CHAPTER 1

INTRODUCTION

1.1 Geography and Economy

Geography

Nepal is a land-locked country nestled in the foothills of the Himalayas. It occupies an area from 26° 20' to 30° 10' north latitude and 80° 15' to 88° 19' east longitude. It shares its northern border with the Tibetan region of the People's Republic of China, and its eastern, southern and western borders with India.

Nepal is rectangular in shape and is approximately 80 miles (128 kilometres) wide and 550 miles (880 kilometres) long. The total land area of the country is 147,181 square kilometres and its population, according to the 1991 Census, is 18.5 million. Nepal is predominantly rural with only 9 percent of the population living in urban areas.

Topographically, Nepal is divided into three distinct ecological regions. These are the Mountains, Hills, and *Terai* (or plains). The Mountain region ranges in altitude from about 4,800 metres to 8,839 metres above sea level and covers a land area of 51,817 square kilometres. Because of the harsh terrain, transportation and communication facilities in this region are very limited and only about 8 percent of the total population lives here. In contrast, the Hill region which ranges in altitude from 610 metres to 4,800 metres above sea level is densely populated. About 45 percent of the total population of Nepal lives in the Hills, which cover an area of 61,345 square kilometres. This region also includes a number of very fertile valleys such as the Kathmandu and Pokhara valleys. Although the terrain is also rugged in this region, because of the higher concentration of people, transportation and communication facilities are much more developed here than in the Mountains. Unlike the Mountains and Hills, the *Terai* region in the southern part of the country can be regarded as an extension of the relatively flat Gangetic plains. This area which covers 34,019 square kilometres is the most fertile part of the country. While it constitutes only about 23 percent of the total land area in Nepal, 47 percent of the population live here. Because of its relatively flat terrain, transportation and communication facilities are more developed in this region than in the other two regions of the country and this has attracted newly emerging industries.

In Nepal, climatic conditions vary substantially by altitude. In the *Terai* temperatures can go up to 44° Celsius in the summer and fall to 5° Celsius in the winter. The corresponding temperatures for the Hill and Mountain areas are 41° Celsius and 30° Celsius, respectively, in the summer, and 3° centigrade and way below 0° centigrade, respectively, in the winter. The annual mean rainfall in the kingdom is around 1,500 millimetres (Central Bureau of Statistics, 1996).

For administrative purposes Nepal has been divided into five development regions, 14 zones, and 75 districts. Districts are further divided into Village Development Committees (VDCs) and sometimes into urban municipalities. A VDC consists of nine wards while the number of wards in an urban municipality depends on the size of the population as well as on political decisions made by the municipality itself.

Nepal is a multi-ethnic and multi-lingual society. The 1991 Census identified 60 caste or ethnic groups and subgroups of population. The percentage breakdown by size of some of these major groups are as follows: Chhetri and Thakuri (18 percent), Brahmins (14 percent), Magar (7 percent), Tharu and Rajbanshi (7 percent),

Newar (6 percent), Tamang (6 percent), Kami—a major occupational group that originated in the Hills (5 percent), Yadav and Ahirs (4 percent), Muslims (4 percent), Rai and Kiranti (3 percent), and Gurung (2 percent) (Central Bureau of Statistics, 1995).

The 1991 Census of Nepal lists 20 different languages or dialects prevalent in Nepal (Central Bureau of Statistics, 1995). These languages originated from two major groups: the Indo-Aryans, who constitute about 80 percent of the population, and the Tibetan-Burmese, who constitute about 17 percent of the population. Nepali is the official language of the country and is the mother tongue of over 50 percent of the population. However, it is used and understood by most of the population and is the national language of Nepal. The other two major languages are Maithili and Bhojpuri, spoken by about 8 percent and 5 percent of the population, respectively.

Nepal is a Hindu kingdom with over 86 percent of its population following the Hindu religion. The second largest religious group are the Buddhists (8 percent), and Muslims constitute about 4 percent of the total population (Central Bureau of Statistics, 1995).

Economy

Forty-eight percent of the GDP comes from the service sector and the agricultural sector accounts for 42 percent of the GDP. The manufacturing sector accounts for 10 percent of the economy (Ministry of Finance, 1996). Because of variations in the climatic and rainfall conditions, agricultural production varies by ecological regions. In the *Terai*, rice is the main crop, followed by wheat and corn. In the Hills, the major crops are corn and rice, followed by wheat, and in the Mountains, corn, rice and wheat are grown (Central Bureau of Statistics, 1995).

1.2 Population

Table 1.1 provides a summary of the basic demographic indicators for Nepal from census data for 1971, 1981, and 1991 (Central Bureau of Statistics, 1995). There was a 59 percent increase in the population over the 20-year period. The population growth rate increased from 2.1 in 1971 to 2.6 in 1981 and then declined again to 2.1 in 1991. Nepal's population is young, with two of five persons below the age of 15. This young age distribution is due to the relatively high fertility in Nepal. In fact, between 1971 and 1981 there was no change in the total fertility rate (TFR) obtained from census estimates. The TFR continues to be high, 5.6 percent in 1991, although it has declined slightly from its 1971/1981 level. The mean age at marriage has risen little over the past two decades, increasing by 0.6 years for males and 1.4 years for females. Nevertheless, data obtained from different demographic surveys indicate that the desired family size in Nepal has decreased over the years from 4 children in 1976 to 3 in 1991 (Ministry of Health, 1993). There has been a corresponding increase in the contraceptive prevalence rate for modern methods from a low of 3 percent in 1976 to 24 percent in 1991.

That both fertility and mortality have been declining can be seen from Table 1.1. While the decline in fertility is a more recent phenomenon, mortality has been decreasing slowly over the years. The crude death rate declined from 20 per 1,000 in 1974/75 to 13 per 1,000 in 1991, while the infant mortality rate experienced a 44 percent decline between 1971 and 1991. These trends suggest that the demographic transition is taking place in Nepal with ample scope for both fertility and mortality to decline further. Male and female life expectancy has gone up by about 13 years over the 20-year period.

Table 1.1 Demographic indicators

Selected demographic indicators for Nepal, 1971-1991

Indicator	1971	1981	1991
Population (millions)	11.6	15.0	18.5
Age			
0-14	40.5	41.4	42.4
15-64	56.4	55.4	54.1
65+	3.1	3.2	3.5
Population density (per square km)	79	102	126
Percent urban	4.0	6.4	9.2
Crude birth rate	42	44	42
Crude death rate	19.5[a]	16.1[b]	13.3
Population growth rate (percent)	2.1	2.6	2.1
Total fertility rate	6.3	6.3	5.6
Infant mortality rate	172	117	97
Life expectancy			
Males	42.0	50.9	55.0
Females	40.0	48.1	53.5
Mean age at marriage			
Males	20.8	20.7	21.4
Females	16.8	17.2	18.2

[a] 1974-75
[b] 1986-87
Source: Central Bureau of Statistics, 1995

1.3 Population and Reproductive Health Policies and Programmes

Evolution of Population Policy

Family planning emerged as one of the major components of Nepal's planned development activities only in 1968 with the implementation of the Third Five-Year Development Plan (1965-70). This is when the Nepal Family Planning and Maternal and Child Health Project (FP/MCH) under the Ministry of Health was launched in the government sector. Until then, family planning activities were undertaken by the Family Planning Association of Nepal (FPAN), which was established in 1959 to create awareness among the people about the need and importance of family planning but not to offer any family planning services. Very little was done to directly regulate population growth until 1965 when a family planning project was established under the maternal and child health section of the Ministry of Health. Limited family planning services were offered through the existing maternal and child health clinics.

The Fourth Development Plan (1970-1975) targeted the provision of family planning services to 15 percent of married couples by the end of the plan period. From the Fifth Five-year Development Plan (1975-80) onwards, family planning services were greatly expanded through outreach workers and serious attempts were made to reduce the birth rate by direct and indirect means. To coordinate the government's multi-sectorial activities in population and reproductive health, a population policy coordinating board was established in 1975 under the National Planning Commission. In 1978, this board was upgraded to become the National Commission on Population (NCP). It was further reorganized under the chairmanship of the prime minister and maintained its own secretariat to plan, monitor, and coordinate population activities both at the government and private sectorial levels.

Subsequent development plans dealt with the population issue from both a policy and programmatic point of view. From the Fifth Plan until the end of the Seventh Plan (1985-1990) population policies and programmes not only emphasized family planning issues in the short run, but also focussed on long-term concerns to encourage the small family norm through education and employment programmes that raised women's status and decreased infant mortality. This included launching population related programmes in reproductive health, agriculture, forestry, urbanization, manpower and employment, education and women's development, as well as community development programmes. In 1990, the NCP was dissolved and its role was given to the population division of the National Planning Commission. In 1996 the government established a National Population Committee comprised of ministers from various ministries and chaired by the Prime Minister, to

provide strong political leadership and guidance in formulating population policies and coordinating, implementing, monitoring, and evaluating population activities.

The Eighth Development Plan (1992-97) continued with the integrated development approach taken in earlier development plans and set the following demographic targets:

- to reduce the total fertility rate from 5.8 to 4.5 by the end of the plan period;
- to increase the expectation of life at birth from 54.4 to 61 years;
- to reduce the infant mortality rate from 102 per thousand to 80 per thousand;
- to decrease under-five mortality to 130 per thousand;
- to reduce the maternal mortality ratio from 5.15 to 4.00 per thousand live births;
- to manage internal migration.

In 1995, the Ministry of Population and Environment (MOPE) was established as a separate ministry for population-related activities and is viewed as the reflection of a strong governmental commitment to population programmes. The ministry is primarily responsible for formulating and implementing population policies, plans, and programmes, and for monitoring and evaluating these programmes. This ministry, along with the Ministry of Health, is also responsible for implementing programmes of action recommended by the 1994 International Conference on Population and Development. The implementation of health-related population programmes in reproductive health such as family planning, safe motherhood, adolescent reproductive health, sexually transmitted diseases, and infertility, nevertheless, falls under the purview of the Ministry of Health.

Family Planning Programmes

Family planning services in Nepal were started by the FPAN in 1959. Initially, its services were limited to the Kathmandu valley. The pioneering work of the FPAN led to the establishment of a semi-autonomous Nepal Family Planning and Maternal Child Health Project (NFP&MCH Project) in November 1968 at the government level. This project was gradually expanded to cover all 75 districts in Nepal.

Currently, government run family planning services have become an integral part of health services. Health services in Nepal are delivered through national, regional, zonal and district hospitals, primary health care centres/health centres, health posts, sub-health posts and peripheral health workers, and volunteers, all of which/ whom provide temporary family planning services (condoms, orals and injectables) on a regular basis. Services such as Norplant implants and IUD insertions are only available at a limited number of hospitals, health centres, and selected health posts where trained manpower is available. Depending on the district, sterilization services are provided at static sites (21 districts) through scheduled "seasonal" or mobile outreach services.

At the central level, the Family Health Division in the Department of Health Services is responsible for planning, supervision, and implementation of family planning activities. The National Health Training and Regional Training Centres are responsible for training field workers for reproductive health services. Information, education, and communication (IEC) activities regarding reproductive health are carried out by the National Health Education, Information and Communication Centre in the Department of Health Services.

Besides governmental programmes, a number of non-governmental organizations are also currently involved in the delivery of family planning services at the grass root level. These organizations include the FPAN, Contraceptive Retail Sales (CRS) Company, Nepal Red Cross Society, Save the Children Fund (UK and

USA), Adventist Development Relief Agency (ADRA), United Mission to Nepal (UMN), Centre for Development and Population Activities (CEDPA), the Asia Foundation (TAF) and CARE.

Among these non-governmental organizations (NGOs), FPAN and CRS are the larger ones. FPAN is currently active in providing family planning services in 32 districts in Nepal. FPAN also provides sterilization services at selected clinics and organizes a number of mobile sterilization camps in different districts. Besides the provision of family planning services, FPAN is very much involved in training and IEC activities in reproductive health.

The CRS company provides oral contraceptives and vaginal foaming tablets through pharmacies, and condoms through a full range of retail shops (e.g. general stores, *paan* shops, hotels, etc.) throughout the country. At present, the CRS company supplies contraceptives to more than 12,000 retailers. It is also marketing injectables (DMPA) in the Kathmandu Valley and in eight other districts where these services are available through trained paramedical personnel, and IUDs and Norplants to certified private practitioners.

Services of other smaller NGOs are limited to delivery and supply of temporary methods of contraception, mostly pills, condoms and injectables. These organizations have also been involved in educational activities. While the areas served by these NGOs are modest, they do help to complement the Ministry of Health's on-going efforts to expand the availability of family planning methods.

1.4 Objectives and Organization of the 1996 Nepal Family Health Survey

The primary objective of the Nepal Family Health Survey (NFHS) is to provide national level estimates of fertility and child mortality. The survey also provides information on nuptiality, contraceptive knowledge and behaviour, the potential demand for contraception, other proximate determinants of fertility, family size preferences, utilization of antenatal services, breastfeeding and food supplementation practices, child nutrition and health, immunizations, and knowledge about Acquired Immune Deficiency Syndrome (AIDS). This information will assist policy-makers, administrators and researchers to assess and evaluate population and health programmes and strategies. The NFHS is comparable to Demographic and Health Surveys (DHS) conducted in other developing countries.

Survey Organization

The NFHS was conducted under the aegis of the Family Health Division of the Department of Health Services in the Ministry of Health of His Majesty's Government of Nepal. The survey was implemented by New ERA, a local research firm. Macro International provided technical support for the survey through the Demographic and Health Surveys (DHS) project. Funding for the survey came from the United States Agency for International Development (USAID) through its mission in Nepal.

Sample Design

The NFHS sample was designed to provide estimates of population and health indicators including fertility and mortality rates for the country as a whole and for urban and rural areas separately. In addition, the sample was designed to provide estimates of most key variables, with the exception of fertility and mortality estimates, for the 13 domains (sub-regions) obtained by cross classifying the three ecological zones (Mountains,

Hills and *Terai*) with the five developmental regions (Eastern, Central, Western, Mid-western and Far-western).[1] In total, 253 primary sampling units (PSUs) were selected—34 in the urban areas and 219 in the rural areas. The number of households actually visited was 8,500, and interviews were successfully completed for 8,429 respondents. The sample design is discussed in greater detail in Appendix A.

Questionnaires

Two types of questionnaires were used in the NFHS: the Household Questionnaire and the Individual Questionnaire. The contents and design of the questionnaires were based on the DHS Model B Questionnaire, which is designed for use in countries with low contraceptive prevalence. The questionnaires were adapted to local conditions and a number of questions pertaining to on-going health and family planning programmes were added in consultation with various ministries and organizations. These questionnaires, which were developed in English, were translated into Nepali, the national language, and two other local languages, Maithali and Bhojpuri.

The Household Questionnaire listed all usual residents of each sampled household and all visitors who had slept in the household the night before the interview. For every person listed, some basic information such as their relationship to the head of the household, sex, age, education, and marital status was collected. The main purpose of this section of the Household Questionnaire was to identify women who were eligible for the individual interviews, that is, ever-married women age 15 to 49 years. In addition, the Household Questionnaire also obtained information on the source of water, type of toilet facilities, rooms used for sleeping, main materials of the floor, ownership of various consumer durable goods, and characteristics of household heads such as religion and ethnicity. In addition, the salt used in each household was tested for its iodine content.

The Individual Questionnaire was administered to all ever-married women age 15-49 who were usual residents or who were present in the household the night before the survey. It obtained information on the following topics:

- Background characteristics including age, education, religion;
- Reproductive history;
- Knowledge and use of family planning methods;
- Fertility preferences and attitudes about family planning;
- Marriage;
- Antenatal and delivery care;
- Breastfeeding and weaning practices;
- Vaccinations and health of children;
- Husband's background characteristics and women's work;
- Knowledge of AIDS;
- Maternal mortality;
- Height and weight of children and their mothers.

Information on vaccinations and health of children, and height and weight measurements were obtained for all children born since Baisakh 2049 of the Nepalese calendar, which roughly corresponds to April 14, 1992 in the Western calendar.

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[1]Due to their small size, the Mountain areas of the Western, Mid-western and Far-western regions were combined. In this report the combined sub-region is referred to as Western Mountain.

Both the Household and Individual Questionnaires were pretested in October, 1995 for about two weeks in three areas: the Nepali version in the Kathmandu valley, the Bhojpuri version in Parsa district, and the Maithali version in Dhanusha district. Pretesting was conducted in both rural and urban areas. About 600 interviews were conducted during the pretest. The questionnaires were finalized with input from interviewers involved in the pretest. The English versions of the questionnaires are included in Appendix E.

1.5 Recruitment, Training and Fieldwork

Prior to the main survey, 26 household listing teams, each consisting of a lister and a mapper, were recruited and trained for about a week in August 1995 at the New ERA office in Kathmandu. Household listing began soon after and was completed by the end of September 1995. Spot checks were conducted while the listers were in the field to ensure that the work was being done correctly and completely. In some cases, listers were sent back to relist areas where households had been missed or mis-listed.

Recruitment for the main survey was also carried out at the New ERA office in Kathmandu. However, keeping in mind the local language requirements, interviewers who spoke Maithili and Bhojpuri were recruited from the Central and Eastern *Terai* regions in order to administer these local language questionnaires. In general interviewers were recruited for their language skills, academic qualifications and previous work experience.

Training for the main survey was conducted in Kathmandu from December 17, 1995 to January 15, 1996. A total of 81 interviewers participated in the training. Because of the large number, interviewers were split up into two groups and were trained simultaneously in two separate classrooms in the same location. The training was conducted by senior project staff of New ERA, the Ministry of Health, and two representatives from Macro International.

The four-week training course consisted of instruction in general interviewing techniques and field procedures for the survey, a detailed review of the questionnaires, practice in weighing and measuring children, mock interviews between participants in the classroom, and practice interviews in the field. In addition, five special lectures were arranged—one each on the health delivery system in Nepal, family planning, maternal health, child health and AIDS. The female trainees whose participation was satisfactory were selected as female interviewers and field editors; male trainees whose participation was satisfactory were selected as male interviewers. Based on the performance of the trainees, field supervisors were also selected.

In order to maintain uniform survey procedures, four manuals relating to different aspects of the survey were prepared. The Interviewer's Manual discussed the objectives of the NFHS, interviewing techniques, field procedures, general procedures for completing the questionnaires, and included a detailed discussion of the Household and Individual Questionnaires. The Supervisor's and Editor's Manual contained instructions on organizing and supervising fieldwork, maintaining and monitoring control sheets, and general rules for editing the completed questionnaires. The manual also contained information on height and weight charts, assignment sheets, and the interviewer's progress sheet. Trainers were given the Training Guidelines for DHS Surveys Manual, which described the administrative and logistical aspects of training and data quality checks. The Household Listing Manual described the mapping and household listing procedures used in DHS surveys.

The NFHS fieldwork was carried out by 12 teams, each comprised of three female interviewers, one male interviewer, a female field editor, and a field supervisor who was either male or female (see Appendix D for a complete list of the persons involved in the NFHS). The male interviewer administered the Household Questionnaire and the female interviewers administered the Individual Questionnaire. Unlike most DHS surveys in which the Household Questionnaire and the Individual Questionnaire are administered by the same

interviewer, in the NFHS, the Household Questionnaire and the Individual Questionnaire were administered by two different interviewers. This procedure was adopted to prevent possible age shifting by interviewers (to lighten their workload) when collecting information in the Individual Questionnaire on children born since the cutoff date, which is Baisakh 2049 in the Nepalese calendar. The fieldwork started in mid-January and ended in mid-June 1996. Assignment of sample points to the teams and various logistical decisions were made by the NFHS staff of New ERA in Kathmandu. Each team was allowed a fixed period of time to complete fieldwork in a primary sampling unit (PSU) before moving to the next PSU. In order to maintain close supervision of all the teams during the initial two weeks of field work, all teams started their fieldwork in the *Terai* region (10 teams in the Eastern and Central *Terai* regions and two teams in the Western *Terai* region) and were accessible within a few hours of driving. After two weeks of fieldwork in these regions, the teams went to their assigned district. All teams began their fieldwork from the *Terai* region and gradually moved to the north. During the initial stage, each interviewer was instructed not to conduct more than two individual interviews of women per day. As interviewers became more familiar with the questionnaire they were conducting up to a maximum of four interviews per day. A minimum of three call-backs were made by the interviewers to ensure that eligible women identified in the sampled households were successfully interviewed.

The main duty of the field editor was to examine the completed questionnaires in the field and ensure that they were correctly filled out. An additional duty was to periodically observe ongoing interviews and verify the accuracy of the method of asking questions, recording answers, following skip instructions, and identifying eligible respondents. Throughout the survey, the senior staff of New ERA maintained close contact with all the teams through direct communication and spot checking. Data collection work was also supervised by staff of the Family Health Division and Macro International. The objective was to provide support and advice to maintain good data quality. Data quality was also ensured by providing feedback to individual teams on the results of the field check tables. These tables were produced by computers at regular intervals from data obtained in the completed questionnaires. These results were discussed with the teams to improve their performance.

1.6 Data Entry and Processing

All the completed questionnaires were brought to the New ERA office for data entry and processing. The data entry operation consisted of office editing, coding, data entry, and machine editing. Although all completed questionnaires were throughly edited in the field, codes for ethnicity and occupation were entered in the office. In addition, the line numbers of eligible women and the birth order of all pregnancies were rechecked. Appropriate codes for "other" responses were also assigned. One supervisor and five data entry operators were responsible for the data entry and computer editing operations. The data were entered and edited using five microcomputers and the ISSA (Integrated System for Survey Analysis) software, which was developed for DHS surveys. Data entry was also 100 percent verified in order to minimize errors. The data entry was done directly from the questionnaires and was initiated within two weeks of the first receipt of the completed questionnaires. All data entry and editing operations were completed within two weeks of completion of the fieldwork, that is, by June 1996. Computer based checks were done to rectify inconsistencies.

A preliminary report highlighting the key findings of the NFHS was released in September 1996. The purpose of this report was to disseminate the basic findings of the NFHS to policy-makers, programme planners, and administrators. The report contained 19 tables and findings on fertility, awareness and practice of family planning, fertility preferences, utilization of antenatal services, unmet need, immunizations, health of children, infant and child mortality, and knowledge about AIDS.

The NFHS followed the DHS tabulation plan in order to maintain data comparability with other countries where DHS has been implemented. Final tables were generated at Macro International.

1.7 Coverage of the Sample

Table 1.2 shows the results of the household and individual interviews. A total of 8,500 households were selected for the NFHS, of which 8,111 were located by the field teams. Of the total 8,111 households that were occupied, 8, 082 were successfully interviewed, yielding a response rate of 99.6 percent. The household response rate was almost the same in urban and rural areas.

A total of 8,580 women were identified as eligible for the individual interview, indicating a ratio of 1.06 eligible women per household. Interviews were completed for 8,429 women, yielding a 98 percent overall individual response rate. The individual response rate was slightly higher in rural areas (98 percent) than in urban areas (97 percent).

Table 1.2 Results of household and individual interviews

Number of households, number of interviews and response rates, Nepal 1996

Result	Residence		Total
	Urban	Rural	
Households interviewed			
Households sampled	1,025	7,475	8,500
Households found	961	7,150	8,111
Households interviewed	955	7,127	8,082
Household response rate	99.4	99.7	99.6
Individual interviews			
Eligible women	983	7,597	8,580
Eligible women interviewed	954	7,475	8,429
Eligible women response rate	97.0	98.4	98.2