INTRODUCTION 1

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1.1 GEOGRAPHY, HISTORY, AND THE ECONOMY

1.1.1 Geography

Malawi is a landlocked country south of the equator in sub-Saharan Africa. It is bordered to the north and northeast by the United Republic of Tanzania; to the east, south, and southwest by the People's Republic of Mozambique; and to the west and northwest by the Republic of Zambia.

The country is 901 kilometres long and ranges in width from 80 to 161 kilometres. The total area is 118,484 square kilometres of which 94,276 square kilometres is land area. The remaining area is mostly composed of Lake Malawi, which is about 475 kilometres long and runs down Malawi's eastern boundary with Mozambique.

Malawi's most striking topographic feature is the Rift Valley, which runs the entire length of the country, passing through Lake Malawi in the Northern and Central Regions to the Shire Valley in the south. The Shire River drains the water from Lake Malawi into the Zambezi River in Mozambique. To the west and south of Lake Malawi lie fertile plains and mountain ranges whose peaks range from 1,700 to 3,000 metres above sea level.

The country is divided into three regions: the Northern, Central, and Southern Regions. There are 28 districts in the country. Six districts are in the Northern Region, nine are in the Central Region, and 13 are in the Southern Region. Administratively, the districts are subdivided into traditional authorities (TAs), presided over by chiefs. Each TA is composed of villages, which are the smallest administrative units and are presided over by village headmen.

Malawi has a tropical, continental climate with maritime influences. Rainfall and temperature vary depending on altitude and proximity to the lake. From May to August, the weather is cool and dry. From September to November, the weather becomes hot. The rainy season begins in October or November and continues until April.

1.1.2 History

Malawi was under British rule from 1891 until July 1964 under the name of the Nyasaland Protectorate. In 1953 the Federation of Rhodesia and Nyasaland was created, which was composed of three countries, Southern Rhodesia (now Zimbabwe), Northern Rhodesia (now Zambia), and Nyasaland (now Malawi). In July 1964 Nyasaland became the independent state of Malawi and gained republic status in 1966.

In 1994 Malawi adopted a multiparty system and a strategy to eradicate poverty. Since then, it has introduced free primary school education, a free market economy, a bill of rights, and a parliament with three main parties. Over the past ten years, the country has experienced a considerable increase of rural-to-urban migration.

1.1.3 Economy

Malawi has a predominantly agricultural economy. Agricultural produce accounted for 70 percent of Malawi exports in 2004, tobacco, tea, and sugar being the major export commodities. The country is largely self-sufficient with regard to food, but due to the high cost of fertilizer, coupled with erratic rains for the past three years, Malawi is experiencing food insecurity, making it largely dependent on imported maize from South Africa.

1.2 POPULATION

The major source of historical demographic data comes from the population census, which was taken every ten years from 1891 to 1931. Since World War II, population censuses were conducted in 1945, 1966, 1977, 1987, and 1998. Other sources of population data include nationwide surveys, such as the 1992 Malawi Demographic and Health Survey (MDHS); the 1996 Malawi Knowledge Attitudes, and Practices in Health survey (MKAPH); and the 2000 MDHS. Table 1.1 provides some demographic indicators for Malawi based on various data sources.

The population of Malawi grew from 8.0 million in 1987 to 9.9 million in 1998, as enumerated by the 1998 Population and Housing census, representing an increase of 24 percent, or an intercensal population growth rate of 2 percent per year. Population density increased from 85 persons per square kilometre in 1987 to 105 persons per square kilometre in 1998.

To address problems associated with rapid population growth, in 1994 the Malawi government adopted the National Population Policy, which was designed to reduce population growth to a level compatible with Malawi's social and economic goals (OPC, 1994). The policy's objectives are to improve family planning and health care programmes, to increase school enrolment with an emphasis on raising the proportion of female students to 50 percent of total enrolment, and to increase employment opportunities, particularly in the private sector.

Table 1.1 Demographic indicators

Selected demographic indicators, Malawi 1998 national census and population projections 1999-2002

	Census Year	Projections			
Indicator	1998	1999	2000	2001	2002
Population (midyear population)	9,933,868	10,152,753	10,475,257	10,816,294	11,174,648
Intercensal growth rate	2.0	3.1	3.2	3.3	3.3
Total area (sq km)	118,484	118,484	118,484	118,484	118,484
Land area (sq km)	94,276	94,276	94,276	94,276	94,276
Density (population per sq km)	105	108	111	115	119
Percentage of urban population	14.0	14.3	14.8	15.2	15.7
Women of childbearing age as a percentage of female population	47.2	48.2	49.8	51.4	53.1
Sex ratio	96.0	96.2	96.3	96.4	96.4
Crude birth rate	37.9	52.3	51.9	51.4	50.8
Total fertility rate	6.2	6.7	6.7	6.6	6.5
Crude death rate	21.1	23.1	21.8	20.5	19.4
Infant mortality rate	121.0	91.4	89.5	87.6	85.7
Life expectancy:					
Male	40.0	41.1	41.7	42.3	42.8
Female	44.0	43.8	44.3	44.9	45.5

Source: National Statistical Office (NSO). 1998 Population Projections for Malawi 1999 to 2023 based on the Population and Housing Census.

1.3 OBJECTIVE OF THE SURVEY

The principal aim of the 2004 MDHS project was to provide up-to-date information on fertility and childhood mortality levels, nuptiality, fertility preferences, awareness and use of family planning methods, use of maternal and child health services, and knowledge and behaviours related to HIV/AIDS and other sexually transmitted infections. It was designed as a follow-on to the 2000 MDHS survey, a national-level survey of similar scope. The 2004 MDHS survey, unlike the 2000 MDHS, collected blood samples which were later tested for HIV in order to estimate HIV prevalence in Malawi. In broad terms, the 2004 MDHS survey aimed to:

- Assess trends in Malawi's demographic indicators, principally fertility and mortality
- Assist in the monitoring and evaluation of Malawi's health, population, and nutrition programmes
- Advance survey methodology in Malawi and contribute to national and international databases
- Provide national-level estimates of HIV prevalence for women age 15-49 and men age 15-54.

In more specific terms, the 2004 MDHS survey was designed to:

- Provide data on the family planning and fertility behaviour of the Malawian population and thereby enable policymakers to evaluate and enhance family planning initiatives in the country
- Measure changes in fertility and contraceptive prevalence and analyse the factors that affect these changes, such as marriage patterns, desire for children, availability of contraception, breastfeeding habits, and important social and economic factors
- Examine basic indicators of maternal and child health and welfare in Malawi, including nutritional status, use of antenatal and maternity services, treatment of recent episodes of childhood illness, and use of immunisation services. Particular emphasis was placed on malaria programmes, including malaria prevention activities and treatment of episodes of fever.
- Provide levels and patterns of knowledge and behaviour related to the prevention of HIV/AIDS and other sexually transmitted infections
- Provide national estimates of HIV prevalence
- Measure the level of infant and adult mortality including maternal mortality at the national level
- Assess the status of women in the country.

1.4 ORGANISATION OF THE SURVEY

The 2004 MDHS survey was a comprehensive survey that involved several agencies. The National Statistical Office (NSO) had primary responsibility for conducting the survey. The Ministry of Health and Population, the National AIDS Commission (NAC), the National Economic Council, and the Ministry of Gender also contributed to the development of the questionnaires for the survey. Most of the funds for the local costs of the survey were provided by multiple donors through NAC. Financial support for the survey was also provided by the United States Agency for International Development (USAID), the United Kingdom's Department for International Development (DFID), the United Nations Children's Fund (UNICEF/Malawi) and United Nations Population Fund (UNFPA). Technical assistance was provided by ORC Macro through the USAID-funded MEASURE DHS project based in Calverton, Maryland, USA. The Centers for Disease Control and Prevention provided technical assistance in HIV testing.

1.4.1 Sample Design

The 2004 MDHS survey was designed to provide estimates of health and demographic indicators at the national and regional levels, for rural and urban areas, and for selected large districts that were oversampled. To meet this objective, 522 clusters were drawn from the 1998 census sample frame: 458 in rural areas and 64 in urban areas. The following districts were oversampled in the 2004 MDHS in order to produce reliable district level estimates; Mulanje, Thyolo, Kasungu, Salima, Machinga, Zomba, Mangochi, Mzimba, Blantyre, and Lilongwe.

The National Statistical Office staff conducted an exhaustive listing of households in each of the MDHS clusters in August and September 2004. From these lists, a systematic sample of households was drawn for a total of 15,091 households. All women age 15-49 in the selected households were eligible for individual interview. Every third household in the 2004 MDHS sample was selected for the male survey. In these households, all men age 15-54 were eligible for individual interview and HIV testing. In the same households, all women age 15-49 were eligible for HIV testing.

During data collection, field staff used global positioning system (GPS) receivers to establish and record geographic coordinates of each of the MDHS clusters.

1.4.2 Questionnaires

Three types of questionnaires were used in the 2004 MDHS survey: the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. The contents of the questionnaires were based on the MEASURE DHS model questionnaires, which were adapted for use in Malawi in collaboration with a wide range of stakeholders. The MDHS survey instruments were translated into and printed in Chichewa and Tumbuka for pretesting.

The Household Questionnaire was used to list all of the usual members and visitors in the selected households. Basic information on each person listed was collected, including age, sex, education, and relationship to the head of the household. Height and weight measurements were taken for all women age 15-49 and all children under the age of five. Respondents to the Household Questionnaire were asked questions on child labour for each child ages 5-14 living in the household or who spent the preceding night in the household. In addition, information was collected about the dwelling itself such as the source of water, type of toilet facilities, materials used to construct the

house, ownership of various consumer goods, and use of bed nets. The Household Questionnaire was also used to identify persons eligible for individual interview: women age 15-49 and men age 15-54. One woman in each household was selected for the interview on domestic violence.

The Women's Questionnaire was used to collect information from women age 15-49 and included questions on the following topics:

- Background characteristics (age, education, religion, etc.)
- Reproductive history (to arrive at fertility and childhood mortality rates)
- Knowledge and use of family planning methods
- Antenatal, delivery, and postnatal care
- Infant feeding practices, including patterns of breastfeeding
- Vaccinations
- Episodes of childhood illness and responses to illness, with a focus on treatment of fevers in the last two weeks
- Marriage and sexual activity
- Fertility preferences
- Husband's background and the woman's work status
- Woman's status and decisionmaking
- Mortality of adults, including maternal mortality
- AIDS-related knowledge, attitudes, and behaviour
- Domestic violence

The Men's Questionnaire was much shorter than the Women's Questionnaire, but covered many of the same topics, excluding the detailed reproductive history and sections dealing with maternal and child health and adult and maternal mortality.

1.4.3 Pretest

Twelve NSO permanent staff were recruited as interviewers for the DHS pretest of the questionnaires, which was conducted in June and July 2004. The 12 interviewers were trained in conducting interviews and taking blood samples for anaemia and HIV testing. The training took place at the NSO offices for a period of two weeks. The interviewers were split into three teams to conduct interviews in the Northern Region, Central Region, and Southern Region, respectively. During the pretest fieldwork, 206 Household Questionnaires, 160 Women's Questionnaires, and 154 Men's Questionnaires were completed. Based on the observations in the field and suggestions

made by the pretest field teams, revisions were made in some skip patterns, wording, and translations of the questionnaires.

1.4.4 Training

A total of 180 people were recruited by NSO for the main training. Training was held for five weeks at Magomero College, south of Zomba town. The first week of training was devoted to the collection of blood samples. Sixty persons were trained to collect blood samples, 34 of whom had medical training and 26 with no medical training. These participants were joined in subsequent weeks by 120 persons who were trained as interviewers only.

The second phase of training focused on interviewing the respondents and taking height and weight measurements. Initially, training consisted of lectures on the underlying rationale of the questionnaires' content and how to complete the questionnaires. Guest lecturers were invited to give talks on specific subjects such as family planning and gender issues, in particular domestic violence. Mock interviews were conducted between participants to allow practice in proper interviewing techniques and the use of local language questionnaires. Throughout the training, participants were given tests to evaluate their understanding and skills in the survey procedures. Toward the end of training, participants spent several days practicing interviews near the training centre.

1.4.5 Data Collection and Data Processing

Fieldwork for the 2004 MDHS was carried out by 22 mobile teams, each consisting of one supervisor, one field editor, four or five female interviewers, and one male interviewer. Two or three of the interviewers on each team were trained in taking blood samples, and at least one of these was medically trained. Four senior NSO staff and one from Ministry of Health and Population supervised and coordinated fieldwork activities. In addition, three health technicians were assigned to supervise the blood collection for anaemia and HIV testing. Fieldwork commenced on 4 October 2004 and was completed by 31 January 2005.

All questionnaires for the MDHS were returned to the NSO central office in Zomba for data processing. The processing operation consisted of office editing, coding of open-ended questions, data entry, double entry verification, and editing inconsistencies found by computer programs developed for the MDHS. The MDHS data entry and editing programs used CSPro, a computer software package specifically designed for processing survey data such as that produced by DHS surveys. Data processing commenced one month after fieldwork and was completed in May 2005. Testing of blood samples started in May 2005 and was completed in June 2005.

Table 1.2 shows the results of household and individual interviews for Malawi as a whole and for urban and rural areas. A total of 15,041 households were selected in the MDHS sample, of which 13,965 were occupied. Of the occupied households, 13,664 were interviewed, yielding a household response rate of 98 percent. The household response rate is higher in rural areas.

In the 13,664 interviewed households, 12,229 women age 15-49 were identified as eligible for the individual interview, and interviews were completed for 11,698, for a 96 percent response rate. Of the 3,797 men age 15-54 who were identified as eligible for individual interview, 3,261 were interviewed, resulting in an 86 percent response rate. For both women and men, the main reason for nonresponse in the MDHS was failure to find the respondents despite repeated visits to the

household. Compared with the 2000 MDHS, the response rate for women declined from 98 to 96 percent and the response rate for men declined from 97 to 95 percent.

Table 1.2 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence, Malawi 2004

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	1,984	13,057	15,041
Households occupied	1,799	12,166	13,965
Households interviewed	1,724	11,940	13,664
Household response rate	95.8	98.1	97.8
Interviews with women			
Number of eligible women	1,733	10,496	12,229
Number of eligible women interviewed	1,640	10,058	11,698
Eligible woman response rate	94.6	95.8	95.7
Interviews with men			
Number of eligible men	632	3,165	3,797
Number of eligible men interviewed	507	2,754	3,261
Eligible man response rate	80.2	87.0	85.9