

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of the Survey

India's first National Family Health Survey (NFHS-1) was conducted in 1992–93 (International Institute for Population Sciences, 1995). The Ministry of Health and Family Welfare (MOHFW) subsequently designated the International Institute for Population Sciences (IIPS), Mumbai, as the nodal agency to initiate a second survey (NFHS-2), which was conducted in 1998–99. An important objective of NFHS-2 is to provide state-level and national-level information on fertility, family planning, infant and child mortality, reproductive health, child health, nutrition of women and children, and the quality of health and family welfare services. Another important objective is to examine this information in the context of related socioeconomic and cultural factors. The survey is also intended to provide estimates at the regional level for five states (Bihar, Jammu and Kashmir, Madhya Pradesh, Rajasthan, and Uttar Pradesh) and estimates for three metro cities (Chennai, Kolkata, and Mumbai), as well as slum areas in Mumbai. This information will assist policymakers and programme administrators in planning and implementing strategies for improving population, health, and nutrition programmes. Comparative state results from NFHS-2 have already been published (International Institute for Population Sciences and ORC Macro, 2000). The current report provides a more comprehensive picture of the findings for Karnataka.

The NFHS-2 national sample covers more than 99 percent of India's population living in all 26 states. It does not cover the union territories. NFHS-2 is a household sample survey with an overall sample size of 90,303 ever-married women in the age group 15–49 living in 92,486 households.

NFHS-2 was conducted with financial support from the United States Agency for International Development (USAID), with additional funding from UNICEF. Technical assistance was provided by ORC Macro, Calverton, Maryland, USA, and the East-West Center, Honolulu, Hawaii, USA. Thirteen field organizations were selected to collect the data. Eight of the field organizations are private sector organizations and five are Population Research Centres (PRCs) established by the Government of India in various states. Each field organization had responsibility for collecting the data in one or more states. The Population Research Centre at the Institute for Social and Economic Change, Bangalore, was selected as the field organization for NFHS-2 in Karnataka.

### 1.2 Basic Socioeconomic and Demographic Features of Karnataka

Karnataka acquired the status of a state within the Indian Union with Bangalore as its capital in 1956, when the State Reorganization Act (1956) came into force. It is one of the major states in India and has a total land area of 191,791 square kilometres. The state has 5 percent of the total population and 6 percent of the land area of the country. The state is divided into four administrative divisions and 27 districts. Geographically, Karnataka can be divided into four regions, namely Coastal, Malnad, Northern Maidan, and Southern Maidan. Every region has

distinct social, economic, and cultural characteristics, apart from different local dialects of Kannada.

Karnataka is predominantly an agricultural state with 69 percent of the population living in rural areas. However, the importance of the agricultural sector has declined over time. The contribution of the agricultural sector to the state domestic product declined from 43 percent in 1980–81 to 33 percent in 1996–97. During the same period, the share of the manufacturing sector increased from 14 percent to 18 percent and the contribution of other sectors increased from 43 percent to 49 percent (EPW Research Foundation, 1998). At the time of the 1991 Census, the agricultural sector provided a livelihood for 63 percent of the labour force (Office of the Registrar General and Census Commissioner, 1992). Karnataka grows *kharif* and *rabi* crops and the major agricultural products include rice, *ragi*, and *jowar*. Among other crops, groundnuts, sugarcane, and cotton are important. Production of food grains has been increasing over the years, from 830 kilograms per hectare in 1970–71 to 1,290 kilograms per hectare in 1995–96 (Centre for Monitoring Indian Economy, 1997).

Industry in Karnataka has been increasing in importance over time. With the establishment of a number of public sector industries such as Hindustan Aeronautics Limited (HAL), Indian Telephone Industry (ITI), Bharat Electronics Limited (BEL), and Hindustan Machine Tools (HMT), the industrial structure of the state has become consistently diversified. Bangalore has been called the silicon valley of India. The average annual per capita net domestic product of the state increased from Rs. 1,520 in 1980–81 to Rs. 2,641 in 1996–97 at constant 1980–81 prices or Rs. 10,279 at current prices (EPW Research Foundation, 1998). As per the estimates given by the Planning Commission for 1993–94, 30 percent of the rural population and 40 percent of the urban population were below the poverty line.

Karnataka had a population of 45.0 million at the time of the 1991 Census and 52.7 million at the time of the 2001 Census (Office of the Registrar General and Census Commissioner, 2001). The total population of the state was 29.3 million in 1971 and 37.1 million in 1981. Thus, the population grew by almost 8 million persons in each of the decades from 1971–2001. The decadal growth rate increased from 24.2 percent in 1961–71 to 26.8 percent in 1971–81 and then decreased to 21.1 percent in 1981–91 and 17.2 percent in 1991–2001. The 1991–2001 intercensal increase in population (17.2 percent) was lower than that for the country as a whole (21.3 percent). Population density per km<sup>2</sup> in Karnataka increased from 153 in 1971 to 194 in 1981, 235 in 1991, and 275 in 2001, which is lower than the density for the country as a whole (324). The increase in population density indicates an increasing pressure on land and other resources.

Karnataka has been undergoing slow but steady urbanization. The percentage of the total population living in urban areas increased from 24 percent in 1971 to 29 percent in 1981, 31 percent in 1991, and 34 percent in 2001. The level of urbanization in the state is higher than for all India (28 percent). According to the 1991 Census, the proportion of the total population designated as scheduled caste is 16 percent and the proportion designated as scheduled tribe is 4 percent in Karnataka.<sup>1</sup> The percentages of scheduled-caste and scheduled-tribe population have been growing due to inclusion of new castes and tribes in the scheduled category during 1971–91.

---

<sup>1</sup>Scheduled castes and scheduled tribes are castes and tribes that the Government of India officially recognizes as socially and economically backward and in need of special protection from injustice and exploitation.

According to the 1991 and 2001 Censuses, the literacy rate among the population age 7 and above was 56 percent in 1991 and 67 percent in 2001, compared with 52 percent and 65 percent, respectively, for India as a whole. The literacy rate in Karnataka in 2001 was 76 percent for males (the same as for all India) and 57 percent for females (compared with 54 percent for all India).

For 1997, the Sample Registration System estimated the infant mortality rate in Karnataka at 53 per 1,000 live births, which is much lower than the rate of 71 for all India. For 1996–2001, life expectancy is projected to be 65.6 years for males and 66.6 years for females, a substantial increase from the estimates of 62.2 for males and 63.3 for females for 1986–1991 (Office of the Registrar General, 1996). The sex ratio of the population (number of females per 1,000 males) has been fairly constant for the past seven decades. The sex ratio was 965 in 1931 and 964 in 2001. In the intervening census years, the sex ratio varied only between 957 in 1971 and 966 in 1951. The percentage of the population age 0–14 years, which was 42 percent in 1971, dropped to 40 percent in 1981 and 36 percent in 1991. The percentage of the population age 65 and over increased slightly from 3.5 percent in 1971 to 4.1 percent in 1991.

The couple protection rate (defined as the percentage of eligible couples effectively protected against pregnancy by various methods of contraception) increased steadily from 9 percent in 1971 to 23 percent in 1981, 48 percent in 1991, and 56 percent in 1997. The couple protection rate in 1997 was 11 percentage points higher than the 45 percent estimate for all India. Between 1971 and 1997, fertility declined steadily in the state. According to estimates from the Sample Registration System, the crude birth rate declined from 31.7 per 1,000 population in 1971 to 28.3 in 1981, 26.2 in 1991, and 22.7 in 1997. The total fertility rate declined at about the same rate, dropping by 1.9 children over the period of 26 years. The crude death rate has also followed a downward trend, from 12.1 per 1,000 population in 1971 to 9.1 in 1981, 8.5 in 1991, and 7.6 in 1997. During the same period, the infant mortality rate declined by 44 percent, from 95 to 53 infant deaths per 1,000 live births.

### **1.3 Questionnaires**

NFHS-2 used three types of questionnaires: the Household Questionnaire, the Woman's Questionnaire, and the Village Questionnaire. The overall content and format of the questionnaires were determined through a series of workshops held at IIPS in Mumbai in 1997 and 1998. The workshops were attended by representatives of a wide range of organizations in the population and health fields, as well as experts working on gender issues. The questionnaires in Karnataka were bilingual, with questions in both Kannada and English.

The Household Questionnaire listed all usual residents in each sample household plus any visitors who stayed in the household the night before the interview. For each listed person, the survey collected basic information on age, sex, marital status, relationship to the head of the household, education, and occupation. The Household Questionnaire also collected information on the prevalence of asthma, tuberculosis, malaria, and jaundice, as well as three risk behaviours—chewing *paan masala* or tobacco, drinking alcohol, and smoking. Information was also collected on the usual place where household members go for treatment when they get sick, the main source of drinking water, type of toilet facility, source of lighting, type of cooking fuel, religion of the household head, caste/tribe of the household head, ownership of a house, ownership of agricultural land, ownership of livestock, and ownership of other selected items. In addition, a test was conducted to assess whether the household uses cooking salt that has been

fortified with iodine. Finally, the Household Questionnaire asked about deaths occurring to household members in the two years preceding the survey, with particular attention to maternal mortality. The information on the age, sex, and marital status of household members was used to identify eligible respondents for the Woman's Questionnaire.

The Woman's Questionnaire collected information from ever-married women age 15–49 who were usual residents of the sample household and visitors who stayed in the sample household the night before the interview. The questionnaire covered the following topics:

Background characteristics: Questions on age, marital status, education, employment status, and place of residence provide information on characteristics likely to influence demographic and health behaviour. Questions are also asked about the background characteristics of a woman's husband.

Reproductive behaviour and intentions: Questions cover dates and survival status of all births, current pregnancy status, and future childbearing intentions of each woman.

Quality of care: Questions assess the quality of family planning and health services.

Knowledge and use of contraception: Questions cover knowledge and use of specific family planning methods. For women not using family planning, questions are included on reasons for not using contraception and intentions concerning future use.

Sources of family planning: Questions determine where a user obtained her family planning method.

Antenatal, delivery, and postpartum care: The questionnaire collects information on whether women received antenatal and postpartum care, who attended the delivery, and the nature of complications during pregnancy for the last two births since January 1996.

Breastfeeding and health: Questions cover feeding practices, the length of breastfeeding, immunization coverage, and recent occurrences of diarrhoea, fever, and cough for young children.

Reproductive health: Questions assess various aspects of women's reproductive health and the type of care sought for health problems.

Status of women: The questionnaire asks about gender roles, women's autonomy, and violence against women.

Knowledge of AIDS: Questions assess women's knowledge of AIDS and the sources of their knowledge, as well as their knowledge about ways to avoid getting AIDS.

In addition, the health investigator on each survey team measured the height and weight of each woman and each of her children born since January 1996. This height and weight information is useful for assessing levels of nutrition prevailing in the population. The health investigators also took blood samples from each woman and each of her children born since January 1996 to assess haemoglobin levels. This information is useful for assessing prevalence rates of anaemia among women and children. Haemoglobin levels were measured in the field at

the end of each interview using portable equipment (the HemoCue) that provides test results in less than one minute. Severely anaemic women and children were referred to local medical authorities for treatment.

For each village selected in the NFHS-2 sample, the Village Questionnaire collected information on the availability of various facilities in the village (especially health and education facilities) and amenities such as electricity and telephone connections. Respondents to the Village Questionnaire were also asked about development and welfare programmes operating in the village. The village survey included a short, open-ended questionnaire that was administered to the village head, with questions on major problems in the village and actions that could be taken to alleviate the problems.

## **1.4 Survey Design and Sample Implementation**

### **Sample Size and Reporting Domains**

The overall target sample size for Karnataka was 4,000 completed interviews with eligible women. The NFHS-1 nonresponse rates at the household and individual levels were used to estimate the sample size that would be required to achieve the target number of completed interviews in NFHS-2.

The sample was designed to provide separate estimates for the state as a whole and for its urban and rural areas. The sample is not large enough to provide reliable estimates for individual districts. The required sampling rates for urban and rural areas were determined by allocating the sample proportionally to the population of urban and rural areas and taking into account the expected urban and rural nonresponse rates (based on the nonresponse rates in NFHS-1).

### **Sample Design**

Within each of the two sampling domains (rural areas and urban areas), a systematic, multi-stage stratified sampling design was used. The rural sample was selected in two stages: the selection of Primary Sampling Units (PSUs), which are villages or groups of villages (in the case of small linked villages), with probability proportional to size (PPS) in the first stage, followed by the selection of households using systematic sampling within each selected PSU in the second stage. In urban areas, a three-stage sampling procedure was followed. In the first stage, wards were selected with PPS. From each selected ward, one census enumeration block (CEB) was selected with PPS in the second stage, followed by selection of households using systematic sampling within each selected CEB in the third stage.

### **Sample Selection in Rural Areas**

In rural areas, the 1991 Census list of villages served as the sampling frame. The list was stratified by a number of variables. The first level of stratification was geographic, with villages classified into six contiguous regions. The district composition of the six geographic regions (based on 19 of the 20 districts in Karnataka at the time of the 1991 Census) is as follows:

- Region I: Bidar, Bijapur, Gulbarga, and Raichur  
Region II: Belgaum and Dharwad  
Region III: Dakshina Kannada, Kodagu, and Uttara Kannada  
Region IV: Chikmagalur and Shimoga  
Region V: Bangalore Rural, Bellary, Chitradurga, Kolar, and Tumkur  
Region VI: Hassan, Mandya, and Mysore

In each region, villages were further stratified by village size and the percentage of the population from scheduled castes or scheduled tribes. Table 1.1 provides details of the sample stratification in rural areas along with the population of each stratum. The final level of stratification was implicit for all the strata, consisting of an ordering of villages within each stratum by the level of female literacy (obtained from the 1991 Census Village Directory). From the list arranged in this way, villages were selected systematically with probability proportional to the 1991 Census population of the village. Small villages with 5–49 households were linked with one or more adjoining villages to form PSUs with a minimum of 50 households. Villages with fewer than five households were excluded from the sampling frame.

<u>Table 1.1 Sampling stratification</u>				
Sampling stratification procedure in rural areas, Karnataka				
Stratification variables				
Stratum	Region	Village size (number of residential households)	Percent SC/ST population	Population <sup>1</sup>
1	1	≤ 2200	≤ 22.0	1,608,996
2	1	≤ 2200	> 22.0	1,955,525
3	1	> 2200	≤ 22.0	1,773,984
4	1	> 2200	> 22.0	1,712,473
5	2	≤ 4400	≤ 12.0	1,604,588
6	2	≤ 4400	> 12.0	1,630,035
7	2	> 4400	NU	1,786,169
8	3	≤ 2900	NU	1,588,610
9	3	> 2900	NU	1,678,352
10	4	NU	NU	2,247,231
11	5	≤ 1400	≤ 30.0	2,178,257
12	5	≤ 1400	> 30.0	2,083,074
13	5	> 1400 and ≤ 2600	NU	2,130,386
14	5	> 2600	NU	2,183,918
15	6	≤ 2300	≤ 16.0	1,608,293
16	6	≤ 2300	> 16.0	1,615,930
17	6	> 2300	NU	1,672,339
Total	NA	NA	NA	31,058,160

Note: The level of female literacy is used for implicit stratification.  
SC: Scheduled caste; ST: Scheduled tribe  
NA: Not applicable  
NU: Not used for stratification  
<sup>1</sup>The population shown is the 1991 Census population, excluding persons living in villages with fewer than five households.

The domain sampling fraction, i.e., the probability of selecting a woman in rural Karnataka ( $f$ ) was computed as:

$$f = \frac{n}{N}$$

where  $n$  = number of rural women to be interviewed (after adjusting upward to account for nonresponse and other loss),

$N$  = projected rural population of eligible women in the state in May 1999.

The probability of selecting a PSU from rural Karnataka ( $f_1$ ) was computed as:

$$f_1 = \frac{a \times s_i}{\sum s_i}$$

where  $a$  = number of rural PSUs selected from the state,

$s_i$  = population size of the  $i^{\text{th}}$  PSU,

$\sum s_i$  = total rural population of the state.

A mapping and household listing operation carried out in each sample area provided the necessary frame for selecting households at the second stage. The household listing operation involved preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses of these structures, identifying residential structures, and listing the names of heads of all the households in residential structures in the selected PSUs. Sample villages larger than 750 households were segmented into three or more segments, and two segments were selected randomly using the PPS method. Household listing in these PSUs was carried out only in the selected segments. The work was carried out by two teams, each comprising one lister and one mapper under the supervision of one field supervisor and one field executive. The teams were trained from 16–24 January 1999 in Bangalore by an official from the Population Research Centre at the Institute for Social and Economic Change, Bangalore, who was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between 28 January 1999 and 31 May 1999. The households to be interviewed were selected with equal probability from the household list in each selected enumeration area using systematic sampling.

The probability of selecting a household from a selected rural PSU ( $f_2$ ) was computed as:

$$f_2 = \frac{f}{f_1}$$

On average, 30 households were initially targeted for selection in each selected enumeration area. To avoid extreme variations in workload, minimum and maximum limits were put on the number of households that could be selected from any area, at 15 and 60, respectively. All the selected households were visited during the main survey, and no replacement was allowed if a selected household was absent during data collection.

## Sample Selection in Urban Areas

The 1991 Census list of urban wards was arranged according to districts and within districts by the level of female literacy, and a sample of wards was selected systematically with probability proportional to population size. Next, one census enumeration block (CEB), consisting of approximately 150–200 households, was selected from each selected ward using the PPS method. As in rural areas, a household listing operation was carried out in the selected CEBs and, on average, 30 households per block were targeted for selection.

The domain sampling fraction, i.e., the probability of selecting a woman in urban Karnataka ( $f$ ), was computed as:

$$f = \frac{n}{N}$$

where  $n$  = number of urban women to be interviewed (after adjusting upward to account for nonresponse and other loss),

$N$  = projected urban population of eligible women in the state in May 1999.

The probability of selecting an urban ward ( $f_1$ ) was computed as:

$$f_1 = \frac{a \times s_i}{\sum s_i}$$

where  $a$  = number of urban wards selected from the state,

$s_i$  = population size of the  $i^{\text{th}}$  ward,

$\sum s_i$  = total urban population of the state.

The probability of selecting a CEB from a selected ward ( $f_2$ ) was computed as:

$$f_2 = \frac{B_i}{\sum B_i}$$

where  $B_i$  = population size of the  $i^{\text{th}}$  block,

$\sum B_i$  = total population of the ward.

A household listing operation carried out in each selected block provided the necessary frame for selecting households in the third stage of sample selection. The probability of selecting a household from a selected CEB ( $f_3$ ) was computed as:

$$f_3 = \frac{f}{f_1 \times f_2}$$



## Sample Weights

Sample weights for households and women are based on design weights, adjusted for the effect of differential nonresponse in different geographical areas. The method of calculating the weights is specified below.

Let  $R_{Hi}$  and  $R_{Wi}$  be the response rates for households and eligible women, respectively. Then the household weight ( $w_{Hi}$ ) is calculated as follows:

$$w_{Hi} = \frac{w_{Di}}{R_{Hi}}$$

where  $w_{Di}$  = the design weight for the  $i^{\text{th}}$  domain, calculated as the ratio of the overall sampling fraction ( $F = n/N$ ) and the sampling fraction for the  $i^{\text{th}}$  domain ( $f = n_i/N_i$ ). Note that  $n = \sum n_i$  and  $N = \sum N_i$ .

The eligible woman's weight ( $w_{Wi}$ ) is calculated as follows:

$$w_{Wi} = \frac{w_{Di}}{R_{Hi} \times R_{Wi}}$$

After adjustment for nonresponse, the weights are normalized so that the total number of weighted cases is equal to the total number of unweighted cases. The final weights for households and eligible women are:

$$W_{Hi} = \frac{\sum n_i}{\sum w_{Hi} \times n_i} \times w_{Hi}$$

$$W_{Wi} = \frac{\sum n_i}{\sum w_{Wi} \times n_i} \times w_{Wi}$$

where  $n_i$  refers to the actual number of cases (households or eligible women) interviewed in the  $i^{\text{th}}$  domain.

For the tabulations on anaemia and height/weight of women and children, two separate sets of weights were calculated using a similar procedure. In this case, however, the response rates for anaemia (for both women and children) are based on the percentage of eligible women whose haemoglobin level was measured, and the response rates for height/weight (for both women and children) are based on the percentage of eligible women whose height or weight was measured.

## Sample Implementation

A total of 133 PSUs were selected for the sample, of which 41 (31 percent) were urban and 92 (69 percent) were rural. Table 1.2 shows response rates for households and individuals and reasons for nonresponse. Nonresponse can occur at the stage of the household interview or at the stage of the woman's interview. The last row of the table shows the overall effect of nonresponse

Table 1.2 Sample results

Sample results for households and ever-married women age 15–49 by residence, Karnataka, 1999

Result	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
<b>Households selected</b>	1,696	100.0	2,906	100.0	4,602	100.0
Households completed (C)	1,552	91.5	2,721	93.6	4,273	92.9
Households with no household member at home or no competent respondent at home at the time of interview (HP)	51	3.0	52	1.8	103	2.2
Households absent for extended period (HA)	34	2.0	60	2.1	94	2.0
Households postponed (P)	0	0.0	0	0.0	0	0.0
Households refused (R)	13	0.8	5	0.2	18	0.4
Dwelling vacant/address not a dwelling (DV)	44	2.6	58	2.0	102	2.2
Dwelling destroyed (DD)	0	0.0	5	0.2	5	0.1
Dwelling not found (DNF)	1	0.1	4	0.1	5	0.1
Other (O)	1	0.1	1	0.0	2	0.0
<b>Households occupied</b>	1,617	100.0	2,782	100.0	4,399	100.0
Households interviewed	1,552	96.0	2,721	97.8	4,273	97.1
Households not interviewed	65	4.0	61	2.2	126	2.9
Household response rate (HRR) <sup>1</sup>	NA	96.0	NA	97.8	NA	97.1
<b>Eligible women</b>	1,609	100.0	3,012	100.0	4,621	100.0
Women interviewed (EWC)	1,504	93.5	2,870	95.3	4,374	94.7
Women not at home (EWNH)	81	5.0	124	4.1	205	4.4
Women postponed (EWP)	1	0.1	0	0.0	1	0.0
Women refused (EWR)	12	0.7	8	0.3	20	0.4
Women partly interviewed (EWPC)	5	0.3	4	0.1	9	0.2
Other (EWO)	6	0.4	6	0.2	12	0.3
Eligible women's response rate (EWRR) <sup>2</sup>	NA	93.5	NA	95.3	NA	94.7
Overall response rate (ORR) <sup>3</sup>	NA	89.7	NA	93.2	NA	91.9

Note: Eligible women are defined as ever-married women age 15–49 who stayed in the household the night before the interview (including both usual residents and visitors). This table is based on the unweighted sample; all other tables are based on the weighted sample unless otherwise specified.  
NA: Not applicable  
<sup>1</sup>Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:  

$$\text{HRR} = \frac{C}{C+HP+P+R+DNF} \times 100$$
  
<sup>2</sup>Using the number of eligible women falling into specific response categories, the eligible women response rate (EWRR) is calculated as:  

$$\text{EWRR} = \frac{\text{EWC}}{\text{EWC}+\text{EWNH}+\text{EWP}+\text{EWR}+\text{EWPC}+\text{EWO}} \times 100$$
  
<sup>3</sup>The overall response rate (ORR) is calculated as:  

$$\text{ORR} = \frac{\text{HRR} \times \text{EWRR}}{100}$$

at the two stages. The survey achieved an overall response rate of 92 percent (90 percent in urban areas and 93 percent in rural areas).

Of the 4,602 households selected in Karnataka, interviews were completed in 93 percent of the cases, 2 percent of the selected households were absent for an extended period, and in another 2 percent of the cases no household member or no competent respondent was at home at the time of interview (Table 1.2). In 2 percent of cases, the dwelling was vacant or the address was not a dwelling. The household response rate—the number of households interviewed per 100 occupied households—was 97 percent.

In the interviewed households, 4,621 women were identified as eligible for the individual interview. Interviews were successfully completed with 95 percent of the eligible women. Nonresponse at the individual level was primarily due to eligible women not being at home despite repeated household visits (4 percent). Only 0.4 percent of eligible women refused to be interviewed.

## **1.5 Recruitment, Training, and Fieldwork**

Field staff for the main survey were trained in Bangalore by officials of the PRC at the Institute for Social and Economic Change, who were trained earlier in a Training of Trainers Workshop conducted by IIPS. Training in Karnataka consisted of three weeks of classroom training, general lectures, and demonstration and practice interviews, as well as field practice and additional training for field editors and supervisors. The classroom training included instructions in interviewing techniques and survey field procedures, a detailed review of each item in the questionnaires, instruction and practice in weighing and measuring women and children, and mock interviews between participants. Special guest lectures on family planning and on child health were also arranged. Health investigators attached to interviewing teams were given additional specialized training on measuring height and weight and testing for anaemia in a centralized training programme conducted by the All India Institute of Medical Sciences (AIIMS), New Delhi, in collaboration with IIPS. This specialized training took place in Mumbai. It included classroom training and extensive field practice in schools, *anganwadis*, and communities.

Four interviewing teams conducted the main fieldwork in Karnataka, each team consisting of one field supervisor, one female field editor, four female interviewers, and one health investigator. The fieldwork was carried out between 22 March 1999 and 8 September 1999. Coordinators and senior staff of the PRC at the Institute for Social and Economic Change monitored and supervised the data collection operations. IIPS also appointed one research officer to help with monitoring throughout the training and fieldwork period in order to ensure that correct survey procedures were followed and data quality was maintained. From time to time, project coordinators, senior research officers, and other faculty members from IIPS, as well as staff members from ORC Macro and the East-West Center, visited the field sites to monitor the data collection operation. Medical health coordinators appointed by IIPS monitored the nutritional component of the survey. Field data were quickly entered into microcomputers, and field-check tables were produced to identify certain types of errors that might have occurred in eliciting information and filling out questionnaires. Information from the field-check tables was fed back to the interviewing teams and their supervisors so that they could improve their performance.

## **1.6 Data Processing**

Completed questionnaires were sent to the office of the PRC at the Institute for Social and Economic Change, Bangalore, for data processing, which consisted of office editing, coding, data entry, and machine editing, using the Integrated System for Survey Analysis (ISSA) software. Data entry was done in Bangalore by four data entry operators under the supervision of PRC senior staff who were trained at a data-processing workshop in Hyderabad. Data entry and editing operations were completed by October 1999. Tabulations for the preliminary report as well as for the present final report were carried out at IIPS in Mumbai.