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NADROGA

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PREFACE AND ACKNOWLEDGEMENTS

The Population and Housing Census is conducted once every 10 years and provides benchmark indicators for a number of Demographic and Health Indicators, in fact it remains the only data source to derive these indicators are at the sub-national level. Whilst there have been improvements in our administrative data sources, there still is a fair bit of work and commitment required before the Population Census can be replaced as the best source of data. With a significant time lag between Population Censuses, the Department works towards maximizing the use of data collected during the exercise. The Provincial Profile is an attempt to meet such an objective.

The Provincial Profile focuses on a particular province in this case Nadroga. The report for each province is in response to the increasing demand for information that allows for the formulation of development plans at lower levels of geography.

The conduct of such a huge national exercise also contributes to staff development. The report was prepared under the guidance of renowned Demographer, Dr. Martin Bakker. It brings out a lot of detailed information at the provincial level on the following demographic processes; Births, Deaths and Internal Migration in addition to the province’s Housing Particulars. I commend the effort and commitment of Dr. Bakker and his assistants Ms. Maria Musudroka Seeto (Statistician Statistical Analyst), Mr. Poasa Naimila (Assistant Statistician GIS) and Ms. Salanieta Tubuduadua (Assistant Statistician Vital). The data processing work of Mr. Serevi Baledrokadroka (Acting Deputy Government statistician) is greatly acknowledged with special praise for his ability to generate the very complex tables required for this report. The training component of the Census Analysis work was very useful given that some of the indirect estimation techniques used are no longer taught at training institutions. Using these indirect estimation techniques for the estimation of relevant indices at the Provincial level is much more demanding so the exposure of our staff ensures that such knowledge remains at the Fiji Bureau of Statistics. The current shortcomings to administrative data are unlikely to be resolved in the coming decade or so which means that the calculation of important Fertility and Mortality indicators at the sub national level will remain dependent on the indirect method using Census data.

The report provides users with a very detailed level of information and I urge all to fully utilize it. There is very useful information on population distribution and change, labour force, education, mortality, fertility, internal migration and urbanization and wherever possible historical data is presented for comparison purposes.

The Chapter on Labour Force would be of great interest to Human Resource Planners, with information on the employed and unemployed persons as well as the inactive population of working age. The size and structure of the country’s workforce have been determined with a measurement of the labour supply and the extent to which available human resources are being utilized in the different sectors of the economy.

The Report also provides information on education. Such information is important in the design and evaluation of overall government policies which are aimed at promoting and creating employment.
Finally, all this work will not be possible without Government’s continuing support to Population Census work and for this we are truly grateful.

The Population Census operation is a huge undertaking and contributors are too numerous to list here. I take this opportunity to thank you all for your valuable input. The key to evidence based policy formulation is good data and a Population Census will remain a key source.

Epeli Waqavonovono
Government Statistician
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INTRODUCTION
The Fiji Bureau of Statistics (FBOS) is the main provider of demographic, socio-economic and other statistical information in Fiji. So far, most FBOS publications mainly included information at the national and sometimes at the divisional level, usually specified for the main ethnic groups (Fijians, Indians and Others) as well as for the geographic sectors (rural and urban). These national statistical reports usually contain relatively little information at the provincial level. In order to facilitate the work of policy makers and planners as well other users at the sub-national level, the Bureau has decided that more efforts will be made to improve the dissemination of statistical information at this level, especially the provinces. With regard to 2007 Census information, this means that information at the provincial level will be published in separate reports for the 14 provinces and Rotuma District. These reports are referred to as “Provincial Profiles” (PF). Furthermore, the information at the provincial level will be published in a more user-friendly manner than in the Census Reports at the national level. The latter contain a massive amount of information in tabulated form. In the Provincial Profiles, the most important information relevant for provincial users has been converted into graphs. These graphs can of course not present the same amount of detail as the tabulations from which they have been derived. Policy makers, planners and other users at the provincial level who require more detail than can be found in the graphs in this profile are referred to the original census tabulations, which can be obtained from the FBOS.

The Introduction provides users in Nadroga Province with some basic information concerning data collection in Fiji and particularly with data collection through a census. An understanding of the basic principles of census taking will help provincial and other users with the interpretation of the information in this profile.

- Section 1 introduces a basic framework of information that ideally should be available to all policy makers and planners at the national as well as the sub-national level.
- Section 2 reviews the various data collection systems that should provide this information and assesses the situation with regard to data availability and quality in the province.
- Section 3 provides some background information on Fiji’s principal data collection system, the national census.
- Section 4 homes in on several aspects of the most recent census conducted in 2007.
- Section 5 provides a brief overview of the structure of this Provincial Profile.

### 1. Basic framework of data requirements

Figure A presents a conceptual framework of the population database required for effective policy making, planning, monitoring and evaluation. In order to be of practical use, all concepts of this framework need to be operationalized. In other words, they need to be translated into variables that can be measured. Moreover, effective intervention in the planning and monitoring process also requires that the nature and extent of the interrelationships between these variables is known.
Figure A: Conceptual framework of the interrelationships between demographic, socio-economic and other variables

Population characteristics:
- Size
- Structure
- Distribution

Population Processes:
- Fertility
- Mortality
- Migration

Variables of the second order (or ultimate variables):
- Economic
- Social
- Cultural
- Religious
- Political
- Technological etc.

Population characteristics:
- Size
- Structure
- Distribution

Size, Structure and Distribution

Fertility, Mortality and Migration (Variables of the first order)

Economic, Social, Cultural, Religious, Political, Technological etc.
The elements of the framework have been summarized into four categories viz.:

- Population characteristics
- Population processes
- Determinants (or causes) of population change
- Consequences of population change.

1.1 Population characteristics

The most basic requirement for all policymakers and planners is the availability of an up to date, complete and accurate picture or snapshot of the characteristics of the population, preferably at several points in time. These population characteristics include:

- Size and growth
- Structure
- Distribution

Basic information concerning the size, structure and distribution of a population is collected during national censuses.

Much of this profile is concerned with the characteristics of the population of the province at the time of the 2007 Census. However, many comparisons are made with previous censuses, especially the one conducted in 1996. The most basic characteristics of a population include demographic variables like age, sex and marital status as well as socio-economic variables like labour force participation, employment, unemployment, education, literacy and religion.

The characteristics of a population at a particular point in time are expressed in numbers, proportions/ percentages, ratios etc.

1.2 Population processes

Policymakers and planners also need to be fully aware of the pace and extent of change in the demographic and socio-economic characteristics of a population over time. Change over a precisely defined period of time (often a year) is measured by means of rates. For instance, the population growth (r) expresses growth as relative change in population size per year (in %).

The three demographic processes contributing to population change include:

- Fertility
- Mortality
- Migration
Fertility and mortality are vital processes. Usually, these vital processes change gradually. Moreover, the determinants of change often affect fertility and mortality levels and patterns after a certain time lag. For instance, since the coup cycle in Fiji started in 1987, the mortality transition in the country started to level off. There are now indications that mortality, at least for adults, may be increasing again.

Natural increase is the surplus (or deficit) of births over deaths in a population in a given year. Population change is not only the result of natural increase (or decrease) but also of migration. Migration, in the demographic/statistical sense, and also in this profile, implies a change in a person’s “usual place of residence”. Contrary to the vital processes (fertility and mortality), the level and pattern of migration often changes overnight due to socio-economic, political, religious and other push and pull factors. In other words, migration tends to disrupt the “normal” course of population change resulting from natural increase (or decrease). Population change due to migration is often unpredictable and more difficult to assess than fertility and mortality change. International migration in Fiji since the 1980s (particularly that of the Indian component of the population), provides a clear example of this.

In order to measure the impact of demographic processes, planners need an up to date, complete and accurate set of indicators measuring the incidence and prevalence of demographic events. These indicators are based on information regarding births, deaths and migratory movements that occurred during a well-defined period of time. Ideally, these statistics should be collected on a continuous basis. In most countries, vital statistics (births and deaths) are a byproduct of the country’s Civil Registration System (CRS).

The CRS has not been designed to collect migration statistics. In Fiji, the source of international migration statistics is the transit statistics (arrival and departure) collected by the Immigration Department at border checkpoints. On the other hand, information concerning internal movements of people (for instance between the provinces or geographic sectors), should ideally be collected by means of a Continuous Population Register (CPR). Fiji does not have such a system.

1.3 Determinants (causes) of population change

The work of policy makers and planners would be much easier if it was precisely known which determinants (or causes) of population change are operating in the country and to what extent they influence fertility, mortality and migration trends. These “ultimate” variables are of an economic, social, cultural, religious, political or technological nature. As shown in Figure A, they are interrelated. In most cases, change in one of the demographic processes cannot entirely be explained by only one determinant but must be explained by means of several, usually interrelated determinants.

In many countries, including Fiji, relatively little is known about the precise impact of all the potential determinants on the level and pattern of fertility, mortality and migration. It is not feasible to collect this very detailed information in a census. Furthermore, this information cannot easily be collected by a registration system. It requires the conduct of in-depth surveys based on a representative sample of the population. Unfortunately, nationwide surveys are very costly and time-consuming. Consequently, they are seldom conducted and hardly ever on a regular basis.
1.4 Consequences of population change

Probably most importantly, policy makers and planners require a picture of the likely size, structure and distribution of the population at some time in the future. This is a basic prerequisite for effective development planning. Without this information, it is impossible to project the future need for hospitals, health centers, schools, doctors, nurses, teachers, roads, water, electricity etc. Moreover, policy makers and planners should formulate the likely socio-economic and other consequences of future population change.

In order to get an idea of the expected population situation at some time in the future, the population is projected. Population projections must be based on precisely defined assumptions with regard to future fertility, mortality and migration trends. The most recent age-sex structure (presently that of the 2007 Census) is used as the base. The FBoS is responsible for the generation of official population projections at the national as well as provincial level.

It will be realized that, producing meaningful population projections for the province is far from easy. In particular, it is difficult to formulate “reasonable” assumptions concerning future international and internal migration. This is the reason why the FBoS produces projections based on a range of scenarios covering a relatively short period of time. From the point of view of effective planning, it is also essential that projections be updated at regular intervals and particularly after a major upheaval i.e. a coup. These upheavals tend to change fertility and mortality but especially migration trends very significantly. This Provincial Profile only includes a very basic projection of the population based on a “no-change” scenario. Users who require a more comprehensive component projection of the population of the province need to contact the FBoS.

Finally, assessing the possible consequences of population change i.e. economic, social, cultural, political, cultural, environmental and other consequences of expected demographic trends is even more problematic than producing meaningful population projections.

In conclusion, far more is known about the “core” variables in the framework in Figure A than about the “fringe” variables (or the ultimate variable) of this framework. This is true at the national level but even more at the provincial level.

2. Data collection systems

The first and most basic responsibility of the FBoS is to collect up to date and accurate information about the characteristics (size, structure and distribution) of Fiji’s population. This is achieved by carrying out censuses at regular intervals. The FBoS is not primarily responsible for the collection of information concerning demographic processes. This section provides a basic assessment of the various data sources at the national and sub-national level. It is concerned with the availability, level of completeness and accuracy of the data from various sources.
Statistical information can be obtained by means of two methods:

- **Collection of stock statistics at particular points in time.**

  Stock statistics refer to a fixed point in time. Stock statistics are mainly collected by means of interviews during a census or survey. For instance, the 2007 Census provides a snapshot of the main demographic and socio-economic characteristics of the population of Fiji and its geographic sub-divisions at midnight on Sunday, 16\textsuperscript{th} of September 2007 (Census Night). Stock statistics should be collected at regular intervals. For instance, censuses in Fiji must by law be conducted at a regular interval of ten years.

- **Recording of events (flow statistics) if and when they occur.**

  Flow statistics do not refer to a fixed point in time. They are collected continuously through a recording or registration system and are compiled for a particular period, usually one year. The best example is the collection of the vital events births and deaths by the Civil Registration System (CRS).

Policy makers and planners in most western countries rely on a large variety of data sources. In statistically underdeveloped countries, some of these sources are often non-existent or incomplete and/or otherwise deficient. The most common data collection systems include the following primary sources:

- Civil Registration System (CRS)
- Service (Administrative) Statistics
- Population Censuses
- Surveys

The subsequent sections briefly discuss the contribution of each of these systems to the national and sub-national database in Fiji.

### 2.1 Civil Registration System (CRS)

The Registration Ordinance of 1892 regulates the recording of all vital events. This ordinance has on several occasions been amended. Since 1975, the ordinance is referred to as the Births, Deaths and Marriages Registration Act. Citizens of Fiji are legally obliged to report all vital events to the Registrar General’s Office. In the case of non-compliance, it is the task of the Civil Registration Office to enforce the act.

The CRS is primarily a legal/administrative system. The collection of vital statistics is a byproduct, albeit a very important byproduct of the system. Countries with a complete and accurate vital registration system are in principle able to provide a picture of their fertility and mortality situation and trend at all times. Unfortunately, in many countries, including Fiji, the registration of vital events by the CRS tends to be incomplete and the system also has other shortcomings. In spite of the fact that Fiji’s CRS has now been in existence for more than 100
years, all reviews of the system that have been conducted so far indicate that this system has never achieved a statistically satisfactory level of completeness and accuracy. As a result, the CRS has contributed very little to our knowledge of the demographic situation and trend in Fiji and next to nothing at the sub-national level. Consequently, since World War II, the FBoS has also been charged with the collection of information concerning fertility, mortality. This applies to the collection of information on internal migration as well. All information in this profile concerning these three demographic processes has been derived from censuses and not from registration systems.

2.2 Service or administrative statistics

Several government departments collect their own administrative statistics, using their own departmental network. The two most important sources of service statistics are those of the Department of Health (DOH) and the Department of Education (DOE).

➢ The National Health Information System (NHIS) of the DOH

The DOH, using its own network of health facilities throughout the country, routinely collects information on the incidence and prevalence of aspects of health, morbidity, mortality, cause of death, fertility, reproductive health, family planning etc. Because of the nature of this information, it can, in most cases, only be collected and/or recorded by trained health personnel. There is no alternative data collection system for the specialized information collected by the NHIS.

Since the 1976 Census, fertility and mortality indices estimated from NHIS data have been compared with those estimated from the census. The comparison suggests that coverage of the NHIS has improved significantly over the years but the system is not yet complete. Unfortunately, since the data on births and deaths recorded by the NHIS cannot yet be published by usual place of residence (of those undergoing these events), it is, at this stage not yet possible to use this data for the estimation of accurate fertility and mortality indices at the provincial level. Similarly, estimates for the geographic sectors based on NHIS data cannot yet be made. At the DOH, work is in progress to ensure that, in future, fertility and mortality indices for all provinces can be estimated from NHIS data. In this Provincial Profile, all fertility and mortality indices have been derived from census data.

➢ Administrative statistics of the DOE

Like the DOH, the DOE also routinely collects administrative statistics through its own network of educational facilities. This includes data concerning access to school (enrollment), retention and achievement of the at-school population. For policy makers and planners, it is probably even more important to have information concerning the educational attainment of those who have left school. This information needs to be cross-classified with other variables, especially labour force, employment and unemployment. This information cannot be collected by the DOE. All censuses, since 1946 have collected some basic information on education.

The service statistics on education from the DOE and the education data from a census are complementary. All information regarding education and literacy of the at-school as
well as the not-at-school population in this Provincial Profile has been derived from censuses.

2.3 Population censuses

In all countries, the census is the main source of nationwide stock statistics. Stock statistics collected in a census refer to a fixed point in time: Census Night. The most important characteristic of this data is that it is not only available at the national level but also at the sub-national level, down to the smallest geographical unit. In Fiji, this smallest unit for which the FBoS publishes (very basic) information is the Enumeration Area (EA). The EA can be considered as a statistical “building block”. Furthermore, the EA makes the geographical system flexible. It is possible to combine EAs to form any kind of larger area that is required for planning or research purposes.

For operational, financial and other reasons, there are limitations to the amount and level of sophistication of stock statistics that can be collected during an immense nation-wide national census. In reality, more complicated and specialized stock statistics are usually collected by means of a survey on a sample basis. It will also be noted that censuses provide the denominators of virtually all demographic and socio-economic indicators that are being used by policymakers and planners at the national as well as sub-national level.

In those countries that are able to collect complete and accurate flow statistics through their registration systems on a continuous basis, the census is restricted to the collection of basic stock statistics. In the case of Fiji, where the primary sources of birth and death registration data (the CRS and the NHIS) remain incomplete and defective, all censuses since 1946 have therefore collected fertility and mortality information through a set of retrospective questions. A brief history of census taking in Fiji is included in Section 3 of this Introduction.

In conclusion, since World-War II, censuses in Fiji have collected basic demographic and socio-economic information regarding the population of Fiji. This will remain so in future. Presently, policy makers and planners of all provinces in Fiji are almost entirely dependent on census data. It is expected that in future, registration systems, especially the system of service statistics of the DOH and the DOE will make an increasingly larger contribution to the provincial database.

2.4 Surveys

A (sample) survey is a canvass of selected persons or households in a population. Information is not collected from all persons (and households) as in a census, but only for a selection of persons (households). This selection is called a sample. The most important characteristic of a proper scientific sample is that it is representative of the entire population. It is designed to provide information that is representative for the entire population. This implies that the sample must be drawn according to definite rules. In a Simple Random Sample (SRS), elements included in the sample are drawn from a universe (sampling frame) in such a way that every single element in this universe has an equal chance of being included. If this rule is followed to the letter, in other words, if the sample is chosen completely randomly, it will be representative of the entire population. The main objective of a (sample) survey is therefore
to infer demographic and socio-economic characteristics or trends for a larger segment or the entire population from the sample data.

All nation-wide surveys in Fiji that have been conducted by the FBoS employ multi-stage sampling. In practice this means area sampling at one or more stages (i.e. administrative subdivisions, geographic sectors etc.) combined with the use of clusters that have clearly delineated boundaries. During the most recent intercensal period 1996-2007, the FBoS has conducted two sample surveys viz. a Household Income and Expenditure Survey (HIES) in 2002–2003 and an Employment/Unemployment Survey in 2004-2005. For policy makers and planners at the provincial level, it is important to note that the results of these and other sample surveys are only valid at the national and divisional level, but not at the provincial level. In order to get survey results that are valid at the provincial level, the size of the sample would have to be increased very drastically. In this respect, it should also be mentioned that in countries with enormous disparities between geographic subdivisions or subgroups, national averages, provided by sample surveys are not a very useful guide for sub-national planners.

In spite of the fact that, over the years, Fiji has conducted many surveys, this data collection system must be considered as under-utilized, especially with regard to non-economic (demographic and social) surveys. So far, surveys have contributed only minimally to the provincial database.

In the meantime, during the last few decades, there has been a shift in emphasis from censuses to surveys. This shift is the result of the ever-increasing demand for more and more detailed data by policy makers, planners and other users. For operational, financial and other reasons, a census cannot meet all these additional demands. Moreover, there is often an immediate demand for this data. In most countries, including Fiji, the census is only conducted once every ten years.

Finally, it needs to be mentioned that several small-scale studies that have been conducted in the province were not based on a random sample of the population. It is not valid to extrapolate the findings of these studies to the province as a whole. Consequently, although the results of these studies are often of great importance for the formulation of hypotheses, they tend to be of limited value for day-to-day planning.

In conclusion, for small area planning in Fiji (i.e. planning at the province and the tikina level), the census will probably always remain the main data source.

### 3. Censuses in Fiji

Fiji has a longer history of census taking than most developing countries. Its first census (a mere headcount of the population) was carried out by the British Administration, as early as 1881. After this, until 1921, censuses (headcounts) were conducted at an interval of 10 years. Due to the worldwide recession in the 1930s, the next census had to be postponed to 1936. Until 1901, the population of what was then known as the Colony of Fiji steadily decreased. Moreover, the sex ratio of the population at that time appears to be very high. This is shown in Table A.
Censuses after 1901 indicated that Fiji’s population started to increase steadily at a rate between one and two percent per year. Although these censuses provided somewhat more information than the early ones of the 19th century, they are, as far as the indigenous people is concerned, still not much more than simple headcounts. It will also be realized that, until the 1946 Census, all information was processed, edited, compiled and tabulated by hand.

Formal census taking only started in 1946. This census, conducted soon after the end of World War II, provides more detailed information than the previous ones. The Interview Schedule of the 1946 Census includes questions regarding age, sex, ethnicity, place of birth, usual place of residence, marital status, religion, school attendance and highest level of education completed, language and a number of economic questions. For the provincial authorities, it is important to note that the 1946 Census was the first one that provided a picture of the most basic characteristics of the population of the province, most importantly the age-sex structure of the population. During the subsequent four censuses, until 1996, the census questionnaire was gradually extended and improved.

The 1946 Census is also the first one from which fertility and infant and child mortality can be estimated indirectly. For this reason, it has been possible to derive basic parameters of fertility and mortality of the population of Fiji for the entire post World War II period. Unfortunately, until the 1996 Census, this information has only been compiled and published at the national level. Since the 1996 Census, this information has also been produced at the provincial level.

The historical development of the total population of Fiji by sex from the time the first census (headcount) was taken in 1881 to the last one in 2007 is presented in Table A.

Table A: Total population of Fiji enumerated during the censuses from 1881 to 2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Census Date</th>
<th>Interc. Period</th>
<th>Population</th>
<th>Sex Ratio*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1881</td>
<td>4 April</td>
<td>-</td>
<td>127,486</td>
<td>70,401</td>
</tr>
<tr>
<td>1891</td>
<td>5 April</td>
<td>10.003</td>
<td>121,180</td>
<td>66,367</td>
</tr>
<tr>
<td>1901</td>
<td>31 March</td>
<td>9.986</td>
<td>120,124</td>
<td>66,874</td>
</tr>
<tr>
<td>1911</td>
<td>2 April</td>
<td>10.006</td>
<td>139,541</td>
<td>80,008</td>
</tr>
<tr>
<td>1921</td>
<td>24 April</td>
<td>10.060</td>
<td>157,266</td>
<td>88,464</td>
</tr>
<tr>
<td>1936</td>
<td>26 April</td>
<td>15.006</td>
<td>198,379</td>
<td>107,194</td>
</tr>
<tr>
<td>1946</td>
<td>2 October</td>
<td>10.436</td>
<td>259,638</td>
<td>136,731</td>
</tr>
<tr>
<td>1956</td>
<td>26 September</td>
<td>9.984</td>
<td>345,737</td>
<td>178,475</td>
</tr>
<tr>
<td>1966</td>
<td>12 September</td>
<td>9.962</td>
<td>476,727</td>
<td>242,747</td>
</tr>
<tr>
<td>1976</td>
<td>13 September</td>
<td>10.003</td>
<td>588,068</td>
<td>296,950</td>
</tr>
<tr>
<td>1986</td>
<td>31 August</td>
<td>9.964</td>
<td>715,375</td>
<td>362,568</td>
</tr>
<tr>
<td>1996</td>
<td>25 August</td>
<td>9.984</td>
<td>775,077</td>
<td>393,931</td>
</tr>
<tr>
<td>2007</td>
<td>16 September</td>
<td>11.060</td>
<td>837,271</td>
<td>427,160</td>
</tr>
</tbody>
</table>

* The sex ratio is the number of males divided by the number of females times 100
In conclusion, in the absence of complete and reliable demographic and socio-economic data from other sources, policy makers, planners and researchers in the province have, so far relied almost entirely on census data. Consequently, all users need to be thoroughly familiar with the potential and quality of this data as well as with its shortcomings and limitations.
4. The 2007 Census

This section provides some additional information about the most recent census conducted in 2007.

4.1 Legal base

As in the case of the previous censuses since 1946, the 2007 Census was conducted under the provisions of the Census Act of 20th July 1946 (Ordinance No. 6 of 1946). Furthermore, in July 2007, the Minister of Finance issued a Census Order. This order states that a census of all the inhabitants of Fiji should be conducted between 16th September and 16th October 2007. Subsequently, the Public Service Commission (PSC) appointed the Government Statistician (GS) as the Census Commissioner. After the Census Order came into effect, the Census Commissioner issued the Census Regulations for the 2007 Census. These regulations state that all persons in Fiji (including any vessels within the territorial waters of Fiji) on Census Night should be included in the 2007 Census.

4.2 Census objectives

The Census Regulations for the 2007 Census state the objectives of this census as well as the information that needs to be collected. More precisely, the Census Regulations stipulate that the census should provide information concerning the following topics:

- The number of people staying in the country on Census Night, in other words, the size of the population at that point in time. By comparing the enumerated population during the 2007 Census with the enumerated population during the previous census in 1996, an estimate can be made of the average annual rate at which the population has been growing during the intercensal period.

- The main demographic and socio-economic characteristics of the population on Census Night. This refers to the structure or composition of the population on Census Night. This includes not only the age-sex structure but also marital status, religion, education and training, labour force etc.

- The distribution of the population, or the place where people were enumerated at the time of the census. In this respect, it should be mentioned that the 2007 Census did not only record the place of enumeration of all respondents but also their usual place of residence. The 2007 Census was the first one to do so. It should also be reiterated that, in Fiji, the census is the only data source that provides basic information about the population of all geographic subdivisions of the province, down to the Enumeration Area (EA) level.

- The type of dwelling. It will be noted that, like in 1996, the 2007 Census is not only a Census of Population but also a Census of Housing.

- Last but not least, since information concerning demographic processes (fertility, mortality and migration) from the primary sources of this data (CRS and NHIS)
remains limited at the national level and non-existent at the sub-national level, the 2007 Census also included once again a series of retrospective questions from which basic fertility and mortality parameters can be estimated indirectly.

In addition, as a result of special requests made by the Census Users Advisory Committee, the 2007 Census also included some basic questions concerning koro dina, disability, remittances and mode of transport.

In conclusion, the 2007 census has collected information concerning the basic characteristics (size, growth, structure and distribution) of the population of Fiji and its geographic subdivisions. Furthermore, this census also collected data from which national and provincial fertility and mortality parameters can be estimated indirectly. Finally, this census collected some basic household and housing information.

4.3 Census principle of periodicity

The Census Act in Fiji specifies that the intercensal period should be ten years. Between 1936 and 1996, censuses were conducted at a decennial interval. The most recent census should have been conducted in 2006. Unfortunately, because of the national elections in 2006, this census was postponed to 2007. This postponement is not only in disagreement with the Census Act, but also with one of the most basic principles of census taking, that of periodicity. The postponement of the census has adverse implications, especially with regard to census analysis (in particular the analysis of fertility and mortality).

4.4 Exact timing of the census

From the point of view of census management and administration, a census should preferably be conducted during a “quiet” and stable period of the year, when the number of people away from their usual place of residence, is minimal. Moreover, in Fiji, the hurricane season from October to April is avoided as well as periods of political or other instability. The latter has become particularly important since the coups of 1987 and even more so the coup in 2000. In 2006, the period leading up to, during, and after the national elections was also considered as a period of potential instability. Because of the coup in December 2006, the census had to be further postponed. Census Night was finally firmly established as midnight of Sunday the 16th of September 2007.

Because of a large variety of practical considerations, the census date that is selected is seldom ideal. It will, however be realized that the choice of a less than ideal period of the year for the conduct of a census will have a negative impact on census coverage as well as on the quality of the data.

4.5 Coverage

Even if a census is conducted under ideal conditions, it is usually far from easy to achieve optimal coverage and data quality. This applies in particular to “difficult” areas of the country. From the enumeration point of view, “difficult”, areas include first of all the
numerous squatter areas. Moreover, it is easier to achieve good coverage in the rural than in the urban sector of Fiji, partly because of the much higher level of mobility of the urban population. Coverage problems in Fiji tend to be largely concentrated in the Lami-Suva-Nasinu-Nausori Corridor and to a less extent in the Nadi-Lautoka Corridor.
4.6 Census forms

During the 2007 Census in Fiji, three different forms were used for data collection:

**Interview Schedule (IS)**

This schedule was used for the vast majority of households residing in private dwellings (PD). Enumerators collected the information concerning household members in face-to-face interviews. It is important that users realize that on many occasions during a census, one senior member of the household (often the head of household or his/her spouse) answers the census questions for all household members. This is not the case during a much more manageable specialized survey based on a sample of the population. In a survey, everybody included in the sample is subjected to a personal interview by an experienced interviewer.

**Self-Filling Questionnaire (SQ).**

This questionnaire includes the same questions as the Interview Schedule. In 2007, this questionnaire has been used for self-enumeration by small number of households. Virtually all these households are residing in parts of a few urban areas that have been classified as high-class.

**Special questionnaire for institutionalized persons residing in Non-Private Dwellings (NPD)**

Some people do not live in a private household but in an institution (hospital, corrective institution, barracks, boarding school etc.) or on board of a ship. For census purposes, these persons are members of a collective household. A special questionnaire has been used for the enumeration of the members of these collective households. It contains a subset of the questions included on the Interview Schedule and the Self-Filling Questionnaire and is therefore referred to as the “Short Form”. The basic information that is required for the “institutionalized” persons is usually available from the official records of these institutions. The FBoS has appointed a Census Coordinator for each of these institutions. These Census Coordinators are persons employed by these institutions who have access to the personal records of the institutionalized persons in their institution. These Census Coordinators have completed the special questionnaire for their institution using the recorded information.

4.7 The census and national elections

The small area data provided by the 2007 Census, down to the enumeration area (EA) level, has been used by the Electoral Boundary Commission (EBC) to redraw the boundaries of the Constituencies.
DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE OF NADROGA PROVINCE
This Provincial Profile has been subdivided into ten Chapters.

- Chapters I to VI are concerned with the characteristics (size, growth, structure and distribution) of the population of the province.
- Chapters VII to IX focus on the demographic processes, mortality, fertility and migration (and urbanization).
- The final Section X presents a basic overview of household and housing information for the province.

Although this Provincial Profile is first of all based on 2007 Census data, most information for 2007 is compared with that of previous censuses, especially the census conducted in 1996.

Contrary to the very comprehensive National Analytical Reports of the 2007 and 1996 Censuses, which contain a very large number of complicated and detailed statistical tables, the Provincial Profiles attempt to disseminate census information in a more user-friendly manner. In order to make the provincial data more accessible to a larger variety of users in the province, it is mainly presented in the form of diagrams and charts accompanied by some explanatory text. It is realized that policy makers and planners often require more detail. These more specialized users of census information are referred to the basic tables in the national reports. However, since it is not feasible to publish the massive amount of national and especially sub-national information collected in a census in the form of published reports, much of the more detailed information is only available as soft copy. Provincial policy makers and planners and other users requiring more detailed information, are asked to contact the FBoS.

Techniques used to derive the indices included in this Provincial Profile, such as rates of growth and its components, indices derived from the age-sex structure, enrolment, literacy, labour force, employment and unemployment indices and especially fertility, mortality and migration indices that have been estimated indirectly from retrospective data collected in the censuses, are fully explained in the Analytical Reports of the 2007 as well as the 1996 Census. Users who want to familiarize themselves with these techniques are referred to these Analytical Reports.

In Fiji, not only age and sex but also ethnicity is a central variable in all demographic and socio-economic planning and research. Most census variables considered in this Provincial Profile are significantly different for the ethnic groups, especially the main ethnic groups the Fijians and Indians. In order to facilitate evidence based planning and targeted intervention, the FBoS specifies its information by ethnicity. This is also the case in the Provincial Profiles.

Map A shows the boundaries of Nadroga Province and its tikinas, as well as the boundaries of the urban areas of Sigatoka and its subdivisions. Map A shows (in brackets) the size of the population of the different geographic subdivisions of the province at the time of the 2007 Census.
Map A: Nadroga province and its tikinas and urban area in 2007
Chapter I (1): POPULATION SIZE, GROWTH, DISTRIBUTION AND DENSITY

1. General

Chapter I is concerned with the most basic characteristics of the population of the province: its size, growth, distribution and population density. This information has been derived from census data, going back to the 1946 Census. The following concepts, used in this chapter require some further clarification.

- **Data collection**
  - **Census**
    
    A canvass of a given area, resulting in an enumeration of the entire population, and the compilation of demographic, social and economic information pertaining to that population at a specific time. Censuses can be conducted on a “de-facto” or a “de-jure” basis.
    
    - **De-facto census**
      
      In a “de-facto” census, all persons are enumerated at the place where they happen to spend Census Night.
    
    - **De-jure census**
      
      In a “de-jure” census, people are enumerated according to their usual place of residence.

- **Note** In Fiji, all censuses so far, have been “de-facto” censuses. However, during the 2007 Census, attempts have been made to meet to some extent, the requirements of planners for de-jure data. This census included a question about the usual place of residence of all respondents included within the scope of the de-facto census. Consequently, although this census was a de-facto census it contained a de-jure element. This has amongst others implications for the interpretation of the 2007 Census migration and urbanization data.

- **Survey**

  This is a canvass of selected persons (or households) in a population. Information is not collected for all persons (or households) like in a census but only for a random selection of the persons (or households) in the country. This selection is called a representative sample.
Demographic characteristics

These refer to the size structure and distribution of a population. Demographic characteristics provide a picture of the population at a particular point in time.

Demographic processes

The demographic processes are fertility, mortality and migration. These processes change the characteristics of a population over time.

Balancing equation

A basic demographic formula used to estimate total population change between two points in time – or to estimate any unknown component of population change providing the other components are known. The balancing equation includes all components of population change: births, deaths, immigration and emigration.

Population growth

Change in the size of the population is the net result of changes in the three demographic processes, fertility, mortality and migration. Population growth in this Provincial Profile is expressed:

- In absolute terms or as the increase in numbers during the intercensal period.
- In relative terms or as the percentage (%) increase during the intercensal period
- As an annual rate of growth (r in %). This is an exponential growth rate, applied to a population continuously. Expressing population growth by means of an exponential growth rate is appropriate since populations increase (or decrease) continuously as a result of births, deaths, and migration. In this Provincial Profile, the population growth rate is an average intercensal rate of growth per year. For instance, the average annual rate of growth per year during the intercensal period 1996-2007 is calculated from the number of persons enumerated during these censuses using a “compound interest” formula.¹

Natural increase

This is the surplus (or deficit) of births over deaths in a population in a given year. Natural increase is expressed by means of the rate of natural increase (RNI). The RNI is defined as the crude birth rate (CBR) minus the crude death rate (CDR).

Zero population growth

A population in equilibrium, with a growth rate of zero, achieved when births plus immigration equal death plus emigration.

¹ For the computation of the average intercensal rate of growth, see Appendix C1 of the Analytical Report of the 2007 Census.
Doubling time

The number of years required for a population of an area to double in size, given the current rate of population growth. When the population growth rate is negative, the doubling time becomes a halving time or the number of years required for the population to reach half of its present size, given the current rate of population growth.

Population momentum

The tendency for population growth to continue beyond the time that replacement level fertility has been achieved because of the relatively high concentration of people in the childbearing years.

Closed population

A population with no migratory flow in or out, so that changes in the population size occur only through births and deaths.

Cohort

A group of people sharing a common temporal demographic experience who are observed through time, i.e. the birth cohort of 1980 consists of all persons born in that year

Level of completeness (coverage)

In all censuses, anywhere in the world, there is usually a certain amount of under-enumeration. This undoubtedly also applies to censuses in Fiji. Nevertheless, there is no evidence that under-enumeration during any of the censuses in Fiji was very serious by international or regional standards. The population growth rate based on a comparison of the size of the population during two consecutive censuses only presents a reliable picture of population growth if the level of completeness (coverage) during these censuses was approximately the same.

Population distribution (geographic levels and sectors)

This is the pattern of settlement and dispersal of the population.

Geographic level

Each province in Fiji is subdivided into a number of tikinas. Tikina level information in this profile refers to the tikina vou (new or combined tikina). The boundaries of these combined tikinas have been clearly identified on the map and on the ground. The FBoS has further subdivided the tikina vou into (statistical/census) enumeration areas (EA). The EA is not an administrative area but a purely statistical/census unit of convenience. This smallest spatial unit does not have any legal or administrative significance.

Note The tikina vou comprises a number of tikina makawa (old tikinas). The tikina makawa consists of a group of villages. In many cases, the tikina makawa has never been properly delineated and in other cases, especially in areas with extensive modern-type development, the precise boundaries of tikina makawas

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are not known anymore. This problem is particularly serious in the urbanized areas of the provinces in the Central Division. This makes the tikina makawa less suitable for census (as well as other data collection) purposes. Information for this type of tikina is mainly of importance for the Fijian component of the population. Since the 1956 Census, the tikina makawa has not been used anymore as a geographical subdivision for census/statistical purposes. With regard to the 2007 Census, the tikina makawa has once again become more important since this census has collected information on the koro dina of all Fijians.

Geographic sectors

Fiji is subdivided into a rural and urban sector. Prior to the 1966 Census, the census/statistical boundaries of all urban areas in Fiji were for the first time officially delineated. Subsequently, before the 1976 Census, these urban boundaries were reviewed. No urban boundary revision was carried out before the 1986 Census. During the twenty-year period between 1976 and 1996, very significant developments in the public and private sector have occurred and these have affected the rural-urban divide very significantly. Consequently, the 1996 Census was preceded by a major revision of all urban boundaries, based on a set of five demographic/statistical criteria.

Population density

Population density is defined as the number of persons per unit of land area (usually per km$^2$). The denominator of this index includes all land irrespective of its land use capability. This index is therefore referred to as “crude” population density”.

Physiological or nutritional density

The number of persons per unit of land area (usually per km$^2$) restricted to arable land. This is a more useful measure of population density.

Carrying capacity

The maximum sustainable size of a resident population in a given ecosystem

Population projections

A population projection presents the size and structure of the population at some time in the future based on precisely defined assumptions with regard to future fertility, mortality and migration trends. Since the future trend in fertility, mortality and migration cannot precisely be known, the FBoS produces projections based on a low, medium and high scenario. A special projection is one based on a “no-change” scenario. In this projection it is assumed that fertility, mortality and migration will remain unchanged during the period covered by the projection.
Demographic transition

Demographic transition refers to the historical shift of birth and death rates from high to low levels in a population. The decline of mortality usually precedes the decline in fertility. This results in rapid population growth during the transition period.
2. Profile

Fig. I-1: De-facto and de-jure population by ethnicity in 2007

Like all previous censuses in Fiji, the 2007 Census was a de-facto census.\(^2\) However, this census also recorded (for the first time) the usual place of residence at the time of this census of all persons enumerated during this census under the de-facto coverage rule. In Table I-1, the de-facto and de-jure population of Nadroga Province in 2007 by ethnicity are: compared to those of the other provinces in the Western Division as well as the national average figures.

In 2007, most provinces in Fiji, the other provinces in the Western Division, Ba and Ra have a larger de-jure than de-facto population. Nadroga is one of the provinces where the opposite is the case. Moreover, this applies to Fijians, Indians as well as “Others”.\(^3\) This is shown in Figure I-1.

In the case of Nadroga, quite a number of people who had another province than Nadroga as their province of usual residence were, during the 2007 Census, enumerated in Nadroga. This means that at the time of this census they were temporarily in Nadroga. It is important that users realize that persons, who were temporarily away from their own province (of usual residence) at the time of the 2007 Census and were enumerated in the province they temporarily visited, should not be considered as migrants. The definition of a migrant, used in all 2007 Census Provincial Profiles (as well as all national Census Reports) is a person who has changed his/her usual place of residence. That is not so in the case of these temporary visitors to Nadroga.

\(^2\) The concepts de-facto and de-jure population are explained in the introduction to this section.

\(^3\) As expected, the provinces with a larger de-facto than de-jure population are first of all the most urbanized provinces Naitasiri and Rewa (though not Ba). In the Western Division, only Nadroga falls in this category. Apart from Naitasiri, Rewa and Nadroga, the provinces Serua and Lomaiviti also had a larger de-facto and de-jure population.
Table I-1: The de-facto and de-jure population of Nadroga by ethnicity at the time of the 2007 Census compared to the national average figures and figures for other provinces in the Western Division

<table>
<thead>
<tr>
<th>Province</th>
<th>Type of Enum.</th>
<th>Total Pop.</th>
<th>Fijians</th>
<th>Indians</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>De-facto</td>
<td>58387</td>
<td>35075</td>
<td>22140</td>
<td>1172</td>
</tr>
<tr>
<td></td>
<td>De-jure</td>
<td>56328</td>
<td>33692</td>
<td>21583</td>
<td>1053</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>2059</td>
<td>1383</td>
<td>557</td>
<td>119</td>
</tr>
<tr>
<td>Ba</td>
<td>De-facto</td>
<td>231760</td>
<td>96852</td>
<td>126142</td>
<td>8766</td>
</tr>
<tr>
<td></td>
<td>De-jure</td>
<td>232217</td>
<td>96212</td>
<td>127508</td>
<td>8497</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>-457</td>
<td>640</td>
<td>-1366</td>
<td>269</td>
</tr>
<tr>
<td>Ra</td>
<td>De-facto</td>
<td>29464</td>
<td>20259</td>
<td>8888</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>De-jure</td>
<td>30219</td>
<td>20820</td>
<td>9104</td>
<td>295</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>-755</td>
<td>-561</td>
<td>-216</td>
<td>22</td>
</tr>
<tr>
<td>Fiji</td>
<td>De-facto</td>
<td>837,271</td>
<td>475,739</td>
<td>313,801</td>
<td>47,731</td>
</tr>
<tr>
<td></td>
<td>De-jure</td>
<td>837,271</td>
<td>475,739</td>
<td>313,801</td>
<td>47,731</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. I-2: Population change by ethnicity between 1946 and 2007

Censuses in Fiji until 1946 were not much more than “headcounts” of the population, although the 1921 and 1936 Censuses attempted to go a bit beyond collecting numbers. However, the scope of the 1946 census went far beyond that of all previous censuses. It also provided fairly detailed information at the provincial level.

The introduction to this chapter briefly relates to the demographic transition model. Chapters II and especially VII (Mortality) and VIII (Fertility) refer to the mortality and fertility transition in Fiji and in Nadroga in more detail. At this stage, it is important to note that the
very large difference in the fertility transition of Fijians and Indians in Fiji and the even more significant difference in the level and pattern of migration of the two main ethnic components of the population have resulted in a very rapidly changing ethnic composition in Fiji. This also applies to Nadroga Province. During the latter part of the 19th century and the beginning of the 20th century, Nadroga Province received a significant number of Indian immigrants though not by far as many as some other provinces. At the time of the 1946 Census, the proportion of Fijians and Indians in Nadroga was about the same. However, 20 years later, in 1966, the proportion of Indians in the province was significantly larger than the proportion of Fijians. After that, the gap closed again very rapidly due to the very fast fertility transition of the Indian population and the relatively slow fertility transition of Fijians.

Soon after the 1986 Census, the Fijians became again the largest component of the population in Nadroga. However, since 1987, this was not only due to the continuing rapid decline in fertility of the Indians but also, and even more importantly, due to the very high rate of emigration of Indians after the two military coups in 1987. Since 1990, the gap between the two main components of the population has been widening in a spectacular manner. By 2007, the proportion of Indians in the province has been reduced to 37.9 percent whereas the proportion of Fijians had drastically increased to 60.1 percent whereas the remaining 2.0 percent were “Others”. Nadroga has now become a predominantly Fijian Province and it is likely that the process of “Fijianization” will continue in the near future. The change in the ethnic composition of the population of Nadroga is shown in Figure I-2.
The most basic statistic of any population is its sex ratio. This ratio is defined as the number of males per 100 females. In 1946, the sex ratio of Fijians in Nadroga was a very low 95.9 males per 100 females. The explanation for this is not entirely clear. It is unlikely that this low sex ratio is due to sex-differential coverage during the 1946 Census. Moreover, there is no evidence that male mortality at the time was much higher than female mortality. It is possible that, at the time of the 1946 Census, a significant number of male Fijians from Nadroga were temporarily working in another province but there is no evidence for this either. The sex ratio for Fijians in 1956 was already much closer to what might be expected (101.7) and after that the ratio has increased further until it reached 105.0 in 1976. After that, it has stayed at approximately this level.

As expected, the sex ratio of Indians in 1946 is still very high (116.9). This is the result of male dominated immigration of Indians during the period of indentured labour in the late 19th and early 20th century. However, already in 1956, the sex ratio of Indians had decreased to 106.5. After that, the ratio has decreased further but in recent decades this trend has been reversed. The sex ratio of Indians in 2007 was an unexpectedly high 109.7. The most likely explanation for this is once again sex-differential migration, i.e. sex differential emigration and/or sex-differential net-interprovincial migration.
Finally, as expected, the sex-ratio of the relatively small group of “Others” has always been quite high due to sex-differential migration patterns, especially male dominated immigration.

Fig. I-4: The rural and urban population at the time of the censuses between 1966 and 2007

Reports of early censuses in 1946 and 1956 provide some basic information concerning the population of all the towns in Fiji. At the time, only a few urbanized places in Fiji had the status of a legally recognized town. Sigatoka was one of these places. Based on the very limited information available from the early censuses, it was not possible to conduct a comprehensive study of Fiji’s rural and urban population.

From 1966 onwards, the situation has improved drastically. Prior to the census conducted in that year, Fiji’s statistical (census) urban areas (UA) were, for the first time, properly delineated. This included the Sigatoka UA. After the first delineation in 1966, all urban boundaries were reviewed in 1976, 1996 and 2007. During the 1976 review of the urban boundary of Sigatoka, it appeared that, during the 1966-1976 intercensal period, all developments in the Sigatoka area had taken place within the UA boundary established in 1966. Twenty years later, during the 1996 review, this was not the case anymore and the UA boundary was extended very significantly. The following Table I-2 presents an overview of the components of the UA Sigatoka viz. Sigatoka Town and the peri-urban area of Sigatoka, since 1966.

Table I-2: Change in the urban population of Nadroga since 1966

<table>
<thead>
<tr>
<th>Component of the Urban Sector of Nadroga Province</th>
<th>Number of persons in Census Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Urban Sector (Sigatoka UA)</td>
<td>2,339</td>
</tr>
<tr>
<td>1. Sigatoka Town</td>
<td>1,059</td>
</tr>
<tr>
<td>2. Sigatoka peri-urban area</td>
<td>1,280</td>
</tr>
</tbody>
</table>

These figures clearly show that the 1996 extension of the UA boundary resulted in a very large increase of the population in the peri-urban area of Sigatoka. Ideally, a significant part
of this increase should already have been included in the 1986 data. However, since the boundaries of the urban areas of Fiji were not reviewed and adapted prior to the 1986 Census, a significant area to the east as well as the west of the Sigatoka River that probably should have been reclassified as peri-urban remained rural in that year. The example of Sigatoka emphasizes the importance of reviewing all urban boundaries at regular intervals but minimally before every census.

In 2007, the population of Sigatoka Town is only about 17 percent of the total population of the UA Sigatoka. This is an indication that the official town boundary is probably far too conservative. Presently this has been recognized and a plan for the extension of Sigatoka Town is in existence but has not yet been approved.

**Fig. I-5: Growth rates (%) for the population by ethnicity between 1946 and 2007**

The reasons for the very large differences in the growth rates of Fijians and Indians in Nadroga since 1946 have already been discussed. The difference between the fertility and net-migration rates of Fijians and Indians is very large and these differences have increased since the coups of the 1980s. Since that time the growth rate of the Indian component of the population has become negative because of the high rate of out-migration form the province. In comparison, the growth rate of the Fijian component has again increased during the most recent intercensal period 1996-2007. Since the inception of the fertility transition, fertility of Fijians has only decreased at a moderate pace and the relatively small decrease in the province has obviously been compensated by some in-migration.

Table I-3 compares population change in the province, by ethnicity during the intercensal period 1996-2007 with that in the other provinces of the Western Division (Ba and Ra) as well as with the average change for the entire Western Division and the nation as a whole.
It appears that, during the most recent intercensal period, Ba and Ra Province have also lost a large proportion of their Indian population. In spite of these losses, the average intercensal growth rate for the entire Western Division during the intercensal period is still approximately the same as the national average growth rate of 0.7 percent.

Table I-3: Population change for Nadroga Province by ethnicity during the intercensal period 1996-2007, compared to that in the other provinces of the Western Division as well as the national average

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1996 Census (Nr)</td>
<td>2007 Census (Nr)</td>
</tr>
<tr>
<td>Nadroga</td>
<td>Total</td>
<td>54,083</td>
<td>58,387</td>
</tr>
<tr>
<td></td>
<td>Fijian</td>
<td>28,180</td>
<td>35,075</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>25,244</td>
<td>22,140</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>659</td>
<td>1,172</td>
</tr>
<tr>
<td>Ba</td>
<td>Total</td>
<td>212,197</td>
<td>231,760</td>
</tr>
<tr>
<td></td>
<td>Fijian</td>
<td>69,902</td>
<td>96,852</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>135,492</td>
<td>126,142</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>6,803</td>
<td>8,766</td>
</tr>
<tr>
<td>Ra</td>
<td>Total</td>
<td>30,904</td>
<td>29,464</td>
</tr>
<tr>
<td></td>
<td>Fijian</td>
<td>18,373</td>
<td>20,259</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>12,239</td>
<td>8,888</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>292</td>
<td>317</td>
</tr>
<tr>
<td>Total Western Division</td>
<td>Total</td>
<td>297,184</td>
<td>319,611</td>
</tr>
<tr>
<td></td>
<td>Fijian</td>
<td>116,455</td>
<td>152,186</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>172,975</td>
<td>157,170</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>7,754</td>
<td>10,255</td>
</tr>
<tr>
<td>Total Fiji</td>
<td>Total</td>
<td>775,077</td>
<td>837,271</td>
</tr>
<tr>
<td></td>
<td>Fijian</td>
<td>393,575</td>
<td>475,739</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>338,818</td>
<td>313,801</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>42,684</td>
<td>47,731</td>
</tr>
</tbody>
</table>
The category “Others” in Nadroga Province has, since 1946, always been rather small. However, this group may be small in numbers but has always been and still remains an important group, especially from the economic point of view.
Nadroga Province is subdivided into eight tikinas (vou) viz. Baravi, Cuvu, Malolo, Navosa, Vatulele, Malomalo, Nasigatoka and Ruwailevu. Figure I-7 presents the change in the size of the population of the eight tikinas since 1956. Compared to many other provinces, it appears that the distribution of the population of Nadroga over its eight tikinas has changed less than expected. Considering that a large proportion of the population of Nasigatoka Tikina is urban, an increase in the share of this tikina is expected. The population of Malolo and even more Vatulele remains very small.
Map I-1: Population density in Nadroga Province in 2007
Population density is defined as the number of persons per km\(^2\). The denominator of this index includes all land irrespective of its land use capability. In the case of Nadroga Province, the total land area is 2,385 km\(^2\). The comparable figures for other provinces in the Western Division (Ba and Ra) as well the average figures for the Western Division and the nation as a whole are presented in Table I-4.

Table I-4: Population, land area and population density in Nadroga Province in 2007, compared to that of other provinces in the Western Division and the divisional and national average figures.

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Land Area [km(^2)]</th>
<th>Population 2007</th>
<th>Population Density</th>
<th>% of Total Land Area</th>
<th>% of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fiji</td>
<td>18,272</td>
<td>837,271</td>
<td>46</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Western Div</td>
<td>6,360</td>
<td>319,611</td>
<td>50</td>
<td>34.8</td>
<td>38.2</td>
</tr>
<tr>
<td>Ba</td>
<td>2,634</td>
<td>231,760</td>
<td>88</td>
<td>14.4</td>
<td>27.7</td>
</tr>
<tr>
<td>Nadroga</td>
<td>2,385</td>
<td>58,387</td>
<td>24</td>
<td>13.1</td>
<td>7.0</td>
</tr>
<tr>
<td>Ra</td>
<td>1,341</td>
<td>29,464</td>
<td>22</td>
<td>7.3</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Nadroga has, after Cakaudrove and Ba (2,634 km\(^2\)), the third largest land area of all provinces in Fiji. Since the enumerated population of Nadroga in 2007 was 58,387 persons, the population density in that year is only 24 persons per km\(^2\). This is a very marginal increase from the population density at the time of the 1986 and 1996 Censuses (23 persons per km\(^2\)). This population density index is a crude index. A picture of crude population density in Nadroga Province at the EA level is shown on Map 1-1.

Table I-5 provides some further information about change in crude population density in the province since 1986. It appears that population density in the province has remained almost the same since 1986. Moreover, population density in the province is only about half of that for the entire Western Division and the nation as a whole.

Table I-5: Change in population density in Nadroga Province since 1986, compared to that of other provinces in the Western Division and the divisional and national average figures

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Enumerated Population</th>
<th>Land Area [km(^2)]</th>
<th>Population Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fiji</td>
<td>715,375</td>
<td>775,077</td>
<td>837,271</td>
</tr>
<tr>
<td>Western Div</td>
<td>283,349</td>
<td>297,184</td>
<td>319,611</td>
</tr>
<tr>
<td>Ba</td>
<td>197,633</td>
<td>212,197</td>
<td>231,760</td>
</tr>
<tr>
<td>Nadroga</td>
<td>54,431</td>
<td>54,083</td>
<td>58,387</td>
</tr>
<tr>
<td>Ra</td>
<td>31,285</td>
<td>30,904</td>
<td>29,464</td>
</tr>
<tr>
<td></td>
<td>18,272</td>
<td>6,360</td>
<td>2,634</td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>81</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>23</td>
<td>22</td>
</tr>
</tbody>
</table>
All the above information refers to crude density. It is more useful to relate the population of a particular area to the amount of arable land of that area. This results into a measure of physiological or nutritional density. In the case of Nadroga Province, the most recent estimate of the amount of arable land in the province, made by the Agricultural Department is 350.7 km$^2$, which is only 14.8 percent of the total land area of the province.$^4$

If the 2007 Census population is related to arable land in Nadroga, the physiological density of the province becomes 166 persons per km$^2$. However, this more refined index should be further refined since probably a very small proportion of persons in the urban sector of the province (the Sigatoka UA) depend for their livelihood on land. It may therefore make more sense to relate the rural population of Nadroga (48,765 persons in 2007) to the arable land of the province. This results in a somewhat more reasonable estimate of physiological density of 139 persons per km$^2$ in 2007.

**Fig. I-8:** Comparison of the rate of growth and rate of natural increase in 2007

The rate of natural increase (RNI) is the difference between the birth and death rate. It does not include the impact of net-migration (the difference between in- and out-migration). On the other hand, the rate of growth ($r$) of a population takes into account natural increase as well as net-migration. In recent decades, the RNI of the population of Nadroga Province has decreased significantly, due to a decrease in fertility, especially for the Indian component of the population.

The RNI of Nadroga Province, estimated from 2007 Census data, is 1.3 percent per annum. Furthermore, the 1996-2007 average intercensal rate of growth was established at 0.7

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$^4$ It will be noted that only in Namosi Province, the proportion of arable land is lower than that in Nadroga, viz. 9.4 percent. The highest proportion is 45.5 percent for Rewa Province.
percent. \(^5\) The difference between the two rates, -0.6 percent, is the net-migration rate (NMR). This NMR includes the impact of internal as well as international migration.

**Fig. I-9: Projection of the population by geographic sector for the years 2020, 2015 and 2020**

In the near future, the FBoS intends to produce detailed component projections at the provincial level. \(^6\) At this stage, only some basic projections of the population, based on a “no-change” scenario have been produced. The question is how reasonable it is to assume that the population of Nadroga Province will continue to grow at the present rate. In answering this question, the following should be taken into account. Firstly, there is as yet no sign that the significant out-migration of Indians from the province will cease in the foreseeable future. Secondly, there is no reason to believe that the present fertility and mortality trends in the province will change significantly in the near future. The question therefore seems to boil down to what kind of developments (i.e. tourism, industrial, forestry etc.) will take place in Nadroga in the near future and in how much in-migration this will result. In view of the current economic situation, the answer to this question is uncertain.

The results of the projection based on a “No-Change” scenario for the total population of the province by geographic sector for the years 2010, 2015 and 2020 is shown in the following Table I-6. This projection is graphically presented in Figure I-9.

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\(^5\) In 2007, the only provinces where the rate of growth is higher than the RNI are Naitasiri and Tailevu. However, in the case of Tailevu, this is only marginally so.

\(^6\) These component projections will amongst others be based on recent trends in fertility, mortality and migration, estimated from 2007 census data and recent NHIS data.
Table I-6: Projection of the population of Nadroga by geographic sector until 2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Pop.</th>
<th>Rural Pop.</th>
<th>Urban Pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nr</td>
<td>% urban</td>
<td>Nr</td>
</tr>
<tr>
<td>2007 (Base Population)</td>
<td>58,387</td>
<td>16.5</td>
<td>9,622</td>
</tr>
<tr>
<td>2010 (Projected Population)</td>
<td>59,500</td>
<td>16.8</td>
<td>10,000</td>
</tr>
<tr>
<td>2015 (Projected Population)</td>
<td>61,500</td>
<td>17.9</td>
<td>11,000</td>
</tr>
<tr>
<td>2020 (Projected Population)</td>
<td>64,000</td>
<td>18.8</td>
<td>12,000</td>
</tr>
</tbody>
</table>

This projection for the population of Nadroga needs to be revised as soon as more information concerning future developments in the province becomes available.
Chapter II (2): POPULATION COMPOSITION

1. General

Age and sex are the key or central variables in demographic and socio-economic analysis. Consequently, during all data collection activities of the FBoS, much effort is made to ensure that age and sex of all respondents is recorded correctly. Information on the age-sex composition of the population is an essential prerequisite for the description and analysis of most other types of demographic data. Some of the concepts, used in this chapter include:

- **Accuracy of age reporting**

  There are many different indices that measure the accuracy of age reporting. The index used in this profile is Myers’ Index. Myers’ Index measures the digit preference or dislike for each terminal digit 0 to 9. It is calculated from data by age in single years and sex. The range of this index is from 0 (no age mis-reporting) to 180 (maximum age mis-reporting). Change in Myers’ Index for a particular population over time is usually inversely correlated with the level of education and literacy of that population. In other words, when the population becomes more educated and literate, Myers’ Index tends to drop.

  Myers’ Index has been calculated from census data in Fiji since 1946. Unfortunately, this has only been done at the national level. At the provincial level, the required basic data is presently only available since 1986.

- **Age-sex structure**

  This is the structure or composition of a population as determined by the number or proportion of males and females in each age category. The age-sex structure of a population is the cumulative result of past trends in the three demographic processes fertility, mortality and migration. Information on the age-sex composition of a population is an essential prerequisite for the description and analysis of most types of demographic and socio-economic data.

- **Young population**

  A population with a relatively high proportion of children, adolescents, and young adults, a low median age, and thus a high potential for growth

- **Old population**

  A population with a relatively high proportion of middle-aged and aged persons, a high median age, and thus a lower potential for growth

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*For the computation of Myers ‘Index, see the Appendix C2 of the Analytical Report of the 2007 Census.*
Age-sex pyramid

The age-sex pyramid is a special type of bar-chart showing the age-sex structure of a population (in numbers or proportions). Age-sex pyramids can be subdivided into three categories:

Expansive: A pyramid with a broad base, indicating a high proportion of children and a rapid rate of population growth.

Constrictive: A pyramid with a base that is narrower than the middle of the pyramid, usually the result of rapid decline in fertility (aging at the base).

Stationary: A pyramid with a narrow base, tapering off at the older ages, indicating a moderate proportion of children and a slow or zero rate of growth.

Indices derived from the age-sex structure

Sex ratio

The sex ratio is the number of males per 100 females in a population.

Dependency Ratio (DPR)

The DPR is the ratio of persons in the ages defined as dependent (under 15 and 65 and over) to those in the ages defined as economically productive (age 15-64). The total or overall DPR consists of two parts, the youth DPR and the old age DPR.

The DPR is a rough index of dependency. Not all persons in the “dependent” age groups are dependent and not all persons in the “working” age group are workers. More sophisticated indicators of dependency are derived from the Employment and Unemployment Surveys as well as Household Income and Expenditure Surveys, which the FBoS carries out at regular intervals. However, it will be noted that the simple and straightforward DPR can be derived from any data collection that includes the basic variables age and sex. Most importantly, this can be done at no additional cost.

Child-Woman Ratio (CWR)

The CWR is the number of children (of both sexes) under the age of five per 1,000 women in the reproductive age range (age 15-49). In a population that has not experienced significant age and sex differential under-enumeration as well as migration, the CWR can be used as a proxy index of the level of fertility but only if more specific fertility information is not available. In populations where these ideal conditions are not met, (i.e. the Indian population of Fiji since the coups in 1987), the CWR should only be used as an index of fertility with the utmost caution.
Median Age (Me)

Me divides a population into two numerically equal groups. Half of the population is younger than this age and half is older.\(^8\)

Note For instance, if it were possible to line up the entire population in order of increasing age, the age of the person standing exactly halfway in the “line-up” would be the median age of the population. Although the above exercise is of course not feasible in practice, the computer can “line-up” the population by increasing age and its median age can thus be determined. In this Provincial Profile, the median ages of the population in 1996 and 2007 have been determined by the computer. The median ages for years before 1996 have been derived from published census data by means of interpolation and may therefore be slightly less accurate.

\(^8\) For the computation of the median age from grouped data, see Appendix C3 of the Analytical Report of the 2007 Census.
2. Profile

Fig. II-1: Change in the accuracy of age reporting, expressed by means of Myer’s Index by sex and ethnicity between 1986 and 2007, derived from census data

Before embarking on a detailed analysis of the demographic and socio-economic information collected in recent censuses, it is important that users realize the importance of accurate age reporting and recording, especially for policy makers and planners. The reason is obvious. Virtually all information concerning a population is age (as well as sex) specific. Age (and sex) can be considered are the central variables in any demographic and socio-economic analysis. Recording of sex is relatively straightforward, but the same cannot be said about recording of age. Consequently, the accuracy of age reporting defines to a large extent the overall quality of all demographic, socio-economic and other data collected in a census (or survey).

In the Introduction to this chapter, reference is made to Myers’ Index. Since 1946, this index has been used for the assessment of the accuracy of age reporting during censuses. Unfortunately Myers’ Index for Nadroga (and the other provinces) cannot be calculated anymore from the censuses conducted between 1946 and 1976. The reason is that the reports of these censuses do not include an age-sex structure of the provincial populations in single years.9

Figure II-1 presents a picture of accuracy of age-reporting by sex and ethnicity (Fijians and Indians) in Nadroga Province during the 1986, 1996 and 2007 Censuses, using Myers’ Index. The indices suggest that, in 1986, knowledge of age and the accuracy of age reporting in the province had reached a very reasonable level of precision. However, the indices for 1996 and 2007 do not present a very consistent picture. Overall; the situation in 2007 seems to be about the same as in 1986, although the Myers’ index for Fijian males seems to be on the increase.

9 It is also not possible anymore to retrieve the data in single years of age from these early censuses since they were either not computer processed (1946) or processed overseas (1956-1976). Starting from 1986, census data was processed in Fiji. Hence, for these censuses, it is possible to reproduce the provincial age-sex structures in single years and to calculate Myers’ Index.
There is, however no reason to believe that the slight upward trend in the index is an indication that accurate knowledge of age in 2007 was less than in 1886. It is for instance possible that the somewhat higher index is the result of differences in data collection and processing in 1986 and 2007.

It is also likely that the trend in the accuracy of age-reporting in Nadroga before 1986 is very similar to that at the national level. This is for instance suggested by some other but less robust indices of accuracy of age reporting that do not require an age-sex structure in single years and that are therefore available at the provincial level.\textsuperscript{10} The national average trend between 1946 and 1986 shows that in the 1940s and 1950s, inaccurate age reporting, particularly by the Indian population, was a serious problem for planners in Fiji. However, it is also clear that, since the 1950s, accuracy of age reporting in the entire country improved drastically. Although this improvement is undoubtedly to a large extent due to enhancement in education and literacy, this is probably not the only reason. After World War II, planners increasingly realized that the availability of an accurate age-sex structure of the population is one of the most basic requirements for effective planning. Consequently, the 1956 and subsequent censuses placed a very large emphasis on accurate age reporting and recording.

Finally, during the early censuses, throughout Fiji, the indices for Fijian and Indian females tended to be significantly higher than those for males. The most likely reason for the discrepancy is that, at that time, a higher proportion of males compared to females had received at least some primary education. In most provinces in 2007, the situation has reversed i.e. the female indices are now lower than the ones for males. This is also the case in Nadroga Province.

\textsuperscript{10} i.e. the UN Secretariat Index
Figure II-2a compares the proportional (%) age-sex structure of males and females in Nadroga in 1966 and 2007. In 1966, the age-sex structure was very broad at the base, as the result of the high level of fertility at the time. There is no evidence, at the time of the 1966 Census; the fertility transition of Fijians has started in earnest. More than four decades later, in 2007, the proportions in the lowest age groups have decreased due to decrease in fertility during the 1996-2007 period.
Figure II-2b depicts recent change in the age-sex structure of the Fijian population of Nadroga between 1996 and 2007. A comparison of the age-sex structure in those two years indicates that, since 1996, the fertility transition of Fijians in the province has continued. Generally, the fertility transition of Fijians has been slow compared to that of the Indians.
Fig. II-3a: Change in the proportional (%) age-sex structure of the Indian component of the population between 1966 and 2007

The 1966 age-sex structure for the Indians in Nadroga, like that in all provinces with a significant Indian population, is very broad at the base. This is the result of the very high level of Indian fertility during the decades immediately after World War II. Figure II-3a shows that, since 1966, fertility of the Indian population of the province has declined at a very fast rate. A comparison of the age-sex pyramids in 1996 and in 2007 clearly indicates an extraordinary “narrowing at the base”. This is the result of the very fast fertility transition of Indians during this period. The trend in Indian fertility rates for the province confirms this. Generally, the fertility transition of Indians in Fiji has probably been faster than in most other countries, especially those in the South Pacific Region.
Fig. II-3b: Change in the proportional (%) age-sex structure of the Indian component of the population between 1996 and 2007

The comparison of the proportional age-sex structure of Indians in Nadroga in 1996 and 2007, presented in Figure IV-3b suggests that, after 1996, the fertility transition of this population has continued. In 2007, Indians in the province, as elsewhere in Fiji, have achieved a Net Reproduction Rate (NRR) of less than 1.0. This means that this population has achieved replacement level fertility.
Fig. II-4: Change in the dependency ratio (DPR in %) by sex and ethnicity between 1946 and 2007

Fig. II-4a: DPR (%) by sex
Fig. II-4b: DPR (%) for Fijians
Fig. II-4c: DPR (%) for Indians

Nadroga/Navosa Indians
Nadroga/Navosa Indian males
Nadroga/Navosa Indian females

Ratio (%)
The concepts (overall) Dependency Ratio (DPR) and its two components the Youth Dependency Ratio (YDR) and the (old) Age Dependency Ratio (ADR) have been explained in the introduction to this section. Users will realize that these ratios represent only a rough indicator of the level of dependency. Not all persons in the “dependent” age groups are dependent and not all persons in the “working” age group are workers.\textsuperscript{11}

Figure II-4 presents a picture of the changing level of dependency by sex and ethnicity in Nadroga since 1946. Because of the high level of fertility in Fiji in the 1950s and 1960s, youth dependency at the time reached a very high level. After the fertility transition started, youth dependency began to decrease.

The situation with regard to Indians is quite different from that of Fijians. Due to the extremely high level of fertility of Indians during the period after World-War II, youth dependency of this component reached a very high level. The very sharp drop in youth dependency after 1966 is the result of the dramatic decrease in fertility of Indians. In comparison, the transition for Fijians progressed at a very sedate pace and changes in the level of youth dependency for this component of the population are therefore not by far as dramatic as those for Indians.

It appears that, during the most recent intercensal period 1996-2007, overall dependency in Nadroga has continued to decrease significantly. This applies to Fijians as well as Indians and to the population in the rural as well as in the urban sector. However, this decrease is entirely due to a decrease in youth dependency, especially for the Indian component of the population. This, in its turn, is a consequence of the continuing decrease in fertility.

On the other hand, old age dependency in the province is on the increase. Considering the age-sex structure of the Indian population of Nadroga in 2007, it is expected that old age dependency of this component of the population will increase very drastically in the near future.

The following table compares the level of dependency in 2007 for the eight tikinas of the province. One would expect to find the lowest YDR for Nasigatoka Tikina since the UA Sigatoka is located in this tikina. For reason that are not entirely clear, this is not the case.

\textbf{Table II-1: Level of dependency in 2007 for the eight tikinas of Nadroga}

<table>
<thead>
<tr>
<th>Tikina</th>
<th>YDR</th>
<th>ADR</th>
<th>ODR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nadroga Province</td>
<td>43.1</td>
<td>7.5</td>
<td>50.6</td>
</tr>
<tr>
<td>Baravi Tikina</td>
<td>46.0</td>
<td>7.4</td>
<td>53.5</td>
</tr>
<tr>
<td>Cuvu Tikina</td>
<td>40.0</td>
<td>7.4</td>
<td>47.4</td>
</tr>
<tr>
<td>Malolo Tikina</td>
<td>21.4</td>
<td>3.2</td>
<td>24.6</td>
</tr>
<tr>
<td>Malomalo Tikina</td>
<td>37.7</td>
<td>7.7</td>
<td>45.4</td>
</tr>
<tr>
<td>Nasigatoka Tikina</td>
<td>42.9</td>
<td>7.7</td>
<td>50.6</td>
</tr>
<tr>
<td>Navosa Tikina</td>
<td>61.4</td>
<td>8.3</td>
<td>69.6</td>
</tr>
<tr>
<td>Ruwailevu Tikina</td>
<td>59.7</td>
<td>8.3</td>
<td>68.0</td>
</tr>
<tr>
<td>Vatulele Tikina</td>
<td>55.9</td>
<td>9.9</td>
<td>65.8</td>
</tr>
</tbody>
</table>

\textsuperscript{11} More sophisticated indicators of dependency can be derived from the Employment and Unemployment Surveys as well as Household Income and Expenditure Surveys, which the FBoS carries out at regular intervals.
The definition of the Child-Woman Ratio (CWR) and its significance as a proxy index of fertility has been explained in the introduction to this section. The CWRs for the total population of Nadroga and its main ethnic components derived from all censuses since World War II are presented in Figure II-5. They are compared to the national average CWRs for these years.

During the two decades after World War II, the CWR for Fijians at the national level as well as for Fijians in Nadroga was high. With the onset of the Fijian fertility transition in the late 1960s, the CWR started to decrease at a moderate pace. It will be noted that the fertility transition of Fijians in Ra followed the national average transition for Fijians very closely. As a result, in 2007, the level of Fijian fertility in Nadroga is very close to the national average level.\textsuperscript{12}

Although during the two decades after World War II, the level of fertility of Fijians in Nadroga was high, for Indians it was even very significantly higher. However, the onset of the Indian fertility transition was earlier and the pace of the transition much faster than in the case of Fijians. However, as in the case of Fijians, the Indian fertility transition in Nadroga also followed the national average transition for Indians closely. The level of fertility of the Indian population in Fiji, including Indians in Nadroga is now below replacement level. The CWR for Indians in Nadroga in 2007 is only a fraction of what it was during the post-World-War II days.

\textsuperscript{12} See also the Chapter VIII on Fertility
Fig. II-6: Change in the median age (Me in years) by ethnicity between 1946 and 2007

Table II-2: Median Age (Me) of the population of Nadroga by sex and ethnicity, derived from all censuses since 1946 and compared to the national average Me

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Geographic Level</th>
<th>Total Pop</th>
<th>Fijians</th>
<th>Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P  M  F</td>
<td>P  M  F</td>
<td>P  M  F</td>
</tr>
<tr>
<td>1946</td>
<td>Nadroga Prov.</td>
<td>16.8 15.7 17.8</td>
<td>22.8 22.7 23.0</td>
<td>19.7 17.9 11.3</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>17.9 18.8 16.9</td>
<td>19.7 19.6 19.8</td>
<td>15.7 16.3 15.0</td>
</tr>
<tr>
<td>1956</td>
<td>Nadroga Prov.</td>
<td>18.3 17.6 19.1</td>
<td>15.1 15.1 15.0</td>
<td>15.7 19.8 11.5</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>16.8 17.3 16.4</td>
<td>18.9 18.5 19.1</td>
<td>14.8 15.6 14.1</td>
</tr>
<tr>
<td>1966</td>
<td>Nadroga Prov.</td>
<td>18.4 18.1 18.7</td>
<td>15.7 15.3 16.1</td>
<td>10.3 10.2 10.4</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>16.5 16.6 16.5</td>
<td>17.8 17.5 18.1</td>
<td>15.2 15.5 15.0</td>
</tr>
<tr>
<td>1976</td>
<td>Nadroga Prov.</td>
<td>16.4 16.6 16.3</td>
<td>15.0 15.2 19.9</td>
<td>17.4 17.6 17.2</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>17.8 17.7 17.9</td>
<td>18.2 18.0 18.4</td>
<td>17.5 17.5 17.6</td>
</tr>
<tr>
<td>1986</td>
<td>Nadroga Prov.</td>
<td>24.2 24.4 23.9</td>
<td>23.9 24.3 23.6</td>
<td>24.4 24.6 24.3</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>20.6 20.5 20.8</td>
<td>20.2 19.9 20.4</td>
<td>20.9 20.8 21.1</td>
</tr>
<tr>
<td>1996</td>
<td>Nadroga Prov.</td>
<td>22.3 22.4 22.1</td>
<td>22.9 23.0 22.8</td>
<td>26.8 33.0 21.3</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>21.2 20.9 21.6</td>
<td>20.1 19.6 20.5</td>
<td>22.4 22.1 22.7</td>
</tr>
<tr>
<td>2007</td>
<td>Nadroga Prov.</td>
<td>26.9 26.8 27.1</td>
<td>25.4 25.2 25.6</td>
<td>29.3 29.1 29.6</td>
</tr>
<tr>
<td></td>
<td>Fiji</td>
<td>25.1 24.8 25.4</td>
<td>23.0 22.6 23.4</td>
<td>27.9 27.6 28.2</td>
</tr>
</tbody>
</table>

The median age (defined in the introduction to this chapter) for the total population of Nadroga and its main ethnic components by sex derived from all censuses since 1956 are
presented in the following table as well as in Figure II-6. They are compared to the national average values.

The information in the table and graph indicates that during the decades immediately after World War II, the median age of the population of Nadroga was low. More precisely, the median age for Fijian males and females was fairly low and that for Indian males and females very low. This is a reflection of the different level of fertility of Fijians and Indians during that time: high for Fijians and very high for Indians.

During the period 1966-2007, the median age of Indians increased dramatically due to the very fast fertility transition of Indians. In comparison, the change in the median age of Fijians during the same period was quite small due to the relative tardiness of the fertility transition of Fijians.

**Fig. II-7: Change in the ethnic composition between 1946 and 2007**

During the censuses between 1946 and 1986 there were more Indians than Fijians in Nadroga Province. However due to the very fast decline in Indian fertility and the rather slow decline in Fijian fertility since the 1960s, the gap between the two components had, by 1986, narrowed significantly. Moreover, massive out-migration of Indians after the 1987 coups became an even more important factor than differential fertility. The net-result has been that in 1996, the number of Indians had again dropped below the number of Fijians. After 1996, the gap has further widened. In 2007 the number of Indians has become very significantly lower than that of Fijians. In this respect, it is important to point out that during the most recent intercensal period 1996-2007, another two coups took place. This led to further emigration of Indians in the province.

The group of “Others” has always been a rather insignificant rest-group in the province. However, this is in terms of numbers and not in terms of their economic significance.
Fig. II-8: Change in the composition of the urban population between 1966 and 2007

A detailed description of change in the urban population of Sigatoka and its components (the population of the incorporated Sigatoka Town and its peri-urban area) since 1966, when the urban area of Sigatoka was properly delineated for the first time, can be found under Figure I-4.
Chapter III (3): MARITAL STATUS

1. General

The Civil Registration System (CRS) of the Registrar General’s Office is not only responsible for the registration of vital events (births and deaths) but also for the registration of marriage and dissolution of marriage. Information regarding the marital (conjugal) status of the population by age, sex and other characteristics should be published on a regular basis. Unfortunately, in Fiji, the latter is not the case.

However, even if the CRS published information on marital status on a regular basis, this would still be insufficient for most policy makers, planners and particularly researchers. The reason is that these users need information concerning the marital status of all members of the population, and not only those who are “legally married”. For demographic analysis (especially fertility analysis) information regarding persons living in “de-facto” (consensual) unions or in “free unions” (which are not registered by the CRS) is equally important. After all many couples living in this kind of unregistered union have children.

This implies that even if the CRS would provide up to date, complete and accurate information concerning the marital status of those who are legally married, this information needs to be supplemented by data from other sources. The main complementary nationwide source of this data in Fiji is once again the census. However, the collection of this data during a census is often problematic. As mentioned, most users of data on marital status are not only interested in information about legal or registered marital unions but also in information about de-facto/consensual unions. For these respondents, discussing the precise nature of their marital status with a census enumerator may be sensitive, particularly if the enumerator is a young person of a different sex than the respondent. Consequently, during recent censuses, all enumerators have been instructed to accept and record the answers to marital status questions that are given to them by respondents, even in those cases where they suspect (or even know) that these answers are not correct. Users should realize that this approach invariably leads to some bias in the data and a comparison of census information on marital status by sex, confirms this. The data provided by females appears to be more accurate than that provided by males.

Finally, in several (but a dwindling number) of societies, marriage is not a categorical concept but it is more like a process. This is particularly the case in those societies where customary (or common law) marriage is common. Fiji does not recognize customary marriages. Moreover, official polygynous unions do not exist in Fiji.

The following clarifies some of the concepts used in this chapter:

- **Nuptiality**
  
The frequency, characteristics, and dissolution of marriages in a population

---

13 In most countries, de facto (consensual) unions are socially accepted unions.
Marital status categories

Prior to the 2007 Census, the Users Advisory Committee recommended the use of a more detailed classification of marital status. Consequently, during this census, respondents were given six options from which they had to choose. These options are: single (never married), legally married (not separated), separated but legally married, de-facto (consensual union), divorced, and widowed.

In order to make the 2007 information on marital status comparable with that of previous censuses, it has, in the tri-graph in Figure III-1, been condensed into three categories:

- Never married
- Married (including de-facto-unions)
- Widowed/divorced/separated

Users requiring the detailed 2007 information are asked to contact the FBoS.

De-facto or consensual union

This union is defined as cohabitation by an unmarried couple for an extended period. It is a socially accepted union where the two partners live together as husband and wife but have not gone through any civil or religious ceremony. De-facto unions may be stable, but in official statistics (i.e. of the CRS) people living in such unions are considered to be unmarried and their children technically illegitimate. For demographic/statistical purposes, partners in these unions are usually grouped together with those who are legally married. This is particularly important for fertility research, since childbirth is not restricted to couples in legally recognized unions.

Polygynous union

This is a marital union where one man has more than one wife at the same time.

Singulate Mean Age at Marriage (SMAM)

Proportions never married and married females and males are important determinants of fertility. This also applies to the age at first marriage. Unfortunately, in Fiji, the age at first marriage derived from CRS data is not a very good determinant of fertility since the CRS does not register de-facto unions. Consequently, in Fiji, a proxy indicator of the age at first marriage has been derived indirectly from census data concerning never married males and females. This index is referred to as the Singulate Mean Age at Marriage (SMAM). 14

In Figure III-2, SMAM values (in years) derived from 1986, 1996 and 2007 Census data for the province are compared.

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14 For the computation of the median age from grouped data, see Appendix C4 of the Analytical Report of the 2007 Census
2. Profile

Fig. III-1: Change in marital status by sex and ethnicity between 1986 and 2007

Fig. III-1a: Marital status by sex and ethnicity for Fiji and Nadroga in 1986
Fig. III-1b: Marital status by sex and ethnicity for Fiji and Nadroga in 1996
Fig. III-1c: Marital status by sex and ethnicity for Fiji and Nadroga in 2007
Figure III-1 shows the proportions of the three marital status categories “never married”, “married” and “widowed and divorced” in 1986, 1996 and 2007. For demographic/statistical purposes, “de-facto” (consensual) unions have been included in the category married. Furthermore, all sub-categories of dissolution of marriage (widowed, divorced and separated) have been combined into one category.

At the provincial level, the proportions in the above three broad marital status categories are only available from the last three censuses (1986, 1996 and 2007). In Table III-1, this data for Nadroga is compared with that for the other two provinces in the Western Division as well as the national average figures.

Table III-1: Change in marital status of the population age 15 and over by sex and ethnicity in Nadroga Province since 1986 compared to that in the other provinces of the Western Division and with the national average figures

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Ethnicity</th>
<th>Sex</th>
<th>Never Married (%) in the year:</th>
<th>Married (%) in the year:</th>
<th>Widowed/Divorced (%) in the year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>Fijians</td>
<td>M</td>
<td>39.8</td>
<td>39.3</td>
<td>41.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>30.1</td>
<td>30.1</td>
<td>32.5</td>
</tr>
<tr>
<td></td>
<td>Indians</td>
<td>M</td>
<td>31.5</td>
<td>32.3</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>23.2</td>
<td>22.4</td>
<td>22.4</td>
</tr>
</tbody>
</table>

Provinces of the Western Division

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Ethnicity</th>
<th>Sex</th>
<th>Never Married (%) in the year:</th>
<th>Married (%) in the year:</th>
<th>Widowed/Divorced (%) in the year:</th>
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</thead>
<tbody>
<tr>
<td>Nadroga</td>
<td>Fijians</td>
<td>M</td>
<td>39.1</td>
<td>39.3</td>
<td>41.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>29.8</td>
<td>29.2</td>
<td>32.0</td>
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<tr>
<td></td>
<td>Indians</td>
<td>M</td>
<td>31.9</td>
<td>31.0</td>
<td>33.6</td>
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<td></td>
<td></td>
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<td>23.1</td>
<td>20.5</td>
<td>20.8</td>
</tr>
<tr>
<td>Ba</td>
<td>Fijians</td>
<td>M</td>
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<td>39.1</td>
<td>42.2</td>
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<td></td>
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<td>30.0</td>
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<td>32.2</td>
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<td>27.5</td>
<td>27.8</td>
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<td>Indians</td>
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<td>31.9</td>
<td>32.1</td>
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</tr>
<tr>
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<td></td>
<td>F</td>
<td>24.5</td>
<td>21.1</td>
<td>21.1</td>
</tr>
</tbody>
</table>

It appears that the proportions never married as well as married males and females in the province are close to the national average ones. The proportions never married and married are important determinants of fertility.

---

15 At the national level, they are available since 1946.
16 From the basic data on marital status by age and sex at the national level, it appears that, for Fijians in the lower age groups the proportions married females are much higher than the proportions married males. For males, the highest proportions married are reached around age 45 but for females at a slightly lower age. The proportions married decline after these peak ages. This is the result of dissolution of marriage through death (widowhood) and divorce.
17 See Chapter VIII
The most salient factor with regard to marital status in the province is that the proportion of widows (Fijian as well as Indian) is significantly higher than the proportion of widowers. This is the result of at least two well established factors that apply to Fijians as well as Indians:

- The average age at first marriage for males in Fiji, including Nadroga tends to be significantly higher than for females.
- Nation-wide, as well as in Nadroga, mortality of males (at all ages) is higher than that of females, especially in the case of the Indians.

The detailed census tabulations on marital status show that, between 1986 and 2007, the proportion of divorced persons has increased. It is expected that, following an almost worldwide trend, these proportions will continue to increase in future.

**Fig. III-2:** Change in mean age at marriage (years) between 1986 and 2007 by sex and ethnicity

![Fig. III-2a: Mean age at marriage (years) for Fijians](image1)

![Fig. III-2b: Mean age at marriage (years) for Indians](image2)

We have seen that Fiji’s CRS does not provide up to date, complete and reliable statistics with regard to vital events and the same applies to statistics on marital status. Consequently, it is not possible to calculate basic indices like age at first marriage from this primary source of information on marital status.

---

18 Moreover, the CRS does not register consensual (de-facto) unions.
Table III-2: Singulate Mean Age at Marriage (SMAM) for the population of Bua by sex and ethnicity since 1986 and compared with the national average SMAMs

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Sex</th>
<th>Total Population</th>
<th>Fijians</th>
<th>Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nadroga Province</td>
<td>Fiji</td>
</tr>
<tr>
<td>1946</td>
<td>M</td>
<td>- 22.5</td>
<td>- 25.8</td>
<td>- 18.3</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 19.0</td>
<td>- 22.1</td>
<td>- 15.4</td>
</tr>
<tr>
<td>1956</td>
<td>M</td>
<td>- 23.9</td>
<td>- 26.0</td>
<td>- 21.1</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 20.2</td>
<td>- 21.3</td>
<td>- 18.1</td>
</tr>
<tr>
<td>1966</td>
<td>M</td>
<td>- 24.7</td>
<td>- 26.1</td>
<td>- 23.4</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 21.1</td>
<td>- 22.4</td>
<td>- 20.3</td>
</tr>
<tr>
<td>1976</td>
<td>M</td>
<td>- 23.9</td>
<td>- 26.0</td>
<td>- 23.7</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 21.7</td>
<td>- 22.3</td>
<td>- 21.3</td>
</tr>
<tr>
<td>1986</td>
<td>M</td>
<td>- 25.3</td>
<td>26.9</td>
<td>26.6</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 22.5</td>
<td>23.4</td>
<td>23.4</td>
</tr>
<tr>
<td>1996</td>
<td>M</td>
<td>- 26.1</td>
<td>27.0</td>
<td>27.0</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 22.9</td>
<td>23.8</td>
<td>23.9</td>
</tr>
<tr>
<td>2007</td>
<td>M</td>
<td>- 28.0</td>
<td>28.3</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>- 24.4</td>
<td>25.1</td>
<td>25.1</td>
</tr>
</tbody>
</table>

It will be realized that a basic parameter like age at first marriage is very important in demographic analysis. This applies in particular to fertility analysis. Age at first marriage (like proportion “never married” and proportions “married” (in Figure III-1) are considered as intermediate variables between the determinants of fertility and the process of fertility. (See Figure A).19

In Fiji, age at first marriage has, since the 1946 Census, been calculated indirectly from proportions never married by sex and in five-year age groups. This census-based indirect index of age at marriage is referred to as the “Singulate Mean Age at Marriage” (SMAM). The national average SMAMs (in years) by sex for Fijians and Indians, derived from census data since 1946, are presented in Table III-2.

Unfortunately, information on marital status in five-year age groups by sex at the provincial level has not been included in the Census Reports before 1986.20 However, since the 1986 census, SMAM can also be calculated from census data for the provinces. The SMAMs by sex and ethnicity derived from 1986, 1996 and 2007 Census data of Nadroga can be found in Figure III-2 (and in Table III-1).

In 1946, the national average SMAMs for Fijian males and females are very significantly higher than those for Indian males and females. Between 1946 and 1986, the national average SMAMs for Fijian males and females increased but not very significantly. On the other hand, during the same period, the national average SMAMs for Indian males and females increased dramatically. As a result, by 1986, the difference in SMAM between the two ethnic components had been very much reduced.

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19 See also Chapter VIII on Fertility.
20 It can also not be obtained anymore from the computerized data from the early censuses.
It appears that between 1986 and 2007, the mean age at marriage for Fijian as well as Indian males and females in Nadroga has further increased. This is shown in Figure III-2. The large increase in SMAM for Indian males and females was achieved before 1986.

Table III-3: Comparison of the Singulate Mean Age at Marriage (SMAM; years) for the population of Nadroga Province by sex and ethnicity in 1986, 1996 and 2007 with SMAM for the other provinces in the Western Division as well as the national average values of SMAM

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Sex</th>
<th>Fijians in the year:</th>
<th>Indians in the year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>M</td>
<td>26.6</td>
<td>27.0</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>23.4</td>
<td>23.9</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>M</td>
<td>26.9</td>
<td>27.0</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>23.4</td>
<td>23.8</td>
</tr>
<tr>
<td>Ba</td>
<td>M</td>
<td>26.3</td>
<td>26.4</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>23.3</td>
<td>23.7</td>
</tr>
<tr>
<td>Ra</td>
<td>M</td>
<td>26.4</td>
<td>26.5</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>22.8</td>
<td>22.8</td>
</tr>
</tbody>
</table>

Finally, Table III-3 provides a comparison of SMAM for Fijians and Indians by sex in 1986, 1996 and 2007 with these indices for Ba and Ra as well as the national average values of SMAM. The values for all three provinces in the Western Division are relatively close to the national average ones.
Chapter IV (4): LABOUR FORCE, EMPLOYMENT AND UNEMPLOYMENT

1. General

The availability of up to date and accurate information regarding the labour force, cross-classified with other key census variables like age, sex and education is essential for effective policy making and planning in the province. Recent censuses included a few questions on the main characteristics of Fiji’s labour force. Employment and Unemployment Surveys provide far more detailed information. Unfortunately, due to the sample size of these surveys, this information is not valid at the provincial level.

Since the 1980s, FBoS publications concerning the labour force, employment and unemployment have used the International Classification of Labour Force Statisticians (ICLS). However, in the 2007 Census, unemployment has also been measured according the “availability” criterion of the International Labour Organization (ILO). Furthermore, all censuses in Fiji have used the current activity approach. All labour force data refers to a short reference period of one week prior to the census. Census information regarding occupation, industry employment status etc. is related to this short reference period.

The ICLS requirement is that labour force questions should be asked of all persons 15 years and over. Prior to the 2007 Census, the Census Users Advisory Committee recommended that the extent of child labour in Fiji should be assessed. As a result, children aged 10-14 were also asked the labour force questions. However, in this Provincial Profile, the labour force situation in 2007 is compared with that in 1996. This comparison can only be made for the population age 15 and over.

Figure IV-1 presents a classification of the labour force used in Fiji. Firstly, the potentially economically active population is divided into those who are:

- In the Labour Force (or the economically active population).
- Not in the Labour Force (or the not economically active population).

The International Classification of Labour Statisticians (ICLS) defines the labour force as:

“All persons of either sex who furnish the supply of labour for the production of goods and services as defined by the United Nations System of National Accounts and Balances during a specific time period.”

The labour force is subdivided into the employed and unemployed. Unemployment can be measured in different ways. The most common ones are based on definitions devised by the ICLS and the ILO. The following table explains the difference between the two approaches towards the measurement of unemployment.
Table IV-1: Approaches of measurement to unemployment

<table>
<thead>
<tr>
<th>ICLS criteria: A person is unemployed if during the reference period, he/she</th>
<th>ILO criteria: A person is unemployed if during the reference period, he/she</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Did not work</td>
<td>-Did not work</td>
</tr>
<tr>
<td>-Was available for work</td>
<td>-Was available for work</td>
</tr>
<tr>
<td>-Was actively looking for work</td>
<td>-</td>
</tr>
</tbody>
</table>

According to the ICLS system, in order to be considered as unemployed, a person must, during the reference period, be actively looking for work. The crucial question is what should be considered as evidence of “looking for work”. In Fiji censuses and surveys, a very broad definition of “looking for work” has been used. Activities that are accepted as evidence of looking for work include apart from application letters to employers, asking for work at work sites, seeking assistance from relatives or friends to find a job, requesting a loan from a financial institution to set up a business etc.

In order to maintain comparability with previously published unemployment rates derived from censuses, the rates in this Profile follow the ICLS definition of unemployment.

➢ Not economically active

Fiji’s data collection systems distinguish between several categories of persons who are not economically active (not in the labour force)

➤ Full time home worker

Home workers can either be female or male. Full time home workers are engaged in domestic duties like cooking, cleaning the house, looking after children etc. However, in the South Pacific Region, especially in Melanesia, including Fiji, many home workers, especially women, combine their domestic duties with other work, particularly growing food in their garden, fishing, and collecting food from the sea etc. for subsistence (household consumption). These women have been classified as subsistence workers.

➤ Full time student

The category full time students comprise those who attend an educational institution at any level on a full-time basis. In Fiji, a very large proportion of persons under the age of 20 fall into this category. It needs to be stressed that the category “full time student” in this classification is a subcategory of the labour force category “not economically active”. Some students are, however, economically active. They have been classified under the appropriate category and not as full time student. In other words, the total number of persons categorized as full time students is less than the total number of students enrolled in educational institutions.
**Retired**

Retired persons are retired from the public or private sector and are not involved anymore in any moneymaking activities. In many cases, these retired persons receive an income (a pension) from a former job.

**Disabled**

These are persons suffering from some form of permanent mental or physical disability. Because of this disability, they are unable to be engaged in any economic activity. From the point of view of labour force statistics, it is important that those who can be considered as disabled but are engaged in any economic activity are classified as wage earner, subsistence farmer or whatever the case may be. It is therefore important that users realize that this category does not include **all** disabled persons age 10 and over.

**Not looking for work**

These persons have given up looking for work since they believe that work that is suitable for them is not available.

**Other, specify**

In censuses in the past, there has often been a tendency to classify persons with an uncertain labour force status in the category “Others”. Analysis of the data from these censuses suggests that this happened in particular in the case of young respondents (especially young males under the age of 25) who do not go to school, are at first sight not engaged in any economic activity (including subsistence farming or fishing) and have not taken any action to find a job. It reality, in the rural sector, most of them are probably engaged in some kind of activity. It will be realized that, in labour force statistics, this category “Others” is a very unsatisfactory rest category. During the 2007 Census, all enumerators were therefore instructed to check very carefully before classifying any respondent as an “Other”.

The graphs and charts in this chapter provide users in the province with a basic picture of change in the labour force, employment and unemployment situation.
Fig. IV-1: Change in labour force status between 1996 and 2007

Population Aged 15 & over
41,664 (35,190)

Economically Active
(In the Labour Force)
24,954 (22,914)

Employed
22,709 (22,414)

Money Income
17,043 (15,976)

[1] 13,145
[2] 1,387
[1] + [2] 246
[1] + [3] 1,081
[2] + [3] 964

No Money Income (Subsistence)
5,666 (6,438)

* The 2007 figures are in **bold** and the 1996 figures are in *(italics)* and in brackets.

Not Economically Active
(Not in the Labour Force)
16,710 (12,276)

Fulltime home Worker
9,290 (7,071)

Fulltime Student
3,330 (3,264)

Retired
1,481 (811)

Disabled
404 (253)

Not Looking
1,731 (293)

Others
474 (584)

[1] – Wage and Salary Earners
[2] – Self Employed (Business)
2. Profile

Figure IV-1 presents an overview of the potential labour force, (the population age 15 and over) of Nadroga Province and the labour force categories that are used in Fiji. All numbers and indices in Figure IV-1, as well as in the rest of this chapter (unless explicitly stated otherwise) are based on the labour force criteria of the International Classification of Labour Statisticians (ICLS) that, since the early 1980s, have been adopted in Fiji. This is particularly important with regard to the measurement of the category unemployed.

A comparison is made between the labour force situation in the province in 2007 and 1996. In Figure IV-1, the figures for 2007 are in bold whereas the 1996 figures have been added in brackets and in italics. Care has been taken to make all figures for 2007 and 1996 comparable.

Unfortunately, it is not possible to compare certain aspects of the labour force as measured during the 1996 and 2007 Censuses:

- **The six subcategories of “employed with money income”**.

  This information cannot be derived from the labour force module used on the 1996 Census Interview Schedule. The 2007 figures are, however, shown.

- **Labour force status of children aged 10-14**

  Although at the special request of the Users’ Advisory Committee, the 2007 Census recorded the labour force status of children aged 10-14 (in order to assess the extent of child labour in Fiji), this age group has not been included in the numbers presented in Figure IV-1. The reason is that the 1996 Census used the internationally agreed upon cut-off point of age 15.

The subsequent graphs in Chapter IV provide a more detailed picture of all the sub-categories of the labour force shown in Figure IV-1.
Fig. IV-2: Change in broad labour force categories between 1996 and 2007 by sex, ethnicity and geographic sector

Fig. IV-2a: Broad labour force categories by sex

Fig. IV-2b: Broad labour force categories by ethnicity

Fig. IV-2c: Broad labour force categories by geographic sector
In 1996, the number of persons in the labour force (economically active) in Nadroga Province was much higher than the number of persons not in the labour force (not economically active). It appears that in 2007, the difference between these two categories has been reduced. This is due to the fact that, although during the intercensal period the number of economically active persons has increased, the number of not economically active persons has increased more.

Of those who are economically active, the number of employed has remained almost the same during the intercensal period whereas the number of unemployed has seen a very large increase.
Fig. IV-3: Change in labour force participation rates (%) between 1996 and 2007 by sex, ethnicity and geographic sector
Figure IV compares the LFPRs in Nadroga as reported during the 1996 and 2007 Censuses. The comparison is by:

- Sex (In Figure IV-3a and b)
- Ethnicity (In Figure IV-3c and d)
- Geographic sector (In Figure IV-3e and f)

By Fiji standards the differences between the LFPRs of males and females (in Figure IV-3a and b) are quite large. A factor contributing to this may be that a significant proportion of the population of this province is Indian.

In interpreting the differences in 1996 and 2007 by geographic sector, it will be realized that the urban sector of this province consists of the UA Sigatoka only.
Figure IV-4: Change in employment status between 1996 and 2007 by sex

Figure IV-2 is concerned with the main labour force categories viz. those in the labour force (economically active) and those not in the labour force (not economically active) whereas Figure IV-3 presents the age-specific rates at which those in the labour force participate.

The next Figures (IV-4 to 6) focus on the “employed” and its sub-categories and compare the situation in 1996 and 2007. According to the ICLS definition used in Fiji, the category employed consists of persons who have:

- Money income without subsistence
- Money income with subsistence
- Only subsistence
The information is again provided:

- By sex (In Figure IV-4)
- By ethnicity (In Figure IV-5)
- By geographic sector (In Figure IV-6)

The information is shown in the form of a pie graph. The size of the pie graph is proportional to the total number of employed persons in each sub-category.

During the intercensal period 1996-2007, the number of employed in Nadroga increased very marginally from 22,414 persons to 22,709 persons. However, during this period, the structure of the employed (using the above three sub-categories) has changed significantly. The proportion with money income (without subsistence) has very much increased whereas the proportions in the two other sub-categories have decreased accordingly. This applies to males as well as females.
Fig. IV-5: Change in employment status between 1996 and 2007 by ethnicity
Fig. IV-6: Change in employment status between 1996 and 2007 by geographic sector

Fig. IV-6a: Employment status in 1996
- Only subsistence: 26%
- Money income without subsistence: 30%
- Money income with subsistence: 44%

Fig. IV-6b: Employment status in 2007
- Only subsistence: 25%
- Money income with subsistence: 10%
- Money income without subsistence: 65%

Fig. IV-6c: Employment status for rural sector in 1996
- Only subsistence: 25%
- Money income with subsistence: 47%
- Money income without subsistence: 28%

Fig. IV-6d: Employment status for rural sector in 2007
- Only subsistence: 28%
- Money income with subsistence: 11%
- Money income without subsistence: 61%

Fig. IV-6e: Employment status for urban sector in 1996
- Only subsistence: 30%
- Money income with subsistence: 28%
- Money income without subsistence: 42%

Fig. IV-6f: Employment status for urban sector in 2007
- Only subsistence: 12%
- Money income with subsistence: 5%
- Money income without subsistence: 83%
Figure IV-7 presents the seven subcategories of the employed by sex that the 2007 (but not the 1996) Census distinguishes. The three single categories are:

- Only 1: Wage/salary earners
- Only 2: Self-employed
- Only 3: Subsistence workers.

This leads to seven different categories: 1, 2, 3, 1+2, 1+3, 2+3 and 1+2+3
Fig. IV-8: Change in unemployment rates between 1996 and 2007 by sex and ethnicity

In Figure IV-8 (and IV-9), the unemployment rates in 1996 and 2007 are given according to the ICLS definition of unemployment. In Figure IV-8, the rates are shown by sex and ethnicity and in Figure IV-9 by sex and geographic sector.

During the period 1996-2007, the overall level of unemployment in Nadroga increased very significantly and this applies to Fijian and Indian males as well as females.

21 The Unemployment Rate is defined as:

\[
\text{Unemployment Rate} = \left( \frac{\text{Number of unemployed}}{\text{Population in the Labour Force}} \right) \times 100
\]

The precise definition of unemployed according to the ICLS definition is presented in the Introduction to this chapter.
Fig. IV-9: Change in unemployment rates between 1996 and 2007 by sex and geographic sector

It appears that in Nadroga in 2007, the differences between rural and urban unemployment rates are only marginal.

Finally, in Table IV-1, the unemployment rates by sex, ethnicity and geographic sector in 2007 are compared to the national average ones as well as those for the other two provinces in the Western Division: Ba and Ra. The rural unemployment rates for all subgroups in Nadroga tend to be significantly higher than the national average rural rates whereas the opposite is the case for the urban rates.
Table IV-2: Comparison of the unemployment rates for Nadroga by sex, ethnicity and geographic sector in 2007 with the national average rates and the rates for other provinces in the Western Division: Ba and Ra

<table>
<thead>
<tr>
<th>Province</th>
<th>Geogr Sector</th>
<th>Total Population</th>
<th>Fijians</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pers</td>
<td>Males</td>
<td>Fems</td>
<td>Pers</td>
<td>Males</td>
<td>Fems</td>
<td>Pers</td>
<td>Males</td>
<td>Fems</td>
<td></td>
</tr>
<tr>
<td>Nadroga/Navosa</td>
<td>All</td>
<td>9.0</td>
<td>7.0</td>
<td>13.0</td>
<td>9.3</td>
<td>8.1</td>
<td>11.2</td>
<td>8.6</td>
<td>5.5</td>
<td>17.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>8.9</td>
<td>6.9</td>
<td>13.0</td>
<td>9.0</td>
<td>7.9</td>
<td>10.9</td>
<td>8.9</td>
<td>5.7</td>
<td>19.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>9.3</td>
<td>7.1</td>
<td>12.7</td>
<td>11.3</td>
<td>10.1</td>
<td>12.7</td>
<td>7.5</td>
<td>4.7</td>
<td>13.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ba</td>
<td>All</td>
<td>8.5</td>
<td>6.3</td>
<td>13.6</td>
<td>11.5</td>
<td>9.5</td>
<td>15.1</td>
<td>6.5</td>
<td>4.4</td>
<td>12.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>6.1</td>
<td>4.3</td>
<td>11.1</td>
<td>7.6</td>
<td>5.6</td>
<td>12.1</td>
<td>5.2</td>
<td>3.6</td>
<td>10.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>10.8</td>
<td>8.4</td>
<td>15.4</td>
<td>14.6</td>
<td>13.1</td>
<td>16.9</td>
<td>8.0</td>
<td>5.3</td>
<td>14.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ra</td>
<td>All</td>
<td>5.9</td>
<td>3.5</td>
<td>12.7</td>
<td>7.3</td>
<td>4.2</td>
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<td>2.2</td>
<td>7.0</td>
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</tr>
<tr>
<td></td>
<td>Rural</td>
<td>5.6</td>
<td>3.0</td>
<td>12.9</td>
<td>6.9</td>
<td>3.7</td>
<td>15.7</td>
<td>2.5</td>
<td>1.6</td>
<td>5.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>7.4</td>
<td>5.6</td>
<td>11.9</td>
<td>10.0</td>
<td>8.0</td>
<td>15.1</td>
<td>5.7</td>
<td>4.0</td>
<td>9.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>All</td>
<td>8.6</td>
<td>6.8</td>
<td>12.3</td>
<td>9.9</td>
<td>8.4</td>
<td>12.6</td>
<td>7.0</td>
<td>4.8</td>
<td>12.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>5.7</td>
<td>4.4</td>
<td>8.8</td>
<td>6.2</td>
<td>5.0</td>
<td>8.6</td>
<td>5.0</td>
<td>3.3</td>
<td>9.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>11.5</td>
<td>9.4</td>
<td>15.3</td>
<td>15.0</td>
<td>13.5</td>
<td>17.3</td>
<td>8.4</td>
<td>6.0</td>
<td>13.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fig. IV-10: The “unemployed” age 15 and over including subsistence workers actively looking for paid employment in 2007 by sex, ethnicity and geographic sector

Fig. IV-10a: The "unemployed" age 15 and over for total

Fig. IV-10b: The "unemployed" age 15 and over for Fijians

Fig. IV-10c: The "unemployed" age 15 and over for Indians

Fig. IV-10d: The "unemployed" age 15 and over for rural

Fig. IV-10e: The "unemployed" age 15 and over for urban
Users are again reminded that unemployment during censuses in Fiji is measured, using the criteria of the ICLS (explained in the introduction to this chapter). For a person to be included in the category unemployed, he/she was during the reference period, not working, available for work and actively looking for work. According to this definition, the unemployment situation in the province has worsened significantly after 1996.

Many users prefer a wider definition of unemployment than the official definition adopted by the FBoS. Some, in accordance with the ILO criteria for unemployed, want to drop the requirement of “actively looking for work” and adopt the “availability” criterion of the ILO. In doing this, the already very high unemployment rates increase even further. As mentioned, in order to avoid confusion, the unemployment rates according to the ILO definition are not shown in this profile, the more so since it is not possible to measure unemployment in 1996 according to the ILO criterion.

However, Figure IV-10 does show how the unemployment rate in the province would increase if subsistence workers actively looking for paid employment would be added to the officially unemployed. Users are again reminded that, according to the ICLS definition used in Fiji, these persons are not unemployed but engaged in subsistence activities (and therefore employed).

Table IV-2 compares the unemployment situation in Nadroga in 2007 with that in other provinces of the Western Division as well as with the national average rates. Generally, the proportion Indian subsistence workers looking for paid employment is not very high. For Fijians this proportion is much higher but that is mainly due to the very large proportion of Fijian subsistence workers in a few provinces. Nadroga is one of these provinces.

Table IV-3: Comparison of various versions of the “unemployment rate” for the population of Nadroga in 2007 by sex and ethnicity with these rates for other provinces in the Western Division and the national average rates

<table>
<thead>
<tr>
<th>Province</th>
<th>Sex</th>
<th>Actively looking for paid employment</th>
<th>Subsistence Workers</th>
<th>Pure (ICLS) Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>All</td>
<td>Fij.</td>
</tr>
<tr>
<td>Fiji</td>
<td>Persons</td>
<td>11.8</td>
<td>14.7</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>9.9</td>
<td>13.4</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>15.4</td>
<td>16.9</td>
<td>13.7</td>
</tr>
<tr>
<td>Nadroga</td>
<td>Persons</td>
<td>17.8</td>
<td>22.6</td>
<td>10.4</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>15.0</td>
<td>21.1</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>23.3</td>
<td>24.9</td>
<td>19.9</td>
</tr>
<tr>
<td>Ba</td>
<td>Persons</td>
<td>10.0</td>
<td>13.4</td>
<td>7.6</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>7.8</td>
<td>11.7</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>14.9</td>
<td>16.6</td>
<td>13.7</td>
</tr>
<tr>
<td>Ra</td>
<td>Persons</td>
<td>10.0</td>
<td>13.1</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>6.8</td>
<td>9.0</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>18.9</td>
<td>24.0</td>
<td>8.8</td>
</tr>
</tbody>
</table>
The rates for Fijian subsistence workers in Nadroga are about three times higher than the national average ones. Only Namosi Province has similarly high rates. It is doubtful that in reality the differences between the rates of the provinces are so large. It is possible that during the interviewer training in Nadroga and Namosi the issue of subsistence workers looking for paid employment was emphasized more than in the other provinces.
Fig. IV-11: Change in the category “not economically active” between 1996 and 2007 by sex

Fig. IV-11a: Category “not economically active” for total in 1996

- Not looking 2%
- Disabled 2%
- Retired 7%
- F/T Home W. 58%
- F/T Student 26%
- Others 5%

Fig. IV-11b: Category “not economically active” for total in 2007

- Not looking 10%
- Disabled 2%
- Retired 9%
- F/T Home W. 56%
- F/T Student 20%
- Others 3%

Fig. IV-11c: Category “not economically active” for males in 1996

- Not looking 10%
- Disabled 5%
- Retired 16%
- F/T Student 59%
- F/T Home W. 3%

Fig. IV-11d: Category “not economically active” for males in 2007

- Not looking 23%
- Disabled 4%
- Retired 17%
- F/T Student 32%
- F/T Home W. 17%

Fig. IV-11e: Category “not economically active” for females in 1996

- Not looking 1%
- Disabled 1%
- Retired 4%
- F/T Student 18%
- F/T Home W. 73%
- Others 3%

Fig. IV-11f: Category “not economically active” for females in 2007

- Not looking 4%
- Disabled 2%
- Retired 5%
- F/T Student 15%
- F/T Home W. 73%
- Others 1%
Figure IV-11, 12 and 13 provide very detailed information regarding the category not economically active (not in the labour force), respectively by:

- Sex
- Ethnicity
- Geographic Sector

As expected, for females, by far the largest category in 1996 as well as 2007 is the category “homeworkers” (defined in the introduction to this chapter). 73 percent of all women in Nadroga who are not in the labour force fall in this category. It is somewhat surprising to see that the proportion of women in this category has not decreased during the intercensal period.

The second largest category of economically persons (males as well as females) not active is the “full-time students”. Users are again reminded that the number of full-time students in Figure IV-11 is not the total number of students in the province. The category “full-time student” in this chapter is a labour force category. Students engaged in economic activity have been classified according to the activity they are involved in.

During the training for the 2007 Census field operation, enumerators, supervisors and area coordinators were instructed to use the category “Others” as a very last resort.
Fig. IV-12: Change in the category “not economically active” between 1996 and 2007 by ethnicity

Fig. IV-12a: Category “not economically active” for total in 1996

Fig. IV-12b: Category “not economically active” for total in 2007

Fig. IV-12c: Category “not economically active” for Fijians in 1996

Fig. IV-12d: Category “not economically active” for Fijians in 2007

Fig. IV-12e: Category “not economically active” for Indians in 1996

Fig. IV-12f: Category “not economically active” for Indians in 2007
Fig. IV-13: Change in the category “not economically active” between 1996 and 2007 by geographic sector

Fig. IV-13a: Category “not economically active” for total in 1996

- F/T Home W. 58%
- F/T Student 26%
- Retired 7%
- Disabled 2%
- Not looking 2%
- Others 5%

Fig. IV-13b: Category “not economically active” for total in 2007

- F/T Home W. 56%
- F/T Student 20%
- Retired 9%
- Disabled 2%
- Not looking 10%
- Others 3%

Fig. IV-13c: Category “not economically active” for rural in 1996

- F/T Home W. 59%
- F/T Student 26%
- Retired 6%
- Disabled 2%
- Not looking 2%
- Others 5%

Fig. IV-13d: Category “not economically active” for rural in 2007

- F/T Home W. 56%
- F/T Student 19%
- Retired 9%
- Disabled 2%
- Not looking 11%
- Others 3%

Fig. IV-13e: Category “not economically active” for urban in 1996

- F/T Home W. 52%
- F/T Student 32%
- Retired 8%
- Disabled 1%
- Not looking 2%
- Others 5%

Fig. IV-13f: Category “not economically active” for urban in 2007

- F/T Home W. 53%
- F/T Student 23%
- Retired 11%
- Disabled 2%
- Not looking 8%
- Others 3%
Chapter V (5): EDUCATION AND LITERACY

1. General

Human Resource Development (HRD) is a priority area in Fiji. One of the government policies is to achieve Universal Primary Education (UPE). According to Millennium Development Goal (MDG) 2, this objective should be achieved by 2015. In other words, by 2015 all children should complete a full course of primary schooling.

- **At-school population**

  For the at school population, the minimum information required by planners concerns:
  
  - Enrollment (or access to education)
  
  - Retention (continuation/progress in education)
  
  - Achievement (quality of education)

- **Not-at school population**

  For labour force and manpower planners, it is even more important to have information concerning the level of education and training achieved by those respondents who completed school and are already engaged in the labour force or are available for employment. Their educational achievement or the qualifications they have obtained need to be cross-classified with other characteristics like their age, sex and marital status, their usual place of residence etc. The main users of this information are employment and manpower planners.

  The Department of Education (DOE) does not (and cannot) collect information concerning the not-at-school population. This information needs to be collected in a census (or survey). The 2007 Census Interview Schedule included a question about educational attainment of all those who had left school as well as their main field of study.

- **Measurement of school enrollment and attendance**

  A:  Enrollment data from the DOE

  Indices of enrollment used by the DOE include the Gross Enrolment Ratio (GER) and Net Enrollment Ratio (NER).

  The GER is the number of students enrolled at a level of education, regardless of age, as a percentage of the population of official school age for that level. For reasons such as grade repetition, attendance at levels of schooling at an age that are not typical for that level (i.e. because of late enrollment) as well as other reasons, the GER can reach a value higher than 100 percent. For these and other reasons, the GER is not an entirely satisfactory index of access to school (enrolment).
The NER is a more satisfactory index of access to school. This ratio is defined as the number of students at a particular level who are of the official age for that level, as a percentage of the population of the official school age for that level. For instance, in Fiji, the official school age for Class 1 to 6 students is age 6 to 11.

B: Attendance data derived from the census

All recent censuses in Fiji have collected information regarding school attendance at the time of the census. The response has been converted into school attendance ratios. These ratios are defined in a similar way as the GER and NER of the DOE, but are referred to as the Gross and Net Attendance Ratios (GAR and NAR). Censuses establish age, including that of school attenders, at the time of the census. It is not straightforward to convert the age of school attenders at the time of the census into age at the time of enrollment. For this reason, the comparison of school attendance in 1996 and 2007 in Figure V-2 is made by means of the GAR. Users requiring information regarding net enrollment should contact the DOE.

➢ Measurement of retention

Enrolment ratios do not provide a complete picture of the education situation of the at-school population. Equally important is that, after being enrolled, children stay at school and complete their education. The census-based attendance ratios measure this but only to a very limited extent. The DOE provides a more sophisticated measure of retention, viz. the Cohort Retention Ratio (CRR). Users requiring information regarding retention should contact the DOE.

➢ Measurement of achievement

Educational achievement can be measured by means of test marks, exam results provided by the DOE. Another measure of achievement is the literacy ratio. Information on literacy should ideally be collected during a survey. In a literacy survey, randomly selected respondents are tested about their literacy skills viz. their reading, writing and understanding skills. Unfortunately, in Fiji, a nationwide literacy survey based on a representative sample of the population has never been carried out. For this reason, the FBoS estimates the level of literacy by means of a proxy index. This index is derived from data concerning the highest level of education completed by all respondents. In order to do this, consensus is required with regard to a reasonable cut-off point of the level of education completed that separates the literate from the non-literate. The present consensus is that completion of “at least Class 3” should be accepted as the cut-off point for literacy. This is of course not entirely satisfactory since people who completed Class 3 many years ago and dropped out of school soon after completing Class 3, may have lost their literacy skills, particularly if they stopped reading and writing after dropping out of school. On the other hand, people who have not completed Class 3, but have improved their reading and writing skills through informal education, may be literate.

This approach is not ideal. However, this proxy index of literacy has the advantage that it can be derived from educational attainment data for all census respondents and indices for the provinces and its subdivisions can therefore be obtained.
The indirect indices of literacy that have most frequently been used are the Youth Literacy Ratio (YLR) and the Adult Literacy Ratio (ALR). The former refers to the age group 15 to 24 and the latter to the age group 15 and over. The ALR is a component of several international indices, for instance the UN Human Development Index (HDI). It is assumed that this indirect measure provides a reasonable approximation of those aged 15 and over who can, with understanding, both read and write a short, simple statement on their everyday life.
2. Profile

Fig. V-1: Educational status in 2007 by sex, ethnicity and geographic sector
The proportion of persons attending school in Nadroga in 2007 (24.4 %) is significantly lower than the national average proportion (27.6 %). The proportion for Fijians (25.1 %) is slightly higher than that for Indians (23.3%). Users should not interpret this as evidence of a lower level of school attendance by Indian children. These figures are the result of the very fast decline in fertility of the Indian population. Consequently, the age-sex structure of Indians has become very narrow at the base. The proportion of Indians in the school-going age group is getting increasingly smaller.

It will also be noted that, in 2007, the proportion of Indian males and females in Nadroga that has never attended school is very much lower than that of Fijians.

The differences in the proportions attending and not-attending by sex are very small. The same applies to differences by geographic sector (rural and urban).

Finally, Table V-1 compares school attendance in Nadroga by sex and ethnicity in 2007 with that in the other provinces of the Western Division as well as the national average figures.

**Table V-1** Educational status (%) in Nadroga, by sex and ethnicity in 2007 compared to that in the other provinces of the Western Division and the national average figures

<table>
<thead>
<tr>
<th>Province</th>
<th>Sex</th>
<th>Attendance status (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>All</td>
<td>Fij.</td>
<td>Ind.</td>
<td>All</td>
<td>Fij.</td>
<td>Ind.</td>
<td>All</td>
<td>Fij.</td>
<td>Ind.</td>
</tr>
<tr>
<td>Fiji</td>
<td>Persons</td>
<td>27.6</td>
<td>29.4</td>
<td>24.3</td>
<td>61.8</td>
<td>58.0</td>
<td>68.1</td>
<td>10.6</td>
<td>12.6</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>27.9</td>
<td>29.8</td>
<td>24.4</td>
<td>61.4</td>
<td>57.4</td>
<td>68.0</td>
<td>10.8</td>
<td>12.9</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>27.3</td>
<td>28.9</td>
<td>24.3</td>
<td>62.2</td>
<td>58.7</td>
<td>68.2</td>
<td>10.4</td>
<td>12.4</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>Persons</td>
<td>24.4</td>
<td>25.1</td>
<td>23.3</td>
<td>65.1</td>
<td>62.4</td>
<td>69.1</td>
<td>10.6</td>
<td>12.5</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>23.9</td>
<td>24.8</td>
<td>22.6</td>
<td>65.7</td>
<td>62.9</td>
<td>69.9</td>
<td>10.4</td>
<td>12.3</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>24.9</td>
<td>25.4</td>
<td>24.2</td>
<td>64.4</td>
<td>62.0</td>
<td>68.2</td>
<td>10.7</td>
<td>12.7</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td>Ba</td>
<td>Persons</td>
<td>25.5</td>
<td>28.0</td>
<td>23.4</td>
<td>64.9</td>
<td>59.5</td>
<td>69.2</td>
<td>9.6</td>
<td>12.5</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>25.7</td>
<td>28.3</td>
<td>23.5</td>
<td>64.6</td>
<td>58.8</td>
<td>69.1</td>
<td>9.7</td>
<td>12.9</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>25.3</td>
<td>27.6</td>
<td>23.3</td>
<td>65.2</td>
<td>60.2</td>
<td>69.3</td>
<td>9.5</td>
<td>12.2</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td>Ra</td>
<td>Persons</td>
<td>27.1</td>
<td>28.6</td>
<td>23.6</td>
<td>61.4</td>
<td>58.1</td>
<td>69.1</td>
<td>11.5</td>
<td>13.3</td>
<td>7.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>27.3</td>
<td>29.0</td>
<td>23.3</td>
<td>61.1</td>
<td>57.6</td>
<td>69.3</td>
<td>11.6</td>
<td>13.5</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>26.9</td>
<td>28.1</td>
<td>23.9</td>
<td>61.8</td>
<td>58.7</td>
<td>68.9</td>
<td>11.4</td>
<td>13.2</td>
<td>7.2</td>
<td></td>
</tr>
</tbody>
</table>

The proportions attending school in Nadroga are somewhat lower than the national average figures, as well as the figures for Ba and Ra. However, the lower proportions for Nadroga are mainly due to the lower proportions for the Fijian component of the population.
The Gross Attendance Ratio (GAR) for all sub-groups of the population in 1996 as well as in 2007 is higher than 100. This signifies that, at the time of these censuses, for a significant proportion of all children, age of child and the level of schooling the child attended did not match. Possible reasons are late enrollment, class repetition etc. As explained in the Introduction to this chapter, attempts to derive more satisfactory Net Attendance Ratios (NAR) from the census data on school attendance were not very satisfactory due to the fact that it is awkward to convert the age of a school-going child at the time of the census to its age at the time of enrollment.

It will be noted that, in both years (1996 and 2007), the GARs for Indian children are lower than those for Fijian children. At first sight, users may interpret this as a more favorable situation for Fijian school attendance than for Indian school attendance. This interpretation is probably wrong. It may also mean that late enrollment, class repetition etc. are more common in the case of Fijian than Indian children.

Users are reminded that the school attendance ratios derived from a census are not the same as the school enrollment ratios published by the Department of Education (DOE). Users requiring a picture of gross- and net-enrollment are referred to the primary source of this
information, the DOE. Providing up to date, complete and accurate service/administrative statistics on enrollment (as well as retention and achievement) of the school-going population is the responsibility of this department and not of a census. The census can, at best, provide some additional information concerning actual attendance at a particular point in time.

The main reason for including Figure V-2 in this Provincial Profile is to draw attention to the fact that the service statistics on enrollment of the DOE need to be improved.
In 1996, the proportion of persons in Fiji who had left school with some kind of tertiary qualification (certificate, diploma, degree) was still rather small. In 2007, this proportion has increased significantly. Figure V-3 shows some increase for Nadroga as well. However, this
increase is less pronounced than in many other provinces. There is significant scope for improvement.

Fig. V-4: Indirectly measured Adult Literacy Ratio (%) in 2007 by sex, ethnicity and geographic sector

Fiji has never conducted a nation-wide literacy survey. Moreover, the DOE can only assess the level of literacy of its “at-school” population. The department does not have records of the “not-at-school” population.

Consequently, Fiji has used its censuses to assess the level of literacy of the adult population (persons aged 15 and over). The census-based adult literacy ratio (ALR) is calculated from data regarding “highest level of formal education completed”. This information is available for all census respondents.

Figure V-4 shows the ALRs estimated from the 2007 Census data. The data suggests that, in that year, all subgroups of the population of Nadroga have reached a very high level of adult literacy. The same is the case in all other provinces. The ALR is not only an important index
in its own right; it is also one of the components of the United Nations Human Development Index (HDI).

Table V-2 presents a comparison of the census-based indirect estimates of the level of adult literacy in Nadroga with that in the other provinces of the Western Division and with the national average level.

Table V-2: Comparison of the indirectly measured Adult Literacy Ratios (%) for the population of Nadroga by sex, ethnicity and geographic sector in 2007 with the ratios for other provinces in the Western Division as well as the national average ratios

<table>
<thead>
<tr>
<th>Province</th>
<th>Total Population</th>
<th>Fijians</th>
<th>Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Sectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Persons</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Fiji</td>
<td>98.7</td>
<td>98.8</td>
<td>98.6</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ba</td>
<td>98.7</td>
<td>98.7</td>
<td>98.6</td>
</tr>
<tr>
<td>Nadroga</td>
<td>98.5</td>
<td>98.6</td>
<td>98.4</td>
</tr>
<tr>
<td>Ra</td>
<td>98.5</td>
<td>98.6</td>
<td>98.3</td>
</tr>
</tbody>
</table>

In 2007, the ALRs for all subgroups of the population in all provinces is high, but especially for Fijians.\(^2^2\)

Users are reminded that the real level of adult literacy in Nadroga (as well as in all other provinces in Fiji) is almost certainly lower than indicated by the census-based ALRs in Table V-2 and Figure V-4. The reason for this assumption is that in Fiji, as well as in several other countries in the region, a cut-off point for being literate of “completed at least class 3” is used. This threshold may be too low. However, adapting the threshold would affect comparability with previous censuses and with other countries using the same threshold (like PNG and the Solomon Islands).\(^2^3\)

In conclusion, the measurement of adult literacy from census data regarding educational attainment is open to debate:

- The cut-off point “completed at least form 3” may not be ideal but changing the threshold will affect comparability in time and in space.

- The quality of the census data on which the ALR is based may not be very accurate. As mentioned, during a census, information concerning household

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\(^2^2\) The only province with an ALR of less than 98 percent (and only very marginally so) is Macuata (97.8 %) and this is due to the ALR for Indians in that province (97.0 %). Generally, the Indians in the provinces in the Northern Division have the lowest ALR.

\(^2^3\) In the case of Fiji, it would only be possible to re-estimate the ALRs (based on the new criteria) from the 1986 and 1996 Censuses.
members is often obtained from a proxy-respondent, usually the head of household or his/her spouse.

During a census interview, it is not feasible to carry out a literacy test to assess the reading, writing and understanding skills of all household members. Most of them will not even be present during the interview.

Some countries have attempted to obtain information on the level of literacy of census respondents by asking a direct question about literacy with a yes/no answer. This approach almost invariably leads to overstatement of the level literacy of a population and is even less ideal than the approach followed in Fiji.

In order to improve Fiji’s database on literacy, the country might consider conducting a nation-wide literacy survey that tests the reading, writing and understanding skills of a randomly selected sample of respondents. It will, however be realized that this approach is expensive and time consuming. It will be difficult to conduct such a survey at regular intervals. Moreover, it is unlikely that the size of the sample will be large enough to obtain province-level estimates.
Chapter VI (6): RELIGIOUS AFFILIATION

1. General

Most churches keep a record of their members. Today, this administrative data is dispersed over a very large number of religious institutions. There is no central authority, like a Ministry of Religion that combines the data from all religious institutions. Moreover, the data of individual religious institutions tends to be affected by over- and undercount. Even more importantly, a significant and ever increasing number of people do not belong to any religion and they are therefore not registered by any religious institution, unless they are kept (incorrectly) on the books of a church they formerly belonged to or their parents still belong to. For these reasons, from the statistical/demographic point of view the administrative data concerning religion that is available in Fiji is considered as very incomplete and biased. For research purposes it is of limited value.

In the absence of complete and reliable administrative data on religion, Fiji includes in its censuses, a question regarding the denomination (or sect) of all census respondents. This approach is not without problems either. Firstly, as mentioned, in a census, the enumerator does (in most cases) not get the required information in a face-to-face interview with all household members. Rather, the head of household or his/her spouse or another senior person belonging to the household answers the questions for all household members. Response by proxy respondents often affects the quality of sensitive information like religious affiliation.24 Furthermore, although the Census Act states that all citizens are obliged to report the census questions truthfully, this does not reply to religion. Respondents who are unwilling to answer this question are, by law, not obliged to do so. Fortunately, during censuses in Fiji, few respondents have so far made use of their right not to answer this question.

Furthermore, in cases where members of the same household belong to different religious denominations, it is doubtful whether the correct religion will always be reported for all members. The available evidence suggests that the person who answers the questions for all household members, is often inclined to report the same religious affiliation for all household members and certainly for members of his/her own nuclear family. More often than not, this is his/her own religion. For this reason, many countries do not bother to collect census information on religious affiliation for young children. It is assumed that the religion of these children is the same as that of their parents. However, censuses in Fiji have never used an age cut-off point for this question.

Finally, census enumerators in Fiji are instructed to record the religion reported to them, even in cases where they know that the answer given to them is incorrect. In other words, for census purposes, with regard to religion people are what they say they are.

24 The same applies to information regarding marital status and fertility let alone information concerning income and expenditure etc.
2. Profile

Figure VI-1: Change in religious affiliation between 1986 and 2007 for the total population

Fig. VI-1a: Religious affiliation for 1986
- Christians: 49%
- Hindus: 42%
- Moslem: 9%

Fig. VI-1b: Religious affiliation for 1996
- Christians: 70%
- Hindus: 25%
- Moslem: 5%

Fig. VI-1c: Religious affiliation for 2007
- Christians: 76%
- Hindus: 20%
- Moslem: 4%
Figure VI-1 compares religious affiliation of the total population of Nadroga as reported during the 1986, 1996 and 2007 Censuses. The three pie-graphs present the proportions (%) of persons who reported that they were Christians, Hindus or Moslems. The increase in the size of the pies between 1986 and 2007 is proportional to the size of the population in the three census years.

It appears that, during the 21-year period, the proportion of Christians (of any denomination) has steadily increased, whereas the proportion of Hindus and Moslems (of any denomination) has decreased. The latter is mainly the result of Indian emigration, which after the 1987 coups has accelerated.

Table VI-1 and 2 compare the religious affiliation of Fijians and Indians (in broad groups) in Nadroga in 2007 with that of other provinces of the Western Division and with the national average.

Table VI-1: Religious affiliation (%) of the Fijian population of Nadroga in 2007, compared to that of the other provinces in the Western Division and the national average

<table>
<thead>
<tr>
<th>Province</th>
<th>All (Nr)</th>
<th>Christians (%)</th>
<th>Hindu (%)</th>
<th>Moslem (%)</th>
<th>Other Rel. (%)</th>
<th>NS (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
<td>Cath.</td>
<td>Protestant</td>
<td>Meth.</td>
<td>Other</td>
</tr>
<tr>
<td>Fijians Tot.</td>
<td>475,739</td>
<td>99.4</td>
<td>12.6</td>
<td>57.4</td>
<td>29.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>35,075</td>
<td>99.5</td>
<td>8.1</td>
<td>57.5</td>
<td>33.9</td>
<td>0.3</td>
</tr>
<tr>
<td>Ba</td>
<td>96,852</td>
<td>99.0</td>
<td>10.4</td>
<td>54.6</td>
<td>34.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Ra</td>
<td>20,259</td>
<td>99.6</td>
<td>11.2</td>
<td>55.7</td>
<td>32.7</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Fijians in all provinces are with few exceptions, Christians. In all provinces, except Namosi, Serua and Cakaudrove, more than 50 percent of the population is Methodist. In these three provinces, but especially Namosi, a large proportion of the population is Catholic.

Table VI-2: Religious affiliation (%) of the Indian population of Nadroga in 2007, compared to that of the other provinces in the Western Division and the national average

<table>
<thead>
<tr>
<th>Province</th>
<th>All (Nr)</th>
<th>Hindu (%)</th>
<th>Moslem (%)</th>
<th>Sikh</th>
<th>Chris (%)</th>
<th>Oth Rel (%)</th>
<th>NS (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All</td>
<td>Ar Sam</td>
<td>San</td>
<td>Oth</td>
<td>All</td>
<td>Ahm</td>
</tr>
<tr>
<td>Indians Tot.</td>
<td>313,801</td>
<td>72.9</td>
<td>6.1</td>
<td>58.9</td>
<td>7.9</td>
<td>16.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>22,140</td>
<td>72.6</td>
<td>2.7</td>
<td>69.4</td>
<td>0.6</td>
<td>18.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Ba</td>
<td>126,142</td>
<td>72.0</td>
<td>3.0</td>
<td>64.8</td>
<td>4.2</td>
<td>17.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Ra</td>
<td>8,888</td>
<td>85.0</td>
<td>1.5</td>
<td>60.7</td>
<td>22.7</td>
<td>9.4</td>
<td>0.1</td>
</tr>
</tbody>
</table>
Figure VI-2: Change in religious affiliation between 1986 and 2007 for Fijians

Figure VI-2 compares the religious affiliation of Fijians in Nadroga as reported during the 1986, 1996 and 2007 Censuses. As in Figure VI-1, the change in the size of the three pies for 1986, 1996 and 2007 is proportional to the change in the size of the population of Nadroga (but in this case, its Fijian population) during the 1986-2007 period.
The three pie-graphs present, clockwise, the proportion (%) of Fijians who reported that they belonged to any of the four largest Christian denominations represented in Fiji. These are: Methodism, Catholicism, SDA and AOG. All other Christian denominations (and there is a large and ever increasing number of them) have been grouped together in the category “Other Christian”.

It appears that, during the 21-year period 1986-2007, the proportion of Methodists in the province has decreased very significantly from 77 percent in 1986 to 58 percent in 2007. The proportion of Catholics remained almost unchanged. The winners were the smaller Christian denominations, but especially the combined group consisting of the smallest denominations. Like in most provinces, this combined group of “Other Christians” has been growing very rapidly. In the case of Nadroga, this group has increased from 3 to 15 percent during the period 1986 to 2007.

The three censuses have collected far more detailed information regarding the affiliation of Fijians with the various Christian denominations in Nadroga. It is not feasible to present all this detailed information in this Provincial Profile. Users who require this detailed information should contact the FBoS and ask for the basic census tabulations on religion.
Figure VI-3: Change in religious affiliation between 1986 and 2007 for Indians

Fig. VI-3a: Religious affiliation in 1986
- Hindu: 81%
- Moslem: 17%
- Christian: 2%

Fig. VI-3b: Religious affiliation in 1996
- Hindu: 80%
- Moslem: 17%
- Christian: 3%

Fig. VI-3c: Religious affiliation 2007
- Hindu: 73%
- Moslem: 18%
- Christian: 9%
Figure VI-3 compares the religious affiliation of Indians in Nadroga as reported during the 1986, 1996 and 2007 Censuses. The three pie-graphs present, clockwise the proportions (%) of Indians who reported that they were Hindu, Moslem or Christian. As in Figure VI-1 and 2, the change in the size of the three pies for 1986, 1996 and 2007 is proportional to the change in the size of the population of Nadroga (but in this case, its Indian population) during the 1986-2007 period.

It appears that, during the 21-year period 1986-2007, the proportion of Hindus amongst Indians in the province has decreased significantly from 81 percent to 73 percent. During the same period, the proportion of Moslems has actually increased marginally from 17 percent to 18 percent. This may be the result of a larger proportion of Hindus than Moslems emigrating overseas or to other provinces in Fiji. The proportion of Christians amongst the Indian population is on the increase (from 2 percent in 1986 to 9 percent in 2007). It is likely but not certain that most of these Christian Indians were originally Hindus rather than Muslims. This requires further research but this research cannot be based on census information.

Figure VI-3 presents only the tip of the iceberg as far as religious affiliation of Indians in the province is concerned. All three censuses have collected far more detailed information on religious affiliation than can be included in this Provincial Profile. Users who require this more detailed information are asked to contact the FBoS.

25 The number of Sikhs in Nadroga is negligible (less than 0.5 percent)
Chapter VII (7): MORTALITY

1. General

In the demographic sense, mortality refers to death as a component of population change. Unfortunately, it is not yet possible to derive reliable mortality indices at the provincial level from death registration data of the Civil Registration System (CRS) and National Health Information System (NHIS) in Fiji. All mortality information in this Provincial Profile have been estimated indirectly from census data. At the national level, this approach of indirect mortality estimation from census data has been utilized since 1946. Unfortunately, at the provincial level, this has only been possible since 1996. After the 1996 and 2007 Censuses, a very comprehensive analysis of mortality was carried out. This analysis also included recent data of the NHIS. Some of the concepts, used in this chapter include:

- Early childhood mortality
  - Infant Mortality Rate (IMR)
    The IMR is the number of deaths to infants under one year of age in a given year per 1,000 live births in that year. In lifetable terms, this is $i_q_0$ or $1- l_1/l_0$
  - Child Mortality Rate (CMR)
    The CMR is the probability of dying between age 1 and 5 expressed per 1,000. In lifetable terms, this is $q_1$.
  - Under Five Mortality Rate (U5MR)
    The U5MR is the probability of dying between the age of 0 and age 5 expressed per 1,000. In lifetable terms, this is $s_1$ or $l_5/l_0$

- Life expectancy ($e_0$)
  The average number of additional years a person would live if current mortality trends were to continue.

  Note The average life expectancy at birth is the average number of years a newborn child would live given continuation of current mortality trends.

- Maternal Mortality Rate (MMR)
  The number of deaths to women due to pregnancy and childbirth complications per 100,000 live births in a given year. In Fiji, it is not yet possible to derive provincial level MMRs from NHIS data. It is not feasible to collect reliable information on maternal mortality from a census.
- **Crude Death Rate (CDR)**
  
  The number of deaths per 1,000 population in a given year, expressed per 1,000

- **Age specific death rate (ASDR)**
  
  A death rate obtained for specific age groups, expressed per 1,000
2. Profile

Fig. VII-1 Average number of children ever born and average number of children surviving for women age 15-49 derived from 2007 Census data

Fig.VII-1a: Average number of children ever born and average number of children surviving for total

<table>
<thead>
<tr>
<th>Age group</th>
<th>AV Nr. CEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>0.0</td>
</tr>
<tr>
<td>20-24</td>
<td>0.5</td>
</tr>
<tr>
<td>25-29</td>
<td>1.0</td>
</tr>
<tr>
<td>30-34</td>
<td>1.5</td>
</tr>
<tr>
<td>35-39</td>
<td>2.0</td>
</tr>
<tr>
<td>40-44</td>
<td>2.5</td>
</tr>
<tr>
<td>45-49</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Legend:
- Fiji Pi
- Fiji Si
- Nadroga Pi
- Nadroga Si
Fig. VII-1b: Average number of children ever born and average number of children surviving for Fijians
Fig.VII-1c: Number of children ever born and average number of children surviving for Indians.
Since measurement of mortality started in Fiji, it has been realized that the country’s civil registration system (CRS) does not provide a complete and reliable record of all deaths that occur in the country. This is still the case in 2013. Moreover, the computation of provincial-level mortality indices from registration data faces additional problems compared to computation of national average indices.

In response, the FBoS has, since the 1946 Census, derived the mortality situation and trend in Fiji in an indirect way from answers to a series of retrospective census questions asked of all women 15 years old and over. These questions are concerned with the total number of children ever been born and how many of these children survived or had died. Census Reports tabulate the answers to these questions separately for male and female children by age of mother (in five-year age groups). Unfortunately, this so-called lifetime fertility information is usually affected by several types of bias. In Fiji, the most important type of bias used to be recall (or memory) lapse. This means that with increasing age of women, the retrospective reports concerning the lifetime fertility of women are usually increasingly affected by underreporting, especially of non-surviving children. Moreover, older women are on average less educated than the younger ones. The latter tend to report more accurately, the more so since they report on events that happened only recently.

Children that are most likely omitted from census lifetime fertility reports in Fiji include:

- Live born children who died in early infancy, especially those dying immediately after birth (within minutes or even seconds after birth).

- Children not living in the same household as their mother (i.e. at boarding school, married etc.)

- Illegitimate children

An assessment of the answers to the lifetime fertility questions during the early censuses in 1946, 1956 and 1966, suggests that recall (memory) lapse at the time was very serious. However, an assessment of this data from more recent censuses, suggests that the impact of recall lapse has decreased very significantly, especially for the younger and better educated women. Reports by older women (beyond the reproductive age span) remain significantly affected by recall lapse. Finally, it should be mentioned that lifetime fertility data in Fiji including Nadroga is to some extent affected by an adoption bias but this applies in particular to the data for the Fijian component of the population.26

Figure VII-1 shows the average number of children ever born and surviving to women in the reproductive age span (15-49) in five-year age groups (P_i and S_i respectively) in 2007. The P_i and S_i values for all women, irrespective of ethnicity in Nadroga are close to the national average ones (which are included in Figure VII-1 for comparison). However, the P_i and S_i values for Fijian women in Nadroga tend to be marginally below the national average ones for Fijians. Finally, the P_i and S_i values for Indian women in the province tend to be marginally above the national average ones for Indians.

26 Women should only report their own or natural children. If a woman had a child that has been adopted by somebody else, she still should report this child since it is her natural child. On the other hand, if she herself has adopted a child, she should not report this child. Its natural mother should report it.
Table VII-1: Comparison of $P_i$ and $S_i$ values by sex for Nadroga with those of other provinces in the Western Davison and national average values

<table>
<thead>
<tr>
<th>Province</th>
<th>Sex</th>
<th>i=1</th>
<th>i=2</th>
<th>i=3</th>
<th>i=4</th>
<th>i=5</th>
<th>i=6</th>
<th>i=7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$P_i$</td>
<td>$S_i$</td>
<td>$P_i$</td>
<td>$S_i$</td>
<td>$P_i$</td>
<td>$S_i$</td>
<td>$P_i$</td>
</tr>
<tr>
<td>Fiji</td>
<td>P</td>
<td>0.121</td>
<td>0.115</td>
<td>0.756</td>
<td>0.728</td>
<td>1.584</td>
<td>1.541</td>
<td>2.381</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>0.055</td>
<td>0.052</td>
<td>0.374</td>
<td>0.360</td>
<td>0.812</td>
<td>0.789</td>
<td>1.229</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>0.067</td>
<td>0.064</td>
<td>0.382</td>
<td>0.368</td>
<td>0.771</td>
<td>0.753</td>
<td>1.152</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>P</td>
<td>0.145</td>
<td>0.139</td>
<td>0.861</td>
<td>0.826</td>
<td>1.576</td>
<td>1.539</td>
<td>2.350</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>0.076</td>
<td>0.072</td>
<td>0.425</td>
<td>0.407</td>
<td>0.791</td>
<td>0.774</td>
<td>1.238</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>0.070</td>
<td>0.665</td>
<td>0.436</td>
<td>0.419</td>
<td>0.785</td>
<td>0.765</td>
<td>1.112</td>
</tr>
<tr>
<td>Ba</td>
<td>P</td>
<td>0.171</td>
<td>0.164</td>
<td>0.798</td>
<td>0.768</td>
<td>1.608</td>
<td>1.561</td>
<td>2.344</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>0.060</td>
<td>0.056</td>
<td>0.390</td>
<td>0.374</td>
<td>0.827</td>
<td>0.801</td>
<td>1.207</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>0.111</td>
<td>0.107</td>
<td>0.408</td>
<td>0.395</td>
<td>0.781</td>
<td>0.760</td>
<td>1.136</td>
</tr>
<tr>
<td>Ra</td>
<td>P</td>
<td>0.106</td>
<td>0.103</td>
<td>0.815</td>
<td>0.784</td>
<td>1.811</td>
<td>1.754</td>
<td>2.623</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>0.053</td>
<td>0.052</td>
<td>0.426</td>
<td>0.405</td>
<td>0.902</td>
<td>0.867</td>
<td>1.386</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>0.053</td>
<td>0.051</td>
<td>0.389</td>
<td>0.379</td>
<td>0.909</td>
<td>0.887</td>
<td>1.237</td>
</tr>
</tbody>
</table>
Between 1946 and 1986, the gap between the $P_i$ and $S_i$ curve for Fiji as well as for Ndroga Province decreased rapidly. This implies that during this period, mortality decreased rapidly. Figure VII-1 shows that, in 2007, the gap between the $P_i$ and $S_i$ curve for Ndroga is relatively small. However, the gap is more or less the same as it was already at the time of the 1986 and 1996 Censuses. This implies that, although mortality in the province has reached a moderately low level, this level was already achieved in the mid-1980s. Further progress after that has been quite insignificant. In other words, it seems that the mortality transition in Ndroga, as well as in all other provinces has stalled since the mid-1980s.

Table VII-1 compares the $P_i$ and $S_i$ values for Ndroga Province with those of the other provinces in the Western Division.

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27 The proportion of children that died ($D_i$) follows logically from $P_i$ and $S_i$. The relationship between these indices is:

$$D_i = 1 - \frac{S_i}{P_i}$$

28 In the Analytical Report of the 2007 Census, possible reasons for the stalling mortality transition since the mid-1980s have been discussed in detail. This will be further researched in a Census Research Monograph on Mortality in Fiji.
Figure VII-2 presents a picture of mortality during early childhood (until the age of five) in Nadroga Province. The proportions of children dead (D_i) derived from the average number of children ever born (P_i) and surviving (S_i) presented in Figure VII-1, have been converted into probabilities of surviving between birth and age x. The result of the calculations is the lifetable l_x function. The l_x values (for x = 2, 3 and 5) in Figure VII-2 have been estimated from the lifetime fertility reports of young women (age 20-34). The reason is that these young women are generally better educated than the older ones. Moreover their reports cover a relatively short period of time and recall lapse and other errors are therefore probably minimal.

Figure VII-2 shows how many male and female children in Nadroga (out of the initial 1,000 new-born children), survive until age 2, 3 and 5, given the mortality conditions in the

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Footnotes:
29 The l_x function of a lifetable denotes the number of survivors at exact age x, in this case out of an initial cohort of 1,000 persons. (The figure of 1,000 is the radix of the lifetable)
30 The lifetime fertility reports of very young women, aged 15-19 have not been used in this exercise. The reports of these women are often very much biased. Moreover the number of children born to these very young women is small and their data is usually affected by significant chance fluctuations.
province immediately before the 2007 census. The numbers suggest that early childhood mortality in Nadroga (until the age of 5) is higher for male than for female children. This is the case in all other provinces (with the possible exception of the district of Rotuma). Moreover, since 1946, when the lifetime fertility information from which the $l_x$ values have been estimated was collected for the first time, childhood mortality in Fiji has always been characterized by higher male than female mortality.

Table VII-2 compares the $l_x$ values ($x = 2, 3, 5$) by sex for Nadroga Province with those of the other provinces in the Western Division.

Table VII-2: Comparison of adjusted $l_x$ values ($x = 2, 3$ and $5$) by sex for Nadroga with those of other provinces in the Western Division and national average values

<table>
<thead>
<tr>
<th>Province</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$l_2$</td>
<td>$l_3$</td>
</tr>
<tr>
<td>Fiji</td>
<td>974</td>
<td>971</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>976</td>
<td>973</td>
</tr>
<tr>
<td>Ba</td>
<td>973</td>
<td>970</td>
</tr>
<tr>
<td>Ra</td>
<td>972</td>
<td>969</td>
</tr>
</tbody>
</table>

Fig. VII-3: Change in the proportion (%) of census respondents with mother still alive between 1996 and 2007 for the total population by ethnicity

The so-called maternal and paternal orphanhood methodology for the indirect estimation of adult mortality was introduced in the early 1970s. Fiji was one of the very first countries in the world that employed the maternal and paternal orphanhood techniques in its 1976 Census.
The 1976 Census Interview Schedule (and all census Interview Schedules after 1976) included the maternal and paternal orphanhood questions. All respondents were asked to report the vital status of their (natural) mother and father at the time of these censuses: “Is your own mother/father still alive”. From this information, proportions of respondents with surviving mother/father have been computed. In the analysis of this data, these rather elusive proportions have been converted into precise adult male and female probabilities of dying.

As in the case of lifetime fertility data (Figure VII-1), maternal and paternal orphanhood data is usually affected by several types of bias. For a meaningful analysis and interpretation, the shortcomings of the data must be clearly understood.

- The proportions of respondents with surviving mother/father do not refer to the entire population. They reflect the mortality experience of parents with surviving children. For instance, in order for a mother (or father) to be included in the orphanhood reports of a census, the mother/father must have at least one surviving natural child and this child must be included in the census.

- The vital status of mothers and fathers who had more than one surviving natural child (and all these children were included in the census) will be included more than once in the orphanhood data of this census. For instance, the vital status of a mother who has given birth to ten children (who all survived until the time of the census and were all enumerated during the census) will be included ten times. On the other hand, the vital status of a mother who has also given birth to ten children (but all these children have passed away or were overseas at the time of the census) will not be reported at all.

In sum, the orphanhood reports from a census do not represent the mortality experience of the entire population. On the other hand, the mortality experience of high-parity mothers and fathers will be overrepresented. Moreover, like the lifetime fertility data (Figure VII-1) orphanhood data is also affected by adoption bias, especially in the case of young children (under age 15). This is partly due to the census interview situation. It can only be hoped that the various biases in the orphanhood data will offset each other to some extent and that their net effect will not be very significant. However, like in early childhood mortality analysis (Figure VII-2), adult mortality analysis is based on what can arguably be considered as the most accurate reports. (In this case, reports from respondents aged 15-44).

Figure VII-3 compares the proportions of respondents who reported that their natural mother was still alive at the time of the 1996 and 2007 Censuses. For Nadroga, during the 11-year period, this proportion has decreased from 77.9 percent to 73.2 percent. In most provinces, the situation has worsened more for Indians than for Fijians and this also very much the case in Nadroga.

In 2007 census information presents the bleak picture that most 2007 proportions are more or less back at the level where they were at the time of the 1986 Census. Consequently, since the mid-1980s, the adult mortality transition has at best stalled. The comparison of the 1996 and 2007 data suggests that presently, adult mortality at the national level as well as in Nadroga is probably on the increase.³¹

³¹ Several hypotheses for the stalling adult mortality transition in Fiji have been forwarded. These will be discussed in detail in a forthcoming Census Research Monograph of the FBoS.
Table VII-3 compares the proportions of respondents with mother still alive at the time of the 1996 and 2007 Censuses in Nadroga with these proportions in other provinces of the Western Division and with national average values.

Table VII-b3: Comparison of the proportions of respondents with mother still alive at the time of the 1996 and 2007 Censuses in Nadroga with these proportions for other provinces of the Western Division and with national average values

<table>
<thead>
<tr>
<th>Province</th>
<th>Total population</th>
<th>Fijians</th>
<th>Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>.7930</td>
<td>.7605</td>
<td>.7912</td>
</tr>
<tr>
<td>Nadroga</td>
<td>.7794</td>
<td>.7316</td>
<td>.7684</td>
</tr>
<tr>
<td>Ba</td>
<td>.7915</td>
<td>.7766</td>
<td>.7880</td>
</tr>
<tr>
<td>Ra</td>
<td>.7816</td>
<td>.7433</td>
<td>.7795</td>
</tr>
</tbody>
</table>

Fig. VII-4: Change in the proportion (%) of census respondents with father still alive between 1996 and 2007 for the total population by ethnicity

The proportions of respondents who, during the 1996 and 2007 Censuses reported that their own (or natural) father was still alive are shown in Figure VII-4. The proportions, by ethnicity, for Nadroga are compared with the national average proportions.

The information confirms that of Figure VII-3. During the period 1996 to 2007, the paternal orphanhood proportions at the national level as well as those for Nadroga have decreased. For
the province, the decrease has been from 69.1 percent in 1996 to 64.1 percent in 2007. It will be noted that the paternal orphanhood proportions in Figure VII-4 are significantly lower than the maternal orphanhood proportions in Figure VII-3. This reflects the higher level of adult mortality for males than for females in Nadroga. The same is the case in all other provinces.

Nationwide, as well as in Nadroga, the proportions for Indians have decreased more than those for Fijians. However the difference by ethnicity in Nadroga is not as pronounced as in some other provinces, especially Macuata.

The conclusion drawn from Figure VII-4 is the same as that drawn from Figure VII-3. The adult mortality transition at the national level as well as in Nadroga has at best stalled and, for a variety of reasons, adult mortality may presently be on the increase. A comparison with 1986 paternal orphanhood proportions suggest that the slowing down started already in the mid-1980s.

Table VII-4 compares the proportions of respondents with father still alive at the time of the 1996 and 2007 Censuses in Nadroga with these proportions in other provinces of the Western Division and with national average values.

Table VII-B4:  Comparison of the proportions of respondents with father still alive at the time of the 1996 and 2007 Censuses in Nadroga with these proportions for other provinces of the Western Division and with national average values

<table>
<thead>
<tr>
<th>Province</th>
<th>Total population</th>
<th>Fijians</th>
<th>Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>.6979</td>
<td>.6690</td>
<td>.7139</td>
</tr>
<tr>
<td>Nadroga</td>
<td>.6911</td>
<td>.6408</td>
<td>.6920</td>
</tr>
<tr>
<td>Ba</td>
<td>.6937</td>
<td>.6931</td>
<td>.7112</td>
</tr>
<tr>
<td>Ra</td>
<td>.6949</td>
<td>.6513</td>
<td>.7046</td>
</tr>
</tbody>
</table>
Fig. VII-5: Age and sex specific death rates (ASDR) derived from 2007 Census data for the total population

The Y-axis of Figure VII-5 denotes the age-specific death rate (ASDR). For a particular age-group (i), the ASDR (i) is the number of deaths of persons in that age group in a year, divided by the mid-year population in that year, expressed per 1,000.32

After the age-sex structures of the 2007 Census became available, ASDRs by sex and ethnicity for Fiji as a whole have been derived in the above direct manner, using the deaths in a particular age-sex group, recorded by the National Health Information System (NHIS) of Fiji.

32 ASDR(i) = \{(D(i)/Pop(i))\}x1,000
the Department of Health (DOH) as numerators of the ASDRs. The census age-sex structure in 2007 was used as the denominator of the rates.

Unfortunately, the above direct procedure of lifetable construction is presently only possible in Fiji at the national level and not at the provincial level, including Nadroga Province. The reason is that the death registration data of the DOH in Fiji is not precise enough with regard to the usual place of residence of deceased persons. On many death registration forms, this information has often been entered incompletely and/or incorrectly. Consequently, these deaths cannot be allocated to a particular province or to the rural or urban sector.33

Consequently, after the 2007 Census (as after the 1996 Census), the provincial lifetables have been estimated indirectly from data collected during the census. Lifetables for the total provincial populations by sex have been generated by splicing together the information on early childhood mortality (Figure VII-2) with that of adult mortality (Figure VII-3 and 4). Figure VII-5 presents the ASDRs of these lifetables for Nadroga (in five-year age groups) for males and females. As in all other provinces, mortality for females is lower than that for males. Moreover, the mortality situation in Nadroga in 2007 is slightly more favorable than for the nation as a whole.

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33 The DOH is in the process of addressing this problem but it will take time before all health personnel issuing death certificates in Fiji will have been sufficiently educated as to the importance of accurate information on usual place of residence of deceased persons, and follow the instructions of the department.
Fig. VII-6: Number of survivors by age and sex (out of 100,000) derived from 2007 Census data for the total population
Figure VII-6 presents another function of the male and female lifetables for Nadroga Province in 2007, namely the l_x function. Once again, age has been plotted on the X-axis and the l_x values on the Y-axis. This lifetable l_x function is defined as the number of survivors at exact age x, out of an initial cohort. For the sake of convenience, the size of the initial cohort is usually a multiple of 10. In our case, the size of the initial cohort (or the radix of the lifetable) is 100,000. For instance, the values of l(25) for males and females in Nadroga are 93,547 and 95,025 respectively. This means that under the mortality conditions of 2007, 93.5 percent of males and 95.0 percent of females (out of the original 100,000 males and females) will survive until the age of 25.

The l_x curve of any population decreases gradually between its maximum value of 100,000 or 100 percent (at age 0) and its minimum value of 0 or 0 percent (at age \( \omega \), when all members of the cohort have passed away). The l_x curves in Figure VII-6 are a reflection of the continuous process of attrition in a male and female birth cohort in Nadroga, due to death. The national average l_x values for males and females are included for comparison.

Table VII-5: Comparison of the l_x values for females in Nadroga in 2007 with the l_x values for females in other provinces of the Western Division and the national average l_x values for females

<table>
<thead>
<tr>
<th>Index</th>
<th>Fiji</th>
<th>Western Division</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ba</td>
</tr>
<tr>
<td>Input: ( \beta = 1.342; \logit l(2) = -0.7152 )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l(2)^a</td>
<td>.976</td>
<td>.974</td>
</tr>
<tr>
<td>logit l(2)^a</td>
<td>-1.8527</td>
<td>-1.8117</td>
</tr>
<tr>
<td>( \alpha )</td>
<td>-.893</td>
<td>-.852</td>
</tr>
<tr>
<td>Output: Female lifetable function l(x) for x = 1, 5, 10, 15……85; l(0) = 100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>98,391</td>
<td>98,255</td>
</tr>
<tr>
<td>5</td>
<td>96,772</td>
<td>96,506</td>
</tr>
<tr>
<td>10</td>
<td>96,309</td>
<td>96,006</td>
</tr>
<tr>
<td>15</td>
<td>95,942</td>
<td>95,611</td>
</tr>
<tr>
<td>20</td>
<td>95,291</td>
<td>94,909</td>
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<tr>
<td>25</td>
<td>94,341</td>
<td>93,887</td>
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<td>30</td>
<td>93,286</td>
<td>92,754</td>
</tr>
<tr>
<td>35</td>
<td>92,099</td>
<td>91,482</td>
</tr>
<tr>
<td>40</td>
<td>90,667</td>
<td>89,950</td>
</tr>
<tr>
<td>45</td>
<td>88,835</td>
<td>87,995</td>
</tr>
<tr>
<td>50</td>
<td>86,329</td>
<td>85,332</td>
</tr>
<tr>
<td>55</td>
<td>82,674</td>
<td>81,468</td>
</tr>
<tr>
<td>60</td>
<td>77,248</td>
<td>75,775</td>
</tr>
<tr>
<td>65</td>
<td>68,580</td>
<td>66,787</td>
</tr>
<tr>
<td>70</td>
<td>55,588</td>
<td>53,555</td>
</tr>
<tr>
<td>75</td>
<td>36,776</td>
<td>34,891</td>
</tr>
<tr>
<td>80</td>
<td>17,274</td>
<td>16,134</td>
</tr>
<tr>
<td>85</td>
<td>5,089</td>
<td>4,708</td>
</tr>
</tbody>
</table>
Figure VII-6 portrays the same picture as Figure VII-5. In 2007, the overall mortality situation of females in Nadroga is somewhat more favorable than that of males. Moreover, the overall mortality situation for males as well as females in Nadroga in 2007 is slightly more favorable than the national average mortality situation for males and females in that year.

Finally, Table VII-5 and 6 compare the \( l_x \) values for females and males respectively in Nadroga in 2007 with the \( l_x \) values for females and males in other provinces of the Western Division and the national average \( l_x \) values for females and males.

### Table VII-6  Comparison of the \( l_x \) values for males in Nadroga in 2007 with the \( l_x \) values for males in other provinces of the Western Division and the national average \( l_x \) values for males

<table>
<thead>
<tr>
<th>Index</th>
<th>Fiji</th>
<th>Western Division</th>
<th>Ba</th>
<th>Nadroga</th>
<th>Ra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input: ( \beta = 1.371; \logit l(2)^a = -0.7152 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( l(2)^a )</td>
<td>.972</td>
<td>.972</td>
<td>.973</td>
<td>.966</td>
<td></td>
</tr>
<tr>
<td>( \logit l(2)^a )</td>
<td>-1.7736</td>
<td>-1.7736</td>
<td>-1.7923</td>
<td>-1.6734</td>
<td></td>
</tr>
<tr>
<td>( \alpha )</td>
<td>-.793</td>
<td>-.793</td>
<td>-.812</td>
<td>-.693</td>
<td></td>
</tr>
<tr>
<td>Output: Female lifetable function ( l(x) ) for ( x = 1, 5, 10, 15, \ldots, 85; l(0) = 100,000 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>98,135</td>
<td>98,135</td>
<td>98,204</td>
<td>97,732</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>96,214</td>
<td>96,214</td>
<td>96,350</td>
<td>95,414</td>
<td></td>
</tr>
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<td>10</td>
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<td>95,663</td>
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<td>94,753</td>
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</tr>
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<td>95,395</td>
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<td>94,448</td>
<td>94,644</td>
<td>93,301</td>
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</tr>
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<td>93,314</td>
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<td>92,054</td>
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<td>90,640</td>
<td>90,957</td>
<td>88,799</td>
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</tr>
<tr>
<td>40</td>
<td>88,936</td>
<td>88,936</td>
<td>89,304</td>
<td>86,810</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>86,764</td>
<td>86,764</td>
<td>87,194</td>
<td>84,293</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>83,810</td>
<td>83,810</td>
<td>84,319</td>
<td>80,909</td>
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</tr>
<tr>
<td>55</td>
<td>79,541</td>
<td>79,541</td>
<td>80,153</td>
<td>76,094</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>73,306</td>
<td>73,306</td>
<td>74,043</td>
<td>69,215</td>
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<td>63,619</td>
<td>63,619</td>
<td>64,493</td>
<td>58,876</td>
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<td>49,768</td>
<td>49,768</td>
<td>50,718</td>
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<td>75</td>
<td>31,171</td>
<td>31,171</td>
<td>31,992</td>
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<tr>
<td>80</td>
<td>13,720</td>
<td>13,720</td>
<td>14,176</td>
<td>11,519</td>
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</tr>
<tr>
<td>85</td>
<td>3,814</td>
<td>3,814</td>
<td>3,956</td>
<td>3,144</td>
<td></td>
</tr>
</tbody>
</table>
Fig. VII-7: Average life expectancy (years) by age and sex derived from 2007 Census data for the total population

The $e_x$ function of the lifetable is defined as the average number of additional years a person who has reached the age of $x$ would live if current mortality trends were to continue. A particular important index is $e_0$, or the average life expectancy at birth. This is the average number of years a new-born child may on average expect to live given continuation of the current mortality conditions. This particular index is considered not only as a key indicator of
the overall health situation but it is also an important proxy indicator of the level of development for the population. For this reason, longevity (the average life expectancy at birth) has been selected as one of the three components of the United Nations Human Development Index (HDI).

The life expectancies at all ages between 0 and \( \omega \) of the male and female lifetables for Nadroga in 2007 are shown in Figure VI-7. In Nadroga as in all other provinces, the life expectancy of females at all ages between 0 and \( \omega \) is somewhat higher than that of males. For Nadroga in 2007, the differences are slightly larger than at the national level. For instance, \( e_0 \) for males in Nadroga is 64.5 years and for females somewhat higher: 67.4 years. The differences between male and female life expectancies in the province are close to the national average differences.

Generally, the differences in life expectancy between the provinces in Fiji are relatively small compared to the differences between the geographic subdivisions of some other countries in the South Pacific Region i.e. Papua New Guinea.

Finally, Table VII-7 compares several mortality parameters by sex for Nadroga in 2007 with these same parameters for other provinces of the Western Division as well as the national average parameters. This includes the average life expectancy at age 0, 5, 25, 65 and 85.

Table VII-7: Comparison of key mortality parameters by sex for Nadroga in 2007 with these same parameters for other provinces of the Western Division as well as with the national average values

<table>
<thead>
<tr>
<th>Province of the Western Division</th>
<th>Sex</th>
<th>IMR (‰)</th>
<th>U5 MR$^5$ (‰)</th>
<th>( e_0 ) (yrs)</th>
<th>( e_5 ) (yrs)</th>
<th>( e_{25} ) (yrs)</th>
<th>( e_{65} ) (yrs)</th>
<th>( e_{85} ) (yrs)</th>
<th>CDR$^a$ (‰)</th>
<th>( d^9 ) (‰)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>P</td>
<td>18</td>
<td>35</td>
<td>65.2</td>
<td>62.4</td>
<td>43.9</td>
<td>10.6</td>
<td>2.8</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>19</td>
<td>38</td>
<td>64.1</td>
<td>61.5</td>
<td>43.1</td>
<td>10.2</td>
<td>2.7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>16</td>
<td>32</td>
<td>66.2</td>
<td>63.3</td>
<td>44.7</td>
<td>10.9</td>
<td>2.8</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Nadroga</td>
<td>P</td>
<td>16</td>
<td>32</td>
<td>66.0</td>
<td>63.6</td>
<td>44.5</td>
<td>10.8</td>
<td>2.8</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>18</td>
<td>36</td>
<td>64.5</td>
<td>61.9</td>
<td>43.4</td>
<td>10.3</td>
<td>2.7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>14</td>
<td>28</td>
<td>67.4</td>
<td>64.3</td>
<td>45.5</td>
<td>11.2</td>
<td>2.8</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Ba</td>
<td>P</td>
<td>18</td>
<td>37</td>
<td>64.8</td>
<td>62.2</td>
<td>43.6</td>
<td>10.5</td>
<td>2.8</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>19</td>
<td>38</td>
<td>64.1</td>
<td>61.6</td>
<td>43.1</td>
<td>10.2</td>
<td>2.7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>17</td>
<td>35</td>
<td>65.4</td>
<td>62.7</td>
<td>44.1</td>
<td>10.7</td>
<td>2.8</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Ra</td>
<td>P</td>
<td>19</td>
<td>37</td>
<td>64.8</td>
<td>62.2</td>
<td>43.7</td>
<td>10.5</td>
<td>2.8</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>23</td>
<td>46</td>
<td>62.1</td>
<td>60.0</td>
<td>41.8</td>
<td>9.8</td>
<td>2.7</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>14</td>
<td>28</td>
<td>67.4</td>
<td>64.3</td>
<td>45.5</td>
<td>11.2</td>
<td>2.8</td>
<td>9</td>
<td>15</td>
</tr>
</tbody>
</table>

---

$^a \omega$ is the age at which the last surviving person of a particular cohort dies.
Figure VII-8 presents information about the mortality situation during the early childhood years. In demographic terms, this refers to mortality of children under the age of five. This is generally measured by means of the “Under-Five Mortality Rate” (U5MR). This rate is defined as the probability of dying between the age of 0 and age 5 expressed per 1,000.³⁵ The U5MR for males and females in Nadroga in 2007 are shown in Figure VII-8. The national average rates are given as comparison.

Furthermore, mortality during early childhood is usually subdivided into infant mortality (under the age of one) and child mortality (during the remaining four years of early childhood). The corresponding rates are:

- **Infant Mortality Rate (IMR).** The IMR is the number of deaths to infants below the age of one, in a given year per 1,000 live births in that year.³⁶ The IMRs by sex for Nadroga are also shown in Figure VII-8.

  Note: Like the $e_0$ in Figure VII-7, the IMR is also considered as a key index of mortality. Generally, a decrease in the IMR and an increase in $e_0$ of a particular population is usually considered as an indication that the population has experienced development.

- **Child Mortality Rate (CMR).** The CMR is the probability of dying between age 1 and 5 expressed per 1,000.³⁷

Figure VII-8 indicates that, in Nadroga, as in all other provinces, the early childhood mortality situation for female children is more favorable than that for males.³⁸ Moreover, the

³⁵ In lifetable terms, this is $s_{q0}$ or $l_0/l_0$
³⁶ In lifetable terms, this is $d_{q0}$ or $1 - l_1/l_0$
³⁷ In lifetable terms, this is $d_{q1}$
³⁸ In 2007, Rotuma may be an exception but more information is required to confirm this.
early childhood situation in Nadroga is slightly more favorable than that for the nation as a whole.

Finally, Table VII-7 (under Figure VII-7) compares the IMR, CMR and U5MR by sex for Nadroga in 2007 with these same early childhood mortality rates for other provinces in the Western Division as well as with the national average rates.

Fig. VII-9: Crude Death Rate (CDR; ‰) and Intrinsic Death Rate (d; in ‰) by sex derived from 2007 Census data for the total population

Figure VII-9 presents two versions of the overall death rate for Nadroga Province:

- Crude Death Rate
- Intrinsic Death Rate

- **Crude Death Rate (CDR)**

As the name suggests, the CDR is a crude rate. This means that this rate is not only affected by changes in the level of mortality but also by changes in the age-sex structure of the population. This implies that comparisons between different geographic units or between the same geographic unit at different points in time must be made with the utmost care. The reason is that a difference in the CDR (or a change in the CDR over time) may not be due to a difference in the level of mortality but it may be partly or even entirely due to differences in the age-sex structure of the populations that are being compared (or to change in the age-sex structure of a particular population over time). In order to make CDRs comparable, they must be standardized. This means that the impact of the difference in age structure on the CDR must be eliminated.
The CDR is not a mortality indicator that can be directly obtained from the lifetable of a population. The CDR for Nadroga (as well as all other provinces) has been obtained by:

- Applying the ASDRs for the subsequent age-groups (i) by sex of the 2007 lifetables of Nadroga to the 2007 Census age-sex structure of the population of Nadroga. This leads to an estimate of the number of deaths in each age-sex group \{D(i)\} \(^{39}\)

- Adding the obtained \(D(i)\) values: \(\sum D(i)\). This is the total number of deaths that would occur in Nadroga in 2007 under the mortality conditions underlying the ASDRs of the 2007 lifetables.

- Dividing the estimate of \(D\) by the total mid-year population, multiplied by 1,000 \(^{40}\)

The CDRs in Figure VII-9 for Fiji and for Nadroga are un-standardized rates and are therefore not directly comparable with each other. Nor can the CDR for Nadroga be compared with that of other provinces, unless differences in the age-sex structure are eliminated by means of standardization.

In 2007, the CDR for Nadroga was approximately the same as the national average CDR, viz. 9 \(\%\).

- **Intrinsic Death Rate (d)**

  The intrinsic death rate \(d\) is defined as the death rate that a population would eventually achieve if that population would become stationary given continuation of present conditions. The intrinsic death rate \(d\) can be derived from the \(e_0\) value of a lifetable:

\[
d = b = \frac{1}{e_0}
\]

where \(d\) and \(b\) are the intrinsic death and birthrate of the stationary population respectively. \(^{41}\)

The intrinsic death rate for Nadroga in 2007 can be compared with that of other provinces and with that for Nadroga at some earlier period when mortality conditions were different from those in 2007. A comparison of \(d\) values derived from 2007 lifetables of all provinces in Fiji indicates that, given continuation of present mortality conditions for the provinces, the level of mortality, once the stationary state has been achieved, would be about the same, viz. 15 to 16 \(\%\) with the female value of \(d\) marginally lower than the male value of \(d\).

\[^{39}\] D = \(\sum\{\text{ASDR}(i) \times \text{Pop}(i)\}\) where \(i\) denotes the age group

\[^{40}\] CDR = \(\{\sum D(i) / \text{Pop}_{\text{mid-year}}\} \times 1,000\)

\[^{41}\] In a stationary (lifetable) population, \(b\) is by definition equal to \(d\) or \(b = d = l_0/T_0\). On the other hand, \(e_0\) is defined as \(T_0/l_0\)
Table VII-7 (under Figure VII-7) compares again the CDR and d by sex for Nadroga in 2007 with these same parameters for other provinces in the Western Division as well as with the national average CDR and d.

**Fig. VII-10: Progress made towards achieving MDG 4 in 2007 and target for 2015**

![Bar chart showing IMR in 1990, 2007, and 2015 for MDG 4](image)

Millennium Development Goal (MDG) 4 is concerned with early childhood mortality (under the age of five) as well as with some important determinants of early childhood mortality, especially immunization. The global target for MDG 4 is extremely demanding namely “to reduce by two thirds, between 1990 and 2015, the under-five mortality rate (U5MR).

Considering the actual trend in early childhood mortality for the nation as a whole, during the 17 year interval between 1990 and 2007, it has become extremely unlikely that, by 2015, the national average MDG 4 target can be achieved. This is illustrated by means of the data in Table VII-8 which provides separate information for the two components of early childhood mortality, namely the infant mortality rate (IMR) and the child mortality rate (CMR).

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42 The census is not a very suitable data collection system with regard to the measurement of immunization coverage.
Table VII-1: Trend in early childhood mortality during the 17 year interval between 1990-2007 for Fiji by sex and ethnicity

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>P M F</td>
<td>P M F</td>
<td>P M F</td>
<td>P M F</td>
</tr>
<tr>
<td>Total Pop.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22 23 21</td>
<td>20 21 19</td>
<td>12 13 11</td>
<td>7 8 7</td>
</tr>
<tr>
<td>Fijians</td>
<td>26 26 25</td>
<td>21 22 20</td>
<td>14 14 14</td>
<td>9 9 9</td>
</tr>
<tr>
<td>Indians</td>
<td>19 20 17</td>
<td>20 22 19</td>
<td>10 11 10</td>
<td>6 7 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total Pop.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 5 5</td>
<td>7 7 6</td>
<td>3 3 3</td>
<td>2 2 2</td>
</tr>
<tr>
<td>Fijians</td>
<td>6 7 6</td>
<td>8 7 8</td>
<td>3 4 3</td>
<td>2 2 2</td>
</tr>
<tr>
<td>Indians</td>
<td>4 4 4</td>
<td>5 6 4</td>
<td>2 2 2</td>
<td>1 1 1</td>
</tr>
</tbody>
</table>

It appears that Fiji (and this applies to Fijians as well as Indians) is far off track as far as progress towards achievement of its MDG 4 targets is concerned. However, it should be taken into account that for a country like Fiji, that, in 1986 (just before MDG base-year 1990), had already achieved a moderately low level of early childhood mortality; this global MDG target must be considered as unrealistic.

Figure VII-10 shows a picture of progress made in Nadroga towards achieving its own MDG 4 target for 2015. Only one component of early childhood mortality is shown in Figure VII-10, namely the infant mortality rate (IMR). In order to be on track to achieve its IMR target for 2015 (7‰), Nadroga should have achieved an IMR of 11‰ in 2007. In reality, its IMR was still 16‰. In other words, Nadroga is significantly behind schedule as far as the achievement of MDG 4 is concerned. Moreover, progress towards achieving the child mortality target for 2015 has been less than in the case of infant mortality.

Finally, the data for Nadroga suggests that this province is as much off track in achieving its MDG 4 target as the nation as a whole. The provinces that, in 2007 are most lagging behind with regard to achieving their MDG 4 target are Tailevu and Rewa in the Central Division as well as Bua in the Northern Division. Cakaudrove, though also not on track, has made more progress than any other province but one reason is that, in MDG base year 1990, early childhood mortality in Cakaudrove was considerably higher than in Nadroga.
Chapter VIII (8): FERTILITY

1. General

The study of fertility is concerned with the actual reproductive performance of an individual, a couple, a group, or a population whereas fecundity refers to the physiological capacity of a woman, man, or couple to produce a live born child.

- **Fertility analysis**
  - **Cohort analysis**
    
    Observation of a cohort’s demographic behavior through life or through many periods, for example, examining the fertility behavior of the cohort of people born in 1980.

  - **Lifetime fertility questions**
    
    Census/survey questions to women (usually of age 15 and over) on the number of children ever born alive to them as well as the number of these that are still alive and that are dead. Lifetime fertility as well as infant and child mortality is derived from the answers to the lifetime fertility questions.

  - **Completed Fertility Rate**
    
    The number of children ever born (CEB) per woman to a cohort of women by the end of their childbearing years.

- **Period analysis**

  This refers to the observation of a population in a specified period of time, often a period of one year.

  - **Age specific fertility rate**
    
    Fertility rate obtained for specific age groups, expressed per 1,000

  - **Total Fertility Rate**
    
    The average number of children that would be born alive to a woman (or group of women) during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates of a given year.

  - **Gross Reproduction Rate (GRR)**
    
    The average number of female children that would be born alive to a woman (or group of women) during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates of a given year.
• **Net Reproduction Rate (NRR)**

The average number of daughters that would be born to a woman (or group of women) if she passed through her lifetime from birth conforming to the age-specific fertility and mortality rates of a given year. A NRR = 1 means that each generation of women is having exactly enough daughters to replace itself in the population.

• **Crude Rates**

  - **Crude Birth Rate (CBR)**
    
    The number of births per 1,000 population in a given year.

  - **General Fertility Rate**
    
    The number of live births per 1000 women in the reproductive age group 15-49 in a given year.

- **“Own-children” technique**

  The “own-children” technique has been used in the estimation of fertility in Fiji since 1976. This technique makes use of the linkage of mother and own children (through the person number of the natural mother) on the census interview schedule. This information is tabulated in the form of an “own-children” matrix. This matrix is the input for the “Own-Children” computer package programme. Mothers and children under the age of 15 are “reverse-survived” using the various lifetables for the 15-year reverse-survival period. The output consists of ASFRs and TFRs for each of the 15 years prior to the census. Since the method can be applied to subgroups of women, it provides a wealth of information on differential fertility.

- **Parity**

  The number of children previously born alive to a woman; for example “three-parity” women are women who have had three children up until now. “Zero-parity” women have had no children at all.

- **Childbearing years or reproductive period**

  The reproductive age span of women, arbitrarily assumed for statistical purposes to be 15 to 49 years

- **Replacement Level Fertility**

  The level of fertility at which a cohort of women on the average are having only enough daughters to “replace” themselves in the population. Replacement level of fertility is reached when the Net Reproduction Rate (NRR) is 1.

- **Family planning**

  The conscious effort of couples to regulate the number and spacing of births. Family planning sometimes connotes the use of “birth control” to avoid pregnancy, but also includes efforts to induce pregnancy.
2. Profile

Fig. VIII-1: Change in the average number of children ever born (CEB) between 1996 and 2007 for women age 15-49, derived from 1996 and 2007 lifetime fertility data
All censuses in Fiji since 1946, recorded the number of children ever born (CEB) to women age 15 and over. In Chapter VII, we have seen that these numbers were converted into proportions of CEB by age of mother. The latter are the \( P_i \) values in Figure VIII-1.\(^{43}\)

Given complete and accurate reporting of the CEB by all women during a census (or survey), the average number of children ever born to women who have reached the end of their reproductive age span (age 50) should provide a measure of lifetime (or completed) fertility. This is the value of \( P_7 \). However, in Chapter VII, it was already mentioned that this data is usually affected by certain forms of bias, the most important one being recall (or memory) lapse. However, lifetime fertility reports of the elderly and not very well educated are often particularly affected by recall lapse. During the early censuses in Fiji, including Nadroga, recall lapse was a serious problem. However, during recent censuses, the extent of recall lapse has diminished and as a result, the quality of the lifetime fertility data from recent censuses has significantly improved.\(^{44}\)

Figure VIII-1 compares the \( P_i \) values for women in Nadroga between age 15 and 50 (in five-year age groups) as reported during the 1996 and 2007 Censuses. The national average \( P_i \) values during those two years are given for comparison. Because there is still evidence of some recall lapse in the most recent census lifetime fertility data, the national average \( P_7 \) values as well as the \( P_7 \) values for Nadroga probably represent a somewhat too low estimate of lifetime fertility or completed family size.\(^{45}\)

The \( P_i \) values for Nadroga in 1996 as well as in 2007 are almost identical to the national average ones, suggesting that the level of lifetime fertility in the province in those years is about the same as the national average level.\(^{46}\)

However, as indicated by the change in \( P_i \) values between 1996 and 2007, lifetime fertility (completed family size) in the province as well as for the nation as a whole decreased during the most recent intercensal period. Between 1996 and 2007, the \( P_7 \) value for women in Nadroga decreased from 3.8 to 3.3. During the same period, the national average \( P_7 \) value decreased from 3.9 to 3.4.\(^{47}\) However, as already suggested in Chapter II, the Indian population in Fiji, including the Indian population of Nadroga has made a much larger contribution to this fertility transition than the Fijian population.\(^{48}\)

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\(^{43}\) The suffix \( i \) indicates the age-group of women i.e. \( i = 1 \) refers to women aged 15-19, \( i = 2 \) refers to women aged 20-24… and \( i = 7 \) refers to women aged 45-49.

\(^{44}\) In Chapter VII, the same lifetime fertility data (average number of children ever born, surviving and dead) has been used for the indirect estimation of early childhood mortality. Lifetime fertility data in Fiji is also affected by an adoption bias.

\(^{45}\) The \( P_i \) values for women age 20-34 (\( P_2 \) to \( P_4 \)) are most likely the most reliable ones since these women:
  - Are relatively young and are therefore not reporting on births that happened a long time ago
  - Are on average better educated than the older women
  - Because of their young age usually report on a relatively small number of children

\(^{46}\) The fertility transition of Indians in Fiji has been much faster in the past and is still much faster than that of Fijians.

\(^{47}\) All provinces, with the possible exception of Rotuma District, saw a decrease in lifetime fertility during the 1996-2007 intercensal period.

\(^{48}\) Chapter II deals amongst others with the change in the age-sex structure of the province over time as a result of fertility decline (ageing at the base of the age-sex pyramid). Moreover, the change in the census-based Child-Woman Ratio (CWR) for the province since 1966 also indicates that the fertility transition of Indians has progressed much faster than that of Fijians.
Table VIII-1 compares the average number of children ever born by age of mother in Nadroga in 1996 and 2007 with these averages for other provinces in the Western Division as well as with the national averages.

Table VIII-1: Comparison of the average number of children ever born by age of mother in Nadroga in 1996 and 2007 with these averages for other provinces in the Western Division as well as with the national averages

<table>
<thead>
<tr>
<th>Province</th>
<th>Year</th>
<th>Age group of mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>1996</td>
<td>0.075 0.751 1.791 2.600 3.153 3.566 3.880</td>
</tr>
<tr>
<td>Fiji</td>
<td>2007</td>
<td>0.121 0.756 1.584 2.381 2.879 3.207 3.358</td>
</tr>
<tr>
<td>Ra</td>
<td>1996</td>
<td>0.074 0.880 2.028 2.965 3.660 4.039 4.374</td>
</tr>
<tr>
<td>Ra</td>
<td>2007</td>
<td>0.106 0.815 1.811 2.623 3.216 3.510 3.721</td>
</tr>
<tr>
<td>Nadroga</td>
<td>1996</td>
<td>0.088 0.790 1.723 2.546 3.119 3.484 3.847</td>
</tr>
<tr>
<td>Nadroga</td>
<td>2007</td>
<td>0.145 0.861 1.576 2.350 2.777 3.227 3.285</td>
</tr>
<tr>
<td>Ba</td>
<td>1996</td>
<td>0.074 0.778 1.788 2.518 3.016 3.378 3.673</td>
</tr>
<tr>
<td>Ba</td>
<td>2007</td>
<td>0.171 0.798 1.608 2.344 2.775 3.043 3.226</td>
</tr>
</tbody>
</table>
As in the case of mortality (Chapter VII), fertility can be analyzed for a cohort or for a certain period of time (i.e. a year).

- Cohort (longitudinal or generation) analysis.

  An example of this kind of analysis is presented in Figure VIII-1. The analysis results in a measure of lifetime fertility (completed family size)

- Current (recent or cross-sectional) analysis
An example of that can be found in Figure VIII-2. The analysis results in a variety of fertility measures for a particular year. In Figure VIII-2, two current fertility measures are shown i.e. age-specific fertility rates (ASFR) and total fertility rates (TFR). These rates are explained in the introduction to Chapter VIII.49

Information for the numerators of ASFRs should ideally be provided by the country’s legal (administrative) Civil Registration System (CRS) on a continuous basis. Unfortunately, as mentioned in Chapter VII, Fiji’s CRS has so far not been able to provide complete and accurate information regarding births (by age of mother).50

Fortunately, since the 1990s, the National Health Information System (NHIS) of the Department of Health (DOH) in Fiji has, however collected reasonably complete and accurate information on births by age of mother.51 However, this information is seldom made available in a timely manner. For instance, during the analysis of 2007 Census data, the required NHIS birth registration data was not available for analysis and it could therefore not be included in the fertility analysis. There are additional problems with birth (and death) registration by the NHIS.52

Presently, in the absence of birth registration data by age of mother for the provinces, ASFRs and TFRs at the provincial level have once again been estimated from census data. Censuses since 1976 have not only provided lifetime fertility data at the provincial level but also province-level data concerning current (recent) fertility. This has been done by means of a question regarding the date of birth (DOB) of last born child (LBC) born alive, irrespective of the vital status of this child at the time of the census. Like the lifetime fertility questions, this question has been asked of all women age 15 and over. All births that occurred during the period of one year before the census, (irrespective of the vital status of these children at the time of the census) are included in the numerators for the ASFRs. The denominators of the ASFRs for 1996 and 2007 in Figure VII-2 are the numbers of women in the specified age groups at the time of these censuses.

A comparison of ASFRs and TFRs directly calculated from NHIS data with those derived indirectly from DOB of LBC data of the 1996 Census suggests that the discrepancies between the two data sets have decreased. For this reason and because there is presently no reasonable alternative, the Provincial Profiles present the ASFRs and TFRs derived from the censuses conducted in 1996 and 2007.

Figure VIII-2 shows that, between 1996 and 2007, the TFR for Nadroga decreased from 3.02 to 2.79. During the same period, the national average TFR decreased from 2.74 to 2.64. In

49 The TFR is the area under the curves in Figure VIII-2.
50 The same applies to the registration of death (by age at death)
51 This also applies to death registration (by age at death)
52 A very important problem with the birth (and death) registration data of the NHIS is deficient recording of the usual place of mother at the time of birth of her child (as well as the usual place of residence of a deceased person). The information recorded on the birth (and death) registration form is often not complete and precise enough to allocate a correct provincial and rural/urban code to the birth of that child (or to the death). Consequently, even if the NHIS information were available, it is still not possible to derive valid provincial and rural/urban age-specific fertility rates (ASFR), total fertility rates (TFR) and other fertility indices from this data. As mentioned in Chapter VII, the DOH is in the process of addressing this problem. In the near future, it should become possible to produce ASFRs and TFRs for all provinces, as well as for the rural and urban sector, based on birth registration data from the NHIS.
1996, the level of fertility in Nadroga was higher than the national average level. In 2007, this is still the case. However, fertility decline in Nadroga during this intercensal period has been slightly faster than for the nation as a whole. For a variety of reasons, all ASFRs and TFRs in Figure VIII-2 must be considered as minimum estimates of current fertility in 1996 and 2007.53

During the most recent intercensal period 1996-2007, all the most urbanized provinces with a large population (and usually a large Indian population as well) have seen a continuation of the downward trend in fertility that started in the late 1950s for Indians and in the 1960s for Fijians. However, this continuing decrease is mainly due to very drastic further decrease in Indian fertility.54 On the other hand, most provinces with a small population (and a very small Indian population) and a small urban sector or no urban sector at all, have seen an increase in fertility during this intercensal period.55

Finally, Table VIII-2 compares the ASFRs and the TFRs for Nadroga in 1996 and 2007 with the ASFRs and TFR for other provinces in the Western Division as well as with the national average values.

Table VIII-2: Comparison of the ASFRs and TFRs for Nadroga in 1996 and 2007 with the ASFRs and TFRs for other provinces in the Western Division as well as with the national average values

<table>
<thead>
<tr>
<th>Province of the Western Division</th>
<th>Year</th>
<th>Age group</th>
<th>TFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>1996</td>
<td>15-19</td>
<td>0.0289</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>15-19</td>
<td>0.0357</td>
</tr>
<tr>
<td>Nadroga</td>
<td>1996</td>
<td>15-19</td>
<td>0.0363</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>15-19</td>
<td>0.0517</td>
</tr>
<tr>
<td>Ba</td>
<td>1996</td>
<td>15-19</td>
<td>0.0287</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>15-19</td>
<td>0.0355</td>
</tr>
<tr>
<td>Ra</td>
<td>1996</td>
<td>15-19</td>
<td>0.0307</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>15-19</td>
<td>0.0477</td>
</tr>
</tbody>
</table>

These reasons include that the census question concerning DOB of LBC makes it difficult to capture:
- Multiple births
- Births where the space between births is less than one year. (Only the DOB of the last born child is recorded!).

Furthermore, an assessment of this information suggests that women are sometimes inclined to report their last born child that was still alive at the time of the census and not, if this is applicable, the DOB of the last child born alive that subsequently died.

54 In fact, all provinces with a large Indian population have now achieved a net reproduction rate (NRR) for Indians that is less than 1.0. In other words these Indian populations are below replacement level.

55 Generally, provinces with a large Indian population and/or a large urban population are the ones with the lowest level of current fertility. In 2007, these provinces are: Rewa (2.33), Naitasiri (2.38), Ba (2.43) and Macuata (2.51). In 2007, the provinces with the highest level of current fertility are those with a predominantly Fijian population and/or provinces without an urban sector or a very small urban sector. These provinces are: Bua (4.18), Namosi (4.90), Kadavu (3.76), Lau (3.66), Lomaiviti (3.66) and Cakaudrove (3.60). The figures between brackets are the TFRs for these provinces in 2007.
Figure VIII-3 presents three summary indices of fertility for Nadroga in 1996 and 2007. They are compared to the national average indices in those years. These summary indices are:

- Total fertility rate (TFR)
- Gross reproduction Rate (GRR)
- Net reproduction Rate (NRR)

These rates have been defined in the introduction of this chapter. Moreover, the TFR has already been introduced in Figure VIII-2 as the sum of all ASFRs. The TFR represents the area under the ASFR curves in Figure VIII-2. All three summary indices of fertility are expressed per 1.

In 2007, the province-level NRRs range from 1.06 in Rewa (the lowest NRR in the country) to 1.90 in Bua (the highest NRR in the country). The NRR for Nadroga in 2007 is 1.28. This is somewhat higher than the national average NRR in that year of 1.20. However, the NRR for Nadroga decreased from 1.38 to 1.28 during the period between 1996 and 2007. During the same period the national average NRR decreased less, viz. from 1.25 in 1996 to 1.20 in 2007.

---

56 The national average NRR in 2007 is 1.20 (down from 1.25 in 1996). However, at the national level, the national average NRR for Indians in 2007 is only 0.86, which is significantly below replacement level. (Replacement level is defined as a NRR = 1.0). For Fijians in 2007, the national average NRR is very much higher viz. 1.45.
Provinces which, in 2007 have achieved a lower NRR than the national average NRR of 1.20 are Rewa (1.06), Naitasiri 1.08), Ba (1.10) and Macuata (1.14). It will be noted that these are the four provinces with the largest urban sector and also the largest Indian population. This suggests that the level of “Indianization” and the level of urbanization must be considered as important determinants of fertility in Fiji.\(^\text{57}\) There are other determinants as well like level of education and literacy, the level of paid employment, religion and many others. Virtually all these determinants are inter-related. For instance, the provinces with a large urban sector tend to be the ones with a large Indian population, an on average higher level of education, literacy and paid employment etc. Nadroga, with its urban sector consisting of the moderately sized UA of Sigatoka only and a smaller proportion of Indians than the four provinces that lead the fertility transition appears to be province that tends toward joining the four leaders.

Provinces with a relatively high NRR in 2007 are mainly those of the Eastern and Northern Division (with the exception of Macuata). These provinces have a predominantly Fijian population and a rather small urban sector or no urban sector at all (Kadavu, Lau and Rotuma). Namosi (1.84) and Serua (1.66) in the Central Division also have a relatively high NRR.

Table VIII-3 compares the TFRs, GRRs and NRRs and some other indices of fertility for Nadroga in 1996 and 2007 with these indices for other provinces in the Western Division as well as with the national average values.

Table VIII-3: Comparison of selected indices of fertility for Nadroga in 1996 and 2007 with these indices for other provinces in the Western Division and with the national average values

<table>
<thead>
<tr>
<th>Province</th>
<th>Year</th>
<th>CBR (%)</th>
<th>GFR (%)</th>
<th>TFR</th>
<th>GRR</th>
<th>NRR</th>
<th>̅M° (yrs)</th>
<th>̅M° (yrs)</th>
<th>CWR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>1996</td>
<td>20</td>
<td>76</td>
<td>2.74</td>
<td>1.34</td>
<td>1.25</td>
<td>27.6</td>
<td>30.8</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>22</td>
<td>81</td>
<td>2.64</td>
<td>1.29</td>
<td>1.20</td>
<td>27.2</td>
<td>30.8</td>
<td>37</td>
</tr>
<tr>
<td>Provinces of the Western Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nadroga</td>
<td>1996</td>
<td>21</td>
<td>81</td>
<td>3.02</td>
<td>1.47</td>
<td>1.38</td>
<td>27.8</td>
<td>31.2</td>
<td>47</td>
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<tr>
<td></td>
<td>2007</td>
<td>22</td>
<td>86</td>
<td>2.79</td>
<td>1.36</td>
<td>1.28</td>
<td>27.1</td>
<td>30.9</td>
<td>38</td>
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<tr>
<td>Ba</td>
<td>1996</td>
<td>19</td>
<td>69</td>
<td>2.50</td>
<td>1.36</td>
<td>1.13</td>
<td>27.0</td>
<td>30.2</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>21</td>
<td>76</td>
<td>2.43</td>
<td>1.19</td>
<td>1.10</td>
<td>26.8</td>
<td>30.6</td>
<td>33</td>
</tr>
<tr>
<td>Ra</td>
<td>1996</td>
<td>19</td>
<td>79</td>
<td>2.94</td>
<td>1.43</td>
<td>1.34</td>
<td>27.9</td>
<td>31.9</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>25</td>
<td>99</td>
<td>3.32</td>
<td>1.62</td>
<td>1.53</td>
<td>27.5</td>
<td>31.5</td>
<td>42</td>
</tr>
</tbody>
</table>

\(^{57}\) The level of “Indianization” and the level of urbanization are of course inter-related. A very large proportion of Indians in Fiji resides in the most urbanized provinces.
Most countries derive their basic fertility statistics, including the mean age of mothers at the time of birth of their children ($\overline{M}^{Mo}$) from the registered of births by age of mother compiled by their Civil Registration System (CRS). As mentioned before, the CRS in Fiji does not provide this information. Moreover, the data regarding births by age of mother at the provincial level recorded by the NHIS of the DOH is still not accurate enough for a meaningful analysis. The main problem that remains is that the usual place of mother is in many cases either recorded incorrectly or not precise enough.58

In the absence of the relevant registration data from the CRS and the NHIS, $\overline{M}^{Mo}$ in 1996 and 2007 has once again been derived from census data. This is the same census data that has been used for the computation of the ASFRs in Figure VIII-2 viz. information regarding the date of birth (DOB) of the last born child (LBC).59 The births in the year before the 1996 and 2007 Censuses have been tabulated by age of mother and $\overline{M}^{Mo}$ has been calculated from this data as a weighted average.60

In the case of the mean age of fathers at the time of birth of their children, $\overline{M}^{Fa}$ the application of the above census-based method is not possible. The reason is that census information regarding the date of birth of the last born child is linked with the mother and not with the father. In the national Analytical Report of the 1996 and 2007 Census as well as in the Provincial Profiles of the 2007 Census, the mean age of the fathers at the time of birth of

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58 Moreover, the birth registration data of the NHIS was not available for the present analysis, so that it could not be used at all, even at the national level.
59 All censuses since the one conducted in 1976, have collected this information.
60 It will be realized that, in this case, this is the age of the mother at the time of the census and not at the time of birth. This needs to be taken into account in the computation of $\overline{M}^{Mo}$. 

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their children has therefore been approximated by adding the difference in singulate mean age at marriage (SMAM) of males and females to $\overline{M}^\text{Mo}$.\(^6\)

Figure VIII-4 shows that between 1996 and 2007, $\overline{M}^\text{Mo}$ for Nadroga has decreased from 27.8 to 27.1 years. During the same period, $\overline{M}^\text{Mo}$ for all other provinces, except Macuata has also decreased.\(^6\) The national average $\overline{M}^\text{Mo}$ decreased from 27.6 in 1996 to 27.2 in 2007.

In most provinces, $\overline{M}^\text{Fa}$ has changed less than $\overline{M}^\text{Mo}$. At the national level, $\overline{M}^\text{Fa}$ between 1996 and 2007 has remained the same (30.8 years). In the case of Nadroga, $\overline{M}^\text{Fa}$ decreased slightly from 31.2 to 30.9 during the most recent intercensal period.

Finally, in Table VIII-3 (under Figure VIII-3), $\overline{M}^\text{Mo}$ and $\overline{M}^\text{Fa}$ for Nadroga in 1996 and 2007 is compared with these values for other provinces in the Western Division and with the national average values.

**Fig. VIII-5:** Change in the crude birth rate (CBR) and general fertility rate (GFR) between 1996 and 2007, derived from 1996 and 2007 Census data

The crude birth rate (CBR) and general fertility rate (GFR) are crude rates. They are expressed per thousand (‰). Change in a crude fertility rate is not only caused by change in the level of fertility but also by change in the age-sex structure of the population. Valid comparisons between these rates for different populations and for the same population over

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\(^6\) The SMAM is discussed in Chapter III on Marital Status. The SMAMs for males and females are presented in Figure III-2.

\(^6\) It is not known why the trend in Macuata has been different from that in all other provinces. It may be related to the high level of outmigration of Indians from Macuata during the intercensal period. (Nationwide, $\overline{M}^\text{Mo}$ for Indians is lower than that for Fijians).
time can only be made after all rates have been standardized. This means that the unstandardized CBRs and GFRs for Nadroga in 1996 and 2007 presented in Figure VIII-5 cannot be compared with:

- The rates for other provinces or the national average rates in those years
- The rates for Nadroga in other years

In order to make these comparisons, all rates need to be standardized. In other words, the impact of differences in the age-sex structure and/or changes in the age-sex structure on the crude rates needs to be removed.

The change in fertility during recent decades has resulted in significant narrowing at the base of the age-sex pyramid of Nadroga (See Chapter II). During the most recent intercensal period, the CBR and GFR for Nadroga have increased marginally. This slight increase is undoubtedly the result of continuing narrowing at the base of the age-sex pyramid of Nadroga (especially the age-sex pyramid of its Indian population). The national average CBR and GFR have also changed only marginally during the intercensal period. This can be seen in Table VIII-3 (under Figure VIII-3) where the CBR and GFR for Nadroga in 1996 and 2007 are compared with those for the other two provinces in the Western Division and with the national average values of CBR and GFR.

Finally, in Chapter I, Figure I-8, the CBR for Nadroga has, in combination with the CDR for the province, been used to derive its rate of natural increase (RNI).

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63 This was also explained in Chapter VII, Figure VII-9 which presents the crude death rates (CDR).
Chapter IX (9): MIGRATION AND URBANISATION

1. General

Migration in the demographic/statistical sense refers to the movement of people across a specified boundary for the purpose of establishing a new permanent residence. Migration requires therefore a change in the usual place of residence. Migration can be international (between countries) and internal (between geographic subdivisions of the country). Although a census collects some information on immigrants, emigrants fall outside the scope of a census. Information on immigrants and emigrants are collected by the Department of Immigration at border checkpoints.

This Provincial Profile focuses on migration within the country or more precisely on migration between the most important geographic subdivisions of the country, the provinces as well as between the geographic sectors (rural and urban).

The following concepts require some further clarification:

- **Usual place of residence**

  This Provincial Profile considers the usual place of residence of census respondents at three points in time:

  - **Place of birth (B).**

    For statistical/census purposes, the place of birth of a person is defined as the usual place of residence of the mother of this person at the time of his/her birth. Failure to apply this definition of place of birth will result in a “delivery” bias in migration statistics.

  - **Five years before the census (X).**

    The 1976 and subsequent censuses recorded the usual place of residence of all respondents at a fixed reference point in time during the interval between birth and enumeration. During the 1986, 1996 and 2007 Censuses, this point (X) was defined as exactly five years prior to the census.

  - **At the time of enumeration (E).**

    All censuses until the one conducted in 1996 were pure de-facto censuses. All respondents were enumerated at the place where they happened to be on census night. Their usual place of residence at the time of the census was not recorded. Since a certain proportion of all respondents covered under the de-facto coverage rule of these censuses were not enumerated at their usual place of residence, but somewhere else in the country, the migration statistics of the 1976, 1986 and 1996 Censuses contain a certain amount of bias.

    During the 2007 Census, it was attempted to address this problem. The Interview Schedule of this census included an additional question. All respondents covered under the “de-facto” rule were asked to answer an additional question:
“What is this person’s usual place of residence?” (State province or country if outside Fiji)

Consequently, the migration statistics derived from the 2007 Census provide a more accurate picture of internal migration than the previous censuses.

➤ Migration status

The migration status of census respondents in Fiji is defined by their usual place of residence at the above three points in time, B, X and E. The classification of migrants in this Provincial Profile (Figure IX-1) is based on this information. This classification distinguishes:

- Migrants and non-migrants

  The population age five and over at the time of the census consists of migrants and non-migrants. For non-migrants:

  \[ B = X = E \]

- Past and recent migrants

  Those respondents who have been classified as migrants are either past migrants or recent migrants. Past migrants moved between birth (B) and point X (five years before the census), but not during the last five years before the census:

  \[ B \neq X = E \]

  This is therefore a restricted definition of past migrants.

  On the other hand, recent migrants moved during the five years before the census:

  \[ X \neq E \]

  In addition, they may also have moved between B and X. However, in order to be classified as a recent migrant this is not a necessary condition.

- One-time and multiple migrants

  Recent migrants can be further subdivided into those who moved only one time (one-time migrants) and those who moved more than once (multiple migrants). One-time migrants moved during the last five years before the census but not before:

  \[ B = X \neq E \]

  Multiple migrants moved before as well as after point X:

  \[ B \neq X \neq E \]
Return migrants and other multiple migrants

Multiple migrants can be further subdivided into those who:

- Returned, during the five years before the census, to their place of birth. These migrants are called “return migrants”.

- Moved to another place than their place of birth during this five-year period. These migrants are referred to as “other multiple migrants”.

For “return migrants”

\[ B \neq X \neq E \text{ (whereas } B = E) \]

For “other multiple migrants” or “frequent movers”

\[ B \neq X \neq E \text{ (whereas } B \neq E) \]

Note: Lifetime migrants

“Lifetime migrants” are not included in the classification presented in Figure IX-1. The category “lifetime migrants” includes all those who reported that their place of birth and place of enumeration was not the same:

\[ B \neq E \text{ (irrespective of whereabouts at } X) \]

The category of lifetime migrants thus defined includes children under the age of five who “migrated” (most likely with their parents) during the period between birth and enumeration.

Internal migration between administrative subdivisions

In-migration

This is the process of entering one administrative subdivision of a country from another subdivision to take up residence. The in-migration rate (IMR) is the number of in-migrants arriving at a destination per 1,000 population at that destination in a given year.

Out-migration

This is the process of leaving one subdivision of a country to take up residence in another. The out-migration rate (OMR) is the number of out-migrants from a particular area per 1,000 population of that area in a given year.
Net-migration

The net effect of immigration and emigration on an area’s population in a given period of time, expressed as an increase or a decrease. The net-migration rate (NMR) is the IMR minus the OMR.

- **Internal migration between geographic sectors (rural/urban)**

  Inter-sectoral migration includes:

  - Migration from rural to urban areas (R→U)
  - Migration from urban to urban areas (U→U)
  - Migration from urban to rural areas (U→R)
  - Migration from rural to rural areas (R→R)

  The main (but not the entire) emphasis in this Provincial Profile is on the type of inter-sectoral migration that is probably of greatest importance for policy makers and planners, viz. rural to urban migration. Furthermore, as in the case of inter-provincial migration, inter-sectoral migration is also subdivided into lifetime and recent migration.

  All information in this chapter is based on statistical/census urban areas (UA). Migration to and from incorporated cities/towns is not considered. The boundaries of the cities/towns in Fiji are political/administrative boundaries. They are not based on demographic/statistical criteria. These incorporated cities and towns are therefore not very meaningful units for demographic/statistical analysis. Studies of rural-urban migration, urban growth and urbanization that are based on incorporated cities/towns instead of the statistical/census urban areas can only lead to a misleading picture of urban growth and urbanization.

  Fiji’s UAs were for the first time delineated before the 1966 Census. During this census, fourteen UAs were created. Eight of these, viz. the Suva, Lautoka, Nadi, Labasa, Nausori, Ba, Sigatoka, and Levuka urban areas, included an incorporated city/town. The other six urban areas viz. Savusavu, Tavua, Navua, Vatukoula, Rakiraki and Korovou received the status of urban area for census/statistical purposes only. The boundaries of all urban areas were reviewed before the 1976 and again before the 1996 census. The 1996 boundary revision was based on more sophisticated criteria than the revisions of 1966 and 1976.

  At the time of the 1996 Census the towns Savusavu [1969] and Tavua [1992] had also been incorporated. Lami, formerly a part of the peri-urban area of Suva, became an incorporated town in 1977. Moreover, three additional urban areas for census/statistical purposes were established before the 1996 census. These are Pacific Harbour, Seaqaqa and Nabouwalu. Finally, during the most recent intercensal period, 1996-2007, Nasinu was incorporated and subsequently, the FBoS established the urban area Nasinu.
➢ **Urbanization**

Growth in the proportion of a population living in urban areas

➢ **“Push-Pull” hypothesis**

A migration theory that suggests that circumstances at the place of origin (i.e. poverty and unemployment) repel or push people out of that place to other places that exert a positive attraction or pull (because of such factors as a high standard of living and job opportunities)

➢ **Closed population**

A population with no migratory flow in or out, so that changes in population size occur only through births and deaths.
2. Profile

Fig. IX-1: Change in migration status of the total population age five and over between 1996 and 2007
<table>
<thead>
<tr>
<th>Type of Migrant</th>
<th>1996</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nr</td>
<td>%</td>
</tr>
<tr>
<td>Population Age 5 and over</td>
<td>47,561</td>
<td>100.0</td>
</tr>
<tr>
<td>1. Migrants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Recent Migrants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. One-Time Migrants</td>
<td>14,607</td>
<td>30.7</td>
</tr>
<tr>
<td>ii. Multiple Migrants</td>
<td>5,257</td>
<td>11.1</td>
</tr>
<tr>
<td>. Return Migrants</td>
<td>2,953</td>
<td>6.2</td>
</tr>
<tr>
<td>. Other Multiple Migrants</td>
<td>2,304</td>
<td>4.8</td>
</tr>
<tr>
<td>b. Past Migrants</td>
<td>1,097</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>1,207</td>
<td>2.5</td>
</tr>
<tr>
<td>2. Non-Migrants</td>
<td>32,954</td>
<td>69.3</td>
</tr>
</tbody>
</table>

Notes:
* The numbers (between brackets) in the diagram refer to inter-provincial
  migrants and non-migrants age five and over in 2007.
* Migrants are defined as all persons age five and over who migrated before
  and/or after point X (mid-2002).
$ Recent Migrants are defined as all persons age five and over who migrated
  after point X, irrespective of whether or not they migrated before point X.
@ These are past migrants in a narrow sense. They only migrated before point
  X and not after point X. Past migrants in a broad sense are all persons who
  migrated before point X and may or may not have migrated after point X. In
  this classification those who did migrate after point X are classified as recent
  migrants.
Figure IX-1 presents a classification of internal migrants that has been used in Fiji since the 1986 Census. It includes an overview of the migration status of persons age five and over in Nadroga at the time of the 1996 and 2007 Censuses. Persons under the age of five were not yet born at point X (five years before these censuses).

The spatial unit of reference used in Figure IX-1 (as well as Figures IX-2 to 5) is the province. This means that the migrants in these figures are inter-provincial migrants. The number of migrants and non-migrants in Figure IX-1 would be very different if another spatial unit i.e. the tikina vou had been chosen as the unit of analysis instead of the province.

In 2007, in most provinces, including Nadroga, the number of non-migrants is still significantly larger than the number of migrants. As expected, the exceptions are the two most urbanized provinces, Rewa and Naitasiri (as well as Serua). However, in the third most urbanized province, Ba, the number of non-migrants still exceeds the number of migrants.
In Figure IX-2a, the total population of Nadroga age five and over is subdivided into inter-provincial non-migrants and migrants. The information provided is sex-specific. All migrants are either recent or past migrants, meaning that they migrated either before or after point X (five years before the census). In Nadroga, in 2007, the number of past migrants is very much higher than the number of recent migrants and this applies to males but especially to females. This is the national average pattern.

The change in migration status that had already started during intercensal period 1986-1996 is continuing. The proportion of non-migrants is decreasing whereas the proportion of migrants is increasing.

Table IX-1 compares the migration status of the population of Nadroga by sex in 2007 with the migration status of the population of Ba and Ra provinces, as well as the migration status at the national level.
Table IX-1: Migration status of the population age five and over by sex in Nadroga in 2007 compared to the migration status figures for the other provinces in the Western Division and the national average figures

<table>
<thead>
<tr>
<th>Province of usual residence in 2007</th>
<th>Total Pop. Age 5+</th>
<th>Non-Migrants</th>
<th>Migrants</th>
<th>Migrants'</th>
<th>Past Migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fiji</td>
<td>753,065</td>
<td>456,070</td>
<td>296,995</td>
<td>117,494</td>
<td>50,123</td>
</tr>
<tr>
<td>Western Div.</td>
<td>288,969</td>
<td>206,128</td>
<td>82,841</td>
<td>31,580</td>
<td>13,619</td>
</tr>
<tr>
<td>- Ba</td>
<td>211,119</td>
<td>153,556</td>
<td>57,563</td>
<td>21,580</td>
<td>10,036</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>50,819</td>
<td>33,589</td>
<td>17,230</td>
<td>6,954</td>
<td>2,331</td>
</tr>
<tr>
<td>- Ra</td>
<td>27,031</td>
<td>18,983</td>
<td>8,048</td>
<td>3,046</td>
<td>1,252</td>
</tr>
<tr>
<td>Note: @ Excludes 1,489 persons whose usual place of residence in 2007 was outside Fiji. Of these, 1,127 are “Others”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total Fiji                        | 383559            | 243275       | 140284   | 58540     | 25318         | 33222         | 16667       | 16555      | 81744        |
| Western Div.                      | 147602            | 109557       | 38045    | 15808     | 6975          | 8833          | 4021        | 4812       | 22237        |
| - Ba                              | 107532            | 80434        | 27098    | 10796     | 5184          | 5612          | 2758        | 2854       | 16302        |
| - Nadroga                         | 26220             | 18535        | 7685     | 3526      | 1195          | 2331          | 866         | 1465       | 4159         |
| - Ra                              | 13850             | 10588        | 3262     | 1486      | 596           | 890           | 397         | 493        | 1776         |

| Total Fiji                        | 369506            | 212795       | 156711   | 58954     | 24805         | 34149         | 18336       | 15813      | 97757        |
| Western Div.                      | 141367            | 96571        | 44796    | 15772     | 6644          | 9128          | 4314        | 4814       | 29024        |
| - Ba                              | 103587            | 73122        | 30465    | 10784     | 4852          | 5932          | 2945        | 2987       | 14681        |
| - Nadroga                         | 24599             | 15054        | 9545     | 3428      | 1136          | 2292          | 938         | 1354       | 6117         |
| - Ra                              | 13181             | 8395         | 4786     | 1560      | 656           | 904           | 431         | 473        | 3226         |

*Includes those residents whose province of birth and province of usual residence in 2002 was overseas.
Figure IX-2b provides the same information as Figure IX-2a. However, the different migration categories of the total population are now presented separately for the two main ethnic groups, the Fijians and Indians.

With regard to Fijians as well as Indians, the proportion of migrants and non-migrants (recent as well as past) has not changed very significantly during the 1996-2007 intercensal period.

Table IX-2 compares the migration status of the population of Nadroga by ethnicity in 2007 with the migration status of the population of Ba and Ra provinces, as well as the migration status at the national level.
Table IX-2: Migration status of the population age five and over by ethnicity in Nadroga in 2007 compared to the migration status figures for the other provinces in the Western Division and the national average figures

<table>
<thead>
<tr>
<th>Province of usual residence in 2007</th>
<th>Total Pop.* Age 5+</th>
<th>Non-Migrants</th>
<th>Total Migrants</th>
<th>Migrants* Past Migrants</th>
<th>Recent Migrants One-time Migrants Multiple Migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Rec. Migr.</td>
<td>One-time Rec. Migr.</td>
</tr>
<tr>
<td>TOTAL POPULATION</td>
<td></td>
<td></td>
<td>Total</td>
<td>117,494</td>
<td>50,123</td>
</tr>
<tr>
<td>Total Fiji</td>
<td>753,065</td>
<td>456,070</td>
<td>296,995</td>
<td>50,123</td>
<td>17,961</td>
</tr>
<tr>
<td>Western Div.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>288,969</td>
<td>206,128</td>
<td>82,841</td>
<td>31,580</td>
<td>13,619</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>211,119</td>
<td>153,556</td>
<td>57,563</td>
<td>21,580</td>
<td>10,036</td>
</tr>
<tr>
<td>- Ra</td>
<td>50,819</td>
<td>33,589</td>
<td>17,230</td>
<td>6,954</td>
<td>2,331</td>
</tr>
<tr>
<td>FIJANS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fiji</td>
<td>420253</td>
<td>245719</td>
<td>174534</td>
<td>72761</td>
<td>28038</td>
</tr>
<tr>
<td>Western Div.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>133002</td>
<td>86691</td>
<td>46311</td>
<td>19172</td>
<td>8182</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>29821</td>
<td>19990</td>
<td>9831</td>
<td>4637</td>
<td>1450</td>
</tr>
<tr>
<td>- Ra</td>
<td>18265</td>
<td>13227</td>
<td>5038</td>
<td>2241</td>
<td>841</td>
</tr>
<tr>
<td>INDIANS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fiji</td>
<td>290952</td>
<td>192324</td>
<td>98628</td>
<td>34067</td>
<td>13316</td>
</tr>
<tr>
<td>Western Div.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>118501</td>
<td>96706</td>
<td>21795</td>
<td>7528</td>
<td>3152</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>20031</td>
<td>13268</td>
<td>6763</td>
<td>2000</td>
<td>714</td>
</tr>
<tr>
<td>- Ra</td>
<td>8500</td>
<td>5668</td>
<td>2832</td>
<td>712</td>
<td>362</td>
</tr>
</tbody>
</table>

Notes: * Excludes 1,489 persons whose usual place of residence in 2007 was outside Fiji. Of these, 1,127 are “Others”.
* Includes those residents whose province of birth and province of usual residence in 2002 was overseas.
Figure IX-3a shows the numbers of lifetime in-migrants into Nadroga and lifetime out-migrants from Nadroga. The situation in 2007 is compared to that in 1996 and refers to the total population (of all ages) as well as females and males. Lifetime migration implies that migration took place somewhere between birth (B) and the 1996 and 2007 Censuses (E) respectively.

It is important that users realize that persons who, between birth and the census changed their usual province of residence on one or many occasions but resided again in their province of birth at the time of the census, have not been and could not be classified as lifetime migrants. During a national census it is only feasible to establish the usual place of residence of respondents at fixed points in time (in this case, B, X and E). A census classification regarding migration status is based on this information.

In the case of Nadroga in 1996, the number of lifetime in- and out-migrants (males as well as females) was not very different. The lifetime net-migration figures for males and females in this province were therefore very low. In 2007, the situation has changed very significantly. Nadroga is a lifetime out-migration province. It is expected that this trend will continue in the near future.

---

64 Figure IX-3a is concerned with lifetime migrants. This includes persons of all ages
65 It will be realized that the census does not record the exact time of migration. Moreover, the characteristics of migrants are those recorded at the time of the census and not those at the time of migration. In comparison, a registration system of migrants, i.e. a Continuous Population Register (CPR) (or the international migration statistics of the Immigration Department) register the characteristics of migrants at the time of migration.
Table IX-3 compares the lifetime in-, out- and net-migration situation by sex (and ethnicity) in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation.

**Table IX-3**: Comparison of the lifetime in-, out- and net-migration situation by sex and ethnicity in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation.

<table>
<thead>
<tr>
<th>Province of usual residence in 2007</th>
<th>Lifetime In-Migration</th>
<th>Lifetime Out-Migration</th>
<th>Lifetime Net-Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P  M  F</td>
<td>P  M  F</td>
<td>P  M  F</td>
</tr>
<tr>
<td>Total Pop.</td>
<td>278229 130735 147494</td>
<td>278229 130735 147494</td>
<td>0 0 0</td>
</tr>
<tr>
<td>Western Div.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>76432 34884 41548</td>
<td>70790 31852 38938</td>
<td>5642 3032 2610</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>53820 25321 28499</td>
<td>37881 17106 20775</td>
<td>15939 8215 7724</td>
</tr>
<tr>
<td>- Ra</td>
<td>15125 6577 8548</td>
<td>18475 8237 10238</td>
<td>-3350 -1660 -1690</td>
</tr>
<tr>
<td></td>
<td>7487 2986 4501</td>
<td>14434 6509 7925</td>
<td>-6947 -3523 -3424</td>
</tr>
<tr>
<td>Fijians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fiji</td>
<td>43,267 20,459 22,808</td>
<td>32,304 14,878 17,426</td>
<td>10,963 5,581 5,382</td>
</tr>
<tr>
<td>Western Div.</td>
<td>30,270 14,578 15,692</td>
<td>17,039 8,022 9,017</td>
<td>13,231 6,556 6,675</td>
</tr>
<tr>
<td>- Ba</td>
<td>19,337 8,577 10,760</td>
<td>18,894 8,148 10,746</td>
<td>443 429 14</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>6,095 2,366 3,729</td>
<td>10,210 4,543 5,667</td>
<td>-4,115 -2,177 -1,938</td>
</tr>
<tr>
<td>- Ra</td>
<td>4,606 2,025 2,581</td>
<td>7,376 3,362 4,014</td>
<td>-2,770 -1,337 -1,433</td>
</tr>
<tr>
<td>Indians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Div.</td>
<td>19,337 8,577 10,760</td>
<td>18,894 8,148 10,746</td>
<td>443 429 14</td>
</tr>
<tr>
<td>- Ba</td>
<td>6,095 2,366 3,729</td>
<td>10,210 4,543 5,667</td>
<td>-4,115 -2,177 -1,938</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>2,697 871 1,826</td>
<td>6,828 3,032 3,796</td>
<td>-4,131 -2,161 -1,970</td>
</tr>
<tr>
<td>- Ra</td>
<td>158 42,317 50,463</td>
<td>92,780 42,317 50,463</td>
<td>0 0 0</td>
</tr>
</tbody>
</table>
Fig. IX-3b: Change in inter-provincial lifetime in-, out- and net-migration of the total population by ethnicity between 1996 and 2007

Figure IX-3b shows the numbers of lifetime in-migrants into Nadroga and out-migrants from Nadroga. However, the main variable is now *ethnicity*. The situation of the Fijian and Indian component of the population of the province is compared for census year 1996 as well as census year 2007.

With regard to Fijians in 1996 as well as 2007, there were slightly more in- than out-migrants. For both years, this has resulted in low level of positive net-migration for the Fijian component.

The situation for the Indian component of the population differs very drastically from that of the Fijians. In 1996, the number of lifetime Indian out-migrants from Nadroga was much higher than the number of lifetime in-migrants. In 2007, the gap between Indian lifetime in- and out-migrants has further increased. This has resulted in a high level of negative lifetime net-migration for Indians. This level may be high (comparable to that of Ra Province) but is only about one quarter of the very high level of negative net-migration for Indians in Macuata.

A comparison of the lifetime in-, out- and net-migration situation by ethnicity (and sex) in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation can be found in Table IX-3 (under Figure IX-3a).

---

66 In 2007, Macuata has become the province with by far the highest level of negative net-migration of Indians
Figure IX-4a (and b) are concerned with recent migration. Recent migration, as defined in the censuses of Fiji in 1996 and 2007, took place at some time during the five-year period before these censuses (or between point X and E).

For policy makers and planners at the national as well as sub-national level, a detailed knowledge and understanding of recent migration is more important than that of lifetime migration (depicted in Figure IX-3a and b). For instance, for many, if not most provinces in Fiji, migration is now a more important component of the growth rate of the population of the province than the natural processes, fertility and mortality. The availability of detailed in- and out-migration rates by age and sex in recent years is also a prerequisite for the generation of provincial population projections.

Figure IX-4a and b show the most basic information regarding recent in- and out-migration for Nadroga Province: the total number of in- and out-migrants. Figure IX-4a provides this information separately for males and females.

In interpreting the information in Figure IX-4a (as well as b), it will be realized that:

- This information excludes all persons who were under the age of five at the time of the censuses (1996 and 2007) since they were born between point X and E.
- A census does not establish the exact time of migration. Consequently, the characteristics of recent (as well as lifetime) migrants are those at the time of the census and not those at the time of migration.
As in the case of lifetime migration, persons who, during the five-year period before the census changed their usual province of residence (one or more times) but had the same usual province of residence at point X and E have not been (and could not be) classified as recent migrants. In 1996, the number of recent out-migrants in Nadroga exceeded the number of recent in-migrants. This applies to males as well as females. Consequently, in 1996, the level of recent net-migration was slightly negative. After 1996, the situation has changed. At the time of the 2007 Census, the number of recent in-migrants had increased significantly whereas the number of recent out-migrants had stagnated at the 1996 level. This has resulted in a slightly positive level of recent net-migration for females as well as males in 2007.

Table IX-4 compares the recent in-, out- and net-migration situation by sex (and ethnicity) in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation.

Table IX-4: Comparison of the recent in-, out- and net-migration situation by sex and ethnicity in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation.

<table>
<thead>
<tr>
<th>Province of usual residence in 2007</th>
<th>Recent In-Migration</th>
<th>Recent Out-Migration</th>
<th>Recent Net-Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td><strong>TOTAL POPULATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fiji</td>
<td>118,126</td>
<td>58,877</td>
<td>59,249</td>
</tr>
<tr>
<td>Western Div.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>21,580</td>
<td>10,796</td>
<td>10,784</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>6,954</td>
<td>3,526</td>
<td>3,428</td>
</tr>
<tr>
<td>- Ra</td>
<td>3,046</td>
<td>1,486</td>
<td>1,560</td>
</tr>
<tr>
<td><strong>FIJIANS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fiji</td>
<td>72,799</td>
<td>36,259</td>
<td>36,540</td>
</tr>
<tr>
<td>Western Div.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>19,172</td>
<td>9,726</td>
<td>9,446</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>12,294</td>
<td>6,236</td>
<td>6,058</td>
</tr>
<tr>
<td>- Ra</td>
<td>4,637</td>
<td>2,370</td>
<td>2,267</td>
</tr>
<tr>
<td><strong>INDIANS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fiji</td>
<td>34,315</td>
<td>16,901</td>
<td>17,414</td>
</tr>
<tr>
<td>Western Div.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ba</td>
<td>10,240</td>
<td>4,942</td>
<td>5,298</td>
</tr>
<tr>
<td>- Nadroga</td>
<td>7,528</td>
<td>3,645</td>
<td>3,883</td>
</tr>
<tr>
<td>- Ra</td>
<td>2,000</td>
<td>980</td>
<td>1,020</td>
</tr>
</tbody>
</table>

67 Recent censuses in Fiji have only recorded the usual place of residence of all respondents during a limited number of exact points in time (point B, X and E). More detailed information regarding migration should be collected in a specialized Migration Survey based on a scientific sample of the population.
Table IX-4 compares the lifetime in-, out- and net-migration situation by sex (and ethnicity) in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation.

**Fig. IX-4b:** Change in inter-provincial recent in-, out- and net-migration of the total population age five and over by ethnicity between 1996 and 2007

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recent In Migration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recent Out Migration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recent Net Migration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure IX-4b shows again the number of recent in- and out-migrants for Nadroga Province in 1996 and 2007 but now for the main ethnic components of the population of the province, the Fijians and Indians.

The Fijian component in 1996 experienced a far higher level of recent in- than out-migration. This applies to females as well as males. Consequently, the level of recent net-migration for Fijians was positive. In 2007, recent in- as well as out-migration has been very much reduced. This trend has, however hardly affected the level of recent net-migration for Fijians in the province. It remains slightly positive.

Indian recent out-migration in 1996 exceeded recent in-migration resulting in a negative level of recent net-migration. In 2007 the situation has changed only marginally but the level of recent net-migration is now only slightly negative.

Table IX-4 (under Figure IX-4a) compares the recent in-, out- and net-migration situation by ethnicity (and sex) in Nadroga in 2007 with that in the other provinces of the Western Division and with the national average situation.
In Figure IX-4 the level of in- and out migration was expressed in numbers. However, for most users, especially policy makers and planners, it is more important and meaningful to express in- and out-migration in the form of rates. Figure IX-5 is concerned with the recent net-migration rates (NMR) of Fijians and Indians in Nadroga. These rates (expressed per thousand - ‰) have been derived from the recent in- and out migration data presented in in Figure IX-4. Users are reminded that these rates are inter-provincial net-migration rates. They do not include international migration.

The recent NMRs in Figure IX-5 for Fijians in 1996 were slightly positive (2 ‰). In 2007, the recent NMR has increased to 7 ‰.

The situation for Indians is very different. During the intercensal period 1996-2007, out-migration of Indians from the province has decreased significantly. As a result the recent NMR for Indians decreased from –10 ‰ in 1996 to –4 ‰ in 2007.

The calculation of recent NMRs involves:

- Conversion of the number of recent in- and out-migrants (in Figure IX-4) into in- and out-migration rates (IMR and OMR). These rates refer to the period of one year.
- The net-migration rate is the difference between the IMR and OMR or NMR = IMR – OMR
- The NMR can be positive and negative.
- All migration rates are expressed per thousand (‰)
The recent change in the growth rate and structure of the population of Nadroga has important implications for future planning.\textsuperscript{69}

Table IX-5 compares the recent IMRs, OMRs and NMRs for Nadroga by sex and ethnicity (derived from 2007 census data) with the recent NMRs of other provinces of the Western Division. The national average NMRs are of course 0, since migration in Table IX-5 refers to interprovincial migration.

Table IX-5: Comparison of the recent in-, out- and net-migration rates per year (‰) for Nadroga (derived from 2007 Census data) with these rates for other provinces in the Western Division and the national average rates

<table>
<thead>
<tr>
<th>Province</th>
<th>In-migration rates (‰)</th>
<th>Out-migration rates (‰)</th>
<th>Net-migration rates (‰)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P M F</td>
<td>P M F</td>
<td>P M F</td>
</tr>
<tr>
<td><strong>TOTAL POPULATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>31 31 32</td>
<td>31 31 32</td>
<td>0 0 0</td>
</tr>
<tr>
<td><strong>Provinces in the Western Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Nadroga</td>
<td>26 26 27</td>
<td>23 22 25</td>
<td>3 4 2</td>
</tr>
<tr>
<td>-Ba</td>
<td>20 20 21</td>
<td>19 18 19</td>
<td>2 2 2</td>
</tr>
<tr>
<td>-Ra</td>
<td>23 22 24</td>
<td>33 33 34</td>
<td>-10 -11 -10</td>
</tr>
<tr>
<td><strong>FIJIANS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>35 34 35</td>
<td>35 34 35</td>
<td>0 0 0</td>
</tr>
<tr>
<td><strong>Provinces in the Western Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Nadroga</td>
<td>30 30 30</td>
<td>23 21 24</td>
<td>7 8 6</td>
</tr>
<tr>
<td>-Ba</td>
<td>29 29 29</td>
<td>30 30 31</td>
<td>-1 -1 -2</td>
</tr>
<tr>
<td>-Ra</td>
<td>25 25 26</td>
<td>31 31 31</td>
<td>6 7 5</td>
</tr>
<tr>
<td><strong>INDIANS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>64 57 71</td>
<td>64 57 71</td>
<td>0 0 0</td>
</tr>
<tr>
<td><strong>Provinces in the Western Division</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Nadroga</td>
<td>19 18 21</td>
<td>24 21 26</td>
<td>-4 -3 -6</td>
</tr>
<tr>
<td>-Ba</td>
<td>13 12 14</td>
<td>10 9 10</td>
<td>3 3 3</td>
</tr>
</tbody>
</table>
| -Ra               | 17 15 19                | 36 34 39                 | -19 -19 -19             

Finally, Table IX-6 compares the change in the NMRs for the Total Population, Fijians and Indians in Nadroga in 1996 and 2007 with change between those years in Ba and Ra Province.

\textsuperscript{69} The change in the level of recent net-migration for Fijians and Indians will be taken into account in the next round of population projections for the province.
Table IX-6: Comparison of change in the NMRs (‰) for the Total Population, Fijians and Indians in Nadroga in 1996 and 2007 with change between those years in Ba and Ra Province

<table>
<thead>
<tr>
<th>Province</th>
<th>Total Population</th>
<th>Fijians</th>
<th>Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Nadroga</td>
<td>-4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>-Ba</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>-Ra</td>
<td>-11</td>
<td>-10</td>
<td>-7</td>
</tr>
</tbody>
</table>

INTRODUCTION TO THE URBANIZATION TABLES IN CHAPTER IX

The following figures in Chapter IX chapter are concerned with migration to and from statistical/census urban areas (UA). UAs in Fiji have been delineated based on a set of five demographic and socio-economic criteria. The boundaries of all UAs are reviewed and if necessary adapted at regular intervals but at least before every census.

In these figures, a migrant is again defined as a person who has changed his usual place of residence (UPOR). However the change in UPOR is now between geographic sectors (rural and urban). For a lifetime migrant the change in UPOR has taken place between birth (B) and the census (E). POB in the following figures refers to place of birth. For a recent migrant the change in UPOR has taken place during the five years before the 2007 Census. (Between point X and E).

In 2013, Sigatoka is still the only UA in Nadroga. Sigatoka is an UA of the first category, meaning that it consists of an incorporated (gazetted) city/town and a peri-urban area that surrounds it.  

- Figure IX-6a to d present lifetime migration to and from the UA Sigatoka. There are separate figures for the total population, Fijians, Indians and Others.
- Figure IX-7a to d present recent migration to and from the UA Sigatoka. There are again separate figures for the total population, Fijians, Indians and Others

Figure IX-8 and 9 provide additional information concerning the lifetime and recent rural to urban migrants in the UA Sigatoka. The additional information refers to the “distance travelled” by the rural-urban migrants in order to get to the UA Sigatoka.

- Category A refers to “short-distance” migrants. These migrants come from the rural area of the province(s) in which the UA is located.
- Category B refers to “intermediate-distance” migrants. They come from the rural area of other provinces located in the same division as the UA.

---

70 In 2013, the twelve eleven UAs of the first category include Suva, Nasinu, Lautoka, Lami, Nausori, Nadi, Ba, Tavua, Sigatoka, Labasa, Savusavu and Levuka. UAs of the second category do not include an incorporated (gazetted) city/town. The UAs in this category are UAs for census/statistical purposes only. In urbanization and migration studies, the people in these UAs are considered as urban.
Category C refers to “long-distance” migrants. They come from the rural area of provinces of other divisions than the one in which the UA is located.

- Figure IX-8 presents lifetime rural-urban migrants to the UA of Sigatoka by “distance travelled”.

- Figure IX-9 presents recent rural-urban migrants to the UA of Sigatoka by “distance travelled”

**Fig. IX-6-a1:** Lifetime migration (rural to urban and urban to urban) to the urban area Sigatoka derived from 2007 Census data: Total Population

Figure IX-6-a1 presents a picture of lifetime migration to the UA Sigatoka. All persons who, during the 2007 Census, reported Sigatoka as their usual place of residence (UPOR) are further categorized according to their place of birth (POB). There are three possibilities:

- **POB is any rural location in Fiji.** This is the important group of lifetime rural to urban (R→U) migrants. These migrants migrated, during their lifetime, from some rural location in Fiji to the UA Sigatoka.

- **POB is any urban location in Fiji.** In this case, there are two sub-categories:
  - **POB is the UA Sigatoka.** The persons in this sub-category are therefore lifetime non-migrants.
  - **POB is another UA than Sigatoka.** Persons in this sub-category constitute the group of lifetime urban to urban (U→U) migrants.

- **POB is overseas**

It appears that in the case of the UA Sigatoka, the number of lifetime rural to urban (R→U) migrants (3,549) is almost three times larger than the number of urban to urban (U→U) migrants.
(1,230). Almost half of all persons with the UA Sigatoka as their 2007 UPOR (9,332) were born in this UA (4,423).

**Fig. IX-6-a2:** Lifetime migration (urban to rural and urban to urban) from the urban area Sigatoka derived from 2007 Census data: Total Population

Figure IX-6-a2 presents the number of lifetime migrants from the UA Sigatoka. All persons who reported the UA Sigatoka as their POB are further categorized according to their UPOR in 2007. There are again three possibilities:

- **UPOR in 2007 is any rural location in Fiji.** Persons in this category constitute the lifetime urban to rural (U→R) migrants

- **UPOR in 2007 is any urban location in Fiji.** There are again two sub-categories:
  - **UPOR in 2007 is the UA Sigatoka.** The persons in this sub-category are non-migrants
  - **UPOR in 2007 is another UA than Sigatoka.** These persons are urban to urban (U→U) migrants.

- **POB is overseas**

Of the 7,098 persons born in the UA Sigatoka, 4,423 were in 2007 still residing in this UA. Of those who left the UA Sigatoka during their lifetime (2,675), most (1,449) migrated to another UA (U→U) whereas 1,217 migrated to a location in the rural sector (U→R). The remaining 9 persons moved overseas.
The number of Fijian lifetime rural to urban (R→U) migrants (1,656) is almost three times larger than the number of Fijian lifetime urban to urban (U→U) migrants (525). Almost half of all Fijians with the UA Sigatoka as their 2007 UPOR (4,363) were born in this UA (2,181).

Of the 3,222 Fijians born in the UA Sigatoka, 2,181 were in 2007 still residing in this UA. Of those Fijians who left the UA Sigatoka during their lifetime (1,041), most (594) migrated to a location in the rural sector (U→R) whereas 447 migrated to another UA (U→U).
The number of Indian lifetime rural to urban (R→U) migrants (1,794) is more than three times larger than the number of Indian lifetime urban to urban (U→U) migrants (584). Of Indians with the UA Sigatoka as their 2007 UPOR (4,521) almost half (2,096) were born in this UA.

Of the 3,630 Indians born in the UA Sigatoka, 2,096 were in 2007 still residing in this UA. Of those Indians who left the UA Sigatoka during their lifetime (1,534), most (926) migrated to another UA (U→U) whereas 599 migrated to a location in the rural sector (U→R). The remaining 9 Indians migrated overseas.
Fig. IX-6-d1: Lifetime migration (rural to urban and urban to urban) to the urban area Sigatoka derived from 2007 Census data: Others

Fig. IX-6-d2: Lifetime migration (urban to rural and urban to urban) from the urban area Sigatoka derived from 2007 Census data: Others
Figure IX-7-a1 and 2 present a picture of recent migration to and from the UA Sigatoka. Separate information is provided for the total population, Fijians, Indians and Others.

Figure IX-7-a1 shows the number of recent migrants to the UA Sigatoka. All persons who, during the 2007 Census, reported Sigatoka as their usual place of residence (UPOR) are further categorized according to their UPOR in 2002 (point X – five years before the 2007 Census). There are three possibilities:

- **UPOR in 2002 is any rural location in Fiji.** For users of this information, particularly policy makers and planners, this category of migrants constitute the important group of recent rural-urban migrants (R→U). They moved between 2002 and 2007 to the UA Sigatoka.

- **UPOR in 2002 is any urban location in Fiji.** The two sub-categories are:
  - UPOR in 2002 is the UA Sigatoka. The persons in this sub-category are non-migrants.
  - UPOR in 2002 is another UA than Sigatoka. Persons in this sub-category constitute the group of recent urban to urban (U→U) migrants.

- **POB is overseas.**

Of the 8,501 persons with the UA Sigatoka as their 2007 UPOR, 6,365 resided already in this UA in 2002. A total of 2,136 persons moved to this UA during the five-year period 2002-2007. Most (1,387) came from a rural location and 611 from another UA. The remainder (138) came from overseas.
Recent migration (urban to rural and urban to urban) from the urban area Sigatoka derived from 2007 Census data: Total Population age five and over

Figure IX-7-a2 shows the number of recent migrants from the UA Sigatoka. All persons who reported the UA Sigatoka as their UPOR in 2002 are further categorized according to their UPOR in 2007. There are again three possibilities:

- **UPOR in 2007 is any rural location in Fiji.** Persons in this category constitute the recent urban to rural (U→R) migrants.

- **UPOR in 2007 is any urban location in Fiji.** There are again two sub-categories:
  - **UPOR in 2007 the Sigatoka UA.** Persons in this sub-category are recent non-migrants.
  - **UPOR in 2007 another UA than Sigatoka.** Persons in this sub-category are recent urban to urban (U→U) migrants.

- **POB is overseas**

Of the 7,429 persons who reported their 2002 UPOR as the UA Sigatoka, 6,365 still resided in this UA in 2007. A total of 1,064 persons left the UA Sigatoka between 2002 and 2007. Most of them (567) moved to a rural location (U→R) and 484 to another UA (U→U). (13 left for overseas).
Fig. IX-7-b1: Recent migration (rural to urban and urban to urban) to the urban area Sigatoka derived from 2007 Census data: Fijians age five and over

Of the 3,881 Fijians with the UA Sigatoka as their 2007 UPOR, 2,744 resided already in this UA in 2002. A total of 1,137 Fijians moved to this UA during the five-year period 2002-2007. Most (763) came from a rural location and 325 from another UA. The remainder (49) came from overseas.

Fig. IX-7-b2: Recent migration (urban to rural and urban to urban) from the urban area Sigatoka derived from 2007 Census data: Fijians age five and over

Of the 3,273 Fijians who reported their 2002 UPOR as the UA Sigatoka, 2,744 still resided in this UA in 2007. A total of 529 Fijians left the UA Sigatoka between 2002 and 2007. Most of them (353) moved to a rural location (U→R) and 176 to another UA (U→U).
Fig. IX-7-c1: Recent migration (rural to urban and urban to urban) to the urban area Sigatoka derived from 2007 Census data: Indians age five and over

Of the 4209 Indians with the UA Sigatoka as their 2007 UPOR, 3,365 resided already in this UA in 2002. A total of 844 Indians moved to this UA during the five-year period 2002-2007. Most (568) came from a rural location (R→U) and 227 from another UA (U→U). The remainder (49) came from overseas.

Fig. IX-7-c2: Recent migration (urban to rural and urban to urban) from the urban area Sigatoka derived from 2007 Census data: Indians age five and over

Of the 3,848 Indians who reported their 2002 UPOR as the UA Sigatoka, 3,365 still resided in this UA in 2007. A total of 483 Indians left the UA Sigatoka between 2002 and 2007. Most of them (278) moved to another UA (U→U) and 192 to a rural destination (U→R). (13 migrated overseas).
Fig. IX-7-d1: Recent migration (rural to urban and urban to urban) to the urban area Sigatoka derived from 2007 Census data: Others age five and over

Fig. IX-7-d2: Recent migration (urban to rural and urban to urban) from the urban area Sigatoka derived from 2007 Census data: Others age five and over
Figure IX-8 (as well as IX-9) focus on one group of inter-sectoral migrants viz. those who migrated from any location in the rural sector in Fiji to the UA Sigatoka (R→U). Figure IX-8 is concerned with lifetime rural-urban migrants and Figure IX-9 with recent rural-urban migrants.

Figure IX-8 provides some further information regarding the composition of the 3,549 lifetime rural-urban migrants to the UA Sigatoka.\(^{71}\) Of these 3,549 lifetime migrants 1,656 are Fijians, 1,794 Indians and 99 Others. Figure IX-8 further classifies these migrants according to the distance they travelled in order to get to the UA Sigatoka. This classification is a rather simple one. It distinguishes three classes, A, B and C. These classes are defined below:

**Category A: ‘Short distance’ migrants**

This category refers to lifetime migration by persons born in the rural sector of Nadroga (the province in which the UA Sigatoka is located). In order to get to the UA Sigatoka, most of these rural migrants travelled a relatively short distance. They stayed within Nadroga and did not cross a provincial boundary in order to get to the capital of their province, the UA Sigatoka.

The 2007 Census established that of the 3,549 lifetime migrants to the UA Sigatoka, 1,784 persons (or 50.3 percent) belonged to category A. In other words they came from the rural sector of Nadroga. The ethnic composition of these 1,784 category A migrants is:

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,784</td>
</tr>
<tr>
<td>Fijian</td>
<td>680</td>
</tr>
<tr>
<td>Indian</td>
<td>1,077</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
</tr>
</tbody>
</table>

\(^{71}\) Based on 2007 Census data
**Category B: “Intermediate distance” migrants**

This category refers to lifetime rural to urban migration by persons born in the rural sector of other provinces in the Western Division than the one in which the Sigatoka UA is located. These provinces are Ba and Ra. In order to get to the UA Sigatoka, these persons crossed at least one provincial boundary but **not** a divisional boundary. In other words they stayed within the Western Division.

The 2007 Census results show that of the 3,549 lifetime migrants to the UA Sigatoka, 721 persons (or 20.3 percent) belonged to category B. In other words they came from the rural sector of either Ba or Ra. The ethnic composition of these 721 category B migrants is:

<table>
<thead>
<tr>
<th>Total</th>
<th>721</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fijian</td>
<td>217</td>
</tr>
<tr>
<td>Indian</td>
<td>481</td>
</tr>
<tr>
<td>Other</td>
<td>23</td>
</tr>
</tbody>
</table>

**Category C: “Long distance” migrants**

This category refers to lifetime rural to urban migration by persons born in the rural sector of any of the provinces of the Northern, Central and Eastern Division. In order to get to the UA Sigatoka, these migrants crossed a divisional boundary. These migrants are referred to as “long distance” migrants.

The 2007 Census determined that of the 3,549 lifetime migrants to the UA Sigatoka, 1,044 persons (or 29.4 percent) belonged to category C. In other words they came from the rural sector of any of the provinces of the Central, Northern or Eastern Division. The ethnic composition of these 1,044 category C migrants is:

<table>
<thead>
<tr>
<th>Total</th>
<th>1,044</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fijian</td>
<td>759</td>
</tr>
<tr>
<td>Indian</td>
<td>236</td>
</tr>
<tr>
<td>Other</td>
<td>49</td>
</tr>
</tbody>
</table>
Figure IX-9 provides some further information regarding the composition of the 1,387 recent rural-urban migrants to the UA Sigatoka. These persons migrated during the five-year period 2002-2007 (or between point X and E). 763 of them are Fijians, 568 are Indian and 56 are Others.

Figure IX-8 uses the same classification according to “distance travelled” (Category A, B and C) as in the case of lifetime migrants.

**Category A: ‘Short distance’ migrants**

This category refers to recent migration (within the period 2002-2007) by persons born in the rural sector of Nadroga. In order to get to the UA Sigatoka, most of these rural migrants travelled a relatively short distance. They stayed within Nadroga Province and did not cross a provincial boundary in order to get to the UA Sigatoka.

The 2007 Census established that of the 1,387 recent migrants to the UA Sigatoka, 752 persons (or 54.2 percent) belonged to category A. In other words they came from the rural sector of Nadroga. The ethnic composition of these 752 category A migrants is:

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>752</td>
</tr>
<tr>
<td>Fijian</td>
<td>390</td>
</tr>
<tr>
<td>Indian</td>
<td>335</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
</tr>
</tbody>
</table>

**72 Based on 2007 Census data**
Category B: “Intermediate distance” migrants

Only 188 persons (13.6 percent of all recent rural-urban migrants to the UA Sigatoka) migrated, during the five years prior to the 2007 Census, from the rural sector of other provinces in the Western Division (Ba and Ra) to the Sigatoka UA. In order to get to the UA Sigatoka, these “intermediate” rural-urban migrants crossed at least one provincial boundary but not a divisional boundary.

The 2007 Census established that of the 1,387 recent migrants to the UA Sigatoka, 188 persons (or 13.6 percent) belonged to category B. In other words they came from the rural sector of Ba or Ra. The ethnic composition of these 188 category B migrants is:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>188</td>
</tr>
<tr>
<td>Fijian</td>
<td>61</td>
</tr>
<tr>
<td>Indian</td>
<td>122</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>

Category C: “Long distance” migrants

This category refers to recent “long-distance” rural-urban migrants from any of the provinces of the Central, Northern and Eastern Divisions. 447 persons (or 32.2 percent) fall in this category. The ethnic composition of these 447 category C migrants is:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>447</td>
</tr>
<tr>
<td>Fijian</td>
<td>312</td>
</tr>
<tr>
<td>Indian</td>
<td>111</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
</tr>
</tbody>
</table>
Chapter X (10): HOUSEHOLDS AND HOUSING

1. General

All Population Censuses since 1986 have been combined with a Census of Housing. The collection on the same Interview Schedule of demographic and socio-economic information of household members and information concerning their housing situation has obvious advantages. It offers the possibility of matching the two data sets and this leads to more comprehensive and meaningful analysis. Although far from perfect, the census remains the main source of information regarding households and housing.

Ideally, for efficient planning and monitoring of the housing situation, a more comprehensive database should be available. Moreover, this database should be updated continuously. These requirements can only adequately be met by an effective system of administrative statistics. Unfortunately, in Fiji, including Nadroga Province, such a system is not in place. Statutory bodies like the Housing Authority and Public Rental Board do not have statistical units, tasked with the continuous collection and analysis of information concerning the housing situation. The same applies to NGOs dealing with issues related to housing. Moreover, the data that is collected by these bodies, deals exclusively with the households occupying houses under their control. In particular, information regarding Fiji’s squatter areas is sketchy and, because of the rapidly changing situation, usually out of date.

Households

Households and families are the fundamental units of all societies and information should preferably be available for both. However from the data collection point of view, particularly the census, the household is a far more convenient unit of enumeration than the family. With regard to location, the household tends to be specific whereas this is often not the case with the family.

Censuses (as well as surveys) conducted in Fiji have always used the household as the basic unit of data collection. It is therefore essential that the concept household and conditions for household membership are precisely defined. As during the previous censuses, the 2007 census defined the household as consisting of:

“those persons who usually eat together food prepared for them in the same kitchen and who together share the work and cost of providing the food.”

A household may consist of one or more persons. Furthermore; it may occupy a whole building, part of a building or many buildings. However, in most cases, the household is a family living in a single dwelling.
**Housing situation**

Shelter, (like water and food) is universally considered as a basic human need. Adequate service delivery with regard to these basic needs has, for a long time, been one of the priority areas of government policy and planning. Considering, the fast increase in Fiji’s squatter population during recent decades, it has become progressively more difficult to meet the housing needs of the population, especially the poor.

The most recent censuses, but especially the 2007 Census collected a massive amount of information regarding the housing situation in the province as well as the availability of basic services like electricity and water supply, toilet facilities and much more. What is presented in this Provincial Profile constitutes only the tip of the iceberg. Users requiring more detailed information are advised to contact the FBoS.

Censuses distinguish between private dwellings and non-private dwellings.

**Private dwellings (PD)**

The majority of all households in Fiji occupy a private dwelling

**Non-private dwellings (NPD)**

Some “households” live in a NPD. This is a “collective household” or institution. Examples include corrective institutions (prisons), health institutions (hospitals, health centers, old people’s homes, and orphanages), boarding schools, barracks, ships etc. These collective households cannot be considered as households in the true sense of the word. As explained in the Introduction, during the 2007 Census the inhabitants of NPDs were enumerated using a reduced questionnaire.
2. Profile

Fig. X-1: Change in average household size between 1996 and 2007 by ethnicity and geographic sector

Figure X-1 compares the average household size in Nadroga Province at the time of the 1996 and 2007 Censuses.

- Figure X-1a presents the situation for the main ethnic groups
- Figure X-1b refers to the main ethnic groups in the rural sector
- Figure X-1c refers to the main ethnic groups in the urban sector (which is the UA of Sigatoka)
Notes:

(1) Some households consist of persons with a different ethnic background. These households have been classified according the ethnicity of the head of household.

(2) Users are again reminded that the data in Figure X-1 only includes households residing in private dwellings (PD). The inclusion of households in non-private dwellings (NPD) would lead to meaningless averages.

During the intercensal period, the average household size for all sub-populations by ethnicity and geographic sector in Nadroga has continued to decrease and this applies to all types of households in the rural as well as the urban sector.
Fig. X-2: Number of persons per household (1,2,........10+) between 1996 and 2007 by ethnicity and geographic sector

Fig. X-2a: Number of persons by household size (1,2,........10+) for 1996 and 2007: All Sectors

Household Size

Number of persons

Nadroga-1996
Nadroga Fijians-1996
Nadroga Indians-1996
Nadroga Others-1996
Nadroga-2007
Nadroga Fijians-2007
Nadroga Indians-2007
Nadroga Others-2007
Fig. X-2b: Number of persons per household (1,2,.....10+) between 1996 and 2007: Rural sector

- Nadroga Rural-1996
- Nadroga rural Fijians-1996
- Nadroga rural Indians-1996
- Nadroga rural Others 1996
- Nadroga Rural 2007
- Nadroga rural Fijians 2007
- Nadroga rural Indians 2007
- Nadroga rural Others 2007
Fig. X-2c: Number of persons per household (1,2,...10+) between 1996 and 2007 by ethnicity: Urban sector

Nadroga Urban 1996
Nadroga urban Fijians 1996
Nadroga urban Indians -1996
Nadroga urban Others 1996
Nadroga urban 2007
Nadroga urban Fijians 2007
Nadroga urban Indians 2007
Nadroga urban Others 2007
Figure X-2a to c present the number of persons by household size for all sectors and the rural and urban sector respectively. The subsequent Figures X-3, 4 and 5 compare the situation of households in Nadroga in 1996 and 2007 with regard to:

- Safe water supply. The two categories that are distinguished in Figure X-3 are safe and unsafe water supply. Safe water supply includes metered water, communal water and water from a roof tank. Unsafe water supply includes water from a well, river, creek and other.

- Electricity. The two categories distinguished in Figure X-4 are electricity and no electricity. Electricity includes electricity from any source viz.:
  - FEA
  - FSC
  - PWD
  - Village power
  - Home solar
  - Own Plant

  Note: In Ba Province some households get their power supply from Vatukoula

- Modern toilet facilities. The two categories distinguished in Figure X-6 are modern and non-modern toilet facilities. Modern toilet facilities include exclusive and shared flush toilet. Non-modern toilet facilities include:
  - Sealed privy (exclusive and shared)
  - Pit latrine (exclusive and shared)
  - None and other

The bar-graphs in these three figures show the proportions (%) of households in Nadroga with safe water supply, electricity (from any source) and modern toilet facilities. The information is provided for the main ethnic groups.
During the intercensal period 1996-2007, access to safe water supply has improved but far more for Indian than for Fijian households.
In 1996, a larger proportion of Indian than Fijian households had access to electricity supply. During the intercensal period 1996-2007 the situation has drastically improved for Fijian as well as Indian households. In 2007, about 15 percent of all households still do not have access to electricity supply but the situation remains worse for Fijian households than for Indian households.  

73 The improvement in electricity supply is mainly due to improvement in FEA supply and in the case of Fijian households also to village power. All other sources of electricity, with the exception of own plant; have not contributed very much to the improvement in electricity supply.
In 1996 more than 70 percent of all households did not have modern toilet facilities. During the intercensal period 1996-2007, the situation has improved drastically. At the time of the last census slightly less than 40 percent of all households still did not have access to modern toilet facilities. However, it will be noted that the difference between Fijian and Indian households has remained. There is very significant scope for improvement, especially for Fijian households.

The next two figures, Figure X-6 and 7 provide further household-related information for the population of Nadroga Province. The information has been derived from the 1996 and 2007 Censuses. It is concerned with:

- **Living quarters (Figure X-6)**

  The 1996 and 2007 Censuses distinguish between two categories. These are:
• Owned/with mortgage

• Non-owned.

Subcategories of the category “Non-owned” include:

- Rent from private landlord
- Rent from public board
- Government/institutional housing
- Occupancy employer
- No rent (informal)
- Other

Land (with private dwelling) (Figure X-7).

The 1996 and 2007 Censuses distinguish between two categories. These are:

•Owned outright

•Not owned outright

Subcategories of the category “Not owned outright” include:

- Leased from state
- Leased from NLTB
- Occupancy non-legal
- Occupancy NLTB
- Traditional village tenure
- Other

The bar-graphs in Figure X-6 and 7 show the proportions (%) of households in Nadroga that own (or own with mortgage) their living quarters and the proportion (%) of households that own outright the land on which the living quarters are situated. The situation in 1996 and 2007 is compared for Fijian and Indian households in the province.
Ownership of living quarters (with or without mortgage) in Nadroga in 1996 was slightly more common for Indian than for Fijian households. However, Figure X-6 also shows that between 1996 and 2007, there has a greater increase in house ownership (with or without mortgage) amongst Fijian than amongst Indian households. As a result, house ownership for both components of the population is now almost the same and stands at about 75 percent of all households.

Furthermore, households that do not own their house, usually rent from a private landlord, especially in the case of Indian households.
Figure X-7 indicates that ownership of the land (on which the living quarters is located) is far less common than ownership of living quarters (shown in Figure X-6). In 1996, only about 10 percent of all households owned the land on which their living quarters is located. In 2007, this has marginally increased but remains below 20 percent. Ownership by Indian households is more common than for Fijian households.

Most households that do not own the land, on which their living quarters are located, either lease from the state or the NLTB, or (in the case of Fijian households) have traditional village tenure.
APPENDIX A:
ABRIDGE LIFETABLES FOR MALES AND FEMALES IN
NADROGA DERIVED FROM 2007 CENSUS DATA
### MALE LIFETABLE

<table>
<thead>
<tr>
<th>Age</th>
<th>m(x,n)</th>
<th>q(x,n)</th>
<th>l(x)</th>
<th>d(x,n)</th>
<th>L(x,n)</th>
<th>S(x,n)</th>
<th>T(x)</th>
<th>e(x)</th>
<th>a(x,n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.01826</td>
<td>0.01796</td>
<td>100000</td>
<td>1796</td>
<td>98373</td>
<td>0.97347</td>
<td>6446165</td>
<td>64.5</td>
<td>0.09</td>
</tr>
<tr>
<td>1</td>
<td>0.00477</td>
<td>0.01887</td>
<td>98204</td>
<td>1854</td>
<td>388364</td>
<td>0.98702</td>
<td>6347792</td>
<td>64.6</td>
<td>1.60</td>
</tr>
<tr>
<td>5</td>
<td>0.00111</td>
<td>0.00553</td>
<td>96350</td>
<td>533</td>
<td>480419</td>
<td>0.99503</td>
<td>5959428</td>
<td>61.9</td>
<td>2.50</td>
</tr>
<tr>
<td>10</td>
<td>0.00088</td>
<td>0.00441</td>
<td>95818</td>
<td>422</td>
<td>478032</td>
<td>0.99417</td>
<td>5479009</td>
<td>57.2</td>
<td>2.50</td>
</tr>
<tr>
<td>15</td>
<td>0.00158</td>
<td>0.00788</td>
<td>95395</td>
<td>751</td>
<td>475247</td>
<td>0.99020</td>
<td>5000977</td>
<td>52.4</td>
<td>2.70</td>
</tr>
<tr>
<td>20</td>
<td>0.00233</td>
<td>0.01159</td>
<td>94644</td>
<td>1097</td>
<td>470588</td>
<td>0.98758</td>
<td>4525730</td>
<td>47.8</td>
<td>2.60</td>
</tr>
<tr>
<td>25</td>
<td>0.00262</td>
<td>0.01303</td>
<td>93547</td>
<td>1219</td>
<td>464743</td>
<td>0.98613</td>
<td>4055142</td>
<td>43.3</td>
<td>2.55</td>
</tr>
<tr>
<td>30</td>
<td>0.00299</td>
<td>0.01485</td>
<td>92328</td>
<td>1371</td>
<td>458299</td>
<td>0.98364</td>
<td>3590399</td>
<td>38.9</td>
<td>2.56</td>
</tr>
<tr>
<td>35</td>
<td>0.00367</td>
<td>0.01817</td>
<td>90957</td>
<td>1653</td>
<td>450803</td>
<td>0.97934</td>
<td>3132100</td>
<td>34.4</td>
<td>2.59</td>
</tr>
<tr>
<td>40</td>
<td>0.00478</td>
<td>0.02363</td>
<td>89304</td>
<td>2110</td>
<td>441490</td>
<td>0.97214</td>
<td>2681297</td>
<td>30.0</td>
<td>2.62</td>
</tr>
<tr>
<td>45</td>
<td>0.00670</td>
<td>0.03298</td>
<td>87194</td>
<td>2875</td>
<td>429190</td>
<td>0.95956</td>
<td>2239807</td>
<td>25.7</td>
<td>2.64</td>
</tr>
<tr>
<td>50</td>
<td>0.01012</td>
<td>0.04941</td>
<td>84319</td>
<td>4166</td>
<td>411836</td>
<td>0.93862</td>
<td>1810617</td>
<td>21.5</td>
<td>2.66</td>
</tr>
<tr>
<td>55</td>
<td>0.01581</td>
<td>0.07623</td>
<td>80153</td>
<td>6110</td>
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First entry of S(x,n) is for survivorship of 5 cohorts of birth to age group 0–4 = L(0,5) / 500000
Second entry of S(x,n) is for S(0,5) = L(5,5) / L(0,5)
Last entry of S(x,n) is S( 80+,5) = T( 85) / T( 80)
# FEMALE LIFETABLE

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