9	1.4	1.8	1.8	12.7	2.3
	Female	0.1	0.3	0.0	0.0	0.3	0.1
	Total	0.5	0.9	0.9	0.9	6.6	1.2

Analysing household member educational attainment on the basis of ethnic groups (Table 4.1.12), the highest percentage that received formal education is found among the "others" ethnic group (E) (34.8%) followed by the Brahman-Chhetri etc. ethnic group (31.0%). The lowest percentage is found among the occupational castes D (11.4%).

Table 4.1.12

Percentage Distribution Of Household Members By Educational Level Passed, Sex And Ethnic Group

Ethnic Group/ Educational Level		Group A	Group B	Group C	Group D	Group E	Rapati
Without Formal Education	Male	49.2	65.5	72.7	80.2	47.5	61.5
	Female	89.5	92.1	98.2	97.1	85.1	92.7
	Total	69.0	78.4	85.4	88.6	65.2	76.8
Class 1-3 Completed	Male	30.2	23.1	19.6	13.1	34.2	24.2
	Female	7.6	6.4	1.7	2.5	9.9	5.6
	Total	19.1	15.0	10.7	7.8	22.8	15.0
Class 4-7 Completed	Male	12.9	8.1	6.1	5.3	11.8	9.6
	Female	2.2	0.9	0.1	0.2	3.9	1.3
	Total	7.7	4.6	3.1	2.6	8.1	5.5
Class 8-10 Completed	Male	4.0	1.7	0.6	0.6	5.1	2.4
	Female	0.5	0.2	0.0	0.2	0.0	0.3
	Total	2.3	1.0	0.3	0.4	2.7	1.4
SLC and Above	Male	3.7	1.6	1.0	0.8	1.4	2.3
	Female	0.1	0.4	0.0	0.0	1.0	0.1
	Total	1.9	1.0	0.5	0.4	1.2	1.2

4.2 Awareness of Family Planning and Health Facilities

A fairly recent survey conducted in Nepal (World Fertility Survey) revealed that only about 21.1 percent of women aged 15-49 years had ever heard of family planning. The baseline survey also gathered information regarding use and awareness of family planning in Rapati Zone but here the question was put to household heads. Moreover the question was asked in an indirect way. The respondent

was first asked if anyone in the village had used family planning. If the response was no, then he or she was asked if they had heard of family planning. The answer could then be either of the three responses namely:

a) the respondent has not heard of family planning;

b) the respondent has heard of family planning but is not aware of anyone having done family planning in the village; and

c) the respondent has heard of family planning and someone he knows has used family planning.

By structuring the question in this way it was felt that the threatening and personally embarassing aspects of the question could be avoided and more accurate information on awareness could be obtained. Thus, the figures reported represent family planning awareness and use at the village level but cannot provide data on individual usage rates.

The responses collected are presented in the Table 4.2.1 below:

Table 4.2.1

Percentage Of Households Aware (Ever Hoard And Use) Of Family Planning By District

District/Response	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Heard of only	48.49	54.96	59.51	33.90	70.48	52.82
Used and Heard	31.54	13.76	25.64	47.10	3.80	25.75
Total Aware	80.03	68.72	85.15	81.00	74.28	78.57

Table 4.2.1 above reveals that 78.57 percent of the total household heads of the zone have heard of family planning. This figure includes 26 percent who know someone in the village who

have used family planning methods and 53 percent who have heard of methods although they do not know any fellow villagers who have practiced them. Scanning the above table, we find that Sallyan has highest level of awareness (85%) followed by Pyuthan (81%), Dang (80%), Rukum (74%) and finally Rolpa (69%). It is interesting to note that in Pyuthan 47.10 percent of the households reported having know someone that had done family planning -- the highest figure among the five districts. On the other hand, although 70 percent of the households in Rukum reported having heard of family planning only 4 percent of the households knew someone who had practiced family planning.

An attempt was also made to collect information as to whether household members had visited a health post, a health centre or a hospital in the last one year. The response could either be a 'yes' if any household member had visited any of the centres and 'no' if no visit had been made. The following table summarizes the responses.

Table 4.2.2

Percentage Of Households That Reported Of At Least One Member Having Visited A Health Post, Health Centre Or Hospital In The Last One Year

District/Response	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Yes	43.96	14.47	30.50	16.39	13.68	25.42
No	56.04	85.53	69.50	83.61	86.32	74.58

It is noteworthy that the more remote districts of Rolpa and Rukum which do not have as many health facilities available report considerably reduced number of visits although there is no reason to assume better health conditions.

4.3 People's Participation

a) Village Level Assembly Or Pancha Assembly Participation

Households were asked whether they had participated in any village assembly or in a village level pancha assembly. No time reference was attached to this question since the idea here was to know if households had ever participated. The highest level of participation in such assemblies was in Pyuthan (35.08%) and the lowest in Rukum (17.27%). The results are presented in Table 4.3.1 below.

Table 4.3.1

Percentage Of Households Ever Participating In Village Assembly Or Pancha Assembly By District

District/Response		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Participate	Yes	20.86	21.39	24.97	35.08	17.27	24.09
	No	66.86	73.91	63.44	59.13	55.78	65.74
Total		87.72	95.30	93.41	94.21	73.05	89.83

Note: Figures do not add upto 100 percent due to non-responses.

The overall participation rate for Rapati worked out to be only 24.09 percent. Table 4.3.2 below presents the same information by type of households. Participation appears to have a direct positive correlation with larger farm households. The lowest level of participation, was recorded for sub-marginal/ landless households (19.86%) and highest for large farm households (46.16%).

Table 4.3.2

Percentage Of Households Participating In Village Assembly Or Pancha Assembly By Type Of Household

Type of Household/ Response		Sub-Marginal	Marginal	Small	Medium	Large	Rapati
Participated	Yes	19.86	22.89	23.35	30.53	46.16	24.09
	No	64.23	67.23	68.69	64.69	49.19	65.74
Total		84.09	90.12	92.04	95.22	96.35	89.83

Note: Figures do not add upto 100 percent due to non-response.

The same information was further tabulated by ethnic group and the results are presented in Table 4.3.3 below.

Table 4.3.3

Percentage Of Households Participating In Village Assembly Or Pancha Assembly By Ethnic Group

Ethnic Group/ Response		Group A	Group B	Group C	Group D	Group E	Rapati
Participated	Yes	26.73	28.13	15.35	19.12	17.05	24.09
	No	62.46	64.10	70.68	72.23	68.08	65.74
Total		89.19	92.55	86.03	91.35	85.13	89.83

Note: Figures do not add upto 100 percent due to non-response.

Ethnic group B had the highest level of participation and ethnic group C the lowest. But among ethnic groups C, D and E, the participation rate is not seen to be very different.

b) People's Participation and Labor Contribution in Various Projects

The baseline survey attempted to measure the degree of people's participation in development implementation. Eleven different activities were identified in the questionnaire which were believed to be relevant. Household heads were asked in which activities they participated in the last one year and how much labor and/or cash they had contributed.

People's Participation is measured on two different bases. First, the actual count, or the number of households that have taken part in panchayat programs, provides one kind of index of people's participation. This people's participation index (PPI) is derived as follows. First the number of households that have participated in all projects is counted (Pi). Then the number of households (HH) and the number of projects (which is 11) are multiplied, and the PPI is defined as follows:

$$PPI = \frac{Pi}{11 \times HH} \times 100$$

If all households have participated in all activities, the PPI will equal 100, the maximum value PPI can have. This method of calculating the participation index tends to downward bias the PPI. An index of 100 is obtained only if households have participated in all 11 different projects. For Rapati if participation alone, irrespective of the number of projects is considered, it is found that on an average each household has participated in three projects.

However, it may be that the number of households participating in anyone project may be high or low but the amount of labor contributed differs. For instance, a fewer number of households may have participated in an irrigation project (since quite often only the beneficiaries participate in such project) as in a road project (where usually there are a greater number of beneficiaries) but the labor days contributed by each household in the case of the irrigation project may have been higher. Therefore, another way to measure the level of people's participation is to consider average labor contribution (ALC). Looking at people's participation from this angle may enable us to identify the different interests of different groups. Here ALC is simply the total labor days contributed divided by the number of households participating in the particular activity. The results are presented in Table 4.3.4 below.

Table 4.3.4

Participation Index And Average Labor Contribution Per Participating Household By Type Of Household And District

District/Type of Household	Dang		Rolpa		Sallyan		Pyuthan		Rukum		Rapati	
	PI	ALC	PI	ALC	PI	ALC	PI	ALC	PI	ALC	PI	ALC
Sub-marginal	27.71	2.54	20.11	4.72	30.72	6.04	33.69	4.84	6.02	4.46	27.59	4.52
Marginal	38.56	3.16	21.30	4.99	29.91	5.37	32.74	4.95	7.21	21.13[2] 3.51	27.34	7.92 4.40
Small	32.71	3.33	18.06	5.67	35.20	4.82	30.91	5.98	11.72	2.58	24.83	4.48
Medium	36.18	11.67[1] 4.45	23.84	5.21	28.45	7.14	30.36	6.27	12.27	3.06	26.47	6.71 5.23
Large	43.40	12.00[2] 5.74	19.51	6.46	49.71	6.7[illegible]	35.84	5.47	13.51	3.12	34.20	6.76 5.51
Average	33.47	5.58 3.84	20.36	5.41	32.34	6.03	32.38	5.50	9.91	6.87 3.35	27.05[3]	6.08 4.83

1/ These high ALC is accounted for by higher labor contribution to irrigation projects. Note that labor contribution to irrigation projects is higher among the larger farm households. The lower results are obtained when the labor contribution to irrigation projects are not taken into account.

2/ Here, the ALC was pushed high due to labor contributed to build schools and the lower results are obtained when labor contributed to school building is not considered.

3/ If this number is multiplied by 11 (i.e. 297.55), it provides the participation rate irrespective of the number of projects as indicated earlier.

The survey findings show that for Rapati as a whole the Participation Index (PI) is 25.31. This means that on an average 25.31 percent of all households in Rapati have participated in identified public projects. It can also be noticed that the average labor days contributed per participating households can be considered as either 6.08 and 4.83 days. The first average labor day figure (i.e. 6.08) is derived by including the higher labor days contributed by households in Dang and Rukum. In Dang, medium and large farm households contributed as much as 11.87 and 12 labor days respectively on irrigation projects and in Rukum marginal farm households contributed 21.13 labor days on school building. If these figures are excluded the average labor days contributed is 4.83 per Rapati as a whole.

The last row of Table 4.3.4 shows the PPI and ALC on the basis of districts. The highest PPI is for Dang (35.19) with 6.58 and 3.84 average labor days being contributed by households, and the lowest PPI is for Rukum (9.91). For Rukum the ALC, however, is not much different from the ALC for other districts if we exclude the 21.13 ALC for school building mentioned above. The PPI for Sallyan and Pyuthan are more or less the same, even though the ALC for Sallyan is slightly higher than that for Pyuthan. The last column of the same table shows the PPI and ALC by type of household. The maximum value of PPI is 26.34 for large farm households and the minimum is 23.22 for sub-marginal farmers, indicating that participation among the five types of households is not significantly different. The ALC on the other hand shows a higher level of variation when upper ALC figures (7.92, 6.71 and 6.76) are taken into account (a range of 4.48 to 7.92). But if we look at the lower figures, the maximum ALC drops to 4.40 and the range narrows from

4.40 to 5.51, showing a much lower level of variation. Comparing participation within different types of households based on PPI and ALC, it can be noticed from Table 4.3.4 above that a higher PPI need not always coincide with a higher ALC. In Rapati, medium farm households have the highest PPI (26.34) indicating that such households have participated the most. But considering participation in terms of ALC, it can be noticed that medium from households contributed 6.71 labor days which is however not the highest among the five types of households.

Table 4.3.5 below presents data on participation in relation to specific project activities. We rank three projects for each type of household for each district based upon the descending percentage order. It can noticed that on an average, project type-3 (road) has the highest maximum household participation in three districts -- namely, Dang, Sallyan, and Pyuthan. In these three districts, a considerable number of roads have been constructed through people's participation over recent years. In Dang, trails and schools are in the second or third position depending on the type of household. In Sallyan, foot paths and trails are ranked second by all households, followed by school building. In Pyuthan school building and trails received the second and third most labor contribution, although there is some variation by type of household.

Table 4.3.5

Ranking Of Project Activities According To Relative Amount Of Labor Contributed By Type Of Household And District

Rank/Type of Household	First	Second	Third
Dang	3	2	1
	3	2	1
	2	3	4
	3	1	2
	3	1	2
Rolpa	2	1	3
	2	1	3
	2	1	3
	2	1	7
	2	3	1
Sallyan	3	2	1
	3	2	1
	3	2	1
	3	2	1
	3	2	1
Pyuthan	3	1	2
	3	1	2
	3	1	2
	3	2	1
	3	1	3
Rukum	1	2	10
	1	2	6
	1	2	6
	1	2	6
	1	2	3

Project Codes:
1 - School
2 - Foot path and trails
3 - Roads
4 - Irrigation
5 - Health
6 - Panchayat building
7 - Suspension and other types of bridges
8 - Drinking water
9 - Soil erosion (landslide and flood control)
10 - Tree plantation
11 - Rest houses

Note: Tabulation of uncoded responses following completion of the survey revealed high labor contribution in the construction of toilets. However, this data was not included in these tables as it is not known whether they were private or public toilets.

4.4 Adoption and Awareness of Modern Agricultural Inputs

Instead of trying to actually measure the amount of modern agricultural inputs used by households in the Kapati Zone, the baseline study gathered general information on the awareness and adoption of these inputs. Information was collected relating to improved seeds, chemical fertilizer and insecticides. Households were first asked whether they had made use of these inputs. If the answer was no, they were then asked whether they had heard of such inputs. Thus possible answers included: a) awareness and use; b) awareness without use; and c) lack of awareness. The findings are reported below in Table 4.4.1.

It should be noted here that improved seeds in this study refers to the entire range of high yielding variety seeds of important crops viz. rice, wheat, maize. No attempt was made to identify the crop specific seeds, but it can be expected that in most cases improved seeds refers to grain seeds such as paddy, wheat or maize.

According to the baseline findings, awareness of these inputs (improved seeds, chemical fertilizer and insecticides) has already reached a fairly high level in the zone. More than 80 percent of the households are aware of these modern inputs. However, usage is relatively low. In the zone as a whole, even though more than 84 percent households are aware of improved seeds only 18.11 percent have used them (Table 4.4.1). It is interesting to note that the level of awareness is highest in Dang (over 85%) and that over 25 percent of the households have used these inputs. Rolpa presents the lowest figures with only 4.76 percent having used modern inputs and 71 percent having heard of improved seeds.

The level of awareness of chemical fertilizer is similarly high with 82.46 percent of the households having heard of chemical fertilizers. However, Table 4.4.1 reveals that only 9.3 percent of all households reported having used chemical fertilizer. Dang (12.30%), Sallyan (12.48%), and Rukum (11.76%) account for over 74 percent of the total users of chemical fertilizers in Rapati. Rolpa reports the least use followed by Pyuthan. However from the point of view of knowledge (users + those that have heard only), Pyuthan has the highest (90.71%) number of households that are aware of chemical fertilizers.

Awareness of insecticides too is reported to be fairly high in Rapati Zone (80.61%), but on the other hand its use has been confined to only 7.8 percent of households. Regarding the use of insecticides it can be noted from Table 4.4.1 that in Dang and Rukum, the percentages of households using insecticides are almost the same.

Table 4.4.2 presents this same information broken down by type of household. Regarding the adoption of improved seeds, chemical fertilizer and insecticides, we notice from the table that there is a strong positive association between the type of household and the degree of use. In other words, adoption of these modern inputs is consistently higher among larger farm households than among smaller farm households, despite the fact that smaller farm households report almost the same degree of awareness. These striking results suggest that dissemination of knowledge about improved inputs may be less important than overcoming other constraints in encouraging the use of these inputs to smaller farmers.

Table 4.4.1

Awareness of Improved Agricultural Practices Among Households By District

District/Response		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Use of Improved Seeds	Heard and Used	8,027 (25.13)	1,325 (4.76)	4,349 (16.01)	6,719 (27.08)	2,928 (16.97)	23,357 (17.11)
	Heard only	19,289 (60.39)	19,665 (70.69)	18,912 (69.64)	16,248 (65.48)	11,960 (69.31)	86,074 (66.73)
	Not Heard	4,628 (14.49)	6,825 (24.50)	3,896 (14.71)	1,845 (7.43)	2,367 (13.72)	19,548 (15.16)
Use of Chemical Fertilizer	Heard and Used	3,928 (12.30)	1,062 (3.82)	3,390 (12.42)	1,285 (5.18)	2,030 (11.76)	12,008 (9.31)
	Heard only	24,050 (75.30)	19,937 (71.68)	20,265 (74.62)	21,222 (85.53)	13,009 (75.39)	94,346 (73.15)
	Not Heard	3,962 (12.43)	6,816 (24.50)	3,502 (12.89)	2,305 (9,29)	2,216 (12.84)	22,625 (17.54)
Use of Insecti-cides	Heard and Used	3,536 (11.07)	1,153 (4.14)	1,135 (4.18)	2,332 (9.40)	1,912 (11.08)	10,068 (7.81)
	Heard only	21,923 (65.64)	18,472 (66.41)	21,520 (79.24)	19,513 (78.64)	13,227 (76.66)	93,897 (72.80)
	Not Heard	6,481 (20.29)	8,190 (29.44)	4,502 (16.58)	2,967 (11.96)	2,116 (12.26)	25,014 (19.39)

Note: Figures in brackets are in percentages.

Table 4.4.2

Awareness Of Improved Agricultural Practices Among Households By Type Of Household

Type of Household/Response		Sub-marginal	Marginal	Small	Medium	Large	Rapati
Use of Improved Seeds	Heard and Used	4,254 (13.89)	8,392 (17.11)	5,7[illegible] (17.98)	2,713 (25.16)	2,238 (34.45)	23,357 (18.[illegible])
	Heard only	25,563 (67.14)	32,388 (66.03)	22,[illegible]1 (69.04)	7,054 (65.42)	3,958 (60.92)	86,074 (6[illegible]
	Not Heard	5,809 (18.97)	8,269 (16.86)	4,1[illegible]3 (12.97)	1,016 (9.42)	301 (4.63)	19,548 (15.[illegible]6)
Use of Chemical Fertilizer	Heard and Used	1,926 (6.29)	3,530 (7.20)	2,5[illegible] (7.96)	2,044 (18.96)	1,960 (30.17)	12,008 (9.3[illegible])
	Heard only	23,225 (75.83)	33,206 (67.70)	25,[illegible] (79.77)	8,170 (75.77)	4,196 (64.61)	[illegible]4,346 (73.[illegible]5)
	Not Heard	5,475 (17.88)	12,311 (25.09)	3,931 (12.28)	569 (5.28)	339 (5.22)	22,625 (17.54)
Use of Insecti-cides	Heard and Used	903 (2.95)	3,453 (7.04)	3,170 (9.90)	1,498 (13.89)	1,044 (16.07)	10,068 (7.81)
	Heard only	21,533 (70.31)	35,835 (73.06)	24,138 (75.37)	7,222 (66.98)	4,198 (64.61)	93,897 (72.80)
	Not Heard	8,190 (26.74)	9,761 (19.90)	4,716 (14.73)	2,063 (19.13)	339 (5.22)	25,014 (19.39)

Note: Figures in brackets are in percentages.

CHAPTER 5

ENVIRONMENTAL CONCERNS

5.1 Travel Time Spent by Households Collecting Various Resources

Information was collected from households regarding the time spent per trip collecting water, fuelwood, tree fodder, fodder grass and crop residues in the project area. This information is reported in Table 5.1.1 below:

Table 5.1.1

Travel Time Per Trip Collecting Various Resources By District

(In hours)

Items/ District	Water	Firewood	Tree Fodder	Fodder Grass	Crop Residues
Dang	0.55	7.29	3.85	2.65	1.09
Rolpa	1.11	5.25	3.35	1.86	0.94
Sallyan	0.93	6.73	.30	2.01	2.22
Pyuthan	0.69	3.72	[illegible]	[illegible]	1.76
Rukum	1.27	4.41	4.56	4.25	1.14

Note: Travel time includes time spent collecting the resources also.

to forest products. Travel time to collect tree fodder is also highest in Pyuthan at 6.99 hours suggesting an associated scarcity in fodder resources as well. However, one does not see a similar association between time spend per trip collecting firewood and tree fodder in Dang. This may be because the households feed their cattle with other substitutes in Dang. In Rukum time spent per trip collecting tree fodder is slightly more than that spent collecting firewood although the difference between these two and the collection of grass fodder is minimal.

In Pyuthan households report only 0.29 hours collecting fodder grass. Finally Sallyan households report the longest travel time collecting crop stems and residues (2.22 hours) as against the shortest period (0.94 hours) reported by Rolpa households. Since figures for collection of fodder should be correlated with livestock population and quantity of different kinds of feed, it is difficult to draw direct conclusions from this data at this point.

5.2 Environmental Problems

Households were also asked:

i) whether they faced water logging problems in their khet land;

ii) whether they faced danger caused by landslides, river bank cutting and flooding of their lands; and

iii) whether their terraces needed to be repaired.

Table 5.2.1 below reports on these issues for the five districts concerned.

Table 5.2.1

Percentage Of Household Responding To Water Logging, Landslides, Floods, And Terrace Repair Problem By District

(in %)

District/Response		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Water Logging problem	Yes	16.45	5.72	5.14	10.33	4.22	8.94
	No	69.28	71.18	85.34	74.37	72.09	74.43
	Don't know	14.27	23.10	9.52	15.30	23.69	16.63
Landslides, floods, bank erosion	Yes	31.29	59.28	43.54	70.26	44.68	49.22
	No	59.26	28.65	50.55	25.65	31.63	40.82
	Don't know	9.45	12.07	5.91	4.09	23.69	9.96
Terrace repair	Yes	32.46	67.53	43.36	49.22	54.89	49.44
	No	58.39	24.63	29.25	48.33	22.56	36.63
	Don't know	9.15	7.84	27.39	2.45	22.55	13.86

Water logging appears to be less of a problem in Rapati compared to land damages due to flood, landslides and river bank cutting. Only 8.94 percent of households reported problems of water logging in their khet land. In Dang, where a large part of the land is flat, the water logging problem appears to be more pronounced than in the four hill districts, where drainage is possibly better due to the hilly nature of these districts. For Rapati as a whole 74.43 percent of the households reported no water logging problems while 16.63 percent of the households were not even aware (i.e. responded, don't know) of such a problem.

Land damages arising from landslides, flood and river bank cutting, on the other hand, appears to be rather serious throughout Rapati. As much as 49 percent of households mentioned this danger and only about 10 percent reported not being aware of this problem. Pyuthan households appear to be the most severely hit since as much as 70 percent of household responded that they faced land damages due to landslides etc. All the four

hill districts, have a higher positive (yes) response than Dang - as can be noticed from the Table (5.2.1). This again most likely reflects the fact that hilly areas face more landslide, flood problems etc., that do plain areas. In the hilly regions, khet land is usually along the river beds and hence flood problems are likely more acute there.

Terrace repair also appears to be a serious problem in the a as nearly 50 percent of households have reported the need for terrace repair. We notice that in the hill districts again, where terraces are most abundant, the need for terrace repair is more pronounced compared to Dang. In Rolpa and Rukum, the two most rugged districts of Rapati, more than 54 percent of the households have mentioned the need for terraces repair.

Households were asked whether their land had been damaged by landslides or floods recently. The responses are reported in Table 5.2.2 below:

Table 5.2.2

Percentage Of Households Reporting Land Damaged By Landslides Or Flood By District

District/Response	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Yes	23.27	47.47	40.92	40.97	26.19	36.00
No	75.75	51.50	56.70	59.16	72.93	62.63

Of all households 36 percent reported that their land had been damaged by landslides etc. The highest positive response was for Rolpa (47.47%) and lowest for Dang (23.27%).

5.3 Land Damaged by Floods, Landslides and River Bank Cutting

In addition to identifying and ranking tyres of problems relating to land, respondants were asked to estimate what area of their own land had been affected by various problems over the last year. Land damaged by river bank cutting appears to be high (2203.29 ha.) in Rapati with Dang reporting the highest amount (1490.22 ha.) among the five districts. Flood damage appears to be the second most serious problem with a total of 1746.75 ha. of land reported to have been damaged in this way. We notice from Table 5.3.1 below that in Pyuthan and Rukum landslides rather than floods or river bank cutting is the more serious problem. In Rolpa and Dang river bank cutting appears to be more serious than either landslides or floods. In Sallyan, on the other hand, flood damage appears to be a more serious problem than the other two.

The last column of Table 5.3.1 reports on the average area that has been damaged by the three calamities in each of the five districts. Dang reports the highest (0.093 ha.) land per household that has been damaged. This might be expected because average land holdings are much higher in Dang than in any of the remaining districts. Within the three districts of Rolpa, Sallyan and Pyuthan, the area damaged per household is more or less the same. For Rukum, where land is relatively less, the area damaged is reported to be 0.019 ha. per household.

Table 5.3.1

Average Area Damaged By Landslides, Flood And River Bank Cutting By District

in ha.

	'Landslides'	Flood	'River Bank' Cutting	Total	'Average 'per HH
Dang	119.55	1370.16	1490.02	2979.73	0.093
Rolpa	239.86	22.77	309.50	572.12	0.021
Sallyan	136.93	252.99	213.09	603.01	0.022
Pyuthan	391.41	93.40	170.81	655.64	0.026
Rukum	302.07	7.43	19.87	329.37	0.019
Rapati	1189.77	1746.75	2203.29	5139.87	0.039

5.4 Awareness of Deteriorating Environment

The occurrence of landslides and flood has also been reported to have increased over the last five years. When households were asked whether there were more landslides and floods now than five years ago, about 60 percent of all households in Rapati responded positively (Table 5.4.1). With regard to landslides, the highest response was received from Pyuthan (86.37%) and lowest from Dang (19.45%). For floods Pyuthan also reported the highest (82.28%) yes response and Sallyan the lowest (29.08%).

Table 5.4.1

Percentage Of Households Reporting More Landslides And Flood Occurrence Now Than Five Years Ago By District

District/Response		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
More landslides now than five years ago	Yes	19.45	75.55	39.48	86.37	78.53	59.88
	No	57.35	15.73	46.19	7.98	17.12	28.87
	Don't know	23.21	8.72	14.33	5.64	4.35	11.25
More floods now than five years ago	Yes	64.55	64.72	29.08	82.28	66.98	61.52
	No	32.62	23.03	56.41	10.78	27.23	30.01
	Don't know	2.82	12.25	14.51	6.94	5.79	8.47

Households were also asked whether the time it took to collect water, fodder and fuelwood had increased over the last five years. Table 5.4.2 below reports the results. For the entire zone, 81.50 percent of households responded that it took more time to collect firewood now than five years ago, 7.53 percent responded no, and 10.97 percent did not know. District level information indicates (Table 5.4.2) that in Dang 91.57 percent of the households reported that it took more travel time to collect firewood now than five years ago. This may indicate that among the five districts of Rapati, accessibility, and perhaps availability, of firewood has changed most severely in Dang. On the other hand, the firewood situation in Rolpa may be assumed, as the figures indicate, to have changed the least.

Table 5.4.2

Percentage Of Household Reporting Increase In Travel Time Collecting Firewood, Fodder And Water Now Over Five Years Ago By District

District/Response			Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
It taken more time now than five years ago to collect	Firewood	Yes	91.57	56.72	82.76	92.46	84.01	81.50
		No	2.71	3.62	10.88	5.97	14.49	7.53
		Don't know	5.72	39.65	6.36	1.57	1.49	10.97
	Fodder	Yes	58.49	87.82	73.96	91.21	80.23	78.35
		No	5.27	7.17	18.01	7.22	17.33	11.00
		Don't know	36.23	5.01	8.03	1.57	2.44	10.65
	Water	Yes	35.79	34.75	29.28	35.24	54.23	37.86
		No	61.84	52.72	56.81	64.49	43.02	55.78
		Don't know	2.37	12.53	13.91	2.27	2.75	6.36

Assuming that 'yes' response provides an indication of the changing accessibility and availability of firewood or fodder, than the fodder situation in the zone has perhaps fared slightly

better than firewood since 78.35 percent of households said it took more time to collect fodder now than five years ago as against 81.50 percent for firewood. It should however be noted that the data indicates the accessibility and availability of fodder is also critical in the zone. On a district basis, Pyuthan is perhaps the most hard-hit by decreasing firewood resources as well as fodder availability since in both cases more than 91 percent of households remarked that collecting these items took more time now than five years ago. In Rolpa it may however be noticed that fodder situation is perceived to have deteriorated more than firewood situation.

Relative to other resources, accessibility to water appears to have changed the least since only 37.86 percent of households responded yes in comparison with 55.78 percent who responded no. In Rukum, however, 54.23 percent of household said it took more time now than five years ago to collect water which is the highest positive response level among the five districts.

Overall, this data indicates that a large majority of the population perceives that natural resource availability is decreasing in many areas.

5.5 Awareness of Production Decrease

The baseline study also attempted to find out whether households perceived any production (agricultural) decreases due to landslides, floods and river bank cutting. Table 5.5.1 below reports on household awareness of this situation.

Table 5.5.1

Percentage Of Households Reporting Production Decrease Due To Landslides, Floods And Riverbank Cutting By District

Districts/Response	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Yes	30.37	58.08	43.28	51.72	51.12	45.95
No	68.66	40.47	54.76	48.27	47.38	52.86

For the zone as a whole 46 percent of households reported production decreases and 52.86 percent reported no decrease. For Rolpa as much 58 percent reported their production had decreased. For Pyuthan and Rukum the positive responses were respectively 52 percent and 51 percent, for Sallyan 43 percent and for Dang 30 percent. Thus it may be said that these natural calamities are perceived to have decreased agricultural production of a significant number of households.

5.6 Households Opinion Towards Forest Development

Household respondents were also asked whether they desired to plant fodder trees and develop panchayat forests. The first part of the question concerned respondent's desire to plant fodder or other trees in public land or grazing land. In Rapati as a whole 43.83 percent of the households indicated that they had this desire. Districtwise the response is as follows: Dang (43.96%); Rolpa (14.47%); Sallyan (30.50%); Pyuthan (16.39%); and Rukum (13.68%).

Secondly, households were asked if they had heard of the Government's plan to develop panchayat forests, panchayat protected forests and (contract) forests. The yes responses were as follows: Dang (50.50%); Rolpa (21.17%); Sallyan (39.77%);

Pyuthan (59.43%); and Rukum (43.13%). The overall yes response for Rapati was 43.94 percent.

A further question was then put to households that indicated that they had heard of these programs, namely, if they thought it was a good idea to develop these types of forest in their village panchayat. The Table 5.6.1 below summarizes these responses.

Table 5.6.1

Households Response To Forest Development In Their Panchayats By District

(in %)

District/Response		Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Household having heard of various forests		50.50	21.17	39.77	59.43	43.13	43.94
Households expressing desire to develop such forests in their panchayat	Yes response	50.26	23.88	39.39	60.44	47.21	43.88
	No	0.85	1.66	3.85	0.40	9.44	2.46
	Don't know	48.89	74.46	56.76	39.16	43.34	53.66

In the above table, rows 2, 3 and 4 are percentages of the first row. 43.94 percent of all reporting households had heard of various panchayat forest programs out of which 43.88 percent expressed a desire to develop such forests in their panchayat and 53.66 percent were not decided. Pyuthan reports the highest yes response and Rolpa the lowest. The relative interest shown in developing panchayat forests of various types is considerably higher, particularly for Pyuthan and Rukum, than in improving public or grazing lands.

5.7 Use of Cowdung as Fuel

Households were asked whether they utilized cowdung for cooking. The response is reported below (Table 5.7.1).

Table 5.7.1

Percentage Of Household Using Cowdung As A Source Of Fuel By District

District/Response	Dang	Rolpa	Sallyan	Pyuthan	Rukum	Rapati
Yes	49.68	4.88	9.67	3.79	1.24	13.85
No	50.32	95.12	90.33	94.60	98.76	86.15

On an average 13.85 percent household responded that they used cowdung for cooking. But it should be noted that for the four hill districts, the district averages are far below the Rapati average and in Rukum only 1.24 percent of household reported the use of cowdung for cooking.

APPENDIX - C

Questionnaire Pre-testing Team

A team consisting of eight members went to Tistung Panchayat in the Kulekhani Catchment Area to conduct the pre-testing of the household and panchayat level questionnaires. The members consisted the following personnels of APROSC:

1.	Mr. Kamal Banskota	Coordinator
2.	Dr. Madhav Gautam	Nutrition Specialist
3.	Mr. Janardan Bikram K.C.	Statistician
4.	Mr. Prakash Dhital	Anthropologist
5.	Mr. Chandra Lal Shrestha	Economist
6.	Mr. Khagendra Basnyat	Research Assistant
7.	Mr. Madhav Rimal	Research Assistant
8.	Mr. Ramesh Giri	Research Assistant

APPENDIX - D

Field Survey Team

1.	Mr. Madhav Rimal	Supervisor
2.	Mr. Bhakta Raj Pant	Enumerator
3.	Mr. Mahesh Puri	Enumerator
4.	Mr. Ramesh Giri	Supervisor
5.	Mr. Hari P. Shrestha	Enumerator
6.	Mr. Padma N. Poudyal	Enumerator
7.	Mr. Khagendra Kasnyat	Supervisor
8.	Mr. Atma Ram Pandey	Enumerator
9.	Mr. Shanker Pokharel	Enumerator
10.	Mr. Rajendra Gurung	Enumerator
11.	Mr. Mukunda Sharma	Supervisor
12.	Mr. Dev Nath Mandal	Enumerator
13.	Mr. Kul Raj Neupane	Enumerator
14.	Mr. Sanobabu Maghaia	Enumerator
15.	Mr. Panna Lal Shrestha	Supervisor
16.	Mr. Ramesh Khadga	Enumerator
17.	Mr. Rajesh Rajbhandari	Enumerator
18.	Mr. Bhabiswor Aryal	Enumerator
19.	Mr. Murari Raj Kaini	Supervisor
20.	Mr. Narayan Dhakal	Enumerator
21.	Mr. Chandika P. Bhattarai	Enumerator
22.	Mr. Heera P. Dhakal	Enumerator

English Translation
of Nepali Original

APPENDIX - E

Sr.No. (to be filled afterwards) ☐☐☐☐

AGRICULTURAL PROJECTS SERVICES CENTRE

R.C.U./RAPATI

BASELINE SURVEY: HOUSEHOLD QUESTIONNAIRE

0 1 Card No. (to be filled up afterwards) ☐☐ Q.N. 0 1

0 2 District ☐ 0 2

Dang Deokhuri	1	Mustang	6
Rolpa	2	Myagdi	7
Sallyan	3	Gorkha	8
Pyuthan	4	Makwanpur	9
Rukum	5		

0 3 Village Panchayat ..... ☐ 0 3

Village .....

0 4 Ward No. ..... ☐ 0 4

0 5 Household No. ....

Name of the head of the household..... ☐☐☐ 0 5

0 6 Caste/ethnic group of the head of the family ..... ☐ 0 6

0 7 Sex of the head of the household ..... ☐ 0 7

Male 1 Female 2

Name of the interviewer . . . . . .

Signature of the interviewer . . . . . .

Date of interview . . . . . .

Name of supervisor . . . . . .

Signature of supervisor . . . . . .

0 8 Family details: Give names of all the members of your family. (Note age, sex, literacy, level of each one of the members of the family. Also note the date of departure, arrival and the purpose if members of the family have left the home for more than a month last year). Refer to the code provided in pages 26 and 27.

Names of family members	Number	Age (in years)	Sex code	Family status code	Marital status code	Literacy code	Education Qualification passed code	Studying at school code	Code for destination after leaving home	Month of leaving home code	Year of leaving home code	Month of returning home code	Year returned home code	Purpose of leaving home code 1	Purpose of leaving home code 2	Remarks
	01	10	12	13	14	15	16	17	18	19	20	21	22	23	24	
	02															
	03															
	04															
	05															
	06															
	07															
	08															
	09															
	10															
	11															
	12															
	13															
	14															

0 9 Did you migrate to this village ? ☐ 0 9

Yes [1] No [2]

(If not, ask question No.12)

1 0 Where did you migrate from ? ☐ 1 0

(a) From hill projects area [1]

(b) From hill area outside projects [2]

(c) From terai projects area [3]

(d) From terai area outside projects [4]

(e) From India [5]

(f) From other place (give name) [6]

1 1 How many years ago did you migrate to this place? ☐ 1 1

1 2 Have any member of your family gone permanently away? ☐ 1 2

Yes [1] No [2]

(if not, ask question No.15)

1 3 How many people have gone? ☐☐ 1 3

1 4 How long ago did the most recent member leave? ☐ 1 4

Code for question 11 and 14:

0 - 1 year	[1]
1 - 3 years	[2]
3 - 5 years	[3]
5 - 8 years	[4]
8 - 25 years	[5]
25 - and more	[6]

15 Details for child birth and death

(To be filled up for each married women between the age of 12 and 49 years)

No. of married women (to be copied from the preceding chart)	No. of living children	No. of children still born & dead after birth	Total No. of children born	Total number of children born within last five years				
				Year and month of birth of each child	Sex of each child	Presently living or dead	Year & month of death	Code for the age at death
				Month	Year			M Y
01	02	03	04	05	06	07	08	09 10
01								
02								
03								
04								

Code for living or dead: Living /1/ Dead /2/

Sex code: Male /1/ Female /2/

Month code

Baisakh	/0/1/	Kartik	/0/7/
Jesth	/0/2/	Marga	/0/8/
Ashadh	/0/3/	Push	/0/9/
Shrawan	/0/4/	Magh	/1/0/
Bhadra	/0/5/	Falgun	/1/1/
Ashwin	/0/6/	Chaitra	/1/2/

Age of death code

Born dead	/1/
0 - 6 months	/2/
7 - 12 months	/3/
1 - 2 years	/4/
2 - 3 years	/5/
3 - 4 years	/6/
4 - 5 years	/7/

1 6 Details about land

How much and in how many places do you have land?

Type of Land		No. of pieces	Code for area measurement	Owned and self cultivated land	Owned and land cultivated by others	Self Cultivated land belonging to others	Remarks
		01	02	03	04	05	
Irrigated paddy land-1	01						
Irrigated paddy land-2	02						
Non-irrigated paddy land	03						
Irrigated slope land	04						
Non-irrigated slope land	05						
Grass land	06						
Land around house	07						
Others	08						
Total	09						

Area measurement code

Bigha - Kattha - Dhur	1	Seed: Muri - Pathi - Mana	4
Matomuri - Pathi - Mana	2	Hal	5
Ropani - Ana - Paisa	3	Others	6

Note 1

Khet 1 = Irrigated throughout the year
Khet 2 = Irrigated only during monsoon.

Note 2

In Rapati four mana makes one pathi and mana measure is generally smaller than in other places.

1 7 Production

What and how much did you produce last year ?

Type of grain	Condition of land	Area code	Area of land	Production code	Total production	Remark
		1	2	3	4	
Improved paddy	0 1 Irrigated					
	0 2 Non-irrigated					
Local paddy	0 3 Irrigated					
	0 4 Non-irrigated					
Improved maize	0 5 Irrigated					
	0 6 Non-irrigated					
Local maize	0 7 Irrigated					
	0 8 Non-irrigated					
Improved wheat	0 9 Irrigated					
	1 0 Non-Irrigated					
Local wheat	1 1 Irrigated					
	1 2 Non-Irrigated					
Potato	1 3					
Sugarcane	1 4					
Tobacco	1 5					
Mustard	1 6					
Barley	1 7					
Millet	1 8					
Soyabean	1 9					
Others						

Note

See code for area measurement in page 5.

Production measurement code

Muri - Pathi - Mana	1	Mand - Seer - Chhatak	3
Dharni - Pau - Tola	2	Quintal - Kg. - Gram	4
		Others	5

1 8 What and how much other crop did you produce among the main crops during the last 12 months ?

Main crop		Other crops	Total production of other crops	Production measurement code	Remarks
		1	2	3	
Paddy	0 1				
	0 2				
Wheat	0 3				
	0 4				
Maize	0 5				
	0 6				
	0 7				
	0 8				
Sugarcane	0 9				
	1 0				
Others					

Other crops code

Beans	0/1	Ginger	0/7
Soyabeans	0/2	Garlic	0/8
Mas (pulse)	0/3	Pumpkin	0/9
Millet	0/4	Sweet potato	1/0
Mustard	0/5	Radish	1/1
Pidalu	0/6	Others	1/2

Note:

See production measurement code in page 6.

1 9 Sales

What and how much did you buy or sell during the last 12 months ?

		Paddy	Wheat	Maize	Millet	Barley	Buckwheat	Mustard	Remarks
Code for production measurement	0 1	01	02	03	04	05	06	07	
Rent received in kind	0 2								
Wage received in kind	0 3								
Total purchase in kind	0 4								
Total 1	0 5								
Rent paid in kind	0 6								
Wages paid in kind (total raw and cooked grain paid to plougiman, Damai, priest, blacksmith, cobbler, servants, etc.)	0 7								
Total sale in kind	0 3								
Total 2	0 9								
Difference between Total 1 and 2 (Balance)	1 0								

Note: See production measurement code in page 6.

		Pulses	Tobacco	Sugarcane	Potato	Soyabean	Others 1	Others 2	Remarks
		08	09	10	11	12	13	14	
Code for production measurement	01								
Rent received in kind	02								
Wage received in kind	03								
Total purchase in kind	04								
Total 1	05								
Rent paid in kind	06								
Wages paid in kind (total raw and cooked grain paid to ploughman, Damai, priest, blacksmith, cobbler, servants, etc.	07								
Total sale in kind	08								
Total 2	09								
Difference between Total 1 and 2 (Balance)	10								

Note: See production measurement code in page 6.

2 0 Livestock (animal rearing) ... following information about the different animals, birds and the crossbred animals.

Animals and birds		Present Total	Last year's production in kind (milk, wool, eggs, etc.) Code for production measurement	Code for articles produced	Total	Sales price of last year's production in Rs.	Last year's income in the form of rent	Production of animals in Rs. (for personal consumption only)	Total cash income of last year	Last year's purchase of animals in Rs.	Remarks
		01	02	03	04				05	06	
He-buffalo	0 1										
Bullock	0 2										
Poney	0 3										
Mule	0 4										
He-goat	0 5										
Castrated goat	0 6										
Pigs	0 7										
Sheep	0 8										
Yak - Cross-breed (bullock)	0 9										
Yak	1 0										

Continued

		01	02	03	04				05	06	
Buffalo	11										
	12										
Cow	13										
	14										
Goat	15										
	16										
Sheep	17										
	18										
Yak cross-breed (cow)	19										
	20										
Nak (yak female)	21										
Chicken	22										
	23										

		01	02	03	04			05	06	
Ducks	24									
	25									
Pigeon	26									
	27									
Others	28									
Total	99									

Production measurement code:

Muri - pathi	/1/	Quintal - kilogram	/4/
Dharni - pau	/2/	Number	/5/
Mund - seer	/3/	Other	/6/

Production article code: Milk /1/ Eggs /2/ Wool and fur /3/

Note: 1. The grand total for the sale of the livestock must be entered in the Income Table.
2. This grand total should be entered on the Expenditure Table under the heading of the livestock expenditure.

2 1 Fruit farming (horticulture):

Give the details of fruits in your land.

Name of fruits and other trees		No. of improved types	No. of local types	No. of trees already bearing fruit	Code for production measurement	Total production	Income from sales of fruits in Rs.*	Remarks
		01	02	03	04	05	06	
Mango	0 1							
Guava	0 2							
Papaya	0 3							
Jackfruit	0 4							
Lemon	0 5							
Banana	0 6							
Lime	0 7							
Apricot	0 8							
Pear	0 9							
Lichi	1 0							
Orange	1 1							
Apple	1 2							
Pineapple	1 3							
Walnut	1 4							
Peach	1 5							
Plum	1 6							
Melon	1 7							
Pomegrenate	1 8							
Japsi	1 9							
Kafal	2 0							
Pomelo	2 1							
Big orange	2 2							
Bimiro	2 3							
Fodder tree	2 4							
Tree (firewood)	2 5							
Others								
Total	9 9							

* Note: This total must be put under the category of income from fruit farming.

Production measurement code

Muri - pathi	1	Bunch	5
Dharni - pau	2	Basket load	6
Mand - seer	3	Number	7
Quintal - kg.	4	Others	8

2 2 Vegetables

What and how much vegetables do you produce in your land ?

	Vegetables produced	Code for is or is not produced 01	Total sale Rs. + 02	Remarks (No code) (Explore whether or not seed is sold)
0 1	Radish and turnip			
0 2	Onions			
0 3	Mustard green			
0 4	Tomatoes			
0 5	Pidalu (Taro)			
0 6	Dhaniya (Corriander)			
0 7	Timur and chillie			
0 8	Peas and beans			
0 9	Cabbage			
1 0	Ginger			
1 1	Garlic			
1 2	Cauliflower			
1 3	Mustard, rayo, green			
1 4	Pumpkin			
1 5	Green vegetables			
1 6	Turmeric			
1 7	Carrot			
1 8	Squash Lauka			
1 9	Chichinda			
2 0	Ghiraula			
2 1	Karela			
2 2	Cucumber			
2 3	Squash Skush			
	Others			
	Total			

Production code: Ye. /1/ No. /2/

Note: + This total must be put under the category

2 3 Cottage Industry

What and how many things do you produce at home ?

	Type of articles produced	Is there production or not, code	Total sum in Rs. if raw material purchased +	Total income in Rs. from the sale of production +	Remarks (not to be coded)
		01	02	03	
0 1	Woolen cloth				
0 2	Cotton cloth				
0 3	Coarse cloth				
0 4	Dried Ginger				
0 5	Herbs				
0 6	Intoxicants				
0 7	Ghee				
0 8	Honey				
0 9	Mats and related objects				
1 0	Bamboo, cane				
1 1	Nepali paper				
1 2	Iron goods				
1 3	Bricks				
1 4	Stone objects				
1 5	Leather goods				
1 6	Earthen pots				
1 7	Tailoring				
	Others				
	Total				

Production code: Yes [1] No [2]

Note: + This total must be put under the category of expenditure for cottage industries in the category of expenditure.

++ This total must be put under the category of income from cottage industries in the table of income.

2 4 Debt:

Have you borrowed any loans ?

Debt		Amount borrowed code	Purpose of borrowing code	Source of borrowing code	Rate of interest	Remarks
Borrowed during the last 12 months but not yet returned	0 1					
	0 2					
	0 3					
	0 4					
Other loans prior to the last 12 months	0 5					
	0 6					
	0 7					
	0 8					

Code for amount of loan:

Rs. 1 - 49	01	Rs. 1,000 - 2,999	06
Rs. 50 - 99	02	Rs. 3,000 - 4,999	07
Rs. 100 - 199	03	Rs. 5,000 - 9,999	08
Rs. 200 - 499	04	Rs. 10,000 - 19,999	09
Rs. 500 - 999	05	Rs. 20,000 above	10

Code for purpose of loan:

Consumption	1	Marriage	5
Farming/animal rearing	2	Death or social rites and customs	6
Land purchase	3	Others (mention)	7
House	4		

Source of loan code:

Non-institutional in kind	1	Institutional	3
Non-institutional in cash	2	Others (mention)	4

Note: Enumerators should indicate their assessment of the reliability of responses given for institutional and non-institutional loans in the following table:

	Institutional	Non-Institutional
A. Absolutely correct		
B. Questionable		
C. Doubtful		
D. Non-distinguishable		

People's Participation:

2 5 Have you participated in the Village Assembly or in the village level Pancha Assembly ? ☐ 25

Yes [1] No [2]

2 6 In the last 12 months how much cash and voluntary labor did you contribute ?

Contribution	Labor contribution in days 01	Cash contribution Rs. 02	Remarks
0 1 Educational building			
0 2 Foot path/pony trail			
0 3 Road			
0 4 Irrigation			
0 5 Health			
0 6 Panchayat Building Construction			
0 7 Bridge/wooden bridge			
0 8 Drinking water			
0 9 Soil conservation (landslide, flood, etc.)			
1 0 Afforestation			
1 1 Resting houses and resting platform const.			
Others			
9 9 Total			

Note:

Convert the contribution in kind into cash.

2 7 Felt needs according to priority

What kinds of facilities do you want for development ?
How important do you consider the following facilities ?

	Spontaneously mentioned	Needs	Needs code	Willing or unwilling to contribute labor subscription	Cash	Remarks
	01		02	03	04	
0 1		Drinking water				
0 2		Fruit trees				
0 3		Irrigation				
0 4		Grain seeds				
0 5		Chemical fertilizer				
0 6		Educational building				
0 7		Adult education				
0 8		Vegetable seed				
0 9		Health post				
1 0		Employment (type)				
1 1		Road repair				
1 2		Road				
1 3		Bridge				
1 4		Electricity				
1 5		Cottage Industry				
1 6		Needs for family planning				
1 7		Facility for best local market				
1 8		Employment training other than agriculture				
1 9		Godown for improved seed				
2 0		Erosion control				
2 1		Mill for grinding and hauling				
2 2		Oil pressing mill				

	01	02	03	04
2 3	Plant of fodder trees			
2 4	Firewood tree plant			
2 5	Improved animals			
2 6	Flood control			
2 7	Improvement of grazing area			
2 8	Storage tank for irrigation			
2 9	Loan			
3 0	Employment opportunity other than agriculture			
	Others			

Code: Spontaneously mentioned [1]

Necessity code:

Unnecessary	[1]	Middle	[3]
Least	[2]	High	[4]

Willing to contribute:

Willing	[1]	Unwilling	[2]

2 8 Income

How much was your income in cash during the last 12 months ?

	Sources	Cash income in Rs.	Remarks
		1	
0 1	From sale of grains		
0 2	Livestock rearing 1/		
0 3	Sale of vegetables 2/		
0 4	Fruit and other trees 3/		
0 5	Cottage industries 4/		
0 6	From labor based in agriculture (only cash of the entire family)		
0 7	From interests and land-rent (cash)		
0 8	House-rent and repayment of loans		
0 9	From government service (civil, police, etc.)		
1 0	From British, Indian army and police (except pension)		
1 1	Wealth remitted by members living away from home		
1 2	From other services		
1 3	Pension		
1 4	Construction labor		
1 5	Special services (priest, Gaine (singer) Dhami, Jhankri (shaman) etc.)		
1 6	Other daily wages (porterage)		
1 7	Business (hotel, teashop, mills, etc. but not included in cottage industry		
1 8	Contract of Bhatti (drinking shop) and Raksi (alcohal)		
1 9	From sale of land		
2 0	House, yard and ornaments, jewellery sale		
	Others		
	Total income (sum)		

Note:

1/ Copy it from Question No.20 of page 9.
2/ Copy it from Question No.22 of page 11.
3/ Copy it from Question No.21 of page 10.
4/ Copy it from Question No.23 of page 12.

2 9 Expenditure

Give th. expenses of the last 1.. months (if the informant is unable to give the total annual expenses figure it should be added up by weekly or monthly expenses and put together).

	Expenditure	Annual expenses in Rs.	Total 01
	a) Purchase of grain b) Ghee, cooking oil, etc. c) Salt, spices, chillies, etc. d) Meat, fish, eggs, etc. e) Sugar, tea (leaves, dust) etc. f) Vegetables, etc.		
0 1	Total from above		
	a) Clothes, cloth, etc. b) Quilts, sheets mattresses, etc.		
0 2	Total expenses from above		
	a) Land maintenance b) Wage for laborers (cash) c) Seed, fertilizer and pesticide d) Bullocks, tractors, etc.		
0 3	Total expenses from above		
0 4	a) Education expenses		
	a) Dhami, Jhankri and herbal medicine expenses b) Hospital and medicine		
0 5	Total from above		
	a) Lighting (kerosene, mantles, electricity, oil, etc.) b) Wood (firewood, dried cowdung-cake)		
0 6	Total from above		
	a) Transportation (bus, poney, porter, etc.) b) Communications (postal, wireless, etc.)		
0 7	Total from above		
	a) Land and house tax etc. b) Transportation tax (poney, bullockcard, etc.) c) Other taxes (weapons, arms, radios, etc.)		
0 8	Total from above		
	Total of this page		

		Expenses	Annual expenses IN RS.	Total
0 9	a)	Drinks, ammal, and intoxicants (raksi, beer, cigarettes, nuts, etc.)		
1 0	a)	Litigation (offices, courts, etc.) expenses		
1 1	a)	House maintenance		
1 2	a)	Purchase of property (last year's house construction, land, animals, jewellery, ornaments, cycle)		
	a)	Furniture (table, chairs, cot, etc.)		
	b)	Pots and pans		
1 3		Total expenditure from above		
	a)	Expenses for wedding, sacred thread ceremony, weaning, etc.		
	b)	Ancestor worship, death, pilgrimage		
	c)	Festivals, religious rituals, clan diety worship		
	d)	Fairs, jatra, bhoj (feasts) etc.		
1 4		Total expenses from above		
1 5	a)	Development subscription		
1 6	a)	Loss from business trade		
		Others		
		Total expenses of this page		
9 9		Total from previous page		
		Total sum of both pages		
		Total income (from the table of income)		
		Balance		

Note:

Check whether the expenditure is in keeping with income, recheck so that there is no doubt.

If the balance between the income and expenditure is more than 20-25 percent (except the irregular wedding, rituals, etc.) the interviewer should repeat and try to obtain the balance.

Extension

30 Do J.T., J.T.A. come to your village? (If they do not) Have you heard of J.T., J.T.A. ? [ ] 30

Have heard [1] Have not heard [2]

31 (If they come) How many times did they come during the last six months ? (No. 0 - 9) [ ] 31

32 Is there a cooperative society in your Panchayat ? (If not) Have you heard of Sajha ? [ ] 32

Have heard [1] Have not heard [2]

33 (If yes) How many times did you go to Sajha during the last two years ? (No. 0 - 9) [ ] 33

34. Have you been to any agriculture office during the past two years? (If not) Have you heard of an agriculture office? [ ] 34

Have heard [1] Have not heard [2]

35 (If you have been) How many times? (No. 0 - 9) [ ] 35

36 Have you been to veterenary hospital during past two years? (If not) Have you heard of a veterenary hospital? [ ] 36

Have heard [1] Have not heard [2]

37 (If you have) How many times ? (No. 0 - 9) [ ] 37

38 Have you participated in any training given by Agriculture Department? (If not) Have you heard of such a training ? [ ] 38

Have heard [1] Have not heard [2]

39 (If you have participated) How many times? (0 - 9) [ ] 39

Improved Agriculture

40 Have you used improved seeds? (If not) Have you heard of improved seeds? [ ] 40

Yes [1] No, but have heard of [2] Have not heard [3]

41 Have you used chemical fertilizer? (If not) Have you heard of chemical fertilizer? [ ] 41

Yes [1] No, but have heard [2] Haven't heard [3]

42 Have you used insecticides when your crops get affected by disease ? (If not) Have you heard of such insecticides ? [ ] 42

Yes [1] Not, but have heard [2] Haven't heard [3]

43 Does it take longer time to collect firewood now than five years ago ? ☐ 43

It does /1/ Does not /2/ Don't know /3/

44 Does it take longer time to collect fodder now than five years ago ? ☐ 44

It does /1/ Does not /2/ Don't know /3/

45 Does it take longer to fetch water now than five years ago ? ☐ 45

Yes /1/ No /2/ Don't know /3/

46 Do you think there are more landslides now in your area than five years ago ? ☐ 46

Yes /1/ No /2/ Don't know /3/

47 Do you think that there are more floods now in your area than five years ago ? ☐ 47

Yes /1/ No /2/ Don't know /3/

48 Do you burn cowdung-cake for cooking and other purposes? ☐ 48

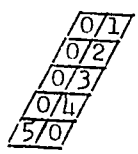
Yes /1/ No /2/ Don't know /3/

4 9 Time taken to collect water, grass, and firewood:

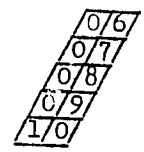
Articles collected	Winter		Summer		Quantity collected*	Remarks
	Time for each trip	Source	Time for each trip	Source		
	01	02	03	04	05	
Water	0 1					
Firewood	0 2					
Tree Fodder	0 3					
Fodder Grass	0 4					
Stems of paddy & other crops	0 5					
Others						

Time code (in hours):

0 - 0.5
0.6 - 1.0
1.1 - 2.0
2.1 - 3.0
3.1 - 4.0

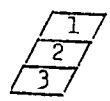


4.1 - 5.0
5.1 - 6.0
6.1 - 7.0
7.1 - 8.0
8.1 - and above



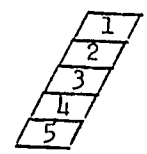
Code for firewood source:

Tree from one's own land
Forest
Stem of grains



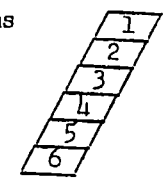
Code for fodder, grass, stems of paddy and other grains:

Tree from one's own land
Forest
Cooperative land
Personal land
Other people's land



Code for water source:

Rivers and streams
Wells
Taps
Springs
Ponds
Others



Note:

* Water for daily use (in pathi) and firewood and other objects for annual use (in average load).

50 Health: ____ 50

Has any member of your family visited a health post, health center, or hospital in the last year ?

Yes /1/ No /2/

51 Family Planning: ____ 51

Do you know if anyone has done family planning in this village ? (If not) Have you heard of family planning ?

Have not heard /1/

Have heard, but no one has done family planning /2/

Have heard, and some people have done family planning /3/

52 Do you wish to plant fodder trees or other trees in public land or grazing grounds? ____ 52

Yes /1/ No. /2/

53 Have you heard of the government plan to develop panchayat forest, panchayat protected forest, and personal forest ? ____ 53

Yes /1/ No /2/

54 (If you have heard) Do you think it is a good idea to have these types of forest in your village panchayat ? ____ 54

Yes /1/ No /2/ Don't know /3/

55 Has production decreased in your land because of landslide and flooding ? ____ 55

Yes /1/ No /2/ Don't know /3/

56 Has your land been damaged by landslide, and flooding? ____ 56

Yes /1/ No /2/

(If not, then ask question No.58)

57 (If yes) How much land was damaged (lost) ?

Kind	Measurement Code	Area	Remarks
	01	02	
0 1 Landslide			
0 2 Flood			
0 3 By erosion of river bank			

Note:

See page 5 for Area Code.

58 Do you have water logging problem in your land? ____ 58

Yes [1] No [2] Don't know [3]

59 Is there a danger of landslide, flooding or ____ 59

Yes [1] No [2] Don't know [3]

60 Are there terraces to be repaired in your land? ____ 60

Yes [1] No [2] Don't know [3]

61 Mention five trees you prefer for firewood:

(1) .....

(2) .....

(3) .....

(4) .....

(5) .....

AGRICULTURAL PROJECTS SERVICES CENTRE

R.C.U./RAPATI

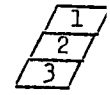
BASELINE SURVEY: HOUSEHOLD

Code Sheet for Questionnaire Page 165

0 2 Sex code: Male [1] Female [2]

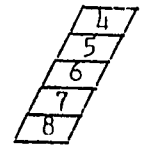
0 3 Code for household level:

Relatives in the household
Permanent servants or others in household
Members away from household for study



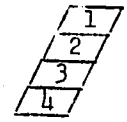
Members away from household except for study purpose:

0 - 1 year
1 - 3 years
3 - 6 years
6 - 8 years
8 and above



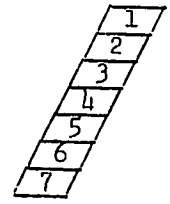
0 4 Marital status code:

Unmarried
Married
Widow or widower
Divorced or left spouse



0 5 Literacy code:

*Illiterate
Educated in school
Educated in household
Educated in army
**Foreign educated
Educated through adult education
Educated by other sources



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* Illiterate - person who cannot read and write.

** Foreign educated: educated in India, Burma, etc., excep in the army.

0 6 Code for educational level completed:

Zero	0/1	7 class completed	0/8
1 class completed	0/2	8 class completed	0/9
2 class completed	0/3	9 class completed	1/0
3 class completed	0/4	S.L.C. passed	1/1
4 class completed	0/5	Certificate (I.A.) passed	1/2
5 class completed	0/6	Diploma (B.A.) passed	1/3
6 class completed	0/7	Degree (M.A.) passed	1/4

0 7 Studying at the school code: Yes 1 No 2

0 8 Code for the destination:

Haven't left the village	0/1	In hill area outside project	0/6
In the center of own district	0/2	In rural area of terai	0/7
In Kathmandu, Pokhara or Surkhet	0/3	In urban area of terai	0/8
In project area - hills	0/4	In India	0/9
In project area - terai	0/5	In other foreign countries	1/0

09+11 Month code:

Baisakh	0/1	Kartik	0/7
Jesth	0/2	Marga	0/8
Ashadh	0/3	Poush	0/9
Shrawan	0/4	Magh	1/0
Bhadra	0/5	Falgun	1/1
Ashwin	0/6	Chaitra	1/2

13+14 Reason for going code:

Civil service (Nepal)	0/1	Construction laborer	0/7
Joined Indian & British army	0/2	Laborer of unknown job description	0/8
Agriculture (one's own or tenant)	0/3	Looking for a permanent living (HH)	0/9
Agricultural laborer	0/4	For household goods purchases	1/0
Porter	0/5	Marketing	1/1
Maiti or parent's home	0/6	Educator	1/2
		Other (specify)	1/3

APPENDIX - F

(To be filled afterwards)

AGRICULTURE PROJECTS SERVICES CENTRE

RCU/RAPATI

Panchayat Level Questionnaire

Part One

		(to be filled afterwards)	Q.No.
71	Card No.:		71
72	District:		72

Dang Deokhuri 1
Rolpa 2
Sallyan 3
Pyuthan 4
Rukum 5

Mustang 6
Myagdi 7
Gorkha 8
Makwanpur 9

73	Village Panchayat:		73
74	Height of Panchayat Office:		74

Name of respondent: .....

Rank of respondent: .....

Date of interview: .....

Name of supervisor: .....

Signature of supervisor: .....

75 Total number of families ☐☐☐☐ 75

76 Total population ☐☐☐☐ 76

77 Composition of population:

	Ethnic group	Number of families 01	Nepali language as mother tongue or not 02	Remarks
0 1	Brahman (Upadhaya, Jaishi, Kumai, etc.)			
0 2	Chhetri (including Matwali)			
0 3	Thakuri			
0 4	Sanyasi			
0 5	Gurung			
0 6	Thakali			
0 7	Bhote (Bara Gaunle)			
0 8	Tamang			
0 9	Magar			
1 0	Newar			
1 1	Sunar, Kami			
1 2	Damai			
1 3	Kumhale			
1 4	Sarki			
1 5	Musalman (including Curaute)			
1 6	Tharu			
1 7	Chandal			
1 8	Badi			
1 9	Pode			
2 0	Kasai			
2 1	Kushle			
	Others			
9 9	Total			

Code:

Yes ☐1☐ No ☐2☐

78 Land

Value

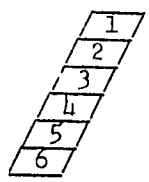
Type	Code 01	Rupees 02	Remarks
0 1 Irrigated land 1			
0 2 Irrigated land 2			
0 3 Unirrigated land			
0 4 Irrigated Pakho			
0 5 Unirrigated Pakho			
0 6 Grass land/Thatch land			
0 7 House-yard land			
Others			

Note: Irrigated land 1 = irrigated throughout the year

Irrigated land 2 = irrigated during monsoon only

Code:

One bigha
One Muri Mato
One Ropani
One Pathi Seeded
One Hal
Others, specify

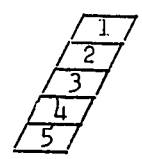


79 Foodgrain crops (value after harvesting)

	Crops	Code	Value (in Rupees	Remarks
0 1	Paddy			
0 2	Wheat			
0 3	Maize			
0 4	Millet			
0 5	Barley			
0 6	Buckwheat			
0 7	Mustard			
0 8	Pulses			
0 9	Tobacco			
1 0	Sugarcane			
1 1	Soyabean			
	Others			

Code:

One Muri
One Dharni
One kg.
One Maund
Others



80 Livestock: (average value of fully matured animal)

	Type	Value (Rupees) 01	Remarks
0 1	He-buffalo		
0 2	Bullock		
0 3	Pony		
0 4	Mule		
0 5	He-goat		
0 6	Castrated goat		
0 7	Pig		
0 8	Sheep		
0 9	Yak - cross breed (bullock)		
1 0	Yak		
1 1	Buffalo (female)		
1 2	Cow		
1 3	She-goat		
1 4	Ewe		
1 5	Yak - cross breed (cow)		
1 6	Nak (Yak female)		
1 7	Chicken		
1 8	Duck		
1 9	Pigeon		
	Others		

81 Average local wage rate in rupees (daily value)

	Type of work	Male 01	Female 02	Children 03	Remarks
0 1	Agriculture				
0 2	Industry				
0 3	Construction (Mason Carpentry)				
0 4	Coolie/Porter				
0 5	Others				

82 **Institutions:**

Types of institution	Name of place	Does or doesn't exist within the Panchayat	How far from the Panchayat office	Distance Code	Time necessary to reach	Remarks
		01	02	03	04	
0 1 Post Office						
0 2 Hospital						
0 3 Health Post						
0 4 Family planning clinic						
0 5 Ayurvedic clinic						
0 6 Primary school						
0 7 Lower secondary school						
0 8 Secondary school						
0 9 Campus (nearby)						
1 0 Veterinary hospital						
1 1 Agriculture Dev. Bank						
1 2 Agriculture Supply Corporation						
1 3 Sajha						
1 4 Ranger office						
1 5 Herbal farm						
1 6 Roads Dept. Camp						
1 7 Roads Dept. Office						
Others						

Code for Column 01

Yes [1] No [2]

Distance code:

Kosh [1]
Mile [2]
Kilometer [3]

Code for time required to reach:

0 to 1 hour [1]
1 to 2 hours [2]
2 to 4 hours [3]
4 to 6 hours [4]
6 hours to 1 day [5]
1 to 2 days [6]
2 to 3 days [7]
3 to 4 days [8]
More than 4 days [9]

83 If you have Sajha organization in your village panchayat, how many members are there in it ? ____ 83

84 How many assemblies at Gaun Panchayat level were held during past 12 months ? ____ 84

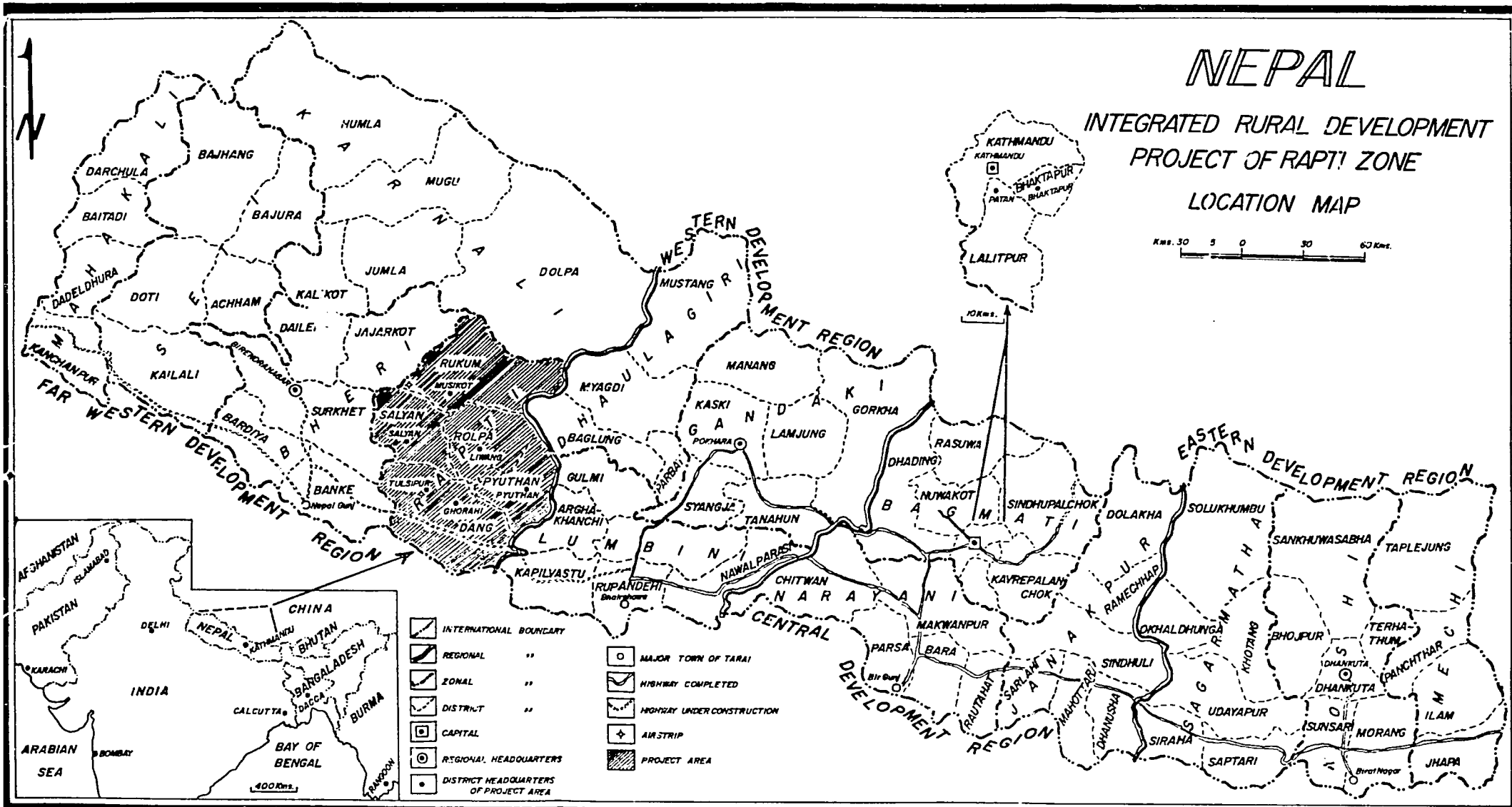
85 Is Panchayat Development and Land Tax collected in your Gaun Panchayat ? ____ 85

Code: Yes 1 No 2

86 What contributions were made by HMG, District Panchayat, local people (voluntary labor) to execute the following types of projects during the past 12 months ?

	Types of projects	HMG Rs.	District Panchayat Rs.	Local Contribution Rs.	Panchayet tax	Remarks
0 1	School building					
0 2	Foot trail					
0 3	Road					
0 4	Irrigation					
0 5	Health					
0 6	Panchayat building					
0 7	Bridge					
0 8	Drinking water					
0 9	Soil conservation					
1 0	Afforestation					
	Others					
9 9	Total					

Note: Convert the voluntary labor of local contribution into Rupees. Also mention how many rupees have to be paid in place of voluntary labor for a day.



APROSC JULY, 1980

By:- TILAK PR. KARASTHA