CHAPTER 1. INTRODUCTION

1.1. HISTORY, GEOGRAPHY, AND ECONOMY

1.1.1. History

The first Marshallese are thought to have reached the islands from Southeast Asia in ocean-going canoes some 2,000 years ago. According to legend supported by archaeological evidence, the settlers arrived in the northern part of the group and slowly moved through the double chain of islands. The social structure that developed over time was shaped to a large extent by the environment, and land constraints in particular. Traditional authority was built around land, with the community organized in bwij (lineage groups) under several alap (clan leaders), and each household living on its own weto (cross-island strip) and each weto typically offering a range of soil types and vegetation (ADB 2001).

Often-fierce competition for scarce land and coastal resources resulted in the formation of a strong hierarchical social structure. As the hereditary chief of the bwij, the iroj held the right to adjudicate the use of land and coastal resources, manage the resources of the community as a whole, and organize both the defense of those resources and offensive operations to expand the resource base. Despite the strongly hierarchical structure, anthropological evidence shows relatively uniform material well-being in the community. That the iroj did not personally accumulate wealth is interpreted as evidence of an egalitarian redistribution system, possibly under the command of the iroj. Workers (rijerbal) provided labor and constituted, along with the alap, the strength of the iroj, thus forming the basis for mutual dependence. The land tenure system has survived colonization and the modern era, with access and use rights to land still held by the iroj and alap. However, poverty and governance have changed considerably with the transition to a monetary economy.

The first outsiders to reach the Marshall Islands were Spanish navigators searching for a westerly route to the Spice Islands (Malukus) in the 16th century. John William Marshall, a British sea captain, sailed through the atolls in 1788 while en route from Australia to China and proclaimed them the Marshall Islands. German trading companies began arriving in the 1860s to establish a base for copra production in the Ralik Islands, which stretch between Ujae and Ebon atolls. The Germans worked with the iroj to acquire both land and labor for copra production. A treaty of friendship was signed in 1875 between imperial Germany and all of the Ralik chiefs, which led to the establishment of a German consulate on Jaluit. Germany bought the rest of the islands from Spain in 1885, thus consolidating its claim on the entire Marshall Island group (Marshall Islands Visitors Authority 2004). Copra became a dominant industry and a head tax payable in copra was introduced, with the iroj responsible for collecting it and receiving a share of it. This elevated the iroj to representatives of the imperial authority, which consolidated the powers of the chiefs with the backing of a modern state. The last point is important with regard to pressures for good governance, as the iroj of the modern era draw legitimacy from both the modern state and the alap and rijerbal.

Japan took over the islands when World War I broke out, remaining in control from 1914 to 1944. The Japanese maintained the administrative set-up left behind by the displaced Germans, except that Tokyo-based trading companies now ran the copra and trade store operations. Annual copra production during the Japanese era reached 5,000 tons, and Japanese manufactured goods were distributed throughout the colony aboard regular inter-island shipping (ADB 2001). The lead-up to World War II saw Japan fortify the islands, building airfields and supporting seaport infrastructure on Kwajalein, Wotje, Mili, and Maloelap, from which they launched the Pacific War. The Americans captured Kwajalein and Enewetak in January and February of 1944 respectively, becoming another colonial power until the country achieved independence in 1986.

The United States administered RMI as part of the Trust Territories of the Pacific Islands. Between 1946 and 1958, the US conducted some 67 nuclear tests in Bikini and Enewetak atolls. People who were resettled from these and other atolls for the tests received compensation, and the RMI Government

continues to seek final reconciliation with the US for the tests. The Asian Development Bank (ADB) notes that a 'blend of ignorance, negligence, and intent in the conduct of the tests exposed thousands of Marshallese civilians and several hundred American servicemen to radiation' (ADB 2001).

The nuclear testing program left Bikini uninhabited, with its original residents resettled on Kili Island, Ejit Island (in Majuro Atoll), and other areas. Residents of Rongelap Atoll, which was exposed to fallout, were relocated and currently live on Mejatto Island in Kwajalein Atoll, on Majuro, and in other areas. The health costs for those affected by the nuclear testing are paid by a special health fund. The US has maintained a military base in Kwajalein Atoll since the end of the war, and since the 1960s has used it to test ballistic missiles. The US provides land-lease payments to Kwajalein landowners through an agreement with the RMI Government, which has an agreement with the landowners for the use of the atoll. The US provides further direct budgetary support and permits access to special grants from the US Government. These transfers from the US are the major source of foreign exchange and have annually been well in excess of 50 percent of gross domestic product (GDP).

RMI's relationship with the US continues under the Compact of Free Association, which went into effect in 1986. Certain provisions of the Compact, including economic assistance, expired in 2001 and were subsequently renegotiated for an additional 20 years commencing in May 2004. An important aspect of the Compact is its provision allowing Marshallese to live and work in the US with little restriction. An estimated 15,000 Marshallese have taken advantage of this access, but remittance flows have not been significant. In fact, some estimates see an outflow of funds from RMI to the US. Likely reasons for this anomaly are the poor economic and social conditions most Marshallese migrants in the US face. On the whole, migrants have held poorly paid menial jobs and used their income to support a large, unemployed Marshallese community in the US. Many migrant families live below the US poverty line, which both explains the lack of remittance income to RMI and offers lessons about what could be done to take better advantage of this opportunity.

RMI's colonial history and rapid transition to a monetized economy heavily dependent on aid, rent, and compensation have had significant socio-psychological impacts. Many Marshallese who directly benefit from transfers have become wealthy quickly. More broadly, transfers have fuelled a large public sector and fostered a dependency mindset. Domestically, many Marshallese continue to expect government handouts, and internationally RMI as a nation continues to rely heavily on and actively solicit transfers from the US and other countries.

1.1.2. Geography

RMI is located in the Central Pacific Ocean, and is comprised of 29 scattered and remote atolls in the Eastern Ratak (Sunrise) and Western Ralik (Sunset) chains. There exist approximately 1,225 islands and islets in the Marshall Islands, none of which is above 10 feet in elevation above sea level. The land area is less than 0.01 percent of the total surface area, with the total land area of 181 square kilometers and some 370 km of coastline, with an exclusive economic zone of 2 million km^2. The Marshall Islands has a unique geography, which is a challenge to delivery of basic health services. Transportation, electricity, and communication are limited by the isolated nature of many of the islands and atolls.

1.1.3. Economy

Traditionally, coastal fisheries and subsistence agriculture served as the major sources of livelihood for most people. Such livelihoods are no longer an option for the majority of the population following RMI's rapid population growth over the past half-century. Today, the highly urbanized Marshallese depend on large financial transfers from abroad and imports, in particular imported food. The potential of the natural environment to sustain the population has meanwhile been diminished by contamination with solid and radioactive wastes and overexploitation of marine resources both nearshore and offshore.

The two major urban atolls, Majuro and Kwajalein, the latter of which includes Ebeye Island, are home to two-thirds of the population. Population densities in some of the urban settlements exceed 28,000 people/km^2. The bulk of the population, particularly those in crowded urban centers, depend on cash income and imports for sustenance. However, employment opportunities are limited. The geographic isolation of RMI and its consequently high transportation and communication costs have severely limited income growth. Not surprisingly, fewer than 1 percent of RMI's 9,161 wage-earners in 2004 worked in manufacturing.

In 2004 the public sector accounted for 41 percent of wage employment, and national government employees' average annual earnings of $13,275 were over one and a half times higher than the average for the private sector. The relatively high public sector wages draw the best personnel into the government, which is the largest sector of the economy and sets wages and employment conditions for the economy as a whole. However, poor productivity in the public sector has been a drag on economic performance (see Chapter 3). External assistance funds most public sector outlays, with the bulk of the recurrent budget being funded through the Compact of Free Association with the United States. A brief historic review helps explain the basis for such extensive foreign assistance.

Economic growth in the first decade of independence was fairly steady, with the per capita GDP expanding by 30 percent from 1986 to 1995, or 3 percent per annum. This decade of growth reflected the front-loaded transfer of economic assistance under the new Compact, which was structured in three five-year blocks from 1986 to 2001, with the bulk of the transfers received and spent during the first two periods to 1995.

The per capita GDP saw a steady decline in the six-year period to 2001, falling by 20 percent. The slow recovery from 2001 to 2004 has been driven by higher government expenditure fuelled by Compact bump-up funds,[6] the commencement of transfers under the new Compact economic package in 2004, and increased financial assistance from Taipei, China.

The per capita GDP in 2004 ($2,340) was higher than in 1986 ($2,065) but lower than the peak in 1995 ($2,647). The gain in per capita GDP since independence has been very slow, averaging less than 1 percent per annum, and has shrunk in the past decade. Caution has to be exercised in interpreting these numbers, but clearly the past two decades have seen little or no economic progress. Given the large transfers to RMI from abroad, the gross national income (GNI) provides a better measure of expenditures, including as it does net factor income and transfers from abroad, as well as domestic production.

Transfers are particularly relevant to RMI as they include large payments for labor and land used by the US on Kwajalein, fees collected from the ship registry and licensing foreign fishing vessels, and interest and dividend income from abroad. Payments to workers at the Kwajalein military base in 2004 amounted to $18 million, base rents another $9 million, and fishing licenses and ship registrations $1 million each. These four items together amounted to 22 percent of GDP. Including these transfers yields a per capita GNI for FY2004 (in 2003 prices) of $2,667.

Over the seven years to 2004, the real per capita GNI has increased at an annual average rate of 0.4 percent. At this rate, growth in the next decade will be only 4.1 percent, which is highly unlikely to translate into reduced poverty. Such a low rate of income growth in an environment of rising income inequality will increase both the number of people in poverty and the severity of that poverty.

1.2. POPULATION

Population censuses have been carried out in the Marshall Islands since 1930, first at five-yearly intervals and then at decennial intervals. Table 1.1 provides a summary of the basic demographic indicators available for RMI from the census data for 1930–1999. The Marshall Islands population increased four times after 1930, from around 10,000 in 1930 to over 50,840 in 1999. The population grew at a rapid rate between 1958 and 1988, from 1.2 percent to 4.2 percent, but the growth rate has slowed since 1988 to 1.5 percent (EPPSO 1999). A recent projection (2007) estimated the Marshallese population size to be over 52,700.[1]

The population density has greatly increased over the same period, from 57 persons per km^2 in 1930 to 726 persons per km^2 in 1999. Marshall Islands is predominantly rural in terms of atoll distribution, but in terms of population distribution, the proportion of the urban population has increased steadily over time and in 1988 was estimated to be higher than the rural population, from about 48 percent in 1980 to 65 percent in 1988. The 1999 Population and Housing Census results show that almost the same proportion (65 percent) of the Marshallese population lives in urban areas now. Life expectancy in the Marshall Islands is improving, increasing by about seven years between 1980 and 1999. Female life expectancy in 1999 was slightly higher than male life expectancy (69.4 years versus 65.7 years).

Table 1.1. Basic demographic indicators – selected demographic indicators, RMI 1930–1999

	1930	1935	1958	1967	1970	1973	1980	1988	1999
Total population	10,412	10,446	13,928	18,925	20,206	24,135	30,873	43,380	50,840
Intercensal growth rate (percent)	1.5	0.1	1.2	3.4	2.2	5.5	3.5	4.2	1.5
Density (population/kilometre^2)	57	58	77	104	111	133	170	240	726
Percent urban	-	-	-	-	-	-	47.8	64.5	65.0
Life expectancy									
Male	-	-	-	-	-	-	-	-	65.7
Female	-	-	-	-	-	-	-	-	69.4
Total	-	-	-	-	-	-	60.0	61.0	67.5

- equals to unknown (not available)

Source: EPPSO, 1999a

1.3. POPULATION AND REPRODUCTIVE HEALTH POLICIES AND PROGRAMS

1.3.1. Evolution of population policy

During the 1960s until the early 1990s, the Marshall Islands experienced very high rates of population growth. Growth rates during this period exceeded over 4 percent and there was much concern by the government to implement programs and planning to cope with the demands of a fast-growing population. The first population policy for the Marshall Islands was officially adopted in December 1990 with help from various organizations in the United Nations system. Changes in socioeconomic conditions were a driving force behind the development of a comprehensive and far-reaching policy document. The very large growth in the population was placing pressure on education, medical services and job creation. The policy was updated in 1995. However, since 1995 there has been no further update or revision. During the mid-1990s ADB supported the government and Ministry of Health with a Health and Population Program Loan that supported activities such as family planning, the creation of community health councils, public health services, and a significant construction program for dispensaries on the outer islands.

[1] SPC population projections 2007.

During a visit by the United Nations Population Fund (UNFPA) to the Marshall Islands in January 2004, the idea of conducting a demographic and health survey (DHS) was first discussed. It had been five years since the last population census and there was more and more interest in ascertaining the general health situation of the population. Much of the thinking revolved around using the results of the DHS as a baseline for basic health indicators, but they could also be used for reviewing and reformulating the population policy. At the same time, the Marshall Islands was entering into a new phase of its Compact of Free Association with the United States. This placed much more emphasis on the health and education sectors, and also on the improved use of data and statistics for policy- and decision-making. The result was a decision to go forward with implementation of a DHS to assist the Marshall Islands with improving health indicators and health data to assist with policy-making, program review and meeting reporting obligations under the Millennium Development Goals (MDGs) and the Compact of Free Association.

1.4. OBJECTIVES OF THE SURVEY

The principal objective of the Republic of the Marshall Islands 2007 Demographic and Health Survey (2007 RMIDHS) is to provide current and reliable data on fertility and family planning behavior, child mortality, adult and maternal mortality, children's nutritional status, the utilization of maternal and child health services, and knowledge of HIV and AIDS. The specific objectives of the survey are to:

- collect data at the national level that will allow the calculation of key demographic rates;
- analyze the direct and indirect factors that determine the level and trends of fertility;
- measure the level of contraceptive knowledge and practice among women and men by method, urban/rural residence, and region;
- collect high-quality data on family health, including immunization coverage among children, prevalence and treatment of diarrhea and other diseases among children under five, and maternity care indicators (including antenatal visits, assistance at delivery, and postnatal care);
- collect data on infant and child mortality;
- obtain data on child feeding practices, including breastfeeding, and collect 'observation' information to use in assessing the nutritional status of women and children;
- collect data on knowledge and attitudes of women and men about sexually transmitted infections (STIs), HIV and AIDS and evaluate patterns of recent behavior regarding condom use; and
- collect data on support to mentally ill persons and information on the incidence of suicide.

This information is essential for informed policy decisions, planning, monitoring, and evaluation of programs on health in general and reproductive health in particular at both national level and in urban and rural areas. A long-term objective of the survey is to strengthen the technical capacity of government organizations to plan, conduct, process, and analyze data from complex national population and health surveys. Moreover, the 2007 RMIDHS provides national, rural, and urban estimates on population and health that are comparable to data collected in similar surveys in other Pacific DHS pilot countries and other developing countries.

1.5. ORGANIZATION OF THE SURVEY

The 2007 RMIDHS was carried out under the ADB/Secretariat of the Pacific Community (SPC) Pacific Regional Pilot DHS Project, and was executed by the RMI Economic Policy, Planning and Statistics Office (EPPSO) in collaboration with the Ministry of Health (MOH). Macro International Inc. provided technical assistance through its MEASURE DHS project. The survey was funded by ADB.

A steering committee was formed to be responsible for coordination, oversight, advice, and decision-making on all major aspects of the survey. The steering committee was composed of representatives from

various ministries and key stakeholders, including MOH and EPPSO. A technical advisory committee and technical subcommittee were also formed.

1.6. SAMPLE DESIGN

The primary focus of the 2007 RMIDHS was to provide estimates of key population and health indicators, including fertility and mortality rates, for the country as a whole and for urban and rural areas separately. The survey used the sampling frame provided by the list of census enumeration areas, with population and household information from the 1999 RMI Census and the 2006 Community Survey.

The survey was designed to obtain completed interviews of 1,070 women aged 15–49. In addition, males aged 15–59 in every second household were interviewed. To take non-response into account, a total of 608 households countrywide were selected: 295 in urban areas and 313 in rural areas.

1.7. QUESTIONNAIRES

Three questionnaires were administered for the 2007 RMIDHS: a household questionnaire, a women's questionnaire, and a men's questionnaire. These were adapted to reflect population and health issues relevant to the Marshall Islands at a series of meetings with various stakeholders from government ministries and agencies, non-governmental organizations (NGOs) and international donors. The final draft of the questionnaires was discussed at a questionnaire design workshop organized by EPPSO in September 2006 in Majuro. The survey questionnaires were then translated into the local language (Marshallese) and pretested from November 16 to December 13, 2006.

The household questionnaire was used to list all the usual members and visitors in the selected households and to identify women and men who were eligible for the individual interview. Some basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. For children under age 18, the survival status of their parents was determined. The household questionnaire also collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, and ownership of various durable goods. Additionally, it was used to record information on mental illness and suicide experiences of members of the household.

The women's questionnaire was used to collect information from all women aged 15–49. The women were asked questions on:

- characteristics such as education, residential history, and media exposure;
- pregnancy history and childhood mortality;
- knowledge and use of family planning methods;
- fertility preferences;
- antenatal, delivery, and postnatal care;
- breastfeeding and infant feeding practices;
- immunization and childhood illnesses;
- marriage and sexual activity;
- their own work and their husband's background characteristics; and
- awareness and behavior regarding HIV and other STIs.

The men's questionnaire was administered to all men aged 15–59 living in every second household in the 2007 RMIDHS sample. It collected much of the same information found in the women's questionnaire, but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health or nutrition.

1.8 LISTING, PRETEST, TRAINING, AND FIELDWORK

1.8.1. Listing

Using an existing structure database from the RMI Environmental Protection Authority, EPPSO was able to divide Majuro into 17 zones and Ebeye into nine zones. Then, using geographic information system (GIS) software, a 30 percent random coverage for structures was provided that colored and plotted all structures to be surveyed. The target survey sample was 20 percent, but because the database included all structures there was an intentional over-sample to compensate for commercial and government buildings, abandoned buildings, and auxiliary structures such as cookhouses and separate toilet facilities. This enabled EPPSO to produce large wall maps for Ebeye and Majuro that identified all houses to be surveyed, as well as smaller maps of each zone, which were provided to all personnel involved with fieldwork. Part of the training ensured that personnel could use and work with the maps as well as global positioning system (GPS) devices to help map every household surveyed. The sample strata were defined as:

0 Out of scope (total population est. 2006 = 13)

1 Urban

2 Very close to Majuro

3 Higher income, not isolated and good schools

4 Have relatively more services, power station, better housing, good dispensary, public high schools, isolated

5 'Typical' outer islands

6 Isolated outer islands

After the selection of the six strata throughout RMI, a listing operation was carried out in the selected strata starting in September 2006. On the outer islands, a decision was made to survey as many of the households as possible during the week to two weeks that personnel would be on island. Most atolls had relatively small populations so surveying all or most households was seen as more practical than using even smaller sample sizes. In the urban areas of Majuro and Ebeye, a more traditional random survey operation was developed and implemented.

1.8.2. Pretest

Prior to the start of the fieldwork, the questionnaires were pretested in the Marshallese language to make sure that the questions were clear and could be understood by the respondents. In order to conduct the pilot survey, two interviewers were recruited, along with EPPSO staff, to interview in both English and Marshallese. These interviewers later became team leaders and field editors. The pilot survey was conducted from November 16 to December 13, 2006 in three selected sites. Both rural and urban households were selected for the pretest. Based on the findings of the pretest, the household, women's and men's questionnaires were further refined.

1.8.3. Training

Before training commenced, local advertisements were placed seeking men and women to be interviewers. Potential candidates completed a short skills assessment in English and mathematics. They were then interviewed by EPPSO project managers to assess the interviewing skills required for the surveys. Training of interviewers, field editors, supervisors and reserves was conducted from January 4 to February 3, 2007. The questionnaires were used during the training, with the Marshallese versions being simultaneously checked against the English questionnaires to ensure accurate translation. In addition to classroom training,

trainees did several days of field practice to gain more experience in interviewing in the three local languages and fieldwork logistics.

A total of 26 participants were trained at the Ministry of Health. The training was conducted by MOH, Macro and SPC advisers. EPPSO and staff from MOH conducted different sessions on population and health issues. After the training on how to complete the household, women's and men's questionnaires, all trainees were given written and oral tests to gauge their understanding of the DHS questionnaires and interviewing techniques. On the basis of the scores on the exam and overall performance in the classroom, 26 trainees were selected to participate in the main fieldwork. From the group, two of the best male trainees were selected as supervisors and two of the best female interviewers were identified as field editors. The remaining 22 trainees were selected to be interviewers. The trainees not selected to participate in the fieldwork were kept as reserves in case people were sick or unable to participate. During the course of the survey several people on reserve were called in as there were several cases of people having family emergencies.

After completing the interviewers' training, the field editors and supervisors were trained for an additional three days on how to supervise the fieldwork and edit questionnaires in the field in order to ensure data quality.

This process of assessment and training made sure that the field supervisors, field editors, interviewers and data processors were of very high caliber, and this was demonstrated in the high degree of teamwork and quality data obtained. Not enough good things can be said about the quality of the training, work, effort and dedication that were put in by all the people involved with this very complicated project.

1.8.4. Fieldwork

Data collection began on February 8, 2007 by four field teams, each consisting of three female interviewers, one male interviewer, a male supervisor and a female field editor. Fieldwork was completed on June 7, 2007. Fieldwork supervision was coordinated by EPPSO; three quality control teams made up of one male and one female member each monitored data quality. Additionally, close contact between EPPSO and the field teams was maintained through field visits by senior staff. Regular communication was also maintained through cell phones and small two-way radios.

1.9. DATA PROCESSING

The processing of the 2007 RMIDHS results began soon after the start of fieldwork. Completed questionnaires were returned periodically from the field to the EPPSO data processing center in Majuro, where they were entered and edited by four data processing personnel specially trained for this task. The data processing personnel were supervised by EPPSO staff. The concurrent processing of the data was an advantage since field check tables were generated early on to monitor various data quality parameters. As a result, specific and ongoing feedback was given to the field teams to improve performance. The data entry and editing of the questionnaires was completed by June 30, 2007. Data processing was done using CSPro.

1.10. RESPONSE RATES

Table 1.2 shows household and individual response rates for the 2007 RMIDHS. A total of 1,141 households were selected for the sample, of which 1,131 were found to be occupied during data collection. Of these existing households, 1,106 were successfully interviewed, giving a household response rate of 98 percent.

In the households, 1,742 women were identified as eligible for the individual interview. Interviews were completed with 1,625 women, yielding a response rate of 93 percent. Of the 1,218 eligible men identified in the selected sub-sample of households, 87 percent were successfully interviewed. Response rates were

higher in rural than urban areas, with the rural–urban difference in response rates most marked among eligible men.

Table 1.2. Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Marshall Islands 2007

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	578	563	1,141
Households occupied	576	555	1,131
Households interviewed	552	554	1,106
Household response rate	95.8	99.8	97.8
Interviews with women aged 15–49			
Number of eligible women	972	770	1,742
Number of eligible women interviewed	884	741	1,625
Eligible women response rate	90.9	96.2	93.3
Interviews with men aged 15+			
Number of eligible men	671	547	1,218
Number of eligible men interviewed	559	496	1,055
Eligible men response rate	83.3	90.7	86.6

[1] Households interviewed/households occupied
[2] Respondents interviewed/eligible respondents