

NEPAL LIVING STANDARDS SURVEY REPORT 1996

MAIN FINDINGS VOLUME ONE



**CENTRAL BUREAU OF STATISTICS
NATIONAL PLANNING COMMISSION SECRETARIAT
HIS MAJESTY'S GOVERNMENT
NEPAL**

**NEPAL LIVING STANDARDS SURVEY
1995-96**

STATISTICAL REPORT

**MAIN FINDINGS
VOLUME ONE**

**CENTRAL BUREAU OF STATISTICS
NATIONAL PLANNING COMMISSION SECRETARIAT
HIS MAJESTY'S GOVERNMENT, NEPAL
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Fax: 977-1-227720

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FOREWORD

The publication of the first volume report on **Nepal Living Standards Survey (NLSS)** is a landmark in the history of Statistical Development in Nepal. Prominent reasons that can be cited for this achievement are; implementation of an integrated household survey almost after a gap of more than ten years, comprehensive coverage in terms of different topics providing an opportunity to analyze and study the inter-relationship of various socio-economic variables, the timely completion of the survey, application of the results in the formulation of the Ninth Plan etc.

Results of this survey is published in the short duration of four months from the time the last household was interviewed. Modern techniques and applications have facilitated in achieving such impressive successes. Indeed this trend is essential to be maintained in the future also to produce a steady flow of integrated statistics on a recurring basis. It is hoped that the Central Bureau of Statistics (CBS) will be able to carry out such works at reasonable intervals in the future also.

I would like to extend my sincere thanks to the World Bank for providing financial and technical support. I would also like to thank all the persons and the staffs of the CBS that were involved in the successful implementation of this survey.

November 1996



Prithvi Raj Ligal

Vice Chairman

National Planning Commission

PREFACE

The successful completion of the **Nepal Living Standards Survey (NLSS)**, an operation large in terms of data collection period and the manpower involved is indeed a matter of great satisfaction. Accomplished within the set timetables, the survey offers unique opportunities to assess the poverty situation in the country and carry out many other research works by providing a large data base for a single reference period on a wide range of topics. The Bureau had started disseminating the data in electronic format to facilitate the output of data suitable to the requirements and needs of the users. A number of institutions now have access to this data set and are processing and analysing according to their needs.

Side by side, the survey operation also has contributed in the institutional building by strengthening the capability of the CBS in conducting sample surveys. Experience gathered from an integrated household survey of this nature certainly will enable the CBS manpower to conduct other kinds of sample surveys with greater ease. The need, now, is to focus on a mechanism that ensures a continuous flow of information in the future. This allows for a critical and regular assessment of the poverty situation in the country supplemented by the causes of its happening. Only then we might be able to tackle and alleviate the conditions of the sizable poor in the country.

It is also encouraging to note that the survey has successfully used advanced techniques like the use of portable computers and solar panels to support them. This has ultimately facilitated in the generation of quality data on a timely basis.

It is for these results that I would most sincerely like to thank the **WORLD BANK** for the support it has provided both financially and technically to this project. The four project vehicles facilitated in carrying out a superb supervision work and I would like to thank the **USAID** for providing them. I would also like to extend my heartfelt thanks to Task Manager Ms. Giovanna Prennushi, Ms. Benu Bidani and Mr. Peter Lanjouw all from the World Bank, Senior Consultant Mr. Juan Munoj, Consultant Mr. Salman Zaidi, and Local consultant Mr. Manik Lal Shrestha for the hard work they all have put into this survey.

My thanks are also due to the core team members of this project Mr. Tunga Shiromani Bastola, Mr. Radha Krishna G.C, Mr. Prem Prasad Sangraula, Mr. Mukti Prasad Adhikari led by Project Coordinator Mr. Keshav Karmacharya all of whom are from CBS. Let me also thank all the field staffs for the hard work they have undertaken lasting almost a year.

November 1996

Keshav Raj Sharma
Director General
Central Bureau of Statistics

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Section 1

METHODOLOGY

1.1 Introduction

One of the principal objectives of the Eighth Five Year Plan of Nepal is the alleviation of poverty in the country. However, the scarcity of reliable and timely data regarding the living standards of the people and the level of poverty in the country has hampered efforts to monitor achievements. This provided the impetus for an understanding between His Majesty's Government of Nepal (HMGN) and the World Bank to launch a Living Standards Survey in Nepal. The Nepal Living Standards Survey (NLSS) was designed as a multi-topic survey collecting a comprehensive set of data on different aspects of household welfare (consumption, income, housing, labor markets, education, health etc.). These data, together with those collected through future rounds of the survey, will ultimately allow HMGN to monitor progress in improving national living standards and to evaluate the impact of various government policies and programs on the living conditions of the population.

This is the first of a two-volume Statistical Report containing the main findings of the survey. This volume contains a descriptions of the survey methodology and the methodology employed to construct consumption aggregates (Section 1), as well as tabulations on Demographic Characteristics (Section 2), Housing (Section 3), Access to Services (Section 4), Education (Section 5), Health (Section 6), Fertility and Family Planning (Section 7). Volume 2, which will be published subsequently, will cover employment, agricultural activities, non-farm enterprises, credit and saving, and household income.

1.2 Survey Methodology

The Nepal Living Standards Survey followed the LSMS methodology developed by researchers at the World Bank over the last ten years and applied in surveys conducted in more than twenty countries. The key features of this methodology are:

- (a) an integrated household questionnaire covering consumption, incomes, assets, housing, education, health, fertility, migration, accompanied by a community questionnaire aimed at collecting information on service provision, prices, and the environment facing the households,
- (b) innovative data management techniques, including a pre-coded questionnaire, decentralized data entry, field verification, and extensive training and supervision of field workers.

The sample design, survey questionnaires, and field work organization of the NLSS are described below.

Sample Design

Sample Frame. A complete list of all wards in the country, with a measure of size, was developed in order to select from it with Probability Proportional to Size (PPS) the sample of wards to be visited. The 1991 Population Census of Nepal was the best starting point for building such a sample frame. The Central Bureau of Statistics (CBS) constructed a data set with basic information from the census at the ward level. This data set was used as a sample frame to develop the NLSS sample.

Sample Design. The sample size for the NLSS was set at 3,388 households. This sample was divided into four strata based on the geographic and ecological regions of the country: (i) Mountains, (ii) urban Hills, (iii) rural Hills, and (iv) Terai. The following table shows how the sample was allocated among the four strata:

NLSS National Sample

<i>Stratum</i>	<i>Number of Households</i>
Mountains	424
Hills (Urban)	604
Hills (Rural)	1,136
Terai	1,224
<i>Total</i>	<i>3,388</i>

The sample size was designed to provide enough observations within each ecological stratum to ensure adequate statistical accuracy, as well as enough variation in key variables for policy analysis within each stratum, while respecting resource constraints and the need to balance sampling and non-sampling errors.

A two-stage stratified sampling procedure was used to select the sample for the NLSS. The primary sampling unit (PSU) is the ward, the smallest administrative unit in the 1991 Population Census. In order to increase the variability of the sample, it was decided that a small number of households -- twelve -- would be interviewed in each ward. Thus, a total of 275 wards was obtained.

In the first stage of the sampling, wards were selected with probability proportional to size (PPS) from each of the four ecological strata, using the number of household in the ward as the measure of size. In order to give the sample an implicit stratification respecting the division of the country into Development Regions, the sample frame was sorted by ascending order of district codes, and these were numbered from East to West. The sample frame considered all the 75 districts in the country, and indeed 73 of them were

represented in the sample.¹ In the second stage of the sampling, a fixed number of households were chosen with equal probabilities from each selected PSU.²

The two-stage procedure just described has several advantages. It simplified the analysis by providing a self-weighted sample. It also reduced the travel time and cost, as 12 or 16 households are interviewed in each ward. In addition, as the number of households to be interviewed in each ward was known in advance, the procedure made it possible to plan an even workload across different survey teams.

Household Listing Operation. After the random selection of the 275 wards, a complete enumeration of households in the sampled wards was conducted in order to select and identify the households to be interviewed. The household listing operation was carried out in two phases between July 1994 and December 1994. Information collected focused on: locality, name of the household head, nick-name of the household head (rural), block number of dwelling (urban), and household size. The cover page for the listing was designed to gather information on the mode of transport and time required to reach the ward; this facilitated the preparation of schedules for the field teams.

Survey Questionnaire

The NLSS questionnaire is different from other household survey questionnaires in several ways. First, information is collected on several aspects of household behavior - demographic composition, housing, education, health, consumption expenditures, income by source, employment. The questionnaire is therefore longer than usual survey questionnaires. Second, information is collected from all household members, not just from the head of household. This is done so as to gain a full picture of living standards for women and children as well. Third, a community questionnaire is also administered in addition to the household questionnaires. Community questionnaires were administered in all wards -- with different questionnaires for urban and rural wards -- to collect information on characteristics of the community, prices, and facilities available. This information supplements the information collected at the household level. The questions in the community questionnaire were answered by the ward or VDC chairman, or other such knowledgeable people in the ward. The contents of the household and community questionnaires are described below.

¹ The two districts not selected in the sample due to their low population were Rasuwa and Mustang.

² After the selection of the wards, it was decided to interview 16 instead of 12 households in each selected ward in the Far-Western Development Region to increase the number of observations for that region.

HOUSEHOLD QUESTIONNAIRE

Section 1. HOUSEHOLD INFORMATION

This section served two main purposes: (i) identify every person who is a member of the household, and (ii) provide basic demographic data such as age, sex, and marital status of everyone presently living in the household. In addition, information collected also included data on all economic activities undertaken by household members and on unemployment.

Section 2. HOUSING

This section collected information on the type of dwelling occupied by the household, as well as on the household's expenditures on housing and amenities (rent, expenditure on water, garbage collection, electricity, etc.).

Section 3. ACCESS TO FACILITIES

This section collected information on the distance from the household's residence to various public facilities and services.

Section 4. MIGRATION

This section collected information from the household head on permanent migration for reasons of work or land availability.

Section 5. FOOD EXPENSES AND HOME PRODUCTION

This section collected information on all food expenditures of the household, as well as on consumption of food items that the household produced.

Section 6. NON-FOOD EXPENDITURES AND INVENTORY OF DURABLE GOODS

This section collected information on expenditure on non-food items (clothing, fuels, items for the house, etc.), as well as on the durable goods owned by the household.

Section 7. EDUCATION

This section collected information on literacy for all household members aged 5 years and above, on the level of education for those members who have attended school in the past, and on level of education and expenditures on schooling for those currently attending an educational institution.

Section 8. HEALTH

This section collected information on illnesses, use of medical facilities, expenditure on health care, children's immunization, and diarrhea.

Section 9. ANTHROPOMETRICS

This section collected weight and height measurements for all children 3 years or under.

Section 10. MARRIAGE AND MATERNITY HISTORY

This section collected information on maternity history, pre/post-natal care, and knowledge/use of family planning methods.

Section 11. WAGE EMPLOYMENT

This section collected information on wage employment in agriculture and in non-agricultural activities, as well as on income earned through wage labor.

Section 12. FARMING AND LIVESTOCK

This section collected information on all agricultural activities -- land owned or operated, crops grown, use of crops, income from the sale of crops, ownership of livestock, and income from the sale of livestock.

Section 13. NON-FARM ENTERPRISES/ACTIVITIES

This section collected information on all non-agricultural enterprises and activities -- type of activity, revenue earned, expenditures, etc.

Section 14. CREDIT AND SAVINGS

This section collected information on loans made by the household to others, or loans taken from others by household members, as well as on land, property, or other fixed assets owned by the household.

Section 15. REMITTANCES AND TRANSFERS

This section collected information on remittances sent by members of the household to others and on transfers received by members of the household from others.

Section 16. OTHER ASSETS AND INCOME

This section collected information on income from all other sources not covered elsewhere in the questionnaire.

Section 17. ADEQUACY OF CONSUMPTION

This section collected information on whether the household perceives its level of consumption to be adequate or not.

RURAL COMMUNITY QUESTIONNAIRE

Section 1. POPULATION CHARACTERISTICS AND INFRASTRUCTURES

This section collected information on the characteristics of the community, availability of electricity and its services and water supply and sewerage.

Section 2. ACCESS TO FACILITIES

Data on services and amenities, education status and health facilities was collected.

Section 3. AGRICULTURE AND FORESTRY

Information on the land situation, irrigation systems, crop cycles, wages paid to hired labor, rental rates for cattle and machinery and forestry use were asked in this section.

Section 4. MIGRATION

This section collected information on the main migratory movements in and out.

Section 5. DEVELOPMENT PROGRAMS, USER GROUPS, etc.

In this section, information on development programs, existence user groups, and the quality of life in the community was collected.

Section 6. RURAL PRIMARY SCHOOL

This section collected information on enrollment, infrastructure, and supplies.

Section 7. RURAL HEALTH FACILITY

This section collected information on health facilities, equipment and services available, and health personnel in the community.

Section 8. MARKETS AND PRICES

This section collected information on local shops, Haat Bazaar, agricultural inputs, sale of crops and the conversion of local units into standard units.

URBAN COMMUNITY QUESTIONNAIRE

Section 1. POPULATION CHARACTERISTICS AND INFRASTRUCTURE

Information was collected on the characteristics of the community, availability of electricity, water supply and sewerage system in the ward.

Section 2. ACCESS TO FACILITIES

This section collected information on the distance from the community to the various places and public facilities and services.

Section 3. MARKETS AND PRICES

This section collected information on the availability and prices of different goods.

Section 4. QUALITY OF LIFE

Here the notion of the quality of life in the community was explored.

Field Work Organization

Field Teams. The data were collected by 12 field teams, each responsible for a particular area of the country. Assignment of wards to the various teams was done to balance the work load and travel time across teams. The teams were based in the appropriate district

office of the CBS, and covered on average 23 wards. Each team consisted of one supervisor, three interviewers, and a data entry operator. One of the interviewer was also trained as an anthropometrist, and was responsible for weighing and measuring children in all interviewed households. Each team included at least one female interviewer.

Structure of the Interviews. Each ward was visited once. Within each ward, however, households to be interviewed were often visited several times, depending on how long it took to complete the questionnaire. In the first visit, the interviewer completed the listing of all the household members and made appointments to talk to each of them; in later visits, he/she interviewed the different members of the household. The amount of time taken to complete the questionnaire varied greatly from household to household, depending on the number of people there were in the household, how much land they owned, how many different kinds of economic activities they were undertaking, how many modern consumer goods they owned, and other such factors. In general, the larger the household, the more the people had to be interviewed, and hence the longer the interview in the household was likely to be. Usually it took at least two visits to complete the interview.

Data Entry and Management. A distinctive feature of the NLSS is the use of personal computers for data entry in the field. Instead of sending the completed questionnaires back to the central office for data entry, the data collected in the ward were entered while the team was still in the field. For this purpose, each team was provided with a computer, a printer, and a power system for data entry, in addition to scales and meters to measure children. A data entry program developed specifically for the survey was installed on each computer. The data entry program let the data operator and the supervisor know if there were mistakes or missing data in the interview, and checked whether information from one part of the interview matched information from other parts. When problems or errors were found, the interviewers returned to the households to correct the information. This process of entering, checking, and correcting the data in the field helped to ensure that the information collected was accurate. It also reduced the time lag between data collection and data analysis; diskettes containing the complete data for each ward were sent back to the central office as soon as work in the ward was completed, and the data were available for analysis shortly after the completion of the collection phase.

Data Collection. Data collection was planned over a full year to cover a complete cycle in agricultural activities and capture seasonal variations in other variables. Field work took place in four subsequent phases. During the first phase, which began on Ashad 15, 2052 (June 25, 1995), interviews were carried out in 28 wards. Then the supervisors and data entry operators were called back to the CBS for a two-week review of the data collected. Instructions were issued where errors and inconsistencies were found. The second phase of data collection work started from Bhadra (mid-August 1995) and continued till the first week of Kartik. During this phase, work on 66 wards was completed. The third phase data collection work continued from Kartik (after Dasain) onwards to Poush. During this phase work on 93 wards was completed. The fourth

phase began in Magh and was completed by the end of Jesth, 2052 (June 15, 1996), as planned.

Distribution of the NLSS Sample. The actual sample numbers 3373 households, 15 less than planned -- one ward (12 households) could not be reached, and one ward had only 9 households. In all other cases, missing or non-respondent households were replaced using a pre-determined random procedure. The following table gives the distribution of the actual sample (individuals, households, wards) by Development Region, ecological belt, and urban-rural location (note that, under "Rural", "Eastern" denotes the Eastern and Central Development Regions while "Western" includes the Western, Midwest, and Farwest Development Regions. For example, "Eastern Terai" covers the Terai parts of the Eastern and Central Development Regions.)

Table 1.1: Distribution of the NLSS Sample

	Number of Males	Number of Females	Total Individuals	Number of Households	Number of Wards
DEVELOPMENT REGION					
Eastern	1960	1959	3919	717	60
Central	3544	3585	7129	1320	110
Western	1596	1813	3409	624	52
Midwest	1064	1120	2184	360	30
Farwest	1099	1115	2214	352	22
ECOLOGICAL BELT					
Mountain	1083	1156	2239	409	32
Hill	4443	4734	9177	1740	142
Terai	3737	3702	7439	1224	100
URBAN					
Kathmandu	1892	1868	3760	716	59
Other urban	1013	974	1987	396	33
	879	894	1773	320	26
RURAL					
Eastern Hill/Mountain	7371	7724	15095	2657	215
Western Hill/Mountain	1858	1984	3842	717	60
Eastern Terai	2125	2373	4498	828	64
Western Terai	2139	2107	4246	744	62
	1249	1260	2509	368	29
NEPAL	9263	9592	18855	3373	274

1.3 Constructing per-capita consumption aggregates

The per-capita consumption aggregates constructed for the NLSS data were obtained by adding together the various goods and services reported to have been consumed in the past 12 months by each household. Consumption of all these goods and services reported in different parts of the NLSS questionnaire was converted to rupee terms, expressed as annual amounts, and then aggregated together to obtain a measure of annual household consumption. The various components of consumption used to construct this aggregate can be grouped together into 3 main groups: (i) consumption of

food items, (ii) consumption of housing, and (iii) consumption of other non-food items. The specific items included in each component, as well as the methodology used to ascribe a rupee value to consumption of these items is briefly outlined below:

(i) Consumption of food items. The food consumption component was constructed from the data collected in Section 5 of the NLSS questionnaire: "Food Expenses and Home Production". For each of the food items 011 - 132 (excluding tobacco and tobacco products) that the household reported having consumed in the past 12 months, the values of purchased food, home-produced food, and food received in-kind were added together to obtain a measure of the value of consumption of that food item in the past 12 months. This measure was then aggregated for the various food items reported to have been consumed by each household to obtain an estimate of total annual food consumption.

(ii) Consumption of housing. Housing provides a range of services which are central to well-being. The large majority of the population consumes housing services such as shelter and protection from the elements, and there is no doubt that at least at certain times of year, these services have a direct and important bearing on their standard of living. A convincing indicator of well-being thus should take into account the consumption of these housing services.

The estimate of the annual value of consumption of housing services was based on data on the rental values of dwellings reported in Section 2B: "Housing Expenses". In the case of households renting their dwelling, the value of consumption of housing services was taken to be the annual rent paid by them. In the case of households that owned their dwelling unit, in most cases, consumption of housing was taken to be the annual rent that they reported they would have had to pay for their dwelling. However, about one-fourth of the sample households owning their dwelling were unable to provide a credible estimate of a rental value for their home (820 cases in all).

In such cases, we imputed a rental value to the dwelling by first estimating a hedonic housing regression on the sample of households reporting non-zero rents. The dependent variable in this regression was the rental value reported by these households, and the set of explanatory variables included a wide range of housing characteristics, measures of the quality of housing, regional dummy variables, and other factors (such as a proxy for household wealth) that we thought could help predict the rental value of the dwelling. This model was then used to predict the rental value for those households in the sample that had reported zero rents. The parameter estimates for the model used to predict rental values are presented below.

Table 1.2: Imputation of consumption of housing

Source	SS	df	MS	Number of obs = 2434		
Model	3812.95277	19	200.681725	F(19, 2414)	=	289.95
Residual	1670.81654	2414	.692136098	Prob > F	=	0.0000
				R-squared	=	0.6953
				Adj R-squared	=	0.6929
Total	5483.76931	2433	2.25391258	Root MSE	=	.83195

lnrent	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
kathmand	.5659256	.1132438	4.997	0.000	.3438605	.7879907
othurban	.1854689	.0856968	2.164	0.031	.0174221	.3535158
rwhills	-.1637326	.0642862	-2.547	0.011	-.2897943	-.0376708
rehills	-.1002949	.0685607	-1.463	0.144	-.2347387	.0341489
rwterai	-.5661014	.0708354	-7.992	0.000	-.7050059	-.4271969
lnrooms	.3726933	.0379762	9.814	0.000	.2982241	.4471626
lnwsize	.093638	.0264439	3.541	0.000	.0417829	.1454931
lnasset	.1581149	.0162156	9.751	0.000	.1263169	.1899128
kitchen	.3504665	.0377002	9.296	0.000	.2765384	.4243946
pavedroad	.1617474	.0661595	2.445	0.015	.032012	.2914827
walls	.0348908	.0582422	0.599	0.549	-.0793191	.1491007
floor	.5002702	.0724286	6.907	0.000	.3582415	.6422989
roof	.1671517	.0524047	3.190	0.001	.0643888	.2699147
window	.1659787	.0444381	3.735	0.000	.0788379	.2531195
water	.19642	.060431	3.250	0.001	.0779181	.3149219
garbage	.1331213	.0787853	1.690	0.091	-.0213725	.287615
toilet	.0266239	.093086	0.286	0.775	-.1559127	.2091605
light	.4898704	.0633517	7.733	0.000	.3656411	.6140996
telephon	.1587844	.0881685	1.801	0.072	-.0141093	.3316781
Constant	2.584359	.1817127	14.222	0.000	2.22803	2.940688

The approach followed here is a simplified version of a fairly common technique for imputing housing expenditures for households which are owner-occupiers. The more common approach is to proceed in two steps. First, one estimates a probit model which relates various household characteristics such as occupation, wealth, etc., to the likelihood of renting or not. A mills ratio is constructed from that probit model and included in the second stage where one takes the sub-sample consisting of renting households only and regresses rent paid on housing characteristics (such as number of rooms, building materials, etc.), plus the mills ratio variable constructed from the first stage. The parameter estimates on the housing characteristics are then used to predict rent payments for those households which are not renting.

We chose to depart from this approach for the following reason. In choosing the two stage approach, household characteristics are assumed to influence the likelihood of renting or not, but are not allowed to directly influence the rent that is paid by households. (The mills ratio variable constructed from the first stage may be significant in the second stage, but is dropped when "predicting" rent paid by owner-occupier households). In our approach, we allowed household characteristics, notably the household's wealth, as proxied by the value of consumer durables owned, to influence the rent paid by the household. This was because we thought that certain aspects of housing quality not readily captured by the existing housing characteristics would be correlated with household wealth, and would certainly influence the rent paid by households. Such

aspects might include neighbourhood security, access to a garden and shade, exposure to noise and air pollution, etc.

The cost of departing from conventional practice is that the parameter estimates on the various housing quality variables may be biased estimates of the true contribution of those variables to total rent paid. For example, one might conclude from the regression estimates that the addition to the total rental price of an additional room, or of a house made of stone rather than wood, is much greater than is actually the case. This is because the sub-sample of renting households might differ from the rest of the population in terms of some set of characteristics such as occupation, location, ethnicity, etc., and that the prices they face are not the "true" prices which prevail for the population as a whole. However, as the purpose of our exercise is not so much to investigate which factors influence rent and by exactly how much, but rather to "explain" total rent paid as well as possible, this disadvantage is not so pressing. Note in addition that the two-stage approach will yield unbiased parameter estimates only in the absence of heteroskedasticity, and this is relatively rare in cross-sectional data such as these.

(iii) Consumption of non-food items. This component of consumption was constructed by aggregating together consumption of all other goods and services covered in other parts of the NLSS questionnaire. The value of non-food items purchased or received in-kind by the household over the past 12 months reported in Section 6 was included in this component of consumption. For non-food items where data was collected on the estimated value of both monthly as well as annual consumption, we first used the monthly reported figure to construct our measure of annual consumption. This was because, in our view, the household's estimate of expenditure in the past month was likely to be more accurate than the annual estimate. If no consumption of the item was reported in the past month, we used the reported annual amount instead.

We excluded expenditure on a few of the items covered in Section 6 from our measure of consumption. For instance, we decided to exclude expenditure on firewood. This was mainly because while fuelwood consumption is widespread, particularly in rural areas, the vast majority of households report collecting firewood for use as fuel rather than purchasing it. In order to ensure comparability of the consumption bundle across households, we would have had to impute a value to the firewood consumption of such households. However, this task was made difficult by the fact that consumption of firewood is generally reported in non-standard units that are difficult to compare across households (not only are these units non-metric, but the same unit can represent a different quantity in different localities). These non-standard units not only made it difficult to convert quantities of firewood consumed into comparable units, but also made it difficult to convert the consumption of firewood into monetary terms. Price information, collected at the community level, was not only missing from many communities but, where available, was generally expressed in units which did not easily match those reported by households. Rather than add a potentially noisy

component to our consumption measure, we decided in the end to exclude consumption of firewood from our consumption aggregate.³

Education expenditures from Section 6 were also excluded, as we decided instead to use the more comprehensive data on education expenses from Section 7 (expenditures on schooling plus value of scholarships received). Other expenditure components in Section 6 which were dropped include repair and maintenance and home construction and improvements on the grounds that these line items are actually investment outlays.⁴ We also dropped expenditure on taxes and fines. Finally, we also excluded expenditure on marriages, dowries, funerals, and other social and religious functions. While expenditure on these items could in principle have been useful in discerning the rich from the poor, the lumpy nature of these expenses, as well the relatively short recall period of 12 months (for these type of expenses) used in the survey made this data unsuitable for our purposes.⁵

Expenditure on durable goods reported in Section 6 was also excluded from our measure of consumption (given its lumpy nature), and instead we decided to value consumption of durable goods by estimating a flow of services accruing to the household from the total stock of durable goods it owned. This estimate of consumption of durable goods was based on data collected in Section 6C, and was calculated as follows:

1. For each durable good, the price paid to purchase the good was expressed in current prices based on information on the number of years ago this item was acquired, and the rate of inflation in Nepal over the past few years (source: Statistical Yearbook of Nepal). In cases where more than one item was owned by the household, the purchase price in current prices for all such items was assumed to be the same as this value.
2. The difference between the value of the item(s) in current prices, and the present value of the item(s), along with information on the number of years this item had been used, was then used to calculate depreciation for the item. This depreciation was then averaged over the sample for each type of durable good to obtain an item-specific depreciation rate (i.e. one for bicycles, one for fans, etc.).

³ Note that the omission of firewood from our consumption aggregate is likely to lead to an understatement of rural consumption levels relative to urban consumption levels, because in urban areas alternatives to firewood are more widespread and these have been included in the consumption aggregate. However it is also the case that certain alternatives to firewood, to which urban households have greater access, are subsidized. So the wedge between urban and rural households, introduced by our omission of firewood, is unlikely to be excessive.

⁴ Including investment expenditures in the consumption aggregate can lead to double-counting. For example, these investments can contribute to improved earning capacity which in turn is reflected in more consumption of final goods.

⁵ Non-food items included from Section 6 were: items with code 211-242 (excluding 211: wood and 236: education), 311, 314-316, 411 & 413).

3. The measure of consumption of durables was then obtained by applying this rate of depreciation to the original value of the item(s) (in current prices) owned by the household to impute an annual flow of services, and then aggregating this flow of services for all durable goods owned by each household.
4. In the case of item 512: telephone sets (77 occurrences), the average depreciation rate computed turned out to be negative (i.e. on average, these items had appreciated in value over the years), thus giving a negative consumption flow when the above methodology was applied. In the case of these items, the consumption flow was instead calculated by dividing the current prices value of the item by the average life of the item, thus getting an annual measure of the flow of services from this consumer durable.

We also included expenditure on garbage collection, electricity, and telephone charges reported in Section 2 in our non-food consumption component. However, we decided to exclude expenditure on water because our concerns regarding rationing of water supply in the country led us to believe that inclusion of this expenditure was likely to bias our welfare rankings.⁶ Finally, our measure of consumption of non-food goods also included consumption of tobacco and tobacco products reported in Section 5.

The three components of consumption thus obtained, (i) food, (ii) housing, and (iii) non-food items, were then aggregated together to obtain a measure of total annual household consumption. Per-capita consumption estimates were then calculated by dividing this measure by the total number of individuals in each household.

Tables 1.3 and 1.4 report average nominal per capita consumption in current Rupees and the cumulative shares of consumption by decile and quintile. In nominal terms, the bottom fifty per cent of households accounts for 26 per cent of consumption, while the top 20 percent account for 45 percent of consumption.

Table 1.3: Nominal per capita consumption by decile

<i>Decile</i>	<i>Mean Cons.</i>	<i>Cum. Cons.</i>
I	2,152	3.2
II	2,987	7.6
III	3,608	12.6
IV	4,178	19.0
V	4,777	26.0
VI	5,506	34.1
VII	6,483	43.7
VIII	7,812	55.1
IX	10,220	70.2
X	20,263	100.0

⁶ See Hentschel and Lanjouw (1996) for a more detailed discussion of this issue

Table 1.4: Nominal per capita consumption by quintile

<i>Quintile</i>	<i>Mean Cons.</i>	<i>Cum. Cons.</i>
I	2,571	7.6
II	3,893	19.0
III	5,142	34.1
IV	7,147	55.1
V	15,243	100.0
<i>Overall Mean</i>	<i>6,802</i>	

Table 1.5 reports the distribution of the population by geographical area and quintile. Most of the population in Kathmandu fall into the top decile. Note, however, that these are nominal consumption figures; if prices are higher in Kathmandu than elsewhere, the distribution of the population by real consumption quintiles will look different.

Table 1.5: Distribution of the population by nominal per capita consumption quintile and geographical group

<i>Quintile</i>	<i>Kathm.</i>	<i>Other</i>	<i>R-W</i>	<i>R-E</i>	<i>R-W</i>	<i>R-E</i>	<i>Total</i>
		<i>Urban</i>	<i>Hills</i>	<i>Hills</i>	<i>Terai</i>	<i>Terai</i>	
I	0.0	12.6	31.5	10.5	28.6	15.4	20.0
II	0.2	14.6	17.9	12.6	27.6	25.7	20.0
III	3.3	11.9	16.3	18.0	21.0	26.7	20.0
IV	6.7	17.7	18.0	26.9	17.4	19.5	20.0
V	89.8	43.2	16.3	32.0	5.4	12.7	20.0
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Section II

DEMOGRAPHY

2.1 Age Distribution And Dependency Ratio

The age distribution of the population by five-year age group and sex is presented in Tables 2.1 - 2.4 for the country by Development Regions, Ecological Belts and by Urban/Rural Residence. The trend in age pattern shows resemblance with the Census figures of 1991 and earlier ones (CBS, 1995). The under-reporting of children in the age group 0-4 for both the sexes is well exhibited as in the 1991 and earlier censuses (see Table 2.1). The age distribution does not show the same pattern across the Development Regions and Ecological Belts. The proportion of population in the age group 0-4 is lower than that in the age group 5-9 in Eastern, Central, Western and Far-Western Region. Whereas, in the Mid-Western Region the proportion of population from the lower to higher ages are in descending order. Similar trends of under-reporting are also noticed for Hills and Terai, while an usual pattern is observed for the Mountain Belt (see Table 2.2). Again, erratic age pattern as obtained in earlier cases are also exhibited for all Rural areas (see Table 2.4). Whereas, in the Urban areas, the age specific population proportion decreases with the advancement of age following an expected trend (Table 2.3).

The demographic composition of households - the proportion of household members in the age group 0-14, 15-59 and 60 years and older - are shown in Table 2.5. The broad age composition could be looked into with the help of the Dependency Ratio. The dependency ratio is the ratio of persons in the "dependent" ages (under 15 and over 59 years) to those in the "economically productive" ages (15-59 years) in a population (PRB, 1980). About 38 per cent of the population is under 15 years of age, 53 per cent of the population is in the productive age group and only 9 per cent are 60 years and older. Residence-wise, rural households have a larger proportion of 0-14 year olds and a smaller proportion of males in the productive age groups than urban households. The Mid-Western and Far-Western Development Regions also exhibit the same pattern.

The dependency ratio in Nepal is 115, and this ratio varies significantly across urban and rural areas. The ratio is 117 in rural areas and 89 in urban areas. Kathmandu has the lowest dependency ratio, and the Far-Western and Western Development regions have the highest dependency ratios (around 127). According to the 1991 population census the overall dependency ratio is 93 and the Far-Western and Western Development Region showed the highest dependency ratio of 100 (CBS, 1995).

2.2 Gender Distribution

The survey shows that the percentage of males in the population is about 49 percent and that of females is 51 per cent. The gender composition of the population as of 1991 census was 49 per cent males and 51 per cent females. This composition also varied slightly depending on the Regions and Belts. However, the gender composition in the Urban area is slightly reversed by showing 51 per cent males and 49 per cent females. This population breakdown by gender is in consonance with the Census figures giving 52 per cent and 48 per cent of males and females respectively in the Urban (CBS, 1995). The distribution of the population by gender as revealed by the NLSS Survey for the Development Regions, Ecological Belts and Urban/Rural Residence are presented in Tables 2.1 - Tables 2.4.

2.3 Household Size and Distribution by Size

The average household size in Nepal is 5.7 persons (see Table 2.6). The size of urban and rural households only differ by 0.30 persons, with rural households being larger. Households are larger in the Far-Western Development Region (6.3 persons), the Terai (6.1 persons) and especially Western Terai (6.8 persons). Households in Kathmandu are smaller on average (4.9 persons). The distribution of households by their size is shown in Table 2.6. Just over a third of all households are 5-6 persons, and a quarter have 3-4 persons. Thirty one percent of all households are 7 persons or larger.

According to the 1991 Population Census - the average household size for the country was 5.6 and regionally Far-Western Development Region depicted the highest average household size of 5.9 persons. In a similar manner the average household size for the urban country was also 5.4. Moreover, the household size distribution exhibited by the survey (Table 2.6) is also almost identical with those revealed by the census (CBS, 1995).

2.4 Distribution of Sex and Age of Household Head

Table 2.7 presents the distribution of households by sex of the head of the household, and the age distribution of the household head. Out of all household heads almost 14 per cent of the households are headed by females and this ratio is almost constant in both the rural and urban areas. The rural Western hills and mountains have a significantly higher proportion of female headed households (22 percent). The ratio of female headed households is high (17.5 percent) in the hills, and somewhat lower in the Terai (9.5 percent). Almost half the households in the country are headed by individuals 30-49 years.

The 1991 Census also revealed 13 per cent female headed households. This shows the similarity with the survey figures of 1996. The 1991 census figures also supports the findings from the survey exhibiting that out of all household heads half the households are headed by persons aged 30-49 years (CBS, 1995).

Table 2.1: Distribution of Population by Age Group and Gender for Development Regions

(Percent)

	Age Group (years)													Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 and +	
EASTERN														
Males	7.03	7.64	6.89	5.52	3.28	3.00	3.04	2.95	2.36	1.76	1.87	1.44	3.22	50.02
Females	6.38	6.81	6.27	5.34	4.23	3.69	3.91	3.03	1.71	1.56	2.47	1.32	3.26	49.98
Total	13.41	14.45	13.16	10.87	7.51	6.69	6.96	5.98	4.07	3.32	4.34	2.76	6.48	100.00
CENTRAL														
Males	7.22	7.13	6.33	4.66	3.88	3.53	2.72	2.86	2.24	2.11	1.75	1.18	3.74	49.35
Females	6.85	7.14	6.19	4.60	4.52	3.79	2.98	2.60	3.02	1.63	2.08	1.36	3.89	50.65
Total	14.07	14.27	12.52	9.26	8.40	7.31	5.70	5.46	5.26	3.75	3.84	2.54	7.63	100.00
WESTERN														
Males	7.10	8.19	6.41	4.27	2.99	2.04	2.38	2.40	2.18	2.13	1.39	1.29	3.96	46.73
Females	6.98	7.90	7.21	5.58	4.35	3.78	3.40	2.66	2.15	2.19	2.19	1.10	3.77	53.27
Total	14.08	16.09	13.62	9.85	7.34	5.83	5.78	5.05	4.33	4.33	3.57	2.39	7.74	100.00
MID-WESTERN														
Males	7.37	7.59	6.78	5.43	3.70	3.44	2.45	2.11	1.92	1.84	1.95	1.35	2.41	48.34
Females	8.27	7.56	6.83	6.05	4.50	3.82	2.89	2.36	2.41	1.91	1.85	1.21	2.00	51.66
Total	15.64	15.15	13.60	11.48	8.20	7.27	5.34	4.47	4.32	3.75	3.80	2.56	4.41	100.00
FAR-WESTERN														
Males	9.05	7.87	7.39	4.78	2.70	3.83	2.46	2.05	1.33	2.16	1.66	1.33	3.08	49.70
Females	7.04	8.31	5.89	4.84	4.96	4.04	2.75	2.50	2.43	1.69	1.51	1.30	3.04	50.30
Total	16.09	16.18	13.28	9.62	7.66	7.88	5.22	4.55	3.77	3.85	3.17	2.63	6.11	100.00
NEPAL														
Males	7.35	7.59	6.63	4.89	3.43	3.13	2.66	2.61	2.12	2.01	1.72	1.30	3.43	48.87
Females	6.97	7.39	6.47	5.18	4.46	3.79	3.24	2.67	2.41	1.77	2.10	1.27	3.40	51.13
TOTAL NEPAL	14.32	14.98	13.10	10.06	7.89	6.92	5.91	5.28	4.54	3.78	3.83	2.57	6.83	100.00

Table 2.2: Distribution of Population by Age Group and Gender for Ecological Belts

	Age Group (Years)												Total	
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59		60 and +
MOUNTAIN														
Males	7.69	7.25	6.00	4.59	3.78	2.66	2.64	2.18	2.15	2.39	2.12	1.59	3.11	48.15
Females	7.64	7.33	5.84	5.18	4.14	3.46	3.15	2.76	2.49	1.97	2.43	1.75	3.70	51.85
Total	15.33	14.58	11.84	9.77	7.91	6.11	5.79	4.94	4.64	4.36	4.56	3.35	6.81	100.00
HILLS														
Males	6.93	7.33	6.75	5.23	3.31	2.58	2.67	2.23	2.27	2.03	1.66	1.32	3.35	47.66
Females	7.01	7.14	6.91	5.87	4.40	3.79	3.25	2.78	2.52	1.78	2.09	1.20	3.61	52.34
Total	13.94	14.47	13.66	11.10	7.70	6.36	5.92	5.01	4.79	3.82	3.75	2.51	6.96	100.00
TERAI														
Males	7.66	7.88	6.63	4.63	3.47	3.68	2.66	3.01	1.99	1.93	1.71	1.23	3.56	50.05
Females	6.83	7.61	6.19	4.58	4.56	3.85	3.25	2.56	2.30	1.73	2.07	1.26	3.16	49.95
Total	14.49	15.49	12.82	9.21	8.04	7.54	5.91	5.57	4.30	3.65	3.77	2.50	6.72	100.00

Table 2.3: Distribution of Population by Age Group, Urban Nepal

(Percent)

	Age Group (years)													Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 and +	
URBAN														
Males	5.27	6.62	7.01	5.51	5.06	4.37	3.03	3.14	2.06	2.08	1.59	1.40	3.37	50.48
Females	6.56	5.59	5.80	5.58	5.35	3.93	3.64	2.87	2.15	1.63	2.02	1.07	3.34	49.52
Total	11.82	12.20	12.81	11.08	10.40	8.30	6.67	6.00	4.21	3.72	3.61	2.47	6.70	100.00
KATHMANDU VALLEY														
Males	4.36	4.97	6.14	6.39	6.29	4.99	4.07	3.09	2.45	2.55	2.35	1.26	2.44	51.33
Females	4.82	3.83	5.20	6.24	6.04	4.66	3.80	2.66	2.68	2.22	1.95	1.05	3.50	48.67
Total	9.18	8.80	11.34	12.63	12.33	9.65	7.87	5.75	5.13	4.77	4.30	2.31	5.94	100.00
OTHER URBAN														
Males	5.80	7.57	7.51	4.99	4.34	4.01	2.42	3.17	1.83	1.81	1.14	1.48	3.91	49.98
Females	7.57	6.61	6.15	5.19	4.94	3.51	3.54	2.99	1.85	1.29	2.06	1.09	3.24	50.02
Total	13.37	14.19	13.66	10.18	9.28	7.52	5.97	6.15	3.67	3.10	3.20	2.57	7.14	100.00

Table 2.4: Distribution of Population by Age Group, Rural Nepal

(Percent)

	Age Category													Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 and +	
RURAL														
Males	7.51	7.67	6.61	4.84	3.31	3.03	2.64	2.57	2.13	2.00	1.73	1.29	3.44	48.75
Females	7.00	7.52	6.52	5.15	4.39	3.78	3.21	2.65	2.43	1.78	2.11	1.29	3.40	51.25
Total	14.51	15.19	13.13	9.99	7.70	6.82	5.85	5.23	4.56	3.78	3.84	2.58	6.84	100.00
EASTERN HILL/MOUNTAIN														
Males	6.85	7.38	6.23	5.07	3.84	2.83	2.92	2.28	2.41	1.96	1.75	1.30	3.64	48.46
Females	7.23	6.88	6.55	5.51	4.21	3.49	3.26	2.65	2.54	1.51	2.22	1.52	3.97	51.54
Total	14.08	14.26	12.77	10.58	8.04	6.32	6.19	4.93	4.95	3.47	3.97	2.82	7.61	100.00
WESTERN HILL/MOUNTAIN														
Males	7.59	7.56	6.98	5.03	2.67	2.10	2.30	2.08	2.06	2.16	1.65	1.41	3.08	46.67
Females	7.39	7.78	7.10	5.89	4.27	3.86	3.15	2.88	2.48	2.04	2.06	1.11	3.31	53.33
Total	14.98	15.34	14.08	10.91	6.94	5.96	5.46	4.96	4.55	4.20	3.71	2.52	6.39	100.00
EASTERN TERAI														
Males	7.75	7.53	6.74	4.79	3.17	3.53	2.76	3.28	2.22	1.98	1.85	1.24	3.51	50.33
Females	6.23	7.45	6.15	4.27	4.35	3.91	3.32	2.84	2.56	1.64	2.30	1.24	3.42	49.67
Total	13.98	14.98	12.88	9.06	7.52	7.43	6.07	6.12	4.77	3.62	4.15	2.49	6.93	100.00
WESTERN TERAI														
Males	7.83	8.44	6.34	4.34	3.78	3.84	2.53	2.47	1.69	1.88	1.63	1.18	3.56	49.50
Females	7.47	8.11	6.27	5.10	4.90	3.84	3.06	2.00	2.00	2.00	1.71	1.32	2.73	50.50
Total	15.30	6.55	12.60	9.44	8.68	7.68	5.60	4.46	3.70	3.88	3.33	2.50	6.29	100.00

Table 2.5: Gender Distribution by Broad age Composition and Dependency Ratio, Nepal

	Percentage 0-14 years	Percentage males 15-59 years	Percentage females 15-59 years	Percentage 60 years and older	Dependency Ratio
DEVELOPMENT					
REGION					
Eastern	36.71	26.24	28.61	8.43	105.45
Central	36.66	25.80	28.13	9.41	110.35
Western	38.98	20.79	29.32	10.91	127.43
Mid-West	42.11	24.55	28.68	4.67	115.28
Far-West	42.36	22.32	28.37	6.95	126.15
ECOLOGICAL BELT					
Mountain	37.03	25.31	28.48	9.18	111.66
Hill	38.25	23.58	29.23	8.94	117.58
Terai	38.60	25.08	27.94	8.38	112.34
URBAN					
Kathmandu	27.49	35.71	30.87	5.94	63.96
Other urban	36.27	26.84	27.34	9.55	106.25
RURAL					
Eastern Hill/Mountain	36.85	25.46	27.81	9.89	111.32
Western Hill/Mountain	40.58	21.01	29.95	8.46	128.36
Eastern Terai	37.53	25.40	28.61	8.47	110.87
Western Terai	41.02	23.90	27.12	7.96	115.96
NEPAL	38.31	24.41	28.57	8.70	114.68

Table 2.6: Average Household Size and Distribution by Household Size Category

	Household Size	Household Size Groups (Percent)					Total
		1-2	3-4	5-6	7-8	9 and more	
DEVELOPMENT REGION							
Eastern	5.49	10.38	25.10	34.65	19.96	9.91	100.00
Central	5.60	9.32	26.37	34.87	18.13	11.33	100.00
Western	5.59	11.87	28.11	29.11	19.30	11.61	100.00
Mid-West	6.03	6.38	21.01	36.85	21.41	14.35	100.00
Far-West	6.34	6.29	22.87	33.97	17.15	19.73	100.00
ECOLOGICAL BELT							
Mountain	5.45	10.28	26.86	32.21	20.05	10.61	100.00
Hill	5.33	9.90	27.62	34.99	19.20	8.29	100.00
Terai	6.08	8.91	23.09	32.87	18.86	16.28	100.00
URBAN	5.40	9.56	29.10	38.87	12.90	9.58	100.00
Kathmandu	4.94	9.42	37.96	33.14	13.56	5.92	100.00
Other urban	5.71	9.66	23.13	42.72	12.45	12.04	100.00
RURAL	5.71	9.46	25.19	33.39	19.60	12.36	100.00
Eastern Hill/Mountain	5.40	9.75	26.67	34.04	21.32	8.22	100.00
Western Hill/Mountain	5.36	10.03	27.09	35.09	18.41	9.38	100.00
Eastern Terai	5.74	9.88	24.35	34.10	18.38	13.29	100.00
Western Terai	6.82	7.06	20.82	27.59	21.48	23.05	100.00
NEPAL	5.69	9.47	25.47	33.79	19.11	12.15	100.00

Table 2.7: Distribution of Households by Age and Sex of the Household Head

(Percent)

	Female Headed Households	Age Of Household Head					
		<= 19 Years	20-29 Years	30-39 Years	40-49 Years	49-50 Years	60 And + Years
DEVELOPMENT REGION							
Eastern	10.45	0.31	12.71	27.44	22.89	18.05	18.60
Central	10.45	0.67	13.87	24.77	24.62	16.81	19.26
Western	19.88	1.38	10.77	24.64	24.53	16.70	21.98
Mid-West	17.46	0.80	17.13	23.91	24.18	20.96	13.02
Far-West	14.20	2.05	20.68	24.01	20.74	18.57	13.96
ECOLOGICAL BELT							
Mountain	14.59	2.50	11.82	23.26	25.10	19.54	17.78
Hill	17.51	0.53	14.01	25.45	24.10	17.59	18.33
Terai	9.47	0.92	14.27	25.28	23.28	17.56	18.69
URBAN	13.04	0.41	18.17	24.57	22.82	16.42	17.59
Kathmandu	13.68	0.73	16.16	23.79	25.99	19.80	13.52
Other urban	12.60	0.20	19.53	25.10	20.69	14.15	20.33
RURAL	13.62	0.91	13.61	25.24	23.88	17.84	18.52
Eastern Hill/Mountain	11.62	0.60	12.52	25.59	24.25	16.97	20.07
Western Hill/Mountain	22.11	1.04	14.27	25.03	23.93	18.46	17.26
Eastern Terai	9.04	0.51	13.11	26.40	23.93	17.56	18.49
Western Terai	10.41	1.99	15.27	22.65	23.08	18.69	18.32
NEPAL	13.58	0.87	13.95	25.19	23.81	17.73	18.45

Section III

HOUSING

3.1 Introduction

Housing primarily concerns with the accommodation in housing units, their structural characteristics and facilities which are largely related to the living standards of the population in the country. It is said that the well being of the population in general depends on the "quantity and quality of housing " available. The basic infrastructure facilities available to the households determine the quality of life. With respect to the occupancy status of the households, the condition of the population in Nepal seem satisfactory; the housing affordability is high. But it is a pity that the quality of the majority of these housing units is not satisfactory. Housing conditions, in general, are poor: piped water, sewerage, and refuse disposal facilities are lacking in the majority of the total households. Very few households have electricity. Access to telephone facilities in the rural areas is negligible.

3.2 Occupancy Status of the Housing Unit

The overwhelming majority of the households in the country own the living quarters which they occupy (Table 3.1). The proportions of housing units for which the occupant actually pays rent in cash or in kind (rented) and the housing units which are occupied with permission of the owner and without paying any rent to the owner in cash or in kind (rent-free) are very low. Households occupying the housing units without the consent or knowledge of the owner are included in the "others" category; their proportion though is very low.

A significant proportion of rented housing units is found only in the urban areas. In the urban Kathmandu valley, more than one fourth of the households are occupying rented housing units. In the rural areas, more than 95 per cent of the households are the owner and have legal possession or claim to own the housing units they are occupying.

Regarding occupancy status of the housing units, the poor are not much different from the rest of the population. It is interesting that the first quintile compares with the fifth quintile with respect to the households owning the living quarters that they occupy. Similarly, there is not much difference in the rent-free category. Proportion of renters is notable in the top two quintiles (e.g., to the richer groups); this might be mainly due to the urban inhabitants who occupy rented dwellings in the country (15 per cent).

3.3 Construction Material of the Outer Walls

In the survey, information was gathered on the material dominantly used in the outer walls of the residential buildings. A majority of the buildings are walled with mud bonded

bricks and stones (Table 3.2). The other common materials used are wood and branches. Cement bonded bricks and stones or concrete are used in the construction of the outer walls in nearly one tenth of the total households. Such households, often classified as "super pukky", are considered as good housing units. Housing units occupied by nearly one half of the urban households belong to this (supper pukky) category. Un-baked bricks, other permanent materials as well as structures with no outside walls are grouped together in "other" category. Nearly 13 per cent of the total households are residing in structurally not acceptable housing units walled with "other" materials.

There is significant difference between the distribution of urban and rural housing units by the type of construction materials used in the outer walls of the building structures. The majority of the buildings in the urban areas, particularly in the urban Kathmandu valley, have outer walls made of cement bonded bricks and stones (61 per cent) while in the rural areas the dominant construction material used are mud bonded bricks and stones. More than one-third of the households in rural areas are living in poorly constructed housing units (i.e., with walls of wood, branches and other structurally not acceptable walling materials). Nepal Rastra Bank, in its report entitled "Multiple Household Budget Survey" (published in 1988), has mentioned that "of the total housing unit covered by the survey ... only 54 per cent and 52.2 per cent of the units in rural and urban Nepal were made of brick or stone joined by mud or cement plastered or not plastered". After a decade, there has not been much change in the rural housing condition while the condition in urban areas has improved to some extent.

In the Tarai, the majority of buildings are made of wood and branches while the houses in the hills are walled with mud bonded bricks and stones. Similar materials (i.e. mud bonded bricks and stones) are used in walling the houses in the mountains. Among the development regions, mud bonded brick and stones are more common in the western parts of the country.

The top quintile is significantly different from the others regarding the percentage of households occupying housing units walled with cement bonded bricks or stones and concrete (e.g., supper pukky). A majority of the households in each quintile, poor as well as rich, occupy buildings walled with mud bonded bricks and stones (i.e., the proportions in quintile are comparable). The proportions of households residing in structurally not acceptable housing units declines from the bottom to the top quintile.

3.4 Construction Material of Roof

One half of the total households in Nepal are living in the buildings and structures roofed over with straw or thatch (Table 3.3). Tiles and slates are the next most commonly used roofing materials; 28 per cent of the total households occupy housing units with tile/slate covered roofs. It is interesting to note that three households out of each four households are living either in thatched houses or tile/slate roofed houses. More durable construction materials like galvanized sheets are used in the units occupied by eleven per cent of the total households. Concrete roofing are found in a few housing units. In Table 3.3, the roofing category "other" includes the following roofing materials: earth, mud, wood, plank

and other materials like asbestos. Only 4 per cent of the total households are housed in living structures using "other" roofing material.

In the urban areas of the Kathmandu valley, more than one half of the households live in concrete roofed houses. In the whole urban area the proportion is almost the half of that in the urban Kathmandu valley. The story is different in the rural areas of the country; a very low percentage of the households occupy housing units roofed over with concrete.

Tile and slate roofed houses are more common in the far western development region. Straw and thatch roofed houses, on the other hand, are more common in the eastern region. Roofing materials like earth, mud and wooden planks are comparatively more common in the mountains. Among the development regions, these roofing materials comparatively more prevalent in the mid-west region.

The proportion of households living in buildings roofed over with concrete is significantly high in the top quintile compared with the lower quintiles. Similarly, significantly high proportions of the richer households have buildings roofed over with galvanized sheets. There is not a big difference between poor and rich households with respect to "tile and slate" used as roofing materials. The proportion of households living in structures covered with straw or thatch is lower in the fifth quintile than for the rest of the population.

3.5 Construction Material of Floor

The construction materials of the floor provide an indicator for the structural acceptability of the housing units. Structural acceptability relates to the quality of the housing units and is primarily concerned with the safety as well as well being of the household occupants. In 90 per cent of the houses in Nepal, the construction material used in floor is earth (Table 3.4). Very few households (5 per cent) occupy housing units that used cement for the flooring in the construction. This indicates that some of the cement walled houses in Nepal are constructed with earth as the flooring material. In Table 3.4, the following flooring materials are grouped together in the "other" category: wood, stone, brick and plank. The percentage of households occupying the housing units with "other" flooring materials compares with those with the cement and tile floored units.

As expected, the majority of the housing units in the urban Kathmandu valley have cemented floors. On the other extreme, cement floors are quite rare in the mountains. Even in the urban areas (except the Kathmandu valley), earth is most frequently used in flooring the buildings; nearly 60 per cent of the households reported their housing units as earthen floored. It should not be a surprise that a very low proportion of households in the mid-west development region (which is the most inaccessible amongst the five regions) was housed in structures that used more durable construction materials like cement and tile for the flooring.

In the rural areas there is not a significant difference in the use of cement by geographic region. In rural Nepal, the prevalence of cement floor is low and compares in all geographic as well as development regions.

Except for the richest households in the country, the overwhelming majority of the households live in buildings and structures that use earth for the flooring in the

construction. Households occupying quarters with cemented floors are notable in the top quintile only. In other words, apart from the richest households in the country, there is not much difference in the construction material of the floor in the structures occupied by the poor and the rich.

3.5 Number of Rooms and Floor Area

The size of a dwelling is generally measured by the number of rooms or by the surface or floor area. The degree of crowding is measured by the number of person per habitable area or number of rooms.

In Nepal, households are reported to have on average 3.04 rooms (Table 3.5). The number of rooms includes all types of rooms including kitchen, toilet and bathroom. The average number of rooms per household varies from a low of 2.7 in the mountains to a high of 3.2 in the Tarai region. Considering the average household size, the low number of rooms indicates a certain level of crowding.

Density of occupancy in terms of the area of the dwelling is also a measure of the adequacy of housing. At the national level, households occupy nearly 600' sq. ft. of dwelling area. Here dwelling area refers to the space enclosed by the exterior walls of the housing unit. According to the survey, the average area of dwelling per household varies between 275 sq. ft. in the far-west to 661 sq. ft. in the eastern region. In other words, the adequacy of housing in the far-west is much lower compared to the other regions. Amongst the three geographic regions, the average dwelling area varies from a low of 484 sq. ft. in the mountains to a high of 688 sq. ft. in the Tarai.

The distribution pattern of the average area of the housing plot is different from that of the average dwelling area in the country. Housing plot consists of the land on which the dwelling is located. If the area around the dwelling is less than 1400 square feet then it is included in the housing plot. The average area of housing plot is highest in the central development region as against the eastern development region with the highest dwelling area per household. The average area of housing plot in urban areas exceeds that in rural areas.

There is no significant difference regarding the average number of rooms used by the poor and the rich households. The poor, however, live in smaller housing plots compared to rich. Similarly, the poor occupy smaller dwelling areas compared to rich households.

3.6 Water Supply

The overall situation with respect to water supply is shown in Table 3.6. On the whole, nearly 33 per cent of the households have access to piped water but only 8 per cent have private connections. Compared with rural areas, proportionately more households in urban areas are connected to piped water; nearly 60 per cent of households have access to piped water. Nearly 46 per cent of the households depend on wells of which 8 per cent on open wells, not acceptable from a health point of view. 21 per cent of households depend on largely unreliable sources like river and spring water.

Access to piped water supply is especially scarce in the Tarai. The overwhelming majority of the households (90 per cent) in the Tarai area depends on wells for the supply of drinking water. In the mountains and the hills region, a considerable proportions of the households depend on other sources like river and seasonal spring water. In the urban areas of the Kathmandu valley, 93 per cent of the households have access to piped water supply and nearly 80 per cent have private connections. This is certainly a high proportion compared with the overall situation of the country.

In the far western parts of the country comparatively more households depend on unsafe as well as unreliable sources of drinking water. In the far-west development region, for example, the majority of the households resort to the "other" sources like river and seasonal spring for drinking water. The western development region stands in a better position with respect to the condition of the drinking water supply.

Access to piped water within the housing premises is mostly available to very rich households only. Even for the households in the top quintile, the most common source of drinking water is piped water outside the housing premises. Poor households largely depend either on wells or on other unreliable sources like rivers and springs for potable water.

3.7 Presence of Household Conveniences

Table 3.7 provides information on the presence of households conveniences. On the whole, 22 per cent of the households have access to toilet facilities, while all other households have no access to any proper latrine facilities. The situation is comparatively better in urban areas, where more than 65 per cent of the households have access to the toilet facilities. Only 18 per cent of the households in the rural part of the country have access to toilets.

Access to electricity for lighting also denotes the quality of life of the households. In the whole country, few households (14 per cent) have access to electricity for lighting. In urban areas the proportion of households using electricity is, however, higher than the national average: 80 per cent of the households have access to electricity. But the situation in the rural areas, on the other hand, is grim. Below 10 per cent of the households have access to this facility.

Sanitary systems (for liquid wastes connected to underground drains or open drains or soak pits) are available to only 10 per cent of the households. In urban areas this facility is available to around 52 per cent of households, in contrast to only 6 per cent of households who have access to sanitary systems in rural areas. Access to garbage disposal is very poor in Nepal; less than 2 per cent of the households have access to this facility. For rural households this facility is negligible: not even one per cent of the households benefit from garbage disposal.

The presence of telephones in the households is also rare. On the whole, only one per cent of the households have access to a private telephone. Even in urban areas this facility is not common, being limited to only 12 per cent of the households. In 1985/86, this facility was