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Preface

This Report contains only the demographic analysis of data from the 1999 Census of Population and Housing for the total population of Vanuatu as well as for each of its six (6) provinces, the Rural and Urban areas, produced by staff of the National Statistics Office. The results of this analysis are presented in Chapters 3 to 7 of this Report. Chapter 2 contains a non-technical summary of the main findings and policy considerations. Users and researchers are invited to make further contributions to the analysis (including analysis of other socio-economic characteristics) and to publish the results of their work in the 1999 Census Monograph Series.

Those who wish to do so are requested to contact the National Statistics Office. In those cases where their requirements are not met by the general purpose tables contained in the Main Report of 1999 Vanuatu Population and Housing Census, they may request special purpose or more detailed tabulations. Access to the individual record data can only be gained under strict conditions in accordance with the Statistical Services Act of 1983. Details will be supplied by the National Statistics Office on request. One of the conditions of access to individual record data is that the National Statistics Office has the opportunity to publish the resulting research. This particularly applies when the research is to be published in an overseas journal with limited circulation in Vanuatu, as we wish to ensure the ready availability and maximum use within Vanuatu of research done using the census data.

In the Analytical Chapters, comparisons with the results from previous censuses have been made whenever this was feasible. This is particularly so in the case of the two most recent (complete) censuses of 1979 and 1989. It should however be noted that these comparisons are often far from easy and straightforward due to changes in census strategy, definitions etc. Reference to this is made in the relevant chapters and sections throughout this Report. It should also be noted that the field staff working in the rural areas had a difficult task in obtaining accurate basic information, particularly age data during the censuses.

Many basic tabulations in the Main Report still contain some distinct 'oddities', like not stated responses. It was decided not to weed all these, usually small discrepancies out during the edit phase. Firstly, this would have lengthened the entire census operation considerably and secondly these discrepancies serve the purpose of giving the users a feeling for the realities and problems of a major data collection exercise like a national census in Vanuatu.

After the Provincial Profiles have been distributed to the provinces, the National Statistics Office will conduct a Data Utilization Workshop in each of the provinces in which the basic tabulations and the results of the analysis will be explained to the users in the provinces. These workshops are planned for the first half of 2002.

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Contents

	<u>page no.</u>
Preface	i
Acknowledgement	ii
Contents	iii
List of tables	iv
List of figures	vi
Chapter 1 – Introduction	1
Chapter 2 – Summary of Demographic Indicators	5
Chapter 3 – Population Size, Growth, and Distribution	9
3.1. Introduction	9
3.2. Population Size	9
3.3. Population Growth	13
3.4. Population Distribution	17
3.5. Urbanisation	20
Chapter 4 – Population Composition	25
4.1. Introduction	25
4.2. Detecting Age Mis-reporting	25
4.3. Age and Sex Ratios	28
4.4. Age Structure	31
4.5. Marital Status	36
Chapter 5 – Fertility	39
5.1. Introduction	39
5.2. Data Availability	39
5.3. Reliability of the Data	40
5.4. Methods of Analysis	40
5.5. Current Fertility	41
5.6. Fertility Trends and Patterns	45
Chapter 6 – Mortality	48
6.1. Introduction	48
6.2. Data Availability	48
6.3. Mortality Measures	48
6.4. Census Data Quality	49
6.5. Methods of Analysis	49
6.6. Mortality Estimates	51
Chapter 7 – Migration	71
7.1. Introduction	71
7.2. Internal Migration	72
7.3. International Migration	88

List of Tables

Table 2.1.	Summary of demographic indicators from the 1999 census	5
Table 3.1.	Population by geographic sector in 1989 and 1999.	10
Table 3.2.	Population by sex and geographic sector at the time of the 1989 and 1999 censuses.	11
Table 3.3.	Population by 'citizenship' at the time of the 1967, 1979, 1989 and 1999 censuses.	12
Table 3.4.	Population by 'citizenship' at the time of the 1999 census.	12
Table 3.5.	Population of urban areas by sex at the time of the 1967, 1979, 1989 and 1999 censuses.	13
Table 3.6.	Population growth for the total population during the intercensal periods.	14
Table 3.7.	Population Growth by Geographic Sector during the intercensal period, 1989-1999.	15
Table 3.8.	Population growth by 'citizenship'	15
Table 3.9.	Population growth rates (%) for urban areas.	16
Table 3.10.	Summary of population growth rates (%) by age and sex for the intercensal period, 1989-1999	16
Table 3.11.	Crude Population Density (persons per km ²) for Vanuatu at the time of the 1967, 1979, 1989 and 1999 censuses	17
Table 3.12.	Crude Population Density (persons per km ²) for the provinces at the time of the 1989 and 1999 censuses.	18
Table 3.13.	Rank of Crude Population Densities by Province and Gini Concentration Ratio at the time of the 1999 Census	19
Table 3.14.	Rank of Crude Population Densities by Province and Gini Concentration Ratio at the time of the 1999 Census	19
Table 3.15.	Rural/Urban population distribution (%) at the time of the 1967, 1979, 1989 and 1999 censuses.	20
Table 3.16.	Mean Town Population Size – Port Vila and Luganville, 1989 and 1999	22
Table 3.17.	Annual Growth Rate of "Percent Urban" and "Urban/Rural Ratio"	23
Table 4.1.	Indices of accuracy of age reporting of the resident population by province and sex derived from the 1989 and 1999 census data	27
Table 4.2.	Age Ratios for the Resident Population	29
Table 4.3.	Sex ratios of the population by province at the time of the 1999 Census	30
Table 4.4.	Indices derived from the Age-Sex Structure of the Resident Population by Sex, Vanuatu, 1989	33
Table 4.5.	Indices derived from the Age-Sex Structure of the Resident Population by Sex, Vanuatu, 1999	34
Table 4.6.	Resident population 15 years and over Vanuatu, Urban and Rural by Marital Status, 1999	36
Table 4.7.	Population 15 years and over by marital status	37

Table 4.8.	Singulate Mean Age at First Marriage for Resident Population 10 years and over by Sex	38	
Table 5.1.	Current fertility, 1999	41	
Table 5.2.	Fertility by background characteristics, 1999	43	
Table 5.3.	Current fertility by province, 1999	44	
Table 5.4.	Total children born in the last 12 months before the census	45	
Table 6.1.	Infant and childhood mortality rates, 1966-1995	51	
Table 6.2.	Estimates of male and female mortality, 1995		52
Table 6.3.	Estimates of Under Five Mortality Rates (U5), 1985 and 1995	53	
Table 6.4.	Provincial levels of infant and child mortality in the period 1992-1997		54
Table 6.5.	U5 Estimates, 1985 and 1995	55	
Table 6.6.	Socio-Economic Differentials in Infant and Child Mortality, 1992-1997		56
Table 6.7.	Adult Survival Ratios from Age 25 to Age x by sex, Vanuatu		57
Table 7.1.	Inter-province migration five years before the Census		73
Table 7.2.	Age specific net migration figures for Shefa province		74
Table 7.3.	Age specific net migration figures for Sanma province		76
Table 7.4.	Current resident population of each province compared to population 5 years ago		77
Table 7.5.	Annual Out-Migration Rates	77	
Table 7.6.	Population migrating to another province in the preceding 5 years	79	
Table 7.7.	Marital status of inter-province migrants (aged 15+)	80	
Table 7.8.	Educational Attainment of inter-provincial migrants (aged 5+)	81	
Table 7.9.	Educational attainment of inter-provincial migrants (aged 15-64)	82	
Table 7.10.	School attendance of inter-provincial migrants (aged 5+)	84	
Table 7.11.	Economic activity of inter-provincial migrants (aged 15-64)		85
Table 7.12.	Work in the last seven days by inter-provincial migrants (aged 15-64)	86	85
Table 7.13.	Inter-provincial lifetime migration	87	
Table 7.14.	Percentage distribution of the resident population of each province by home island		88
Table 7.15.	Age distribution of those whose permanent address 5 years previously was overseas		89
Table 7.16.	Population Numbers Born Overseas	90	
Table 7.17.	Ethnicity of those who have moved from overseas to Vanuatu in the preceding five years		91
Table 7.18.	Educational attainment of those of Ni-Vanuatu ethnicity returning to Vanuatu to live (age 15 +)		93
Table 7.19.	Educational attainment of those of other ethnicity returning to Vanuatu to live (age 15+)		93
Table 7.20.	Economic activity of population migrating from overseas to Vanuatu in the preceding 5 years (age 15 – 64)	94	

List of Figures

Figure 1.1.	Trends in the de-facto population increases and the number of households covered in the 1967, 1979, 1989 and 1999 censuses	2
Figure 3.1.	Resident Population in 1967, 1979, 1989 and 1999	9
Figure 3.2.	Growth Rate of the Total Resident Population	14
Figure 3.3.	Annual Growth Rate of "Urban/Rural Ratio" measuring the Tempo of Urbanisation	23
Figure 4.1.	Population by Single Years of Age, Vanuatu, 1989 and 1999	26
Figure 4.2.	Age Ratios by Age and Sex, Vanuatu, 1999	29
Figure 4.3.	Age and sex distribution of resident Vanuatu population in 1999	31
Figure 4.4.	Age and sex distribution of resident Vanuatu population in 1989	32
Figure 5.1.	Total fertility rates by province, 1999	42
Figure 5.2.	Age specific fertility rates, 1979-1999	46
Figure 5.3.	Total fertility rates, 1979-1999	47
Figure 6.1.	Infant Mortality Rates, 1985-1995	52
Figure 6.2.	IMR, CMR and U5 estimates, 1985-1995	53
Figure 6.3.	Probabilities of Surviving from Age 25 by Sex, Vanuatu	58
Figure 6.4.	Average Life Expectancy at Birth by Sex	59
Figure 6.5.	Life Table Survival Ratios from Birth by Sex, Vanuatu	60
Figure 7.1.	Net Migration for Shefa Province	75
Figure 7.2.	Net Migration for Sanma Province	76
Figure 7.3.	Population migrating to another province in the preceding 5 years	79
Figure 7.4.	Proportion of the population that have migrated to another province in the last 5 years	80
Figure 7.5.	Educational Attainment of inter-provincial migrants (aged 5+)	81
Figure 7.6.	Educational Attainment of inter-provincial migrants (aged 15-64)	82
Figure 7.7.	School attendance of inter-provincial migrants (aged 5+)	83
Figure 7.8.	Economic activity of inter-provincial migrants (aged 15-64)	85
Figure 7.9.	Proportions of inter-provincial migrants working in the seven days preceding the census	86
Figure 7.10.	Lifetime Migration proportions	87
Figure 7.11.	Age distribution of those whose permanent address 5 years previously was overseas	90
Figure 7.12.	Percentage of resident population (all ages) born in Vanuatu and overseas	91
Figure 7.13.	Ethnicity of those who have moved from overseas to Vanuatu in the preceding five years	92
Figure 7.14.	Percentage that worked in the seven days preceding the census, immigrants aged 15-64 that had moved from overseas to Vanuatu in the preceding five years	94
	Life Tables for Vanuatu, urban, rural and the 6 provinces by sex	61
	References	95

Chapter 1 – Introduction

For adequate planning at the national, provincial and local levels, Vanuatu requires detailed information about the characteristics of its society and about specific goals of government programs to improve the living conditions. Also required is some knowledge about the potential impact and effects of such programs on the society and its development. Such requirements speak for themselves and do not need to be dwelt upon here.

In its quest for social and economic development, Vanuatu has often struggled with information that is incomplete or is not available at the time it is needed. Data are not only required, they are required at the opportune time for use before becoming obsolete.

The availability of data (including population data), has improved greatly in recent decades as a result of expansion and strengthening of the capabilities of the Statistics Office. By now, Vanuatu has conducted four population censuses and will regularly take census every ten years. The government of Vanuatu has fully funded the last Population and Housing Census in 1999. The National Statistical Office also has plans for intercensal surveys on specific topics in the years ahead.

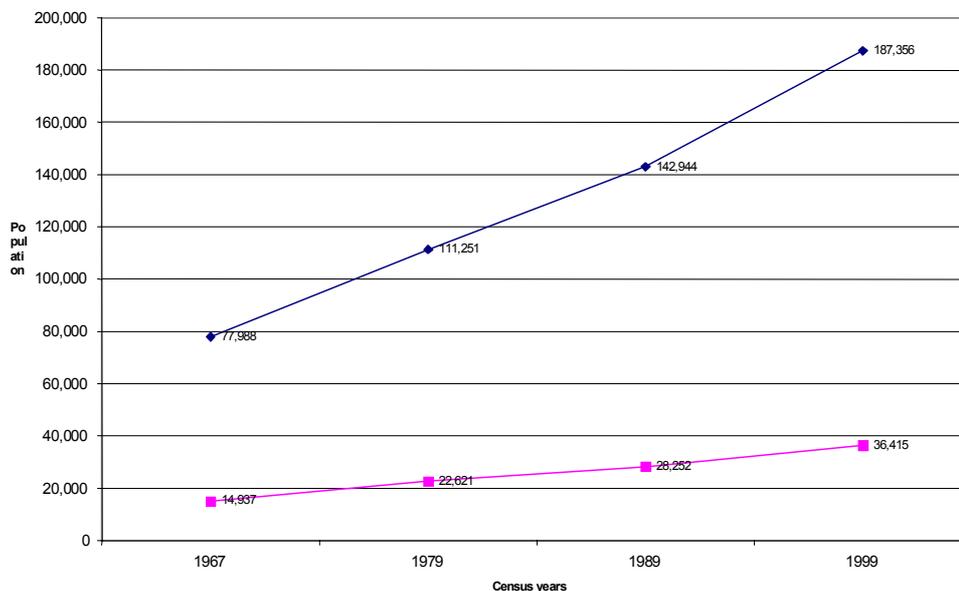
Together with improvements in data collection, the development of computer programs for processing data has enhanced the prompt availability of tabulations appropriate for policy, planning and decision-making. The increases in communication among professionals and the availability of technical assistance have accelerated the process of collecting and publishing information in Vanuatu. In some cases, the quality of the information still can be improved greatly. Especially needed is development and improvement in Vital Registration Systems (this of course is a Pacific wide problem that needs to be addressed by all countries in the region).

But the availability of information is not the only concern. If data are available but are not analysed, it is the same as if the data did not exist. The analysis too must be timely, as the data may rapidly become obsolete. The use of already developed microcomputer software programs has accelerated the process of analysing data in Vanuatu.

Vanuatu is currently undergoing a Comprehensive Structural Reform Programme for social and economic development. In the process of implementing the activities under the Reform Programme, some policies are reviewed and others are formulated. One of these policies is the National Population Policy, which has been officially endorsed by the Council of Ministers early in year, 2001. The overall goal of the policy is to contribute to a sustained rise in the real standard of living of the population and improve the quality of life of the people. The policy statement upholds the principles of the ICPD (International Conference on Population and Development, 1994) Programme of Action. Vanuatu endorsed the ICPD Programme of Action. Thus, this analytical report will provide the social and demographic indicators from the census, appropriate for monitoring and reviewing the progress of implementation of, not only the National Population Policy, but also other social and economic development policies under the Structural Reform.

As cited above, Vanuatu so far has conducted four national population censuses. These censuses were conducted on a de-facto¹ basis and covered all persons in Vanuatu, both citizens and non-citizens. The analysis was based on both the de-facto and de-jure² population. The 1967 Census covered 14,937 households, while the 1979 Census covered 22,621 private households and 74 institutions (including boats). Similarly, the 1989 Census covered a total of 28,252 private households and 119 institutions and the 1999 Population and Housing Census enumerated a de-facto population from a total of 36,415 private households and 102 institutions (including schools, hospitals, prisons, etc).

Figure 1.1. Trends in the de-facto population increases and the number of households covered in the 1967, 1979, 1989 and 1999 censuses



The purpose of this report is to present the results of a demographic analysis of population data from the fourth population census of Vanuatu – the 1999 Population and Housing Census. The report also includes the description of procedures or methods used in the demographic analysis. Chapter 2 of this report covers a non-technical description of summary results and related policy considerations, while Chapters 3 to 7 cover technical details and derived estimates.

The 1999 census was a de-facto enumeration. It was initially intended that all information would be collected during an enumeration period of two weeks, the weeks from 16-29 November 1999. Census night for individual households was the night before the enumerator called. In order to restrict the enumeration period to two weeks, a large number of interviewers and supervisors had to be involved. In reality, the actual enumeration period was much longer in the remote parts of some provinces. This has also caused

¹ Persons are counted in the census at the locations in which they spent census night, regardless of where they usually resided.

² Analysis done on the basis of the usual place of residence of the population.

considerable problems of analysis and interpretation since the simple de-facto coverage rule becomes less appropriate the longer the enumeration period becomes.

It is also obvious that in the conduct of a statistical operation as large and complex as a national census, it is inevitable that errors will occur due to questions being misunderstood, replies being incorrect or misinterpreted, etc. In fact, errors could have been introduced at all stages of the census, from planning, field operation stage, non-responses, non-call back to check on households that were missed during the actual enumeration and the training of enumerators (i.e. misunderstanding on the part of enumerators). Also errors could have been introduced at the data processing stage (editing, coding and data entry). In designing and carrying out the field procedures, including training procedures, considerable efforts were made in order to reduce the effects of such errors on the results. However, it is clear that several errors still occurred. **It should also be remembered that a small figure in this report is likely to have a proportionately greater error than a large one, and none of the figures should be regarded as being correct to the last digit shown.** The possible effects of the errors on the data are discussed under various chapters of the report.

This report is the second national level publication from the 1999 census information. The first national report – “The 1999 Vanuatu National Population And Housing Census – Main Report” was released in December 2000, and contains information on the census operations and procedures, as well as basic information on the distribution, composition and the characteristics of the population, including the basic census cross-tabulations. The third lot of reports forthcoming are the Provincial Profiles. The results of the 1999 census are also available in basic computer tabulations for the country as well as for each of the 6 provinces. Furthermore, a large number of additional tables could be produced upon request. In addition to that, a number of Technical Reports on certain aspects of the 1999 census such as Publicity, Pre-testing, Code lists, will be published in an Administrator's Report. One of the important outputs of this census will be the national, provincial and urban statistical maps (or social atlas). Population projections for the country as well as the 6 provinces will be produced and published after this analytical report.

The 1999 census results have been compared with those of the 1967, 1979 and 1989 censuses whenever this was possible. A comparison of the results of the 4 censuses is in many cases far from easy or straightforward. This is due to changes in definitions, coverage rules, etc. A comparison of the 1989 and 1999 census results in particular is affected by changes in operational strategy, geographical and economic definitions, etc. These changes and the related problems of analysis, comparison and interpretation are explained in detail in the relevant Chapters of this Report.

Finally, over the last few decades a number of changes, both major and minor have taken place in the boundaries of provinces (which were known as districts before Vanuatu became independent in 1980, local government areas after independence, and were changed to provinces in 1992 before the census). In making comparisons over time, these changes should be borne in mind.

There are seven chapters in this report. They include the following main topics: age/sex structure, population size, growth, distribution, and urbanisation, and fertility,

mortality, migration. Population projections based on the 1999 census results will be published separately as one of the publications under the census publication series. Following this introduction, there are six more chapters. Chapter 2 summarises the key results of the demographic analysis and the relevant policy considerations. This chapter is directly related to the Population Policy of Vanuatu.

Chapter 3 is the first chapter related to the technical analysis of this report. It presents information on the population, size, growth and geographical distribution of the population, including urbanisation. The chapter first discusses the geographical distribution of the major ethnic groups in 1999. Where appropriate, comparisons are made by referring to the previous censuses in regard to growth and geographical distribution of the population and related densities. The chapter goes on to discuss urbanisation. It discusses the growth, level and pattern of urbanisation that exist in Vanuatu. The level of urbanisation is measured with reference to the percentage of people living in towns. Some demographic aspects of the process of urbanisation in the country are examined with reference to 1967, 1979 and 1989. The chapter also examines urban population growth during the previous intercensal periods. The socio-economic characteristics of the population in Port Vila and Luganville and indeed for the entire country have not been discussed as they will be discussed as part of another national publication on the "Social and Economic Characteristics".

Chapter 4 discusses the analysis of the age and sex composition of the population. It presents some of the indices frequently used to measure age misreporting for each sex and the effects of age misreporting on the sex ratios at each age. It also outlines some smoothing techniques to correct for age misreporting. Chapter 5 discusses the estimates and analysis of fertility. The chapter first discusses the estimation techniques and the assumptions of the methodology for estimating various fertility measures (such as crude birth rate, age specific fertility rate, total fertility rate, child-woman ratio, general fertility rate and net reproduction rate). The chapter then presents the resulting fertility estimates.

Chapter 6 discusses the estimates and analysis of mortality. The chapter first discusses the estimation techniques and the assumptions of the methodology for estimating infant, childhood and adult mortality. Then the chapter presents the resulting mortality estimates as well as the derived Life Tables for Vanuatu. Chapter 7 discusses the analysis of migration patterns in Vanuatu. Rates of population change in particular islands or provinces in Vanuatu cannot be explained without reference to migration. There has always been movement of Vanuatu citizens within and between provinces in the country. Therefore, this chapter discusses the techniques and methodology employed in the analysis of internal migration. It presents estimates of internal migration numbers, rates and directions during the five years before the census.

Chapter 2 – Summary of Demographic Indicators

The summary in the following pages is based on some of the key indicators for Vanuatu and the provinces, derived from 1999 census data. These indicators are summarised below in Table 2.1. These indicators are for the total population, that is the population of a combination of the Rural and Urban Sector, as well as the provinces. All indicators are for the Resident population unless it is specifically mentioned that indicators refer to the total population or the non-citizen population.

Table 2.1. Summary of Demographic Indicators from the 1999 Census

Description of Indicator	Vanuatu	Urban	Rural	Malampa	Penama	Sanma	Shefa	Tafea	Torba
Total Population	186,678	40,094	146,584	32,705	26,646	36,084	54,439	29,047	7,757
Annual Population Growth Rate (%)	2.6	4.0	2.2	1.4	1.7	3.0*	2.6*	2.5	2.5
Youth Population (< 15 years)+	77,409	14,205	63,204	13,809	11,442	14,871	20,426	13,250	3,611
Adult Population (15 - 59 years)+	94,699	23,135	71,564	16,544	13,240	17,887	30,240	13,116	3,671
Older Population (60 years & over)+	9,172	880	8,291	2,149	1,772	1,253	2,112	1,438	448
Median Age	18.8	21.0	18.1	18.9	18.5	17.3	20.0	16.4	16.8
Econ. Active Pop. Males (15 - 59 years)	47,681	12,007	35,674	8,181	6,649	9,185	15,536	6,326	1,804
Females (15 - 59 year)	47,017	11,128	35,890	8,363	6,591	8,702	14,704	6,790	1,867
Dependency Ratio - Total	91.4	65.2	99.9	96.5	99.8	97.7	91.2	112	110.6
Dependency Ratio - Young Age	81.9	61.4	88.3	83.4	86.3	88.5	79.6	100.9	98.5
Dependency Ratio - Old Age	9.7	3.8	11.7	13	13.5	8.1	11.6	11.1	12.3
Rate of Urbanisation (%)	1.8	-	-	-	-	1.1	1.4	-	-
Crude Population Density	15	-	-	12	22	24	13	18	9
Sex Ratio	105	107	105	104	106	101	107	101	103
Crude Birth Rate (CBR)	28.2	25.2	29.0	26.0	30.0	29.0	26.0	31.0	30.0
General Fertility Rate (GFR)	134	104	144	124	149	142	113	159	149
Total Fertility Rate (TFR)	4.8	3.8	5.1	5.0	5.2	5.1	4.0	5.1	5.9
Gross Reproduction Rate (GRR)	-	-	-	-	-	-	-	-	-
Mean Age at First Marriage - Males	25.3	26.4	25.0	25.8	25.6	24.8	26.2	23.2	25.5
Females	23.0	23.0	22.9	24.1	22.9	21.8	23.8	21.8	24.2
Infant Mortality Rate (IMR) - Total	27	17	29	24	23	29	21	34	39
IMR - Males	27	17	30	25	24	28	21	35	40
IMR - Females	26	18	33	23	23	29	20	32	38
Child Mortality Rate (CMR) - Total	6	3	6	5	5	7	4	9	11
CMR - Males	6	3	7	5	5	7	4	9	11
CMR - Females	5	3	9	4	5	7	4	8	11
Average Life Expectancy at Birth - Total	67.3	71.9	65.9	65.8	67.0	67.1	69.6	68.4	59.3
Males	65.6	69.5	64.4	62.2	65.2	64.8	68.9	64.4	66.6
Femal	69.0	74.2	67.4	69.4	68.8	69.3	70.2	72.4	51.9
Annual Out-Migration Rate@	-	-	-	11.6	9	18.5	16.6	9.2	9.8
Number of Households	36,415	8,258	28,157	6,483	5,371	4,867	4,733	5,364	1,339
Average Household Size	5.1	4.9	5.2	5.0	5.0	7.4	11.5	5.4	5.8

Notes: + excludes age "not stated"

* rural population growth rate only

@ annual out-migration rates for 5 years before the 1999 census (persons per 1,000 population)

Population size, growth and distribution

The 1999 census was a de-facto enumeration with a simple de-facto coverage rule applied throughout the country. In addition to that, the usual place of residence of respondents was also recorded and this provides some idea of the 1999 'de-jure' population

as well. The results in this report are based on the “de-jure” population of Vanuatu at the time of the November 1999 Population and Housing Census.

Shefa province continues to have the highest number in terms of population (54,439) as the province is host to the largest urban town in Vanuatu, the capital Port Vila. This represents 29 percent of the total population. The lowest number was enumerated in Torba province (7,757). Twenty one percent of the population of Vanuatu are residents of the two urban areas of Port Vila and Luganville. The ratio of rural to urban population is 4 persons. In other words, there are four rural people to every person in Port Vila and Luganville combined.

The average annual rate of population growth in Vanuatu during the 1989-1999 intercensal period was 2.6 percent per year. This is much lower than the rate estimated for the period 1967-1979, which was 3.1 percent per year. If the current annual population growth rate of 2.6 percent is to continue in future, the population of Vanuatu will double the 1999 size in only 27 years.

In terms of growth by geographical sectors (Table 2.1), Sanma Province (rural component) has the highest growth rate (3.0%). Sanma (rural component) is now ranked number 4 on the provincial rank-order in terms of population size. Only Shefa (rural component) and Torba provinces have a smaller population. It is likely that Sanma province might become number 1 on this rank-order, as its population growth rate is comparatively higher than the rest of the province. In contrast, The non-citizen population has decreased very drastically after Independence (in 1980). In 1999, the proportion of non-citizens in the country has become very small indeed. Only one percent of the population enumerated in 1999 was non-citizens.

The crude population density in 1999 was 15 persons per km². Population density in 1999 based on effective land use criteria was not calculated as the data on effective land use was not available. If calculated, this figure would represent almost certainly a far more realistic picture of the population-land situation and density problems in the provinces than the crude population density.

Population composition

Forty one percent of the population in 1999 is below the age of 15 years and as a result, the young age dependency burden on the economically active population of Vanuatu is 82 children for every 100 economically active person. This young age composition is further reflected in the distribution of the median age of the population. At the country level, the median age was estimated at 18.8 years, while it varied from 20 years in Shefa province to the lowest of 16.4 years in Tafea province. The sex ratio ranged from 101 to 107 males per 100 females by geographical sectors. At the national level, the sex ratio was estimated at 105 males for every 100 females.

An estimated 5 percent of the population is above the age of 59 years old, and 23 percent (2,149) of the older population reside in Malampa province. The related old age

dependency burden on the economically active population is 10 for every 100 economically active person.

Marriage is almost universal in Vanuatu. The 1999 census estimated that 66 percent of the population aged 15 years and over is either currently married or married in the past. Thirty percent of the population was estimated to remain single at the time of the 1999 census. The related average age at first marriage (measured by the so-called singulate mean age at first marriage or SMAM) at the national level for males is 25 years and for females is 23 years. There is not much variation by province (Table 2.1).

Fertility

For the whole country, CBR was estimated at 28 births per 1000 population over the decade 1989-1999. There was a distinct difference between urban and rural, with the crude birth rate of 25 for urban compared to 29 for rural areas. Meanwhile, general fertility rate (GFR) was estimated at 134 births for every 1000 women for the whole country. The estimated GFR was higher for rural areas (144) compared to urban areas (104 per 1000 women). (Table 2.1).

Fertility levels in Vanuatu have shown significant decline since 1979. Total fertility rate (TFR) has declined from 6.5 in 1979 to 5.3 in 1989 and 4.8 in 1999. The current TFR of 4.8 children means that, if fertility remained constant at the current level, a ni-Vanuatu woman would give birth to an average of 4.8 children. The differential by geographical sectors show that TFR is 3.8 children per woman in urban area compared to 5.1 children for rural women. There are of course marked differences in the age-specific fertility rates between urban and rural areas. As expected, the urban age-specific fertility rates are much lower for all ages compared with those of rural and Vanuatu total.

Variation in TFR by province is obvious (Table 2.1). Women in Torba province had higher TFR than women in the other five provinces. At the current fertility rate, a Torba woman would give birth to an average of 5.9 children, while the lowest was estimated for Shefa province at 4.0 children per woman.

Mortality

Infant mortality rate (IMR) estimated varied between 39 deaths per 1000 births in Torba province, and 23 deaths for every 1000 births in Penama province. These estimates were 6 year averages for the period 1991-1997 before the 1999 census. The national average IMR was estimated at 27 deaths per 1000 births. This results in an average life expectancy at birth of 67 years at the national level. Table 2.1 shows the mortality indicators and variations of these indicators by geographical sectors.

Migration

The 1999 census offers another opportunity for a detailed analysis of levels, patterns and trends in internal migration. The analysis included in Chapter 7 of this Report contains only the tip of the iceberg. A more detailed analysis of internal migration or more precisely

the migration status of respondents enumerated in each province could be carried out. It is envisaged that further in-depth analysis of internal migration will be carried out by those interested in the topic. This applies in particular to the characteristics of the different types of migrants.

An interesting estimate of migration indicator from the 1999 census is the out-migration rate presented in Table 2.1. This rate shows the number of out-migrants per year in the last 5 years before the census. For example, Sanma province had the highest rate of about 19 people moving out of the province every year for the last 5 years before the census. In contrast, Penama and Tafea provinces had the lowest estimate of 9 people moving out per year in the 5 years before the census.

Population policy review

It is recommended that the Vanuatu Population Policy be reviewed as appropriate considering the new demographic indicators and related socio-economic indicators derived not only from the 1999 population and housing census, but also from administrative and other sources that are likely to use census numbers as denominators.

Chapter 3 – Population Size, Growth and Distribution

3.1. Introduction

The size, growth and distribution of the population within a country's territory depend on both historical factors and current-day characteristics. While early settlers tend to locate in a particular part of a country because of land ownership, food and water possibilities, weather conditions, and perhaps geological considerations, subsequent current populations may locate for completely different reasons. In many developing countries, the modernisation process introduced by the industrialised countries permitted the emergence of urban areas, with very high population growth rates.

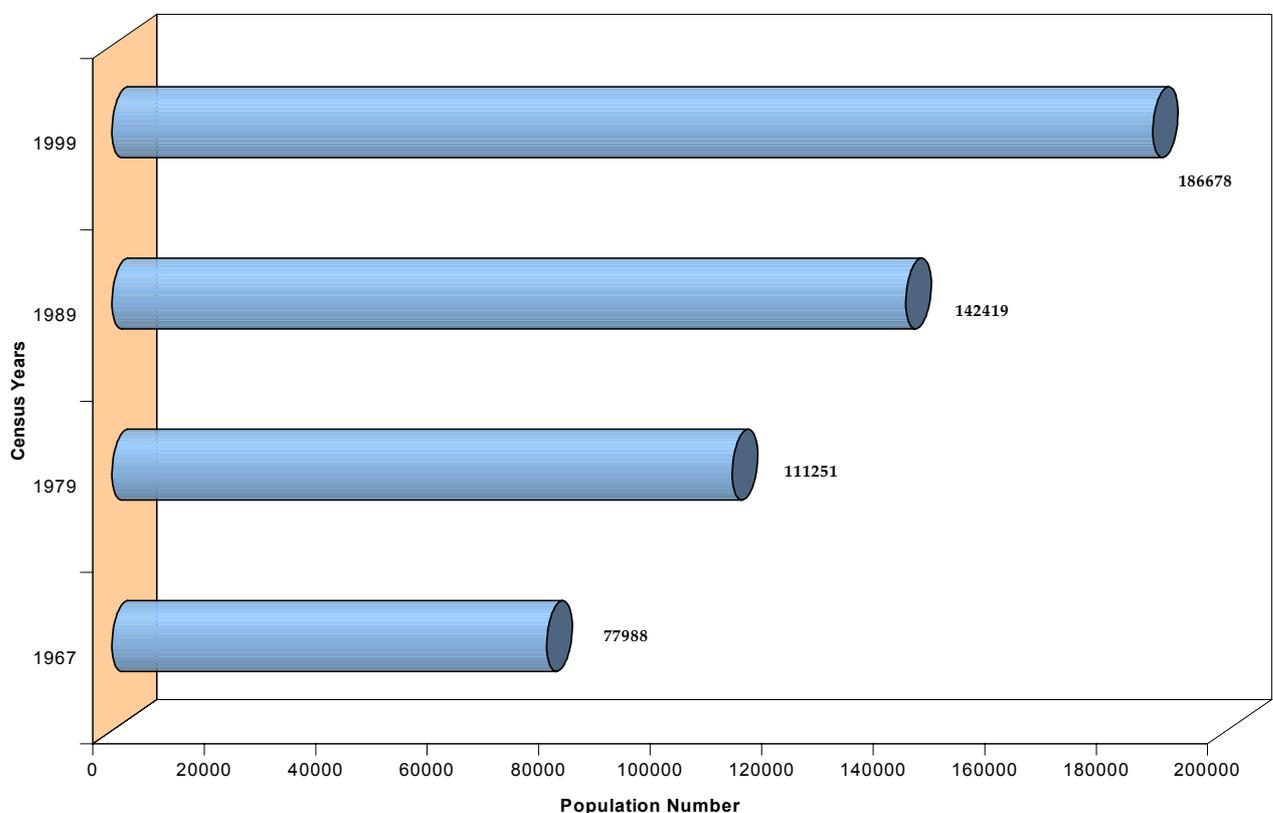
This Chapter discusses population size, growth and distribution, presents some of the most frequently used indices, and considers the analysis and measurement of urbanisation.

3.2. Population Size

3.2.1 Total Population

The resident population of Vanuatu as enumerated during the 1967, 1979, 1989 and 1999 censuses are shown in Figure 3.1. It shows how the populations have changed since the 1967 census.

Figure 3.1: Resident Population in 1967, 1979, 1989 and 1999



The size, growth and distribution of population in Vanuatu are an important consideration in the planning process. The emerging urban areas and areas of high crude population densities need to be understood in order to analyse the population data in terms of size, growth and distribution characteristics.

3.2.2. Population by Geographic Sector

Like most countries, Vanuatu as well as each of its provinces is subdivided into a rural and urban sector. A clear distinction of rural and urban areas based on unambiguous definitions is of crucial importance for all studies in population distribution, migration, city growth, urbanization, etc. It is therefore important to look first at the definition of an urban area, which was used during the previous censuses.

In 1967 and 1979, an urban area was defined as comprising settlements with a generally urban character, a minimum population of 500 persons and a minimum population density of 500 persons per square mile (about 195 persons per square kilometer). Prior to the 1967 census, both Port Vila and Luganville were recognised as urban towns. The 1989 census used the same urban definition as in 1967 and 1979 but the density criterion was applied a little more loosely in order to set boundaries conforming with geographic features and to include migrant settlements closely associated with the urban centers. In 1989, there was no further addition to the two urban areas in Vanuatu. An urban area in 1999 was defined as a geographic unit whose physical structure is predominantly non-traditional and whose residents are engaged in predominantly non-traditional activities. The size and density criteria remained the same as in previous censuses.

The resident population by geographic sectors as enumerated during the 1989 and 1999 censuses is given in Table 3.1 and compared by geographic sectors.

Table 3.1. Population by geographic sector in 1989 and 1999.

Geographic Sector	1989 Population	As a % of total Population	1999 Population	As a % of total Population
Vanuatu	142, 419	100.0	186, 678	100.0
Urban	25, 870	18.2	40, 094	21.5
Rural	116, 549	81.8	146, 584	78.5
Malampa	28, 174	19.8	32, 705	17.5
Penama	22, 281	15.6	26, 646	14.3
Sanma (rural)	18, 577	13.0	25, 346	13.6
Shefa (rural)	19, 118	13.4	25, 083	13.4
Tafea	22, 414	15.7	29, 047	15.6
Torba	5, 985	4.2	7, 757	4.2

In comparing the figures for the two censuses, the extent of under-enumeration in each census should be taken into account. Unfortunately, no Post Enumeration Survey (PES) could be carried out after the 1989 and 1999 censuses, so it is not possible to adjust the

data of the two censuses for under-enumeration in a meaningful manner. It should however be kept in mind that under-enumeration did occur during the censuses and the extent of under-enumeration was almost certainly not the same during the two censuses.

The resident population by geographic sectors and sex as enumerated during the 1989 and 1999 censuses is shown in Table 3.2.

Table 3.2. Population by sex and geographic sector at the time of the 1989 and 1999 censuses.

Geographic Sector	1989 Population		1999 Population	
	Females	Males	Females	Males
Vanuatu	69,035	73,384	90,996	95,682
Urban	12,200	13,670	19,371	20,723
Rural	56,835	59,714	71,625	74,959
Malampa	13,749	14,425	16,052	16,653
Penama	10,938	11,343	12,922	13,724
Sanma (rural)	8,755	9,822	17,408	18,676
Shefa (rural)	9,281	9,837	26,320	28,119
Tafea	11,162	11,252	14,474	14,573
Torba	2,950	3,035	3,820	3,937

The geographical distribution of Vanuatu's population has changed dramatically since the first census in 1967, when most residents lived on their "home islands". At the time of the last census in 1999, the population has become increasingly concentrated in the provinces where the only two urban towns of Port Vila and Luganville are located. This pattern of movement from rural or outer islands to urban areas is consistent with those found in many Pacific island countries.

3.2.3. Population by Citizenship

Vanuatu gained independence in 1980 and the term 'Ni-Vanuatu' has been applied to citizens in the last two censuses, which were carried out in 1989 and 1999. For census purposes, the 1967 census distinguished between indigenous and non-indigenous people. In 1967, the indigenous population were the "melanesian peoples and all persons descended from these melanesian peoples to the extent of more than one half".

A comparison of the pre-Independence indigenous and non-indigenous people with the post-Independence Ni-Vanuatu and non-citizens is however far more problematic. It should be emphasized that the data for citizens in the post-Independence censuses include both 'automatic' citizens (by birth) and citizens by naturalization, and that for all respondents, the recorded answer to the question on citizenship was what the person him (her) self stated. It is not the task of a census enumerator to determine whether the answers to this question are legally correct. A person identified as 'indigenous' in 1967 and 1979 has most likely been classified as a 'Ni-Vanuatu' in 1989 and 1999. However, a person identified

as 'non-indigenous' in 1967 is not necessarily a 'non-citizen' in 1979, 1989 and 1999. It is essential that the above observations be kept in mind when the data by 'citizenship' in Table 3.3 are compared.

Table 3.3. Population by 'citizenship' at the time of the 1967, 1979, 1989 and 1999 censuses.

Census	Ni-Vanuatu	%	Others	%
1967	72243	92.6	5745	7.4
1979	104371	93.8	6880	6.2
1989	139475	97.9	2944	2.1
1999	184830	99.0	1848	1.0

Changes in the distribution of the population of Vanuatu by citizenship between 1967 and 1999 are shown in the above table. Between 1967 and 1999, the percent distribution of the Ni-Vanuatu and non-citizen population has changed from 92.6 and 7.4 to 99.0 and 1.0 respectively. The non Ni-Vanuatu population decreased by 86 percent between 1967 and 1999. The decrease was by about 52 percent in the last intercensal period, 1989-1999.

Table 3.4 shows population by citizenship and geographic sectors at the time of the 1999 population census. Over three quarters of the non-citizen population is located in the two urban towns.

Table 3.4. Population by 'citizenship' at the time of the 1999 census.

	Total	Ni-Vanuatu	Others
Vanuatu	186678	183919	2759
Urban	40094	37931	2163
Rural	146584	145988	596
Malampa	32705	32593	112
Penama	26646	26600	46
Sanma (rural)	25346	25231	115
Shefa (rural)	25083	24816	267
Tafea	29047	29001	46
Torba	7757	7747	10

3.2.4. Population of Urban Areas

Since the urban sector was completely enumerated during all four censuses, detailed information in Vanuatu is available for Port Vila and Luganville at four points in time. A picture of the population size of all urban areas at the time of subsequent censuses is given below in Table 3.5.

Since 1979, the urban areas which can be considered as a major town (here defined as towns with a population of more than 5,000 persons) were Port Vila and Luganville. Population growth in both towns after 1979 has however been significantly lower than before 1979. No other settlement has yet been declared an urban town by the 1999 census.

Table 3.5. Population of urban areas by sex at the time of the 1967, 1979, 1989 and 1999 censuses.

Census Year/Sex	Port Vila	Luganville	All Urban
1967	5208	2564	7772
1979	10601	5183	15784
1989	18905	6965	25870
Males	9975	3695	13670
Females	8930	3270	12200
1999	29356	10738	40094
Males	15189	5537	20726
Females	14167	5201	19368

3.3. Population Growth

Due to the impact of the three demographic processes, fertility, mortality and migration, all populations change continuously. In a 'closed' population (that is a population closed to migration), change is an entirely 'natural' process since only births and deaths affect it. In this case, population change is therefore called 'natural' increase. If in- and/or out-migration also affect a population, change in population size is called population growth.

During the entire period 1967-1999, international migration has been negligible. The rate of natural increase (RNI) is therefore very close to the rate of growth (r). The RNI indicates what the population growth rate would have been in the absence of migration.

3.3.1. Population Growth of the Total Population

In Table 3.6, population growth in Vanuatu is presented. Absolute change, relative change (%) as well as the average annual rates of growth (%) are given for the intercensal periods 1967-1979, 1979-1989, 1979-1999 and 1989-1999.

The average intercensal annual rate of growth, (r) has been calculated, using the exponential growth formula: $P_2 = P_1 e^{rn}$. In this formula, P_1 and P_2 are the population at the time of the first and the second census respectively, n is the interval between the two

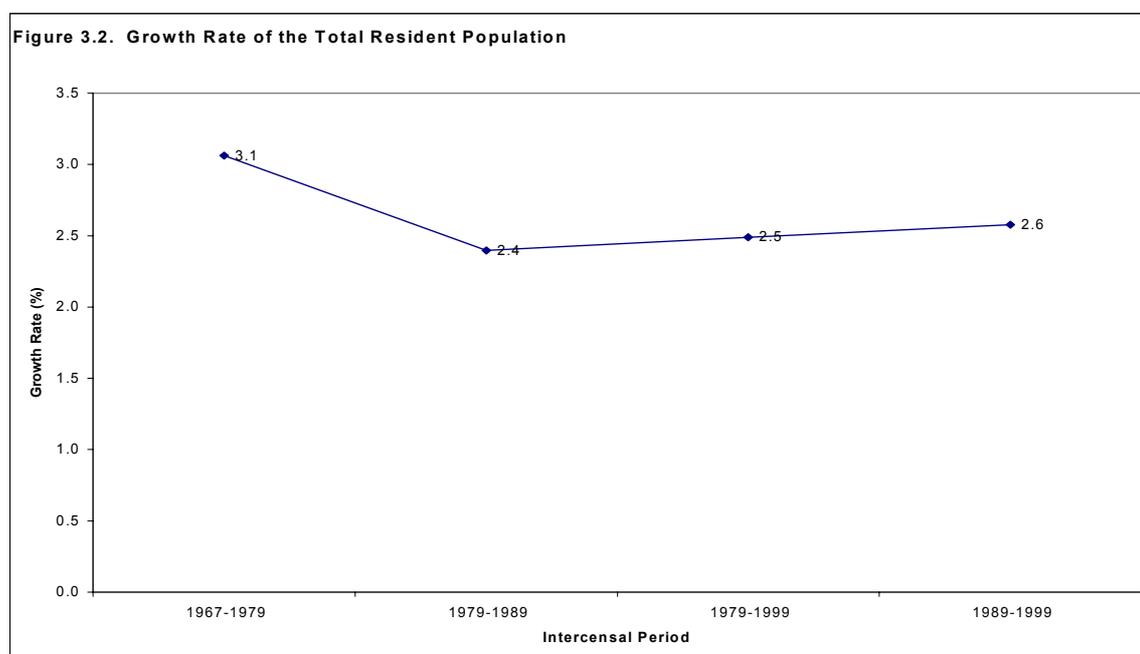
censuses (in years), r is the average annual rate of growth between the two censuses and e is the base of the natural logarithm system.

Table 3.6 shows that after 1979, the population growth rate of the country declined from 3.1 percent in the period 1967-1979 to 2.4 percent in 1979-1989, then increased to 2.6 percent in 1989-1999. That is to say that the annual rate of growth of Vanuatu population has increased after 1989. The 1989-1999 rate of growth is more than 8 percent higher than the 1979-1989 rate.

Table 3.6. Population growth for the total population during the intercensal periods.

Intercensal Period	Interval (years)	Pop. at T1 (P1)	Pop. at T2 (P2)	Population Growth			Doubling Time (yrs)
				Absolute	Relative (%)	Annual (r) (%)	
1967-1979	11.6	77988	111251	33263	42.7	3.1	23
1979-1989	10.3	111251	142419	31168	28.0	2.4	29
1979-1999	20.8	111251	186678	75427	67.8	2.5	28
1989-1999	10.5	142419	186678	44259	31.1	2.6	27

The trend in the growth rate of the total resident population has been presented below in Figure 3.2.



The doubling time in the last column of Table 3.6 gives an idea of future implications if it is assumed that population growth continues at the rate shown in the previous column. The doubling time of a population is defined as the time (in years) needed for the population to double in size assuming that its growth rate does not change. For instance, the average annual rate of growth of Vanuatu during the 1989-1999 intercensal period was 2.6%. If it is assumed that this rate continued after 1999, it would take only 27 years to reach a population size of 373, 356 persons or twice the 1999 population. Given the above 'no change' assumption, this would happen by the year 2026. It should however be emphasised that it is highly unlikely that population growth in Vanuatu (or any other province in Vanuatu for that matter), will follow a "no-change" growth path in the next 50 years.

3.3.2. Population Growth by Geographic Sector

In Table 3.7, population growth is presented separately for the rural and urban sectors and the provinces. In interpreting the information in this table, the comments made above about the changes in the definition of the rural and urban sector should be kept in mind. The urban sector of Vanuatu had a higher population growth rate between 1989 and 1999 than any other geographic sector in Vanuatu. In Table 3.9, the growth rate of individual urban areas will be further considered.

Table 3.7. Population Growth by Geographic Sectors during the intercensal periods, 1989-1999.

	Interval	Pop. at T1 (P1)	Pop. at T2 (P2)	Population Growth			Doubling Time
				Absolute	Relative (%)	Annual (r) (%)	
Vanuatu	10.5	142419	186678	44259	31.1	2.6	27
Urban	10.5	25870	40094	14224	55.0	4.2	17
Rural	10.5	116549	146584	30035	25.8	2.2	32
Malampa	10.5	28174	32705	4531	16.1	1.4	49
Penama	10.5	22281	26646	4365	19.6	1.7	41
Sanma (rural)	10.5	18577	25346	6769	36.4	3.0	24
Shefa (rural)	10.5	19118	25083	5965	31.2	2.6	27
Tafea	10.5	22414	29047	6633	29.6	2.5	28
Torba	10.5	5985	7757	1772	29.6	2.5	28

3.3.3. Population Growth by Citizenship

Table 3.8 details population growth separately for the Ni-Vanuatu and non-citizen population. Users are once again reminded that the figures for 1967 are for indigenous and non-indigenous persons. As explained earlier, these categories do not necessarily completely coincide with the categories Ni-Vanuatu and non-citizens after 1979.

Table 3.8. Population growth by 'citizenship'

Intercensal Period	Interval	Pop. at T1 (P1)	Pop. at T2 (P2)	Population Growth			Doubling Time (yrs)
				Absolute	Relative (%)	Annual (r) (%)	
<i>Ni-Vanuatu</i>							
1967-1979	11.6	72243	104371	32128	44.5	3.2	22
1979-1989	10.3	104371	139475	35104	33.6	2.8	25
1979-1999	20.8	104371	184830	80459	77.1	2.7	25
1989-1999	10.5	139475	184830	45355	32.5	2.7	26
<i>Others</i>							
1967-1979	11.6	5745	6880	1135	19.8	1.6	45
1979-1989	10.3	6880	2944	-3936	-57.2	-8.2	-
1979-1999	20.8	6880	1848	-5032	-73.1	-6.3	-
1989-1999	10.5	2944	1848	-1096	-37.2	-4.4	-

This table highlights the decline in the non-citizen population of Vanuatu after 1979. The annual rate of growth between 1989 and 1999 was -4.4% . The rate of growth of the non-citizen population of all provinces was negative during the same period.

3.3.4. Population Growth for Urban Areas

Finally, population growth for the two urban areas is presented, starting from the 1967 census. The growth rates are shown in Table 3.9. The population growth rates of both Port Vila and Luganville have been high, in fact well above the rate of natural increase. In other words, the numbers of persons who moved away from both towns are less than the numbers of persons who migrated to these towns.

Table 3.9. Population growth rates (%) for urban areas.

Intercensal Period	Interval	Pop. at T1 (P1)	Pop. at T2 (P2)	Population Growth			Doubling Time (yrs)
				Absolute	Relative (%)	Annual (r) (%)	
<i>Vanuatu Urban</i>							
1967-1979	11.6	7772	15784	8012	103.1	6.1	11
1979-1989	10.3	15784	25870	10086	63.9	4.8	15
1979-1999	20.8	15784	40094	24310	154.0	4.5	16
1989-1999	10.5	26294	40094	13800	52.5	4.0	17
<i>Port Vila</i>							
1967-1979	11.6	5208	10601	5393	103.6	6.1	11
1979-1989	10.3	10601	19311	8710	82.2	5.8	12
1979-1999	20.8	10601	29356	18755	176.9	4.9	14
1989-1999	10.5	19311	29356	10045	52.0	4.0	18
<i>Luganville</i>							
1967-1979	11.6	2564	5183	2619	102.1	6.1	12
1979-1989	10.3	5183	6983	1800	34.7	2.9	24
1979-1999	20.8	5183	10738	5555	107.2	3.5	20
1989-1999	10.5	6983	10738	3755	53.8	4.1	17

Table 3.10 gives an overview of the population growth rates, r , (%) for broad age groups and sex for the most recent intercensal period, 1989-1999.

Table 3.10. Summary of population growth rates (%) by age and sex for the intercensal period, 1989-1999

Age in Years	Interval	Pop. at T1 (P1)	Pop. at T2 (P2)	Population Growth			Doubling Time
				Absolute	Relative (%)	Annual (r) (%)	
< 15	10.5	62750	77410	14660	23.4	2.0	35
15-59	10.5	72003	94698	22695	31.5	2.6	27
60+	10.5	7666	14570	6904	90.1	6.1	11
<i>Sex</i>							
Males	10.5	73384	95682	22298	30.4	2.5	28
Females	10.5	69035	90996	21961	31.8	2.6	27

These intercensal growth rates could be affected by the level of under-enumeration and therefore, growth rates could be different. There was no PES and therefore, no way of measuring under-enumeration during the most recent 1999 census. There is also no evidence that the under-enumeration has been more extensive in 1999 than in 1989.

3.4. Population Distribution

Information on place of usual residence has been used to describe the distribution of population. Population data by province has been used to describe where the population lives in Vanuatu. In addition, crude population density has been used to analyse the concentration of population. Population density has been calculated by dividing the total population for each province by the corresponding total surface area of the province.

The appropriate measure of density depends on the purpose of the analysis. For example, if a large part of a country or province is uninhabited because it is comprised of high mountains, deserts or lakes, the average density may be quite low, even though most of the people live in crowded conditions in a small part of the country or province. Hence, it may be more appropriate to estimate population densities omitting surface areas of uninhabited parts of the country or province. For this reason, densities are sometimes calculated as persons per unit of agricultural or arable land.

3.4.1. Crude Population Density

The total land area of Vanuatu is 12, 281km². This land area is 3% of that of neighboring Papua New Guinea. The crude (arithmetic) population density is defined as the number of persons per km², at the time of the 4 censuses has been increasing since 1967, from 6 person per km² to 15 persons in 1999 (see Table 3.11).

Crude population density gives a rather misleading picture of the real population-land situation in Vanuatu. A far more meaningful measure of population density as mentioned above is the number of persons per km² of land that is used for agriculture ('arable land'). These physiological densities provide a far more realistic picture of the population-land situation than the crude population densities. Since there are no data on the effective arable land, related population densities have not been calculated.

Table 3.11. Crude Population Density (persons per km²) for Vanuatu at the time of the 1967, 1979, 1989, and 1999 censuses.

Census	Resident Population	Land Area (Km ²)	Crude Pop. Densities
1967	77988	12281.25	6
1979	111251	12281.25	9
1989	142419	12281.25	12
1999	186678	12281.25	15

Crude population densities by provinces in 1989 and 1999 are presented below in Table 3.12. It should be noted that Sanma and Shefa provinces include urban Luganville and Port Vila respectively. The density shown for these two provinces is for the entire province and not just the rural component. From Table 3.12, it can be seen that Shefa and Penama provinces are more densely populated than most other provinces, except for Tafea, which is not far behind both Shefa and Penama.

Table 3.12. Crude Population Density (persons per km²) for the provinces at the time of the 1989 and 1999 censuses.

Province	Resident	Population	Land Area (Km ²)	Crude Population Densities	
	1989	1999		1989	1999
Malampa	28174	32705	2808.41	10	12
Penama	22281	26646	1203.92	19	22
Sanma	25542	36084	4262.06	6	8
Shefa	38023	54439	1507.36	25	36
Tafea	22414	29047	1632.17	14	18
Torba	5985	7757	867.33	7	9

3.4.2. Gini Concentration Ratio

Information on the above crude population density has been used to calculate a summary measure, the Gini Concentration Ratio indicates how evenly or unevenly the population is distributed over the entire territory of Vanuatu. If the population were evenly distributed in Vanuatu, a given proportion of the country's area would have the same proportion of its population; that is, 20 percent of Vanuatu's area would have 20 percent of the population. In reality, a country's population is never evenly distributed over the land surface area, hence, the cumulative proportion of land area and population will differ one from the other.

The Gini Concentration Ratio can be used to analyse the historical population concentration in Vanuatu as a whole or the population concentration in each province. The higher the value of the index, the higher the concentration of the population within the specified areas of the country. This index is affected by the size of the areas used in the calculation. For comparison purposes, the same area has been maintained in Table 3.13 for 1999 and Table 3.14 for 1989.

Although it is a useful measure for certain purposes, this index of population concentration must be interpreted with caution. Usually the smaller the surface area of the place being analysed, the higher the value of the index. If for example, provinces could be defined in such a way that all uninhabited land areas were excluded, then all inhabited land areas would have high population densities, and the index value would be close to its maximum.

Table 3.13. Rank of Crude Population Densities by Province and Gini Concentration Ratio at the time of the 1999 Census.

Province	Rank	Total Land Area (km ²)	Resident Population	Crude Densities	Cumulative		Cumulative %		Cumulative %	
					Area	Res. Pop.	Area	Res. Pop.	Products	Products
					A(k)	PP(k)	PP(k+1).A(k)	PP(k).A(k+1)		
Vanuatu		12281.25	186678	15						
Sanma	1	4262.06	36084	8	4262.06	36084	34.70	19.33	815.0	807.3
Torba	2	867.33	7757	9	5129.39	43841	41.77	23.48	1712.6	1517.9
Malampa	3	2808.41	32705	12	7937.80	76546	64.63	41.00	3655.9	3195.2
Tafea	4	1632.17	29047	18	9569.97	105593	77.92	56.56	5519.9	4962.2
Penama	5	1203.92	26646	22	10773.89	132239	87.73	70.84	8772.6	7083.8
Shefa	6	1507.36	54439	36	12281.25	186678	100.00	100.00		
									20476.1	17566.4

$$CR = 0.2910$$

(Gini Concentration Ratio)

Table 3.14. Rank of Crude Population Densities by Province and Gini Concentration Ratio at the time of the 1989 Census.

Province	Rank	Total Land Area (km ²)	Resident Population	Crude Densities	Cumulative		Cumulative %		Cumulative %	
					Area	Res. Pop.	Area	Res. Pop.	Products	Products
					A(k)	PP(k)	PP(k+1).A(k)	PP(k).A(k+1)		
Vanuatu		12281.25	142419	12						
Sanma	1	4262.06	25542	6	4262.06	25542	34.70	17.93	768.2	749.0
Torba	2	867.33	5985	7	5129.39	31527	41.77	22.14	1750.8	1430.8
Malampa	3	2808.41	28174	10	7937.80	59701	64.63	41.92	3726.6	3266.5
Tafea	4	1632.17	22414	14	9569.97	82115	77.92	57.66	5711.9	5058.1
Penama	5	1203.92	22281	19	10773.89	104396	87.73	73.30	8772.6	7330.2
Shefa	6	1507.36	38023	25	12281.25	142419	100.00	100.00		
									20730.2	17834.6

$$CR = 0.2896$$

(Gini Concentration Ratio)

Sanma province has over one third of Vanuatu's land area, but has only 18 percent of the population concentrated in that province.

3.5. Urbanisation

Urbanisation occurs as a result of people's choosing to live in cities/towns. More people are changing residence from rural to urban areas, and increasing proportions of these people are selecting large cities and towns. These events produce two aspects of urbanisation whose measurements should be differentiated - an increase in the proportion of people selecting urban areas of residence, and natural increase in cities and towns.

3.5.1. Degree of Urbanisation

Several indices measure particular aspects of degree of urbanisation (or level of urbanisation) at a given time - percent of population in urban cities and towns, the urban/rural ratio and mean city/town population size.

Percent Urban

The simplest index to measure the urbanisation process in a population is the percent of the total population living in defined urban areas. This index refers to the number of persons living in urban areas for each 100 living in the country. It is calculated by taking the ratio of the urban population to the total population of the country, multiplied by 100.

The easy interpretation of this index is its advantage, however, in comparative analysis, it is questionable whether it reflects the relative levels of urbanisation among countries. For example, in 1999 21 percent of the population of Vanuatu but only 18 percent of the population of Papua New Guinea (PNG) lived in urban areas. An analysis of urban characteristics of the two countries would show that, in most aspects of the urbanisation process, PNG was "more urban" than Vanuatu. This is because of the size of the total and urban population of PNG as well as the urban infrastructure in major cities in PNG, compared to Vanuatu. A further disadvantage of this index as a measure of urbanisation is that once a country or a province achieves a high proportion of urban population; further increases in the percent urban are negligible, although the "urbanisation process" may continue in the sense that the size of the cities/towns continues to increase.

Table 3.15 shows the estimated indices that measure degree of urbanisation ("percent urban", "percent rural", "rural/urban ratio") at the time of the 1967, 1979, 1989 and 1999 Vanuatu Censuses.

Table 3.15. Indices that measure degree of urbanisation at the time of the 1967, 1979, 1989 and 1999 censuses.

Census Year	Percent Rural	Percent Urban	Urban/Rural Ratio
1967	90.0	10.0	0.11069
1979	85.8	14.2	0.16533
1989	81.8	18.2	0.22197
1999	78.5	21.5	0.27352

Urban/Rural Ratio

Another index used for measuring the urbanisation process is the ratio of the urban to the rural population (Table 3.15, last column). This index is also easy to understand as it gives the number of urban residents for each person living in the rural areas. Thus, if the index has a value of 1, it means that the urban population is equal to the rural population. The advantage of this index is that, unlike the “percent urban”, the “urban/rural ratio” does not have an upper limit. It may vary from 0 to virtually the total population of the country, assuming for calculation purposes, that there is at least one person living in rural areas.

The “urban/rural ratio” is useful in estimating changes in the urbanisation process. In a comparative analysis of countries or provinces in a country, the proportion urban and the urban/rural ratio are related. Although the calculated values of the two indices would be different in magnitude, the ranking of the degree of urbanisation of the countries or provinces would be the same.

Mean City/Town Population Size

Both of the indices described above are easy to understand, but neither one takes into account an important dimension of the urbanisation process – the size of the cities/towns. For instance, in the above example of PNG and Vanuatu, the population of Port Moresby is several times the population of Port Vila. Furthermore, several other cities/towns in PNG are larger than the largest city in Vanuatu (Port Vila). Although the two countries may have a similar percent of their population in urban areas, their urbanisation cannot be as alike as the “percent urban” would suggest. Since urban problems are related to the size of urban cities/towns, for specific analysis it would be desirable to take into account the size of the cities/towns in establishing an urbanisation index.

For this purpose, an index called “mean city or town population size” was created (Arriaga, 1973). This index takes into account the size of cities/towns and consequently gives different results when applied to countries or provinces where the percent urban is the same but the size of the cities/towns are different. The value of this index represents the average city/town size of residence of the population. In other words, it tells the size of the city in which the average person lives.

This concept should not be confused with the average size of cities. For example, in 1999 Vanuatu had two urban areas with populations of 29, 356 (Port Vila) and 10, 738 (Luganville) respectively. The average size of the two urban areas is 20, 047, however, most of the people live in Port Vila, and hence, the average town size of residence of the 40, 094 inhabitants of both urban areas is not 20, 047 but 24, 370 inhabitants (shown in Table 3.16 below). In other words, the “mean city or town population size” is a weighted average. This index is adjusted by the population size of the towns or cities considered.

An analogy with the mean age (commonly called median age) of a group of persons may clarify this concept. Suppose there are 10 persons aged 20 years and 100 persons of age 40 years. The median age of the whole group of 110 persons is not 30 years (because there are more persons in the older age group), but the result of a weighted average (in this example is 38.2 years).

Table 3.16. Mean Town Population Size - Port Vila and Luganville, 1989 and 1999

	1967	1979	1989	1999
Proportion of population in towns:	0.100	0.142	0.185	0.215
Mean urban town population size:	4336	8822	16037	24370
Index of mean town population size:	432	1252	2961	5234

The mean city/town population size index (last row of Table 3.16) has the same underlying concept as the median age example, and its calculation is similar. In the case of the median age, the population at each age is multiplied by that age; in the case of the mean city/town population size, the population of each city/town is multiplied by the size of the city/town (size of the city/town is also the population of the city/town). The products are added and the total population of the country divides the sum. If all inhabited places of the country are taken into account, statistically this index is the expected value of the city/town size of residence of the population. (The mean urban town population size is the actual measure, whereas, the index of mean town population size is the expected measure).

This index is useful for comparing the urbanisation of provinces within a country and for analysing some social aspects of urbanisation that are related to city/town size or to the urbanisation of particular social groups. Because Vanuatu has only two urban areas, a single index has been derived for the country as a whole and compared over all the censuses.

3.5.2. *Tempo of Urbanisation*

The previous Section presented some of the indices for measuring the level of urbanisation in a population. In this Section, another dimension of the urbanisation process is presented. The tempo of urbanisation measures the change in the level of urbanisation by analysing changes in the indices used for measuring the degree of urbanisation.

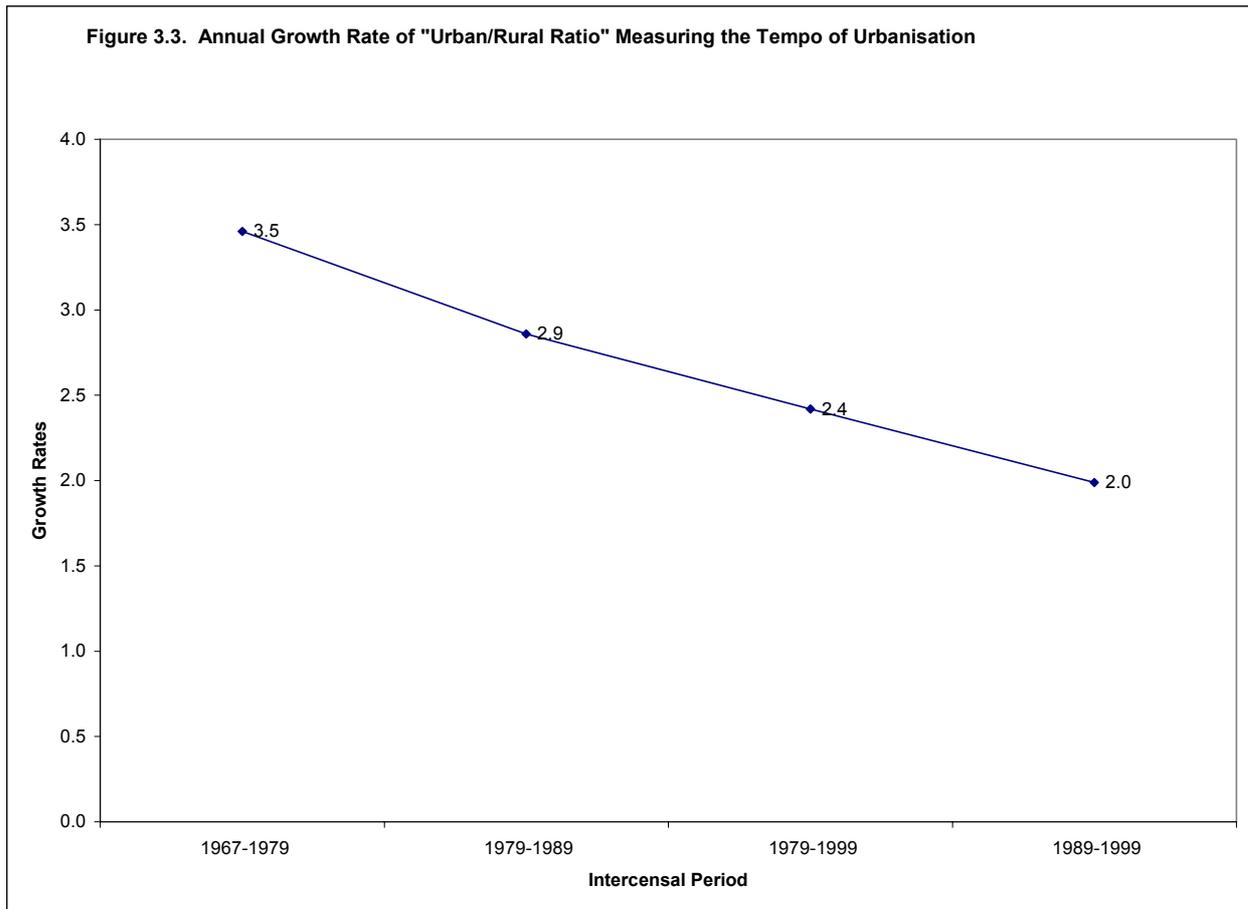
The measurement of urbanisation tempo indicates the pace at which a specific area is urbanising. If a degree or level of urbanisation in a country or province is known for two or more dates, the tempo is measured by the annual change in the index used for measuring the level of urbanisation. Although potentially useful, this procedure of measuring the tempo may require some caution depending on the index used for measuring the level of urbanisation.

If the level was measured using the “percent urban” for example, areas achieving a high degree of urbanisation (close to 100 percent) would show a slowing down of the tempo, not necessarily because the urbanisation process is slowing down, but because the “percent urban” has the limits 0 to 100. Therefore, it is not recommended to measure the tempo of urbanisation by the annual change in the “percent urban” (see Table 3.17 below).

Table 3.17. Annual Growth Rate of “Percent Urban” and “Urban/Rural Ratio”

Intercensal Period	Interval	Urban Percent at:		Growth Rate (r) (%)	Urban/Rural Ratio at:		Growth Rate (r) (%)
		(T1)	(T2)		(T1)	(T2)	
1967-1979	11.6	10.0	14.2	3.0	0.11069	0.16533	3.5
1979-1989	10.3	14.2	18.2	2.4	0.16533	0.22197	2.9
1979-1999	20.8	14.2	21.5	2.0	0.16533	0.27352	2.4
1989-1999	10.5	18.2	21.5	1.6	0.22197	0.27352	2.0

One of the best indices for measuring the tempo of urbanisation is the difference between the annual population growth rates of urban and rural areas. For example, in Vanuatu the annual population growth rates during the most recent period (1989-1999) for urban and rural areas were respectively, 4.2 percent and 2.2 percent, the urbanisation tempo is 2.0 percent per year.



The “urban/rural ratio” is related to the difference between the two mentioned rates (annual population growth rates of urban and rural areas). If the urban/rural ratio is known for more than one date, the annual exponential growth rate of the urban/rural ratio is also the difference between the urban and rural annual population growth rates. In the case of Vanuatu in 1999, the last column and last row of Table 3.17 shows the annual exponential growth rate of “urban/rural population ratio” (2.0), which is equal to the difference between the urban population growth rate of 4.2 percent and rural population growth rate of 2.2 percent.

Measuring the tempo of urbanisation not only makes sense for determining how fast one area is growing in relation to the other but also is related to the indices for measuring the level of urbanisation. Both the percent urban and the urban/rural ratios are related to the difference between the urban and rural population growth rates.

For reasons stated earlier, it is advisable to measure the tempo of urbanisation as the difference between the annual growth rates of the urban and rural populations. Figure 3.3 above, presents the trend of annual growth rates related to the “urban/rural ratio” during the period 1967-1999. It shows the declining pace of urbanisation in Vanuatu, and this trend is consistent with the urban population growth presented above in Table 3.9. The reason for this decline could be related to the timing of the two previous population censuses. The 1989 and 1999 censuses were conducted at the time of school holidays, when most urban

residents (parents and children) could have gone to “home islands” for Christmas and school holidays.

Chapter 4 – Population Composition

4.1. Introduction

The distribution of a population by age and sex is one of the most basic types of information needed in planning for the future. For example, an analysis of educational requirements, labour force projection, family composition, retirement, migration, or voting practices, would not be complete without considering information on age and sex. Age and sex are important variables in demographic analysis as well. The study of fertility and mortality without considering age would permit only a partial understanding of these phenomena.

Age is the central variable in most demographic as well as socio-economic analysis. Virtually all information collected during a census or any other data collection exercise varies with age. Most information presented in census tables are cross-classified by age (and sex). During all four censuses, a considerable effort has therefore been made to establish the age of respondents as accurately as possible. This is not an easy task in Vanuatu. Until recently, only a small proportion of the population was familiar with chronological age whereas birth certificates and other documentation containing date of birth or age were hardly ever available. At present, the level of illiteracy is still very high in many parts of the country. Given the importance of the age structure with respect to social and economic characteristics, it is imperative that the information on the population age sex structure be as accurate as possible. The first priority in this Chapter is therefore to establish the accuracy of age-reporting during the 1999 census. It then interprets changes in the age-sex structure during the intercensal periods, but particularly during the most recent interval 1989-1999, by comparing the age-sex pyramids, as well as a number of indices that have been derived from the age-sex structures.

4.2. Detecting Age Misreporting

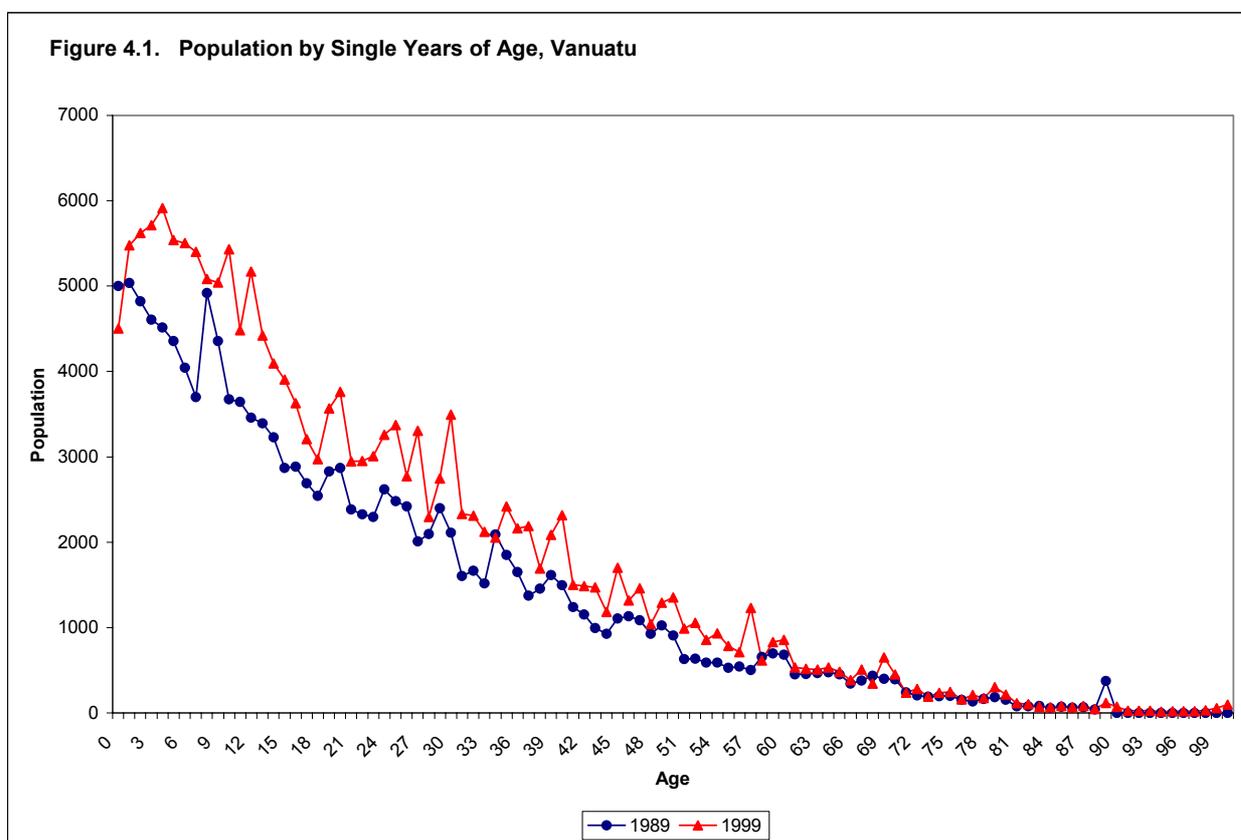
Population data are often subject to age misreporting and the Vanuatu data are no exception. Irregularities in the age distribution produced by respondents misreporting their age can be detected in graphical cohort analysis, where age misreporting may be suggested by the repetition of a similar age pattern for different cohorts (as opposed to the parallelism expected for the same cohort). Comparing data from two censuses shows if the age pattern of the population at the two census dates is consistent. For example, there could be a shortage of people in the age 20 to 29 years in the 1999 census compared to the earlier census (10 to 19 years in the 1989 census). Migration can cause distortions of the age pattern and, therefore, the age of migrants as well as the direction of migration movement should be analysed. Any overall repetitive pattern should be interpreted as errors in the data, which thus would need some adjustment before in-depth analysis

Age misreporting in the process of enumerating the population in a census can come from two sources. One source is the respondent, who either wilfully misreports his or her age or gives an approximation if the true age is unknown. The other source of error is the interviewer who estimates the age of a respondent who does not know his or her age. In

either case, the result of this age-guessing process is that ages are often rounded to end in the digits 0 and 5.

4.2.1. Digit Preference

Irregularities in reporting single years of age can be detected by using indices or graphs. There are several frequently used indices for detecting digit preference: Myers (1940), Whipple (US Bureau of Census, 1971), and some others. These indices not only provide an overall idea of the extent of age misreporting but also indicate the preference for certain ending age digits. The analysis also can be done graphically by constructing a typical population pyramid by single years of age or a line graph by single years of age. The single age pyramid or the line graph should show age misreporting in the country's population in certain ages (such as 30, 40, 50, and 60 years). Information on age containing such errors requires adjustment. Figure 4.1 shows a line graph of age misreporting (digit preference) in Vanuatu during the 1989 and 1999 Censuses.



During field work the age of respondents who did not know their exact age was estimated using past "Notable Events" in that locality or even the country. If the respondents still could not determine their age, age was estimated using relationships between household members as well as physical appearance. For a number of cases (almost 3 percent at the national level, 1 percent in urban and 1.9 percent in the rural areas), age is reported as "Not Stated".

A number of indices of age misreporting for the resident population based on census data classified by age and sex have been calculated.³ The results are presented in Table 4.1. The Indices for the previous censuses were not calculated, however, data is available for users who wish to calculate these indices for the earlier censuses.

Table 4.1 Indices of accuracy of age reporting of the resident population by province and sex derived from the 1989 and 1999 census data

Census	Myers'	Index	Whipples'	Index	UN Secretariat
	M	F	M	F	Index (P)
1989					
Vanuatu	6.7	8.9	104.8	109.0	34.0
Urban	7.8	7.5	98.1	107.8	65.6
Rural	6.7	9.3	106.8	109.3	36.6
1999					
Vanuatu	10.5	8.5	117.4	116.7	26.8
Urban	11.5	7.2	122.6	117.7	26.5
Rural	10.2	8.9	115.6	116.4	28.4
Malampa	10.5	7.9	114.4	109.0	43.2
Penama	12.5	10.4	113.5	120.7	34.0
Shefa	10.6	7.7	118.8	114.3	28.2
Sanma	11.4	9.7	116.9	121.0	41.2
Tafea	13.8	13.1	119.0	121.6	51.1
Torba	16.3	10.6	128.2	118.6	72.1

Myers' Index measures the excess or deficit of persons reporting ages ending in any of the 10 digits, expressing these deviations as percentages. The larger the value of this index, the greater the preference for certain digits. The range of this index is from a minimum of 0 to a maximum of 180. In a population with a Myers' Index of 0, there is no preference or dislike for any of the 10 terminal (unit) digits of age (that is, accurate age reporting). If Myers' Index is 180, all ages have been reported/recorded with the same terminal digit (that is, inaccurate age reporting). Although Myers' Index for (1989) and 1999 is still higher than 0, there are clearly less problems with age reporting in Vanuatu than in some other countries in the Pacific region.

Whipple's index detects a preference for ages ending in zero, five, or both. If age reporting is consistent, this index should fluctuate slightly around 100. The higher the value of the index, the higher the preference for digits zero and five. The Whipple's index for both sexes in 1999 was about 117, indicating better reporting. Table 4.1 also shows the variation by sex and provinces in the accuracy age reporting during the 1999 Vanuatu Census.

³ For an example of the computation of the 3 indices of the accuracy of age reporting used in this Report, see the United Nations, 1955. Methods of Appraisal of Quality of Basic Data for Population Estimates, Manual II, Population Studies, No. 23, Department of Economic and Social Affairs, Population Branch, UN, New York.

4.3. Age and Sex Ratios.⁴

Ratios permit comparisons of phenomena over time and between geographical areas. Complexities of changing age and sex compositions can be better discussed and evaluated using ratios.

4.3.1. Age Ratios

Age ratios for 5-year age groups have also been proposed as indices for detecting possible age misreporting in the populations where fertility has not fluctuated greatly during the past and where international migration has not been significant. Under such demographic conditions, age ratios are expected to be similar throughout the age distribution, and all of them should be close to a value of 100.

The UN Secretariat Index in Table 4.1 is based on age and sex ratios for subsequent 5-year age groups. The age-ratio is defined as the number of persons in a particular 5-year age group divided by the average of the number of persons in the two adjacent age groups times 100 (United Nations, 1952). Age-ratios are calculated separately for males and females. In a population with an age-sex structure which is not distorted, that is an age-sex structure which has not been affected by age shifting and age heaping, age-differential underenumeration, migration, deficits in certain birth cohorts, war etc., all age-ratios should be approximately 100. Deviations of 100 are a consequence of the factors mentioned above.

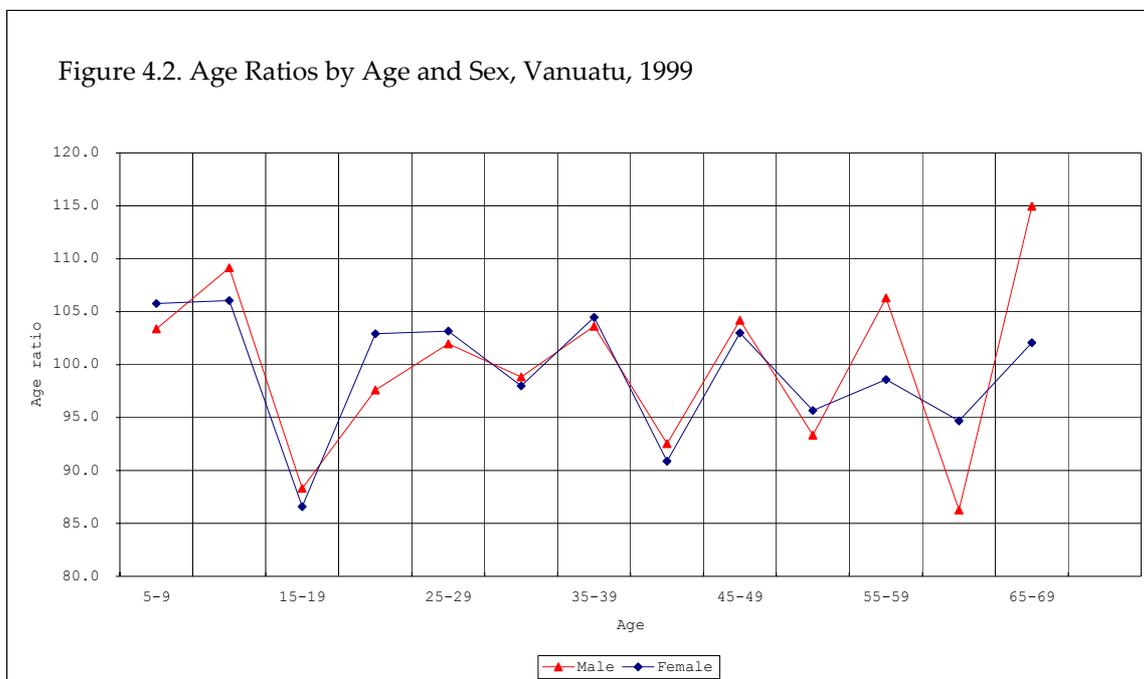
The larger the fluctuations of these ratios and the larger their departure from 100, the greater the probability of errors in the age data (except in populations exposed to international migration). It is obvious that age reporting has improved between 1989 and 1999 censuses in Vanuatu (Table 4.1).

The age-ratios for the resident population of Vanuatu in the two recent census years are shown in Table 4.2. The same information for 1999 is presented in Figure 4.2.

⁴ For a general discussion of the distortions of age- and sex ratios, see: United Nations, 1955. Methods of Appraisal of Quality of Basic Data for Population Estimates, Manual II, Population Studies No. 23, Department of Economic and Social Affairs, Population Branch, UN, New York.

Table 4.2. Age-Ratios for the Resident Population

Age Group	Age Ratio_1989		Age Ratio_1999	
	Males	Females	Males	Females
0-4	n/a	n/a	n/a	n/a
5-9	105	102	103	106
10-14	99	99	109	106
15-19	93	92	88	87
20-24	97	101	98	103
25-29	106	106	102	103
30-34	89	97	99	98
35-39	113	101	104	104
40-44	85	91	93	91
45-49	123	106	104	103
50-54	79	85	93	96
55-59	100	99	106	99
60-64	103	103	86	95
65-69	109	104	115	102
70-74	n/a	n/a	n/a	n/a
75+	n/a	n/a	n/a	n/a



4.3.2. Sex Ratios

The sex-ratio is the number of males per 100 females. In most populations where the age-sex structure is not distorted, the sex-ratios for subsequent 5-year age groups are expected to decrease gradually with increasing age. This is due to the fact that in the majority of populations, the mortality risk at all ages is higher for males than for females. In addition to that, the average sex-ratio at birth, that is the number of live born male per 100 live born female children in one year is not 100. The worldwide average sex ratio at birth is usually assumed to be close to 105. There is evidence that this ratio may be somewhat higher or lower for certain populations. Incomplete and often quite inaccurate data from civil registration systems and health department records in some countries in the Pacific Region suggest that the sex ratio at birth may be somewhat higher than 105. This seems particularly the case for some Melanesian populations, although conclusive evidence is not available. The sex-ratios for the resident population of Vanuatu in 1989 and 1999 are shown in Table 4.3.

Table 4.3 Sex ratios of the population by province at the time of the 1999 Census

Age Group	Vanuatu		Urban	Rural	Malampa	Penama	Shefa	Sanma	Tafea	Torba
	1989	1999								
Total	106	105	107	105	104	106	107	101	101	103
0-4	108	108	105	109	113	107	106	100	107	110
5-9	111	106	103	107	103	113	105	93	107	111
10-14	108	109	101	111	107	111	107	96	108	105
15-19	103	105	103	106	109	108	103	95	100	111
20-24	95	96	101	94	96	97	103	106	83	78
25-29	93	96	100	94	84	103	99	96	91	99
30-34	90	98	103	97	96	101	101	100	93	89
35-39	106	100	108	97	91	104	102	99	88	98
40-44	104	105	126	98	93	94	115	122	101	116
45-49	125	108	125	103	97	96	121	126	104	80
50-54	112	109	137	103	105	91	121	133	94	96
55-59	118	118	145	114	128	105	120	115	96	140
60-64	121	112	156	107	109	106	129	122	86	139
65-69	129	130	155	128	125	135	116	86	139	112
70+	131	128	137	128	141	123	121	98	107	93

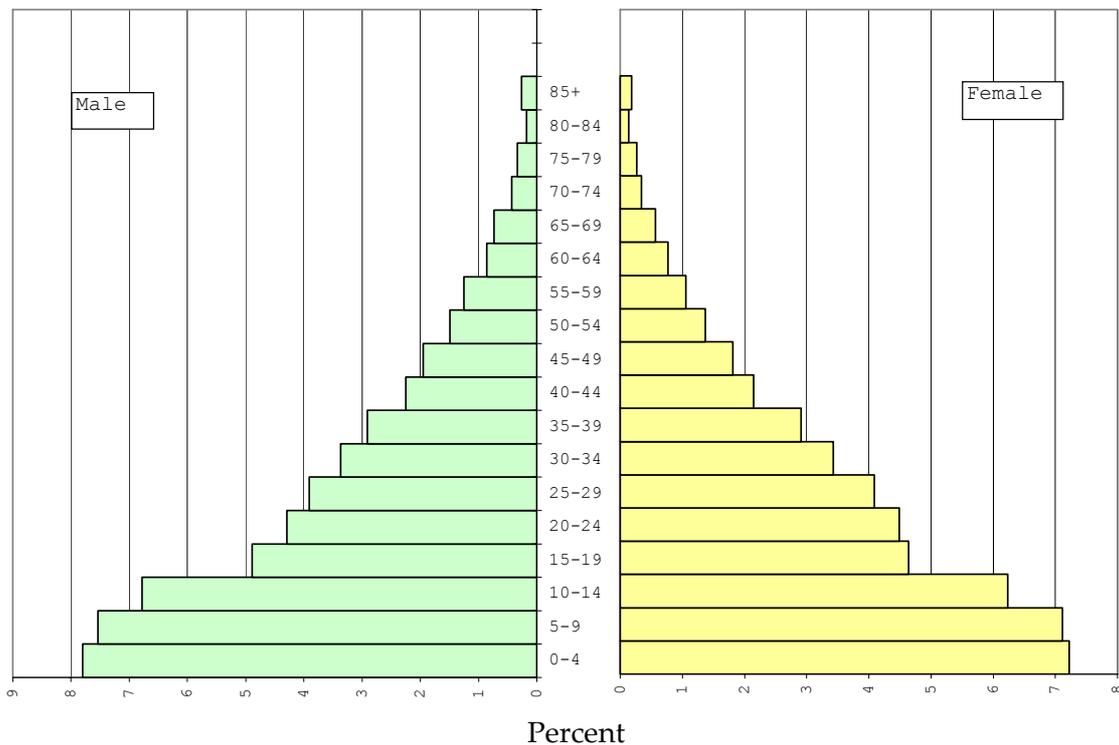
The 1999 sex ratio for the resident population at the national level is fairly standard, however, age specific variations can be observed. Generally, the following explanations must be considered: sex differential net-migration, sex differential mortality, sex differential under-enumeration or a combination of these. The fairly high 1999 sex ratio at the older ages is probably caused by sex differential mortality, whereas the low sex ratios in the ages 20-44 could be due to sex differential net-migration or under-enumeration. The high sex ratio can almost certainly not be explained by a higher female than male level of mortality.

Analysis of the 1989 census data suggests that male mortality is higher than female mortality (E0 for males was 61.5 and for females was 64.2). There is no evidence to suggest that the situation in 1999 is different. In the absence of a PES, there is also no evidence of sex selective under-enumeration in Vanuatu in 1999.

4.4. Age Structure

Population pyramids for Vanuatu in 1999 and 1989 are presented below, while the Provincial Profiles show the pyramids at the provincial levels.

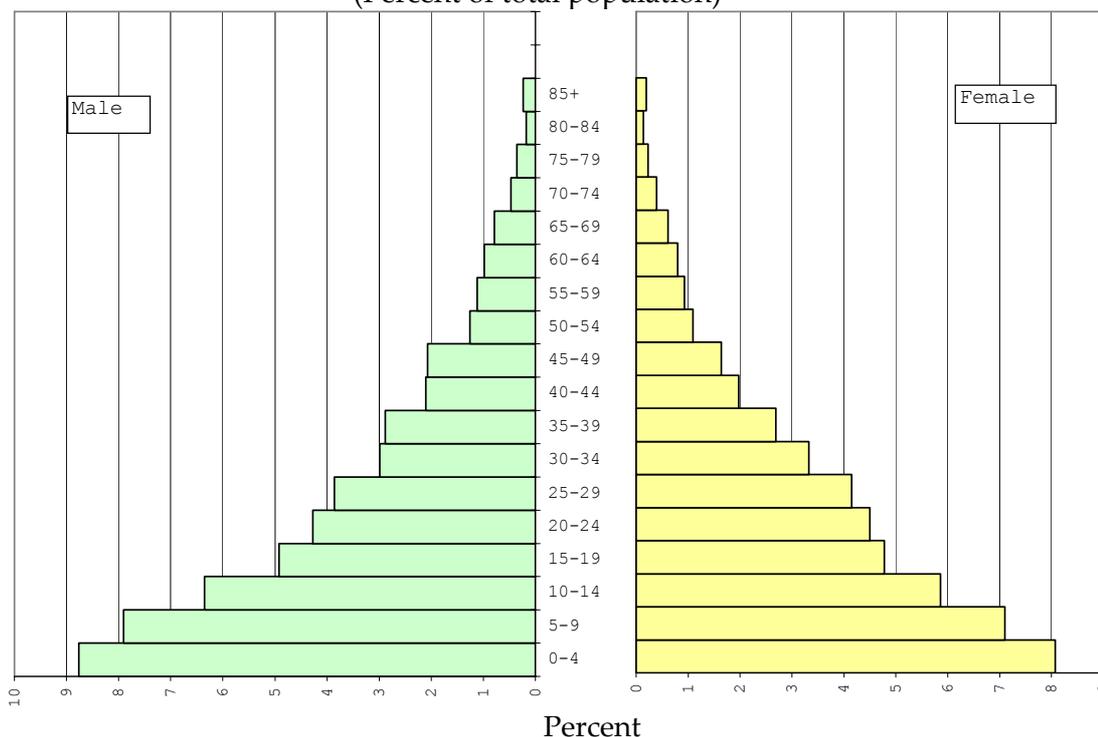
Figure 4.3 Age and sex distribution of resident Vanuatu population in 1999
(Percent of total population)



Source: 1999 Census Main Report – Table 1.1 & 1.2

A population’s age structure may be considered as a map of its demographic history. Persons of the same age constitute a cohort of people who were born during the same year (or period); they have been exposed to a similar historical events and conditions. The age structure of the whole population at a given moment may be viewed as an aggregation of cohorts born in different years. A graphic representation of the age structure of the population such as an “age pyramid”, shows the different surviving cohorts of people of each sex in Vanuatu.

Figure 4.4 Age and sex distribution of resident Vanuatu population in 1989
(Percent of total population)



Source: 1989 Census – Main Report Table 11.1

4.4.1. Changes in the Age-Sex Structure

Both age-sex pyramids are very broad at the base and the population must therefore be considered as very young. Over 40 percent of the population is under the age of 15 and the Median Age is only 19 years. The broad-based age-sex structure is a consequence of the high level of fertility. Because of this, the potential for further growth (momentum) of the population is high. Even if the rather unrealistic assumption is made that fertility will decline very rapidly in the near future and that the population will reach replacement level fertility in fifty years, the population is expected to continue to grow for a long period of time after this point is reached.⁵ This is due to the high level of fertility at present and in the past and the consequently high growth momentum of the population. It is of crucial importance that these factors are taken into account in the National Population Policy.

⁵ When a population reaches replacement level fertility, the Net Reproduction Rate (NRR) is 1. This means that on average every female is replaced by one female child which, in her turn, will live until the end of her reproductive age span.

4.4.2. Indices derived from the Age-Sex Structure

Tables 4.4 and 4.5 present several indices based on the age-sex structure of the resident population in 1989 and 1999 by geographical sectors and sex. Indices for the earlier censuses were not calculated as they have probably been affected by under-enumeration.

Table 4.4. Indices derived from the Age-Sex Structure
of the Resident Population by Sex, Vanuatu, 1989

Sector and Sex	Percent of the Population		Dependancy		CWR	Median Age
	< 15	15-59	60+	Ratio		
Vanuatu	44.1	50.6	5.4	97.8		18.1
Females	43.4	51.7	4.9	93.3	73.1	18.4
Males	44.7	49.5	5.9	102.2		17.8
Urban	37.0	60.6	2.5	65.1		20.7
Females	37.7	60.1	2.3	66.4	59.1	20.0
Males	36.3	61.0	5.4	68.4		21.5
Rural	45.6	48.3	6.0	106.9		17.3
Females	44.6	49.9	5.4	100.2	76.8	17.9
Males	46.6	46.8	6.6	113.6		16.8

CWR is Child-Woman Ratio

Indices for the earlier censuses were not calculated as they have probably been affected by under-enumeration.

Table 4.5. Indices derived from the Age-Sex Structure of the Resident Population by Sex, Vanuatu, 1999

Province and Sex	Percent of the Population			Depend. Ratio	CWR	Median Age
	< 15	15-59	60+			
Vanuatu	41.5	50.7	4.9	91.4		18.8
Females	41.0	51.7	4.5	88.1	63.9	19.1
Males	41.9	49.8	5.3	94.7		18.6
Urban	35.4	57.7	2.2	65.2		21.0
Females	36.1	57.5	1.8	66.0	47.5	20.6
Males	34.8	58.0	2.6	64.4		21.5
Rural	43.1	48.8	5.7	99.9		18.1
Females	42.3	50.1	5.2	94.9	69.2	18.6
Males	43.9	47.6	6.0	104.9		17.7
Malampa	42.2	50.6	6.6	96.5		18.9
Females	41.4	52.1	5.9	90.8	61.6	19.4
Males	43.0	49.1	7.2	102.2		18.4
Penama	42.9	49.7	6.7	99.8		18.5
Females	42.1	51.0	6.2	94.8	68.7	18.9
Males	43.7	48.4	7.1	104.8		18.0
Shefa	40.5	50.9	5.9	91.2		20.0
Females	40.1	51.6	5.8	88.9	62.7	20.3
Males	40.9	50.2	6.0	93.4		19.7
Sanma	43.2	48.2	3.9	97.7		17.3
Females	42.9	49.2	3.2	93.6	72.5	17.4
Males	43.5	47.3	4.7	101.7		17.3
Tafea	45.6	45.2	5.0	112.0		16.4
Females	44.1	46.9	4.8	104.4	80.6	17.4
Males	47.1	43.4	5.1	120.1		15.4
Torba	46.6	47.3	5.8	110.6		16.8
Females	45.3	48.9	5.6	104.1	74.9	17.6
Males	47.8	45.8	6.0	117.4		16.0

It is clear that the percent under the age of 15, has declined by about 3% at the national level between 1989 and 1999. On the other hand, the percent of the population age 60 and over has remained almost the same between the 1989 and 1999 censuses.

4.4.3. *Dependency Ratio*

For the purposes of this Report, the Dependency Ratio has been defined as the population under the age of 15 and the population age 60 and over ('dependent' population) divided by the population in the age-group 15 to 59 ('working' age population) multiplied by 100. The 'old age' cut-off point age 60 has been chosen instead of the internationally recommended age 65. The reason for this is that Vanuatu still has a relatively high level of mortality and consequently a low official retirement age. The Age Dependency Ratio gives only a very approximate picture of the real dependency situation in the country. A somewhat more sophisticated picture of dependency will be provided in another report that will consider Economic Characteristics of the Vanuatu Resident Population. Ideally, the level of economic dependency should of course be determined in an in-depth sample survey.

The Age Dependency Ratio can be divided into two parts, the Youth Dependency Ratio and the Old Age Dependency Ratio. The former only takes youths under the age of 15 into account. It is clear that in Vanuatu (as in all the provinces in the country) the overall Age Dependency Ratio is high because the youth component is high. The Old Age Dependency Ratio is still low (in 1999 the percent of the population age 60 and over is only 4.9%). Users are again reminded that the internationally recommended Old Age Dependency Ratio is based on the population age 65 and over. The 'real', internationally comparable level of old age dependency in Vanuatu is therefore even lower than that suggested by the data in Table 4.4 and Table 4.5 above.

As expected, the overall Age Dependency Ratio of Vanuatu has changed very little between 1989 and 1999. It is important to reiterate that a significant decline in the Age Dependency Ratio can only be accomplished by a future decline in fertility. Policy makers and planners in the country should take this into account in their plans for the future. It should also be realised that continuing declines in mortality will contribute very little to a change in the Age Dependency Ratio. It is even possible that future mortality decline (in the absence of fertility decline) may result in some widening (rejuvenation) at the base of the age-sex pyramid and consequently in a slightly higher Age Dependency Ratio.⁶

4.4.4. *Child-Woman Ratio*

The Child-Woman Ratio (CWR) is defined as the number of children (of both sexes) under the age of 5 divided by the number of females in the reproductive age span (here assumed to be 15 to 49 years) multiplied by 100. In a population with a stable mortality regime and in the absence of age and sex selective, under-enumeration and migration, the CWR should provide an approximation of the level of fertility. In populations where these ideal conditions are not met, the CWR should be used as an index of fertility only with the utmost caution. This is particularly so if the CWR is used for comparison with the level of fertility of other populations. Vanuatu is one of those cases where the ideal conditions for using the CWR as a fertility index are probably not met. The precise impact of sex-selective

⁶ This will be the case if decline in infant and child mortality in the future is far more extensive than decline in adult mortality.

net-migration on the age-sex structure is not known but it is certainly not insignificant. It should be noted that the CWR slightly declined after 1989. This may be another indication that Vanuatu experienced a slight decrease in fertility during the most recent intercensal period. This very provisional conclusion will be reviewed in the fertility analysis in Chapter 5.

4.4.5. Median Age

The Median Age is that age where 50 percent of the population is younger and 50 percent older. As shown in Tables 4.4 and 4.5, the Median Age for males as well as females in 1999 is clearly very low, as is to be expected of a population with a high level of fertility, and changed only a little between 1989 and 1999. A study of the above indices, separately for the Rural and Urban Sector and by provinces is also of considerable interest.

4.5. Marital Status

All previous censuses of Vanuatu have provided some information on marital status. For the resident population in 1999, this information is summarized in Table 4.6.

Table 4.6. Resident population 15 years and over Vanuatu, Urban and Rural by Martial Status, 1999

	Vanuatu		Urban		Rural	
	Females	Males	Females	Males	Females	Males
Never Married	13.3	17.0	14.8	18.8	12.9	16.4
Married	26.6	26.0	21.4	21.8	28.2	27.3
Separated	0.9	0.6	1.0	1.0	0.8	0.5
Defacto	3.9	3.8	6.7	6.7	3.0	2.9
Divorced	0.3	0.2	0.5	0.3	0.3	0.2
Widowed	2.1	1.0	0.7	0.4	2.6	1.1
Total	49.1	50.9	47.8	52.2	49.6	50.4

Note: Marital status not stated have been excluded

For census purposes, in 1999 the category 'Married' also includes those persons living in a consensual (de-facto) union.⁷ The figures in Table 4.6 do not necessarily represent the legal situation. The marital status of all respondents that are recorded during a census is the marital status they report themselves. In most censuses, there are usually discrepancies between the actual and the reported marital status of many respondents, particularly the younger ones. In a country like Vanuatu (and many other Pacific island countries), data collection on marital status is exacerbated by the fact that marriage, divorce and other certificates, stating marital status are usually not available. The prevalence of polygynous unions⁸ in Vanuatu is negligible. There is the odd polygynous union here and there in

⁷ A consensual (de-facto) union is defined as a stable, socially accepted union.

⁸ A polygamous union is a union where a husband has more than one wife at the same time.

middle bush areas in Santo for example, but the number would be statistically insignificant. On the whole, the practise is discouraged in Vanuatu.

The figures in Table 4.6 are not strictly comparable. It is however clear that the percentage of widowed females (2.1%) is significantly higher than the percentage of widowed males (1.0%). This reflects the fact that the male age at first marriage is generally higher than the female age at first marriage (Table 4.8). Moreover male mortality in Vanuatu in 1989 was higher than female mortality. It may also be that widowed males are more likely to remarry than are widowed females. Table 4.7 distributes the resident population by marital status and province of residence at the time of the 1999 Census. The basic tables on population by marital status, age and sex in 1999 are contained in the Main Report.

Table 4.7. Population 15 years and over by martial status

Province	Never Married	Married	Separated	Defacto	Divorced	Widowed	Not Stated	Total
Vanuatu	33,096	57,433	1,644	8,438	636	3,384	4,638	109,269
Urban	8702	11176	515	3462	214	283	1537	25,889
Rural	24394	46257	1129	4976	422	3101	3101	83,380
Malampa	5991	10410	236	1266	89	751	153	18,896
Penama	4666	8747	249	607	64	734	137	15,204
Shefa	11362	15950	596	3946	234	645	1280	34,013
Sanma	6067	10615	267	1818	120	512	1814	21,213
Tafea	3652	9479	220	546	119	551	1230	15,797
Torba	1358	2232	76	255	10	191	24	4,146

4.5.1. Average Age at First Marriage

In the absence of official marriage registration by the Civil Registry for most of the resident population, the average age at first marriage can only indirectly be derived from census data on marital status classified by age and sex. Table 4.8, presents the 'Singulate Mean Age at Marriage' SMAM (in years) of the resident population by sex in 1999.⁹

The 1999 SMAMs for the Urban Sector suggest that the age at first marriage for males in the Urban Sector are slightly higher (26.4 years) than that for the Rural Sector (25.0 years).

Table 4.8. Singulate Mean Age at First Marriage
for Resident Population 10 years and over by Sex

Province	Males	Females
Urban	26.4	23.0
Rural	25.0	22.9
Malampa	25.8	24.1
Penama	25.6	22.9
Shefa	26.2	23.8
Sanma	24.8	21.8
Tafea	23.2	21.8
Torba	25.5	24.2
Vanuatu - 1999	25.3	23.0
Vanuatu - 1989	25.2	22.6
Vanuatu - 1979	26.1	22.2
Vanuatu - 1967	26.6	21.2

⁹ For an example of the computation of Hajnal's Singulate Mean Age at Marriage (SMAM), see the United Nations, 1983. Indirect Techniques for Demographic Estimation, Manual X, Population Studies No. 81, Department of International Economic and Social Affairs, UN, New York.

Chapter 5 – Fertility

5.1 Introduction

As is the case for most developing countries, estimation of fertility levels in Vanuatu is necessary based on very limited data. Besides fertility information collected in the national population censuses, other sources of fertility information are either the vital registration system or the hospital records of births of Vanuatu residents. These sources of information on fertility are not reliable or complete. Consequently, it is necessary to obtain measures of fertility for Vanuatu residents indirectly from census data by applying demographic techniques of estimation.

The indirect techniques of estimation utilise data on the age structures of the female and male populations. The accuracy of the estimation therefore, depends on the quality of age reporting and also on other factors such as the completeness of the enumeration.

Fertility estimates for Vanuatu are available in the 1979 Census, 1989 Census and 1999 Census. The fertility data collected in the 1979 Census are of rather poor quality and the estimates derived from them are regarded as approximations. Fertility rates were estimated from the 1979 Census data on children ever born by applying the “Own-Children” technique. This method requires that mothers and their own children in the same household are matched. As this relationship was not recorded, assumptions were made in order to link children to women.

The estimates of fertility obtained from 1989 Census were obtained by applying the Brass P/F ratio method (Brass et al, 1968). This method adjusts the age-specific fertility rates derived from information on births in the preceding year by comparing them with the level of fertility of women under age 30 (i.e. average parity of women in the age groups 20-24 or 25-29 or an average of these two age groups).

This chapter estimates and analyses fertility in 1999. As in 1989, the Brass P/F ratio method of fertility estimation is used. This chapter begins by discussing some of the basic measures of current fertility. These fertility measures include: the crude birth rate (CBR), age-specific fertility rate (ASFR), the total fertility rate (TFR), the general fertility rate (GFR) and the net reproduction rate (NRR). The child-woman ratio (CWR) is also employed as part of the fertility analysis, but is discussed in Chapter 4 on population composition, as part of the analysis of the age-sex structure of the resident population. Besides these basic fertility measures, births in the preceding 12 months and births to women in the age range 15 to 19 (teenage births) are also discussed.

5.2 Data Availability

The main source of data for the analysis of this chapter is raw data from the 1999 Population and Housing Census. The census enumerated a total resident female population of 90,996. Of these 42,624 were enumerated as Vanuatu women residents in the child-

bearing age group 15-49 years. This is the figure on which this analysis is based. Females who are not usually resident in Vanuatu are excluded.

5.3 Reliability of the Data

Reporting of births is often significantly affected by omissions and/or by recall errors as to whether or not a birth took place within the specified period. The fertility rates obtained from this question are therefore, often inaccurate as far as the level of fertility is concerned. However, they can be used to provide information on the pattern of fertility by age of women, and as such are used in the estimation of fertility by indirect demographic techniques.

Reporting of births in the preceding 12 months are subject to both recall lapse and enumerator errors during field operations by women reporting their births within that one year reference period. Although the question asked was "*when was your last child born?*", usually answers such as *one year ago* tend to be wrongly converted by enumerators into dates and hence, subject to time reference errors.

For this reason, the P/F ratio method of fertility estimation was selected and applied to the data on children ever born. This method was also selected because the P/F ratio method adjusts the age pattern of fertility derived from the information on births in the last one year by the level of fertility implied by the average parity of women.

The basic assumption in applying the P/F ratio method is that fertility has not changed in the recent past. The application of this method to parity data from younger women yields valid results if any decline in fertility has been mostly confined to older age group. However, this method does not correct for omissions of those births which tend to be omitted equally by all age groups of women such as children who died at very young ages.

5.4 Methods of Analysis

The 1999 Population and Housing Census collected fertility data for Vanuatu resident women in the childbearing age group 15-49 years. The data for this age group of women is analysed at two levels, national and provincial. Fertility estimation is carried out by applying the Brass P/F ratio method to data on the children ever born. The age specific fertility rate (ASFR) is based on births occurring in the 12 months preceding the census date. Details on the application of the Brass P/F ratio technique (Brass et al., 1968) can be found in many demography textbooks and UN Manual X.

The Brass P/F ratio takes as correct the pattern of fertility by age of women obtained from the question on births occurring since 1 November 1998. The level of fertility reported is generally not taken as correct because of errors involved in recalling whether a birth occurred just before or after 1 November 1998 and also because of omissions. Accordingly, the level is adjusted using data on the total number of children ever born, which are generally more reliable. The P/F ratio technique adjusts the fertility pattern by age at census date to cumulative values and makes an overall adjustment to the level of fertility according

to the ratio of average parity of women aged (P) to reported fertility in the preceding 12 months (F).

5.5 Current Fertility

(i) Age-specific fertility rates (ASFR)

The sum of the age-specific fertility rates, which is the total fertility rate (TFR), is used to summarise the current level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the current observed rate. If fertility remained constant at the current level, a Ni-Vanuatu woman would give birth to an average of 4.8 children, as shown in Table 5.1. A close examination of the age-specific fertility rates reveals that there are marked differences between urban and rural areas. The results indicate that the urban age-specific fertility rates are considerably lower for all ages. The TFR for urban women is 3.8 children per woman compared with 5.1 for rural women.

Table 5.1: Current Fertility
Age-specific and cumulative fertility rates and crude birth rate
for the five years preceding the census by urban-rural residence

Age group	Residence		
	Urban	Rural	Total
15-19	74	97	92
20-24	244	331	333
25-29	432	573	560
30-34	602	794	761
35-39	694	917	862
40-44	758	986	932
45-49	781	1011	958
TFR 15-49	3.8	5.1	4.8
TFR 15-44	3.5	4.9	4.5
GFR	104	144	134
CBR	25.2	29.0	28.2

TFR: Total fertility rate expressed per woman

GFR: General fertility rate (births divided by number of women 15-49), expressed per 1000 women

CBR: Crude birth rate, expressed per 1,000 population.

(ii) General Fertility Rate (GFR)

The general fertility rate (GFR) was calculated by dividing the number of births occurring during the 12 months preceding the census by the number of women of reproductive age 15-44 years and multiplying the result by 1000. The 1999 National Population and Housing Census data indicate that the GFR was 134 for the whole country;

that is 134 births to every 1000 women. The observed GFR was higher in rural areas (144) than in urban areas (104).

(iii) *Crude birth rate (CBR)*

The crude birth rate was calculated from the total births in the preceding 12 months for women in the age group 15-49 divided by total population at all ages, and multiplying the result by 1000. For the whole country, CBR was estimated at 28 births per thousand population (see Table 4.1). Close observation of the results indicate a distinct difference between urban and rural areas, with the crude rates of 25 for urban areas and 29 for rural areas. The reason for this difference could be that women of childbearing age in urban areas have more access to family planning services than do rural women. Also it could be that, women in the urban areas are likely to delay age at first marriage to later date due to their engagement in the formal workforce, thus influencing the number of births an urban woman is likely to bear.

(iv) *Total fertility rate (TFR)*

Total fertility rates (TFRs) by residence, province and respondents' level of education are presented in Figure 5.1 and Table 5.2. There are variations in the total fertility rate by provinces. For example, women in Torba province tend to give birth to more children than do women in the five other provinces. If fertility were to remain constant at current levels, a Torba woman would give birth to an average of 5.9 children, followed by women in Penama (5.2), Sanma and Tafea (5.1 each), Malampa (5.0) and Shefa province with the lowest (4.0).

Figure 5.1: Total Fertility Rates by Province, 1999

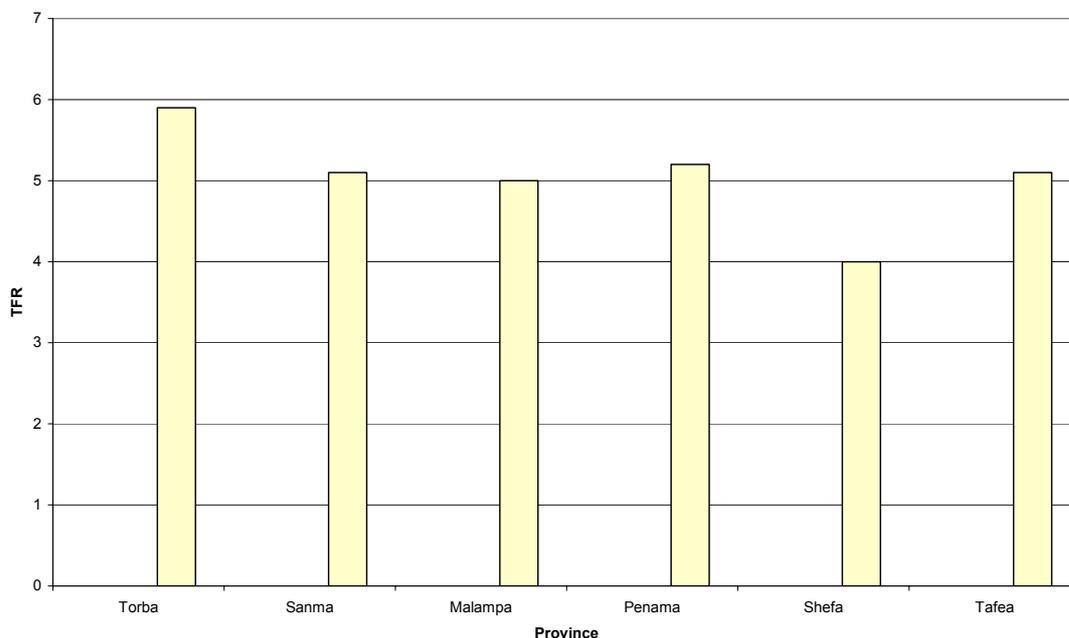


Table 5.2 also reveals that women with no education tend to give birth to more children compared to women with some or more education. If fertility were to remain constant at current levels, a woman with no education would give birth to an average of 5.2 children, followed by women with primary education (4.8), junior secondary education (4.1) and senior secondary and above education (3.7). This clearly indicates that women with

some education tend to bear fewer children compared to those with no education, and the higher the educational attainment, the fewer children an educated woman is likely to bear.

The average number of children ever born (CEB) to women aged 40-49 is also presented in Table 5.2. The average number of CEB an urban woman is likely to bear is 3.8 compared to 4.9 for a rural woman. Again, variations are observed in the average number of CEB by province. The highest average number of CEB is shown for Torba province (5.8), followed by Tafea (5.1), Malampa (5.0), Sanma and Penama (4.9 each) and the lowest is indicated for Shefa province (3.9).

Women with no education tend to have higher average number of CEB (5.0), followed by women with primary education (4.7), junior secondary education (4.2) and the lowest average CEB was found for women with senior and above education (3.5). Again the higher the educational attainment, the lower the average number of children ever born an educated woman is likely to have.

Table 5.2: Fertility by Background Characteristics
Total fertility rate for the five-years preceding the census and
the mean number of children ever born to women age 40-49
by selected background characteristics

Background Characteristics	Total Fertility Rate	Residence
		Mean no. of CEB Women aged 40-49
Place of residence		
Urban	3.8	3.8
Rural	5.1	4.9
Province		
Torba	5.9	5.8
Sanma	5.1	4.9
Malampa	5	5
Penama	5.2	4.9
Shefa	4	3.9
Tafea	5.1	5.1
Level of education		
No school	5.2	5
Primary	4.8	4.7
Junior secondary	4.1	4.2
Senior secondary & above	3.7	3.5
Total	4.8	4.7

The total fertility rates for women aged 15-44 for the six provinces are presented in Table 5.3. There are marked differences between provinces in the total fertility rate. Close examination of total fertility rate for women in the age group 15-44 reveals that women in Tafea province tend to give birth to more children than do the women in the five other provinces. If fertility were to remain constant at current levels, a woman in Tafea province would give birth to an average of 5.3 children in her life time, followed by women in Torba (5.1), Sanma and Penama (4.9 each), Malampa (4.6) and Shefa (3.8).

For the crude birth rate, Tafea province tends to have highest crude rate of about 31 births per thousand population over the last decade compared with other provinces, followed by Penama and Torba (30 each), Sanma (29), Malampa and Shefa (26 each).

Table 5.3: Current Fertility
Age-specific and cumulative fertility rates and crude birth rate for the five years preceding the census by province

Age group	Province					
	Torba	Sanma	Malampa	Penama	Shefa	Tafea
15-19	127	109	92	89	75	93
20-24	387	334	280	319	272	360
25-29	660	582	540	557	452	616
30-34	899	791	781	787	628	839
35-39	1040	910	871	943	741	945
40-44	1135	1006	952	1010	787	1006
45-49	1170	1041	982	1035	804	1029
TFR 15-49	5.9	5.1	5.0	5.2	4.0	5.1
TFR 15-44	5.1	4.9	4.6	4.9	3.8	5.3
GFR	149	142	124	149	113	159
CBR	30	29	26	30	26	31

TFR: Total fertility rate expressed per woman

GFR: General fertility rate (births divided by number of women 15-49), expressed per 1,000 women

CBR: Crude birth rate, expressed per 1,000 population.

(v) *Births in the last 12 months*

Births in the preceding 12 months were defined as births that occurred during the period 17th November 1998 to 16th November 1999. The data on births in the preceding 12 months and the number of women by age were used to estimate age specific fertility rates (ASFR) and the total fertility rate (TFR).

The total number of children born in the preceding 12 months and the sex ratio at birth for Vanuatu total, urban, rural and the six provinces are presented in Table 5.4. Overall, there were more males aged 0 compared with females aged 0 in all sectors. The rural sector had more males (1,925) and females (1,705) aged 0 compared with the urban sector males (452) and females (420) aged 0. At the provincial level, Shefa tended to have most children born in the preceding 12 months (1,419) followed by Sanma (1,059), Tafea (890), and Malampa (853). The lowest (245) was recorded for Torba province.

Generally, there were very high male to female sex ratios at birth for all sectors. The male ratio per 100 females for the population aged 0 in Vanuatu was 112 (i.e. for every 100 females there were 112 males). In the rural area there was a higher sex ratio at birth (113) compared to the urban sex ratio at birth (108) for the population aged 0. Torba province tended to have the highest sex ratio at birth (122), followed by Malampa (119), Penama (113), and Shefa (111). The lowest sex ratios were in Tafea (108) and Sanma (107).

Table 5.4: Total children born in the preceding 12 months and sex ratio by total Vanuatu, urban-rural and province

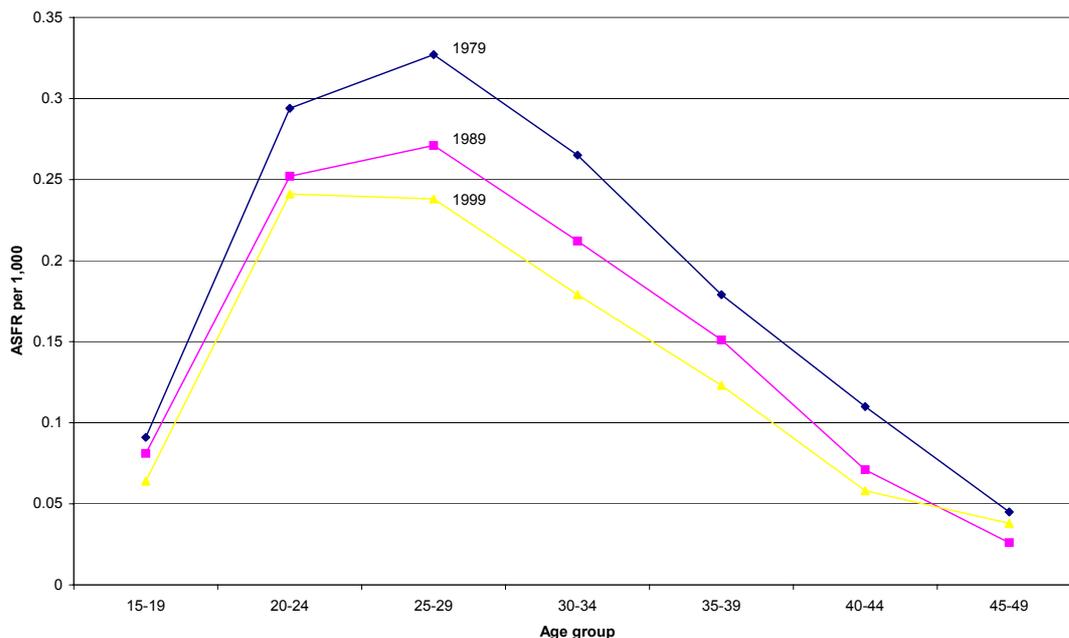
Sector	Total children born in the preceding 12 months	Population aged 0		Sex ratio	
		Male	Female		
Col.(1)	Col.(2)	Col.(3)	Col.(4)	Col.(5)=col.(2)-cols(3) & (4)	Col.(6)
Vanuatu	5,262	2,377	2,125	760	112
Urban	1,012	452	420	140	108
Rural	4,250	1,925	1,705	620	113
<i>Province:</i>					
Torba	245	113	93	39	122
Sanma	1,059	453	422	184	107
Malampa	853	402	337	114	119
Penama	796	360	320	116	113
Shefa	1,419	646	580	193	111
Tafea	890	403	373	114	108

The higher male to female ratios at birth for children born in the preceding 12 months, reflects a pattern which is generally taken as an indication of women's low status. Given a world average of 104 males to every 100 females, the male to female ratios of 112 at the national level are excessively high. This raises questions as to whether there was undercounting, whether female children were omitted from the census or miscarriages were selectively female, or whether there is something unique about sex ratios at birth in Vanuatu.

5.6. Fertility Trends and Patterns

The pattern of age specific fertility rates in Vanuatu in 1979 and 1989 is compared with that of 1999 in Figure 5.2. On the whole, it can be seen that fertility has declined between 1979, 1989 and 1999, which has caused the total fertility rate (TFR) to decline from 6.5 in 1974-78 to 5.3 in 1988-89. A further decline is shown in 1999, to a current TFR of 4.8 (see Figure 5.3). Overall, the age specific fertility rates are low in the 15-19 age group, rise to a peak in the 20-29 age group, and then decline to moderate levels in the 30-39 age group and to low levels in the 40-49 age group. Fertility rates are somewhat lower at older ages compared with those at younger ages. These fertility patterns suggest that there are certain factors such as education, family planning practices and involvement of more women in the formal workforce that have caused to some extent moderate declines in fertility at all age groups. As the decline is especially marked at ages 35-39, it is likely that there is increasing practice of family planning by women who have completed their families.

Figure 5.2: Age Specific Fertility Rates: 1979, 1989 and 1999

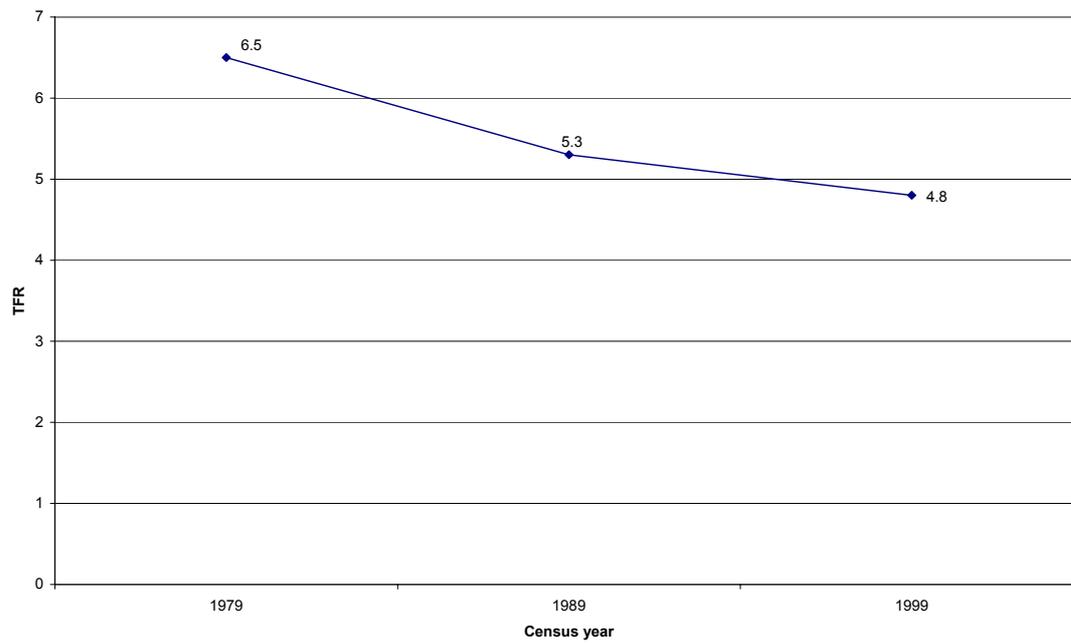


Source: South Pacific Commission 1989 and Statistics Office 1993 and 2001.

There is a marked decline in the total fertility rate between 1974-78, 1988-89 and 1998-1999 as shown in Figure 5.3 below. The current total fertility rates for women in the childbearing age group 15-49 indicate that, if fertility remained constant at the current level, a Ni-Vanuatu woman would give birth to an average of 4.8 children, compared to 5.3 children in 1989 and 6.5 in 1979.

Figure 5.3 also indicates that in absolute terms, a Ni-Vanuatu woman was bearing an average of one child less during the decade between 1979 and 1989 compared with the previous decade. Within a decade between 1989 and 1999, fertility again declined by an average of one child. In fact, the total fertility rate reduced by 23 per cent between 1979 and 1989. A further 10 per cent reduction was observed during the last intercensal period (1989-1999). Overall, there has been a reduction of 35 per cent in the level of fertility as measured by the total fertility rate during the last 20 years, 1979-1999.

Figure 5.3: Total Fertility Rates: 1979, 1989 and 1999



Source: South Pacific Commission 1989 and Statistics Office 1993 and 2001.

Chapter 6 - Mortality

6.1. Introduction

One of the first steps in making plans for reducing mortality is to know not only the overall level, but also the age structure of mortality and if possible, the main causes of death. This chapter presents information on levels, trends and differentials in infant, child and adult mortality. This information is central to an assessment of the demographic situation in Vanuatu. Infant and childhood mortality estimates are important information to support efforts to improve child survival in Vanuatu. The final part of the chapter presents information on the level of adult mortality in Vanuatu. Since causes of death statistics were not collected from the census, cause of death is not discussed in this Chapter.

This Chapter first presents the available data from the census, mortality measures to be calculated from these data, the quality of these census data, and the methods or techniques to be used in the data analysis. The Chapter then presents the estimated infant, childhood and adult mortality measures, and the resulting life tables for Vanuatu and its 6 provinces.

6.2. Data Availability

The infant and childhood mortality estimates are calculated from information on children ever born and children surviving that was collected in the Census Questionnaire. The questionnaire contained questions about the aggregate child bearing experience of female respondents aged 15 to 49 years at the time of the census. That is, the number of sons and daughters born who were living in the same household, living elsewhere, or dead. The answers to these questions were used to indirectly estimate infant and childhood mortality rates using indirect methods.

The adult mortality estimates were calculated from the information on the survival status of both mother and father of the census respondents. The questionnaire contained questions on whether the respondent's mother and father were still alive at the time of the census.

6.3. Mortality Measures

In this chapter, mortality is measured using four indicators:

- *Infant mortality rates* - the probability of dying before the first birthday;
- *Child mortality rates* - the probability of dying between the first and fifth birthday;
- *Survival Ratios* - the probability of surviving from age 25 to age 45-75 (adult ages); and
- *Average life expectancy at birth and other ages* - calculated from a life table.

6.4. Census Data Quality

In addition to age reporting errors, as discussed in Chapter 3, the reliability of mortality estimates derived from these special questions from the census depends upon the completeness with which births and deaths of children are reported and recorded. Omission of births and deaths directly affects mortality estimates.

The quality of mortality estimates is also affected by the extent to which child adoption is reported in the census. There are two parents/children issues under consideration here. First is the case of fostering children and the second is related to adoption. Fostering is only temporary (few weeks to 10 or more years) and occurs when the natural parents are temporarily (visiting, separation, etc) or permanently absent (death of one or both, divorced/separated) from home. The foster parents (usually relatives on either the natural father or mother's side) take on the responsibility of raising the children until the parents return home or until the children are old enough to move on in life. The foster children are identified by the natural fathers name and are always related to the natural parents when introduced to others. Adoption on the other hand, involves permanent separation from natural parents and are raised as own child of the adopted parents. There are many reasons for this, and the common reasons in many Pacific countries: natural parents have many siblings, adopted parents have no children or desire for a child of a particular gender, teenage births, and of course death of either one or both natural parents (the children in this last category are either fostered or adopted). The adopted parents in many Pacific countries do not always want the adopted child to know the natural parents (at least when they are young), therefore, the child gets introduced to the rest of the society as their own. In many cases, the adopted children are related to the adopted parents for the rest of their natural lives.

The implication for data collection and quality of result is that, the foster children are recorded in censuses/surveys as foster children. The adopted children are most likely to be recorded as own children twice, by the natural parents (if alive) and the adopted parents. Even if very highly educated and trained interviewers/enumerators are used, probing becomes difficult out of respect for privacy of respondents (this is culturally common in many Pacific countries). Therefore, census/survey results related to own children, mothers, and the derived indicators should be used with caution.

6.5. Methods of Data Analysis

The methods for measuring mortality depend not only on the quality but also on the level of detail of the information available. If data are reliable and complete, mortality can be estimated directly; otherwise, specific techniques are required to estimate mortality indirectly. The main source of reliable information on mortality is the civil registration system. Since registration of deaths in Vanuatu is not complete, indirect methods of estimating mortality were applied to the census data.

There are several techniques for estimating mortality in cases where death statistics are incomplete or non-existent. There are at least five techniques that use only age

distribution of the population to indirectly estimate general mortality levels, however, none of them provide a reliable estimate of infant and childhood mortality. Other techniques estimate mortality from special census questions.

6.5.1. *Children Ever Born/Children Surviving*

Various techniques were developed to estimate mortality during the first years of life. These techniques use data on children ever born and children surviving by age of mother at the time of the census. If it is known how many times a mother has ever given birth, and how many of her children are still alive, then the ratio of children who have died to total children ever born is a measure of mortality from birth up to certain ages. This concept was developed and reflected in the original Brass technique and four modified versions of it, all of which produce estimates of the probability of dying between birth and early ages in childhood. (*General discussions of these methodologies can be found in most demographic textbooks*).

The Brass technique was applied to the Vanuatu census data on children ever born and children surviving. This technique provides a method to estimate the level of infant and childhood mortality based on data on the average number of children ever born and the average number of children surviving per woman by age group of women (Brass, et al. 1968 *in UN Manual X*). The technique assumes that mortality and fertility have not changed in the 10 years preceding the census, and that there has been no age misreporting of women. (*A detailed presentation and discussion of this technique can be found in most demographic textbooks*).

6.5.2. *Orphanhood Technique*

Like mortality in infancy and childhood, adult mortality can be estimated indirectly when reliable data such as death registrations are not available to measure it directly. One technique that has been developed, estimates adult mortality based on information collected in censuses or surveys on the number of persons whose mother or father has died (orphanhood). This technique provides an estimate of survivorship levels between two adult ages for a period of time prior to the year of census or survey. The actual reference period is estimated under certain assumptions. The orphanhood technique was applied to the Vanuatu census data to estimate adult female and adult male mortality.

The orphanhood technique uses the proportion of persons whose mother (or father) is still alive to estimate adult mortality. The estimated adult mortality measure is the survivorship of women (or men) from a given age in adulthood to a subsequent older age (United Nations, 1983).

The orphanhood technique assumes that mortality and fertility have not changed during the past; and that there are not mortality differentials between large and small families. In addition, the technique assumes that the data contain no age misreporting; and that the data refer to the survivorship status of the respondent's natural mother (or father) and not a stepmother (or stepfather). (*A detailed presentation and discussion of this technique can be found in most demographic textbooks*).

6.5.3. Life Tables

The calculation of Life Table values for Vanuatu and the 6 provinces was made easy after the calculation of childhood and adult mortality estimates. The United Nations computer program MORTPAK was used to combine the estimated childhood mortality and adult mortality to produce average life expectancy at birth and other life table values. All the mortality estimates and the life table values are based on the United Nations General Model Life Table.

6.6. Mortality Estimates

6.6.1. Infant, Childhood, U5 Mortality Estimates

Estimating mortality during any census period in Vanuatu is complex since many women are very reluctant to speak about death, particularly the death of their young children. Note in this report that, the 1989 estimates are 5 year averages whereas the 1999 estimates are 10 year averages. The estimated infant mortality rate has been declining markedly since the first official census in 1967 (Figure 6.1). As can be seen in Table 6.1, the Infant Mortality Rate (IMR) decreased from 123 per 1000 live births in 1966 to 94 per 1000 live births in 1973, a decrease of 24 percent. A further 52 per cent decrease was observed between 1973 and 1985 and a 40 per cent decline between 1985 and 1995. Mortality of children between their first and fifth birthday, that is the child mortality rate (CMR), also declined from 61 per 1000 live births in 1985 to 6 per 1000 live births in 1995. That is, there was a decline of 89 per cent in the CMR (ages one to five years) in the 10 years preceding the census.

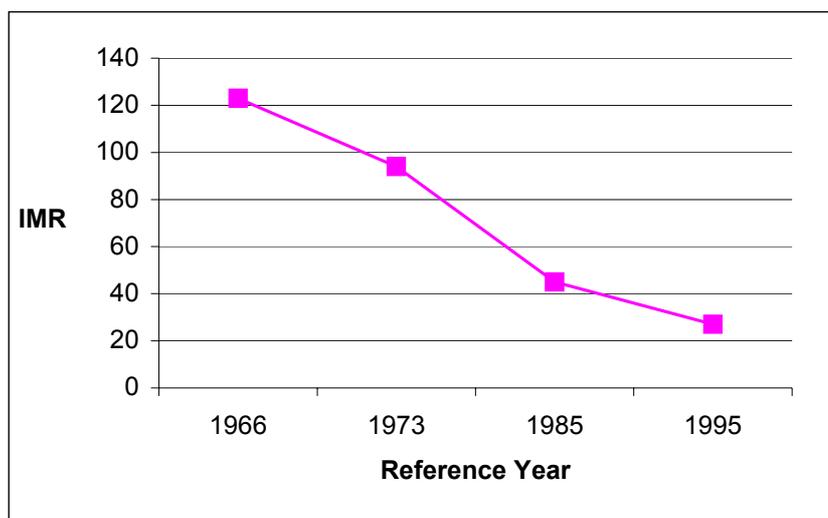
Table 6.1. Infant and childhood mortality rates, 1966-1995

Mortality Type	Reference Year			
	1966	1979	1985	1995
Infant Mortality (1q0)	123	94	45	27
Childhood Mortality (4q1)	n.a	n.a	61	6
Under 5 Mortality (5q0)			106	33

Note: These are five-year averages (twelve months before the census excluded from the analysis)

Data on mortality up to exact age five years, that is, under-five mortality rate (U5) are not available for 1966 and 1973, but it is evident that U5 has declined from 106 in 1985 to 33 in 1995, a decline of 69 per cent over 10 years. The decline is largely as a result of improved survival of children after their first birthday. Furthermore, it indicates the improvements in the maternal and child health in the health sector.

Figure 6.1. Infant Mortality Rates, 1985-1995



Sex Differentials

Table 6.2, presents the estimated IMR, CMR and U5 by sex. The estimated IMR and U5 for males is slightly lower than that for females. The male probability of dying between exact age one and exact age five is close to that for females.

Table 6.2: Estimates of male and female mortality, 1995

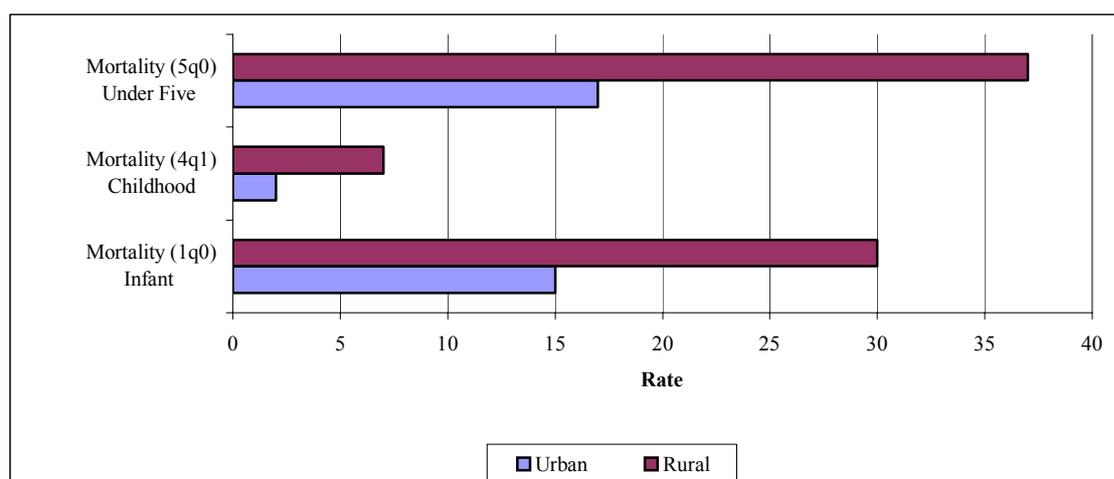
Sex of Child	Infant Mortality (1q0)	Child Mortality (4q1)	Under Five Mortality (5q0)
Male	27	6	33
Female	26	5	31
Vanuatu	27	6	33

The probability of a female infant dying before reaching exact age one year is estimated to be 26 per 1000 live births between 1985 and 1995, compared to 27 per 1000 live births for males during the same period. A similar pattern continues as age increases, resulting in an estimated male U5 mortality of 33 per 1000 live births, whereas the U5 for females is estimated at 31 per 1000, a 6 percent difference. In other words, there is very little difference between male and female infant and childhood mortality between 1985 and 1995.

Urban and Rural Differentials

The rural IMR estimate was 30 per 1000 live births compared with 15 per 1000 in urban areas. That is, it is estimated that urban areas had 50 per cent lower infant mortality compared to rural areas. This is as expected, since infant and child mortality are usually lower in urban areas than in rural areas because of better access to health services (Figure 6.2).

Figure 6.2. IMR , CMR and U5 estimates, 1985-1995



Source: NSO, 1993

The 1989 Demographic and Migration Analysis of Vanuatu (Table 2.9, page 10) reported a 5 year average U5 of 58 for urban areas and 79 for rural areas. The 1999 figures give lower estimates for urban areas (U5: 17) and rural areas (U5: 37) compared to the 1989 figures. The urban and rural differential in U5 has decreased slightly compared with 1985. The estimates obtained in the 1999 census show a 71 per cent decline in urban areas compared with only 53 per cent in rural areas (Table 6.3).

Table 6.3: Estimates of Under Five Mortality Rates (U5), 1985 and 1995

Area	Reference Year		
	1985	1995	% Decline
Vanuatu	79	33	58
Urban	58	17	71
Rural	79	37	53

Source: NSO, 1993

Provincial Differentials

The provincial CMR estimates for 1989 and 1999 vary between the six provinces. In the 1999 estimates Shefa province, which is the most urbanised of the provinces, had the lowest IMR (20) and U5 (24). Next lowest was Penama (IMR: 23, U5: 28), followed by Tafea (IMR:25, U5:34), Malampa (IMR: 26, U5: 32), and Sanma (IMR:31, U5:39). Torba had the highest IMR of 41 per 1000 live births and the highest U5 of 53 per 1000 live births (Table 6.4).

Table 6.4: Provincial levels of infant and child mortality in the period 1992-1997

Province	Infant Mortality (1q0)	Childhood Mortality (4q1)	Under Five Mortality (5q0)
Vanuatu	27	6	33
<u>Sector</u>			
Urban	15	2	17
Rural	30	7	37
<u>Province</u>			
Malampa	26	6	32
Penama	23	5	28
Sanma	31	8	39
Shefa	20	4	24
Tafea	25	9	34
Torba	41	12	53

Note: The twelve months before the census is excluded from the analysis

There was less difference between provinces in the CMR, with Torba the highest (12) and Shefa lowest (4). Figure 6.3 shows that Torba and Sanma province have higher child mortality compared to the national estimated average. The probability of dying before reaching exact age five years in Malampa province is estimated to be 33 per 1000 live births, similar to the national level estimates, whereas Tafea, Sanma and Torba experienced higher U5 mortality rates compared to the national level estimate (Table 6.6).

Differentials by Education

Level of education has an impact on the level of mortality, resulting in differing experiences of mortality of children. According to Table 6.6, child mortality decreases when the level of education increases. The IMR experienced by women who never attended school was 42 per 1000 live births, the IMR experienced by women with primary education was 24, the IMR experienced by women with junior secondary education was 20, and the IMR experienced by women with senior secondary education or higher was 17 per 1000 live births.

The IMR experienced by women with no schooling appears to be relatively high in the 10 years preceding the census compared with the rate experienced by women with different education backgrounds. The pattern is the same for the U5. The highest estimated U5 occurs among women with no schooling (54 per 1000 live births), followed by those with primary education (29), junior secondary (24) and senior secondary and above (20 per 1000 live births) (Table 6.6).

The estimates of U5 in the 1985 Demographic and Migration Analysis (Table 2.11, page 13) indicate that, during 1985, children of women with the highest level of education (7 + years) experienced 40 deaths per 1000 live births (Table 6.5). This was lower than for children whose mothers had only primary education (1-6 years).

Table 6.5: U5 Estimates, 1985 and 1995

Mother's education	Reference Year		% Change
	1985 U5	1995 U5	
No School	97	54	-44
Primary	53	29	-45
7+ years	40	19	-53

Source: NSO, 1993

Ten years later (1985-1995), the U5 had decline by over 50 per cent. There were similar declines of 45 per cent for children of women who had attended primary school, and 53 per cent for children of women with junior high school education and above (7 + years).

Differentials by Economic Activity

The economic activity status of women has an impact on child mortality. Among women who were economically active and working for a salary or wages in the 10 years preceding the census the IMR was 18. For those working without salary the IMR was 31 while the IMR of children of economically inactive women was 22. Table 6.6 shows the mortality risk of infants whose mothers are not working for salary or wages, together with those whose mothers were economically inactive.

The U5 for children of women working for salary or wages was 21 and 38 for those whose mothers worked without salary. For children of women who were economically inactive the U5 was 26.

Table 6.6: Socio-Economic Differentials in Infant and Child Mortality, 1992-1997

Background Characteristics	Infant Mortality (1q0)	Childhood Mortality (4q0)	Under Five Mortality (5q0)
Vanuatu	27	6	33
Level of Education			
No School	42	12	54
Primary	24	5	29
Junior Secondary	20	4	24
Senior Secondary +	17	3	20
Economic Activity Status			
Working for Salary/Wages	18	3	21
Working without Salary/Wage	31	7	38
Economically Inactive	22	4	26
Marital Status			
Never Married	25	6	31
Married/Defacto	25	7	32
Separated/Divorced/Widowed	36	9	45
Household Headship Status			
Household Head	27	6	33
Not Household Head	27	6	33

Note: The twelve months before the census is excluded from the analysis

Differentials by Marital Status

The differences in marital status indicate that children of women who were separated, divorced or widowed had the highest IMR of 36 per 1000 live births, higher than the national estimate of 27 per 1000 births. Children of women who were married or defacto or never married appear to have a similar IMR of 25 per 1000 live births. Children of women who were never married had slightly lower CMR compared to children of married women or those in de-facto relationships and women who were separated, divorced or widowed. The CMR for children of women who were married or in de facto relationships is the same as the national average of 7 per 1000 live births (Table 6.6).

Differentials by Household Headship Status

The mortality experience of mothers who were heads of households was the same as that for mothers who were not heads of households. The estimates of IMR, U5 and the childhood mortality of both categories are consistent with the national estimates (Table 6.6).

6.6.2. *Adult Mortality Estimates*

To apply the “orphanhood technique”, census or survey data must be available on the proportion of respondents whose mother (or father) is still alive for each 5-year age group of the population, as well as the proportion of the respondents who do not know this information. The Vanuatu 1999 Census provides the required information to apply this technique. The estimated adult mortality measure is the survivorship of women (or men) from a given age in adulthood to a subsequent older age.

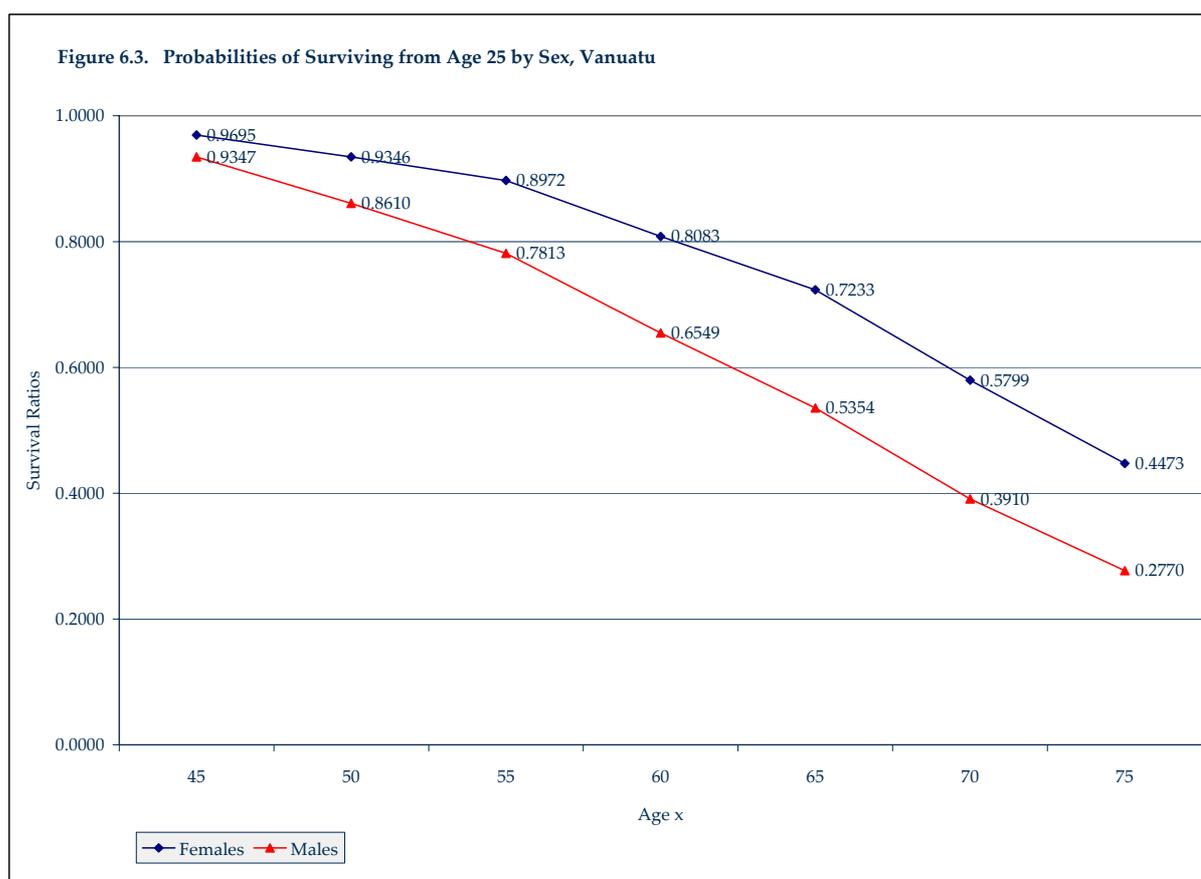
This technique uses mortality and fertility models to create simulated populations with various proportions of orphans in each age group. Using these simulated populations, a set of weighting factors was developed to relate a life table probability of surviving between two ages (from age 25 to 35, 40, 45, etc.) to the proportions of persons whose mother is still alive. When the technique is used, these weighting factors are applied to the proportions orphaned in the actual population to obtain estimates of the corresponding survival ratios.

The mortality estimates derived from this “orphanhood technique” should be used with caution, as the assumptions of the technique have not been fully met by the Vanuatu 1999 Census data. Again users are reminded that the survival ratios (Table 6.8) are based on the United Nations General Model life table for mortality analysis. This information is also presented in Figure 6.4 below.

Table 6.7. Adult Survival Ratios from Age 25 to Age x by sex, Vanuatu

Vanuatu - Adult Females		Survival ratios from age 25 to age x for Vanuatu and the provinces							
Age x	Vanuatu	Urban	Rural	Malampa	Penama	Shefa	Sanma	Tafea	Torba
45	0.9695	0.9808	0.9659	0.9589	0.9676	0.9771	0.9694	0.9743	0.9610
50	0.9346	0.9518	0.9284	0.9255	0.9380	0.9503	0.9256	0.9272	0.9025
55	0.8972	0.9223	0.8881	0.8967	0.8956	0.9101	0.8964	0.8821	0.8570
60	0.8083	0.8299	0.8003	0.8100	0.8035	0.8319	0.7914	0.7883	0.7778
65	0.7233	0.7595	0.7098	0.7196	0.7082	0.7522	0.6990	0.7078	0.7291
70	0.5799	0.6441	0.5572	0.5728	0.5822	0.6139	0.5319	0.5761	0.5701
75	0.4473	0.5397	0.4200	0.4208	0.4228	0.4991	0.4035	0.4474	0.4596

Vanuatu - Adult Males		Survival ratios from age 25 to age x for Vanuatu and the provinces							
Age x	Vanuatu	Urban	Rural	Malampa	Penama	Shefa	Sanma	Tafea	Torba
45	0.9347	0.9499	0.9297	0.9232	0.9247	0.9491	0.9385	0.9260	0.9342
50	0.8610	0.8820	0.8534	0.8588	0.8357	0.8731	0.8763	0.8427	0.8476
55	0.7813	0.8135	0.7698	0.7799	0.7388	0.8023	0.8037	0.7441	0.7854
60	0.6549	0.6822	0.6450	0.6456	0.6544	0.6815	0.6618	0.5999	0.6358
65	0.5354	0.5747	0.5208	0.4991	0.4990	0.5672	0.5441	0.5288	0.5480
70	0.3910	0.4489	0.3704	0.3747	0.3587	0.4180	0.3937	0.3907	0.3616
75	0.2770	0.3431	0.2572	0.2411	0.2560	0.2970	0.3032	0.2840	0.2292



6.6.3. Life Tables

Life tables serve useful purposes both for demographic analysis as well as other purposes. They are the source of estimates of average life expectancy at birth. In addition, they provide survival ratios for each age or age group that are used in making population projections. Life Insurance companies use life tables (called actuarial tables) to determine their clients' probable life spans, and hence their insurance premiums.

A life table follows a hypothetical cohort of 100,000 people born at the same time (called the radix of the life table) as they progress through successive ages, with the cohort reduced from one age to the next according to a set of actual death rates by age, until all persons eventually die. A complete (or unabridged) life table is constructed by single years of age, while an abridged life table is constructed by 5-year age groups. A life table can be constructed for both sexes together, or more commonly, for each sex separately. The Vanuatu Life Tables have been constructed for each sex separately.

The construction of life tables may seem difficult at first, but with computer software readily available, it becomes easy to calculate. Understanding the steps in producing the life tables (after data quality checks) is important. (*The steps are described in many Demographic Textbooks*).

The calculation of the Life Tables for Vanuatu and the 6 provinces was made after the calculation of childhood and adult mortality estimates. The probability of dying from birth

to exact age 1 ($1q_0$) and the probability of dying from exact ages 1 to 4 ($4q_1$) were derived from the indirect estimation of early age mortality. From these estimates, the probabilities of surviving from birth to exact age 1 and to exact age 5 were calculated. The life table numbers of survivors at age 1 (l_1) and 5 (l_5) were then calculated for each sex category. These estimates were then combined with adult mortality estimates, specifically the average life expectancy at age 20, to generate all the other life table estimates. As cited above, the United Nations computer program MORTPAK was used to combine the estimated childhood mortality and adult mortality to produce the life table estimates.

The following summary table presents the estimated average life expectancy at birth for Vanuatu, Urban, Rural, and the 6 provinces, by sex. Figure 6.5 presents the same information.

Average Life Expectancy at Birth
by Province and Sex

Province	Females	Males
Vanuatu	69.0	65.6
Urban	74.2	69.5
Rural	67.4	64.4
Malampa	69.4	62.2
Penama	68.8	65.2
Shefa	70.2	68.9
Sanma	69.3	64.8
Tafea	72.4	64.4
Torba	51.9	66.6

Figure 6.4. Average Life Expectancy at Birth by Sex

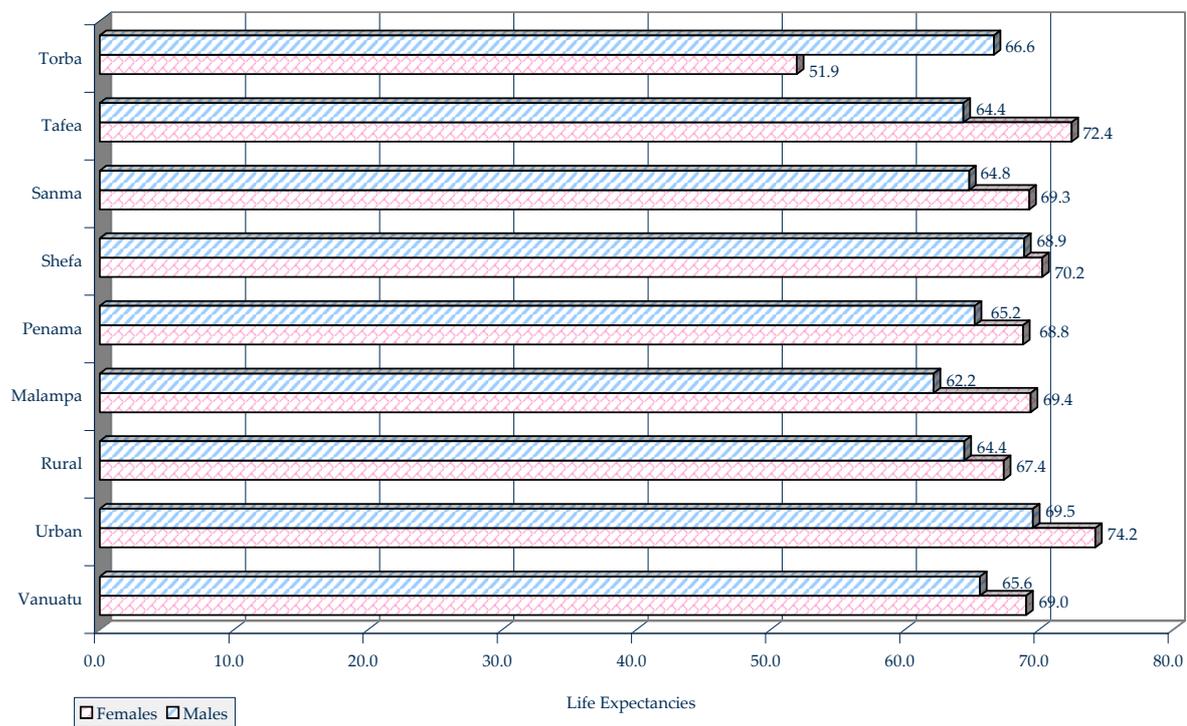
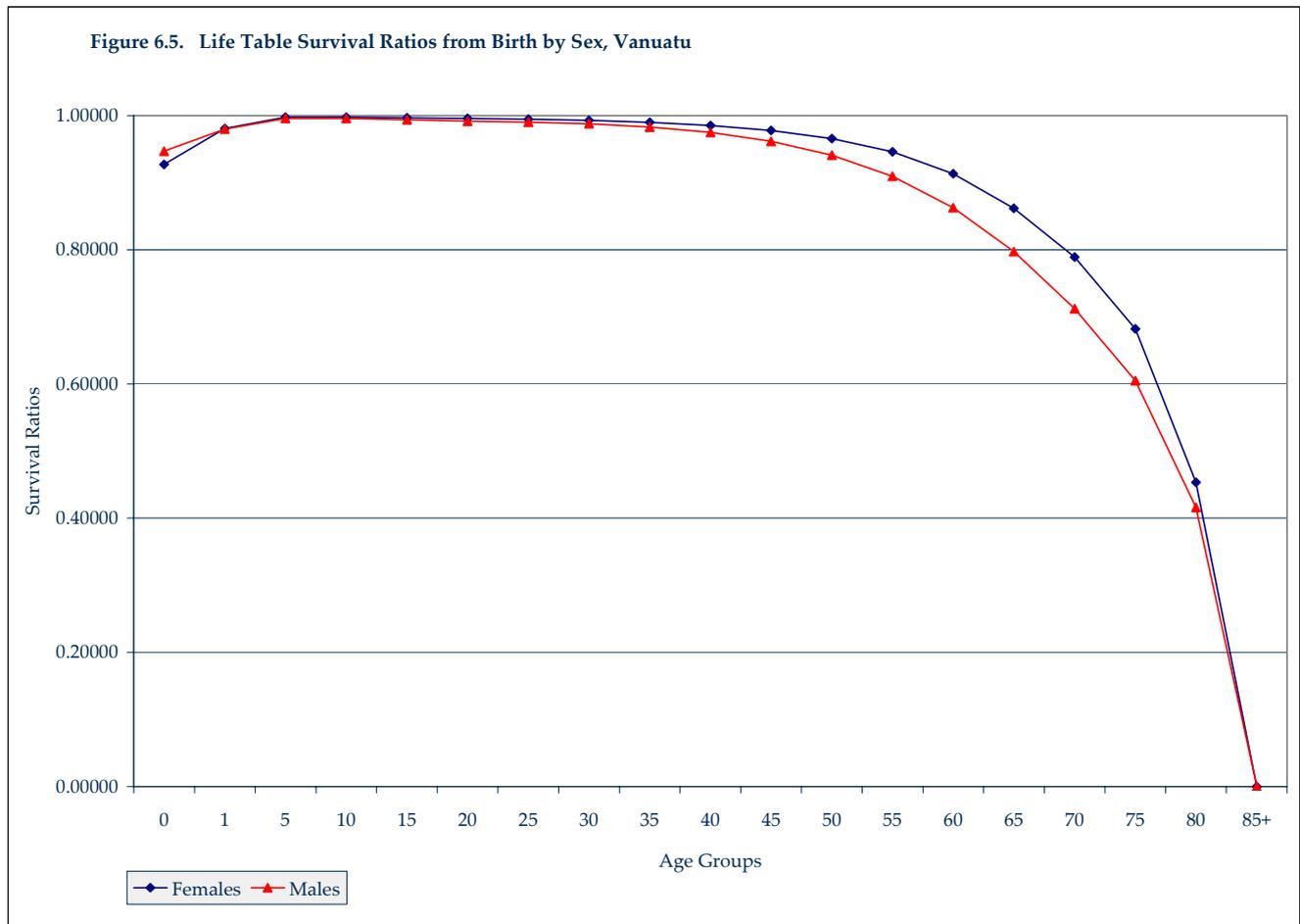


Figure 6.5 shows the estimated life table survival ratios for every age group by sex.



LIFE TABLES FOR VANUATU, URBAN, RURAL AND THE 6 PROVINCES BY SEX

nM_x	Age-specific central death rate.
nq_x	Probability of dying between exact ages x and $x+n$ (age-specific mortality rate).
l_x	Number of survivors at age x .
ndx	Number of deaths occurring between ages x and $x+n$.
nL_x	Number of person-years lived between ages x and $x+n$.
$5P_x$	Survival ratio for persons aged x and $x+5$ surviving 5 years to ages $x+5$ to $x+10 = 5L_{x+5}/5L_x$ (first $5P_x = 5L_0/5l_0$), second $5P_x = 5L_5/5L_0$, last $5P_x = T_{x+5}/T_x$).
T_x	Number of person-years lived after age x .
e_x	Average life expectancy at age x .
nax	Average person-years lived by those who die between ages x and $x+n$.

Vanuatu - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.06399	0.06100	100000	6100	95321	0.92733	6904184	69.0	0.233
1	4	0.00765	0.03000	93900	2817	368346	0.98077	6808862	72.5	1.425
5	5	0.00059	0.00292	91083	266	454749	0.99756	6440517	70.7	2.500
10	5	0.00039	0.00196	90817	178	453638	0.99768	5985768	65.9	2.500
15	5	0.00056	0.00281	90639	255	452586	0.99681	5532129	61.0	2.624
20	5	0.00072	0.00357	90383	323	451143	0.99592	5079543	56.2	2.603
25	5	0.00093	0.00464	90060	418	449303	0.99472	4628400	51.4	2.607
30	5	0.00121	0.00602	89643	540	446930	0.99292	4179097	46.6	2.620
35	5	0.00167	0.00833	89103	742	443766	0.98997	3732167	41.9	2.641
40	5	0.00242	0.01202	88361	1062	439316	0.98528	3288402	37.2	2.655
45	5	0.00361	0.01789	87299	1562	432851	0.97778	2849085	32.6	2.665
50	5	0.00554	0.02732	85738	2343	423234	0.96571	2416235	28.2	2.671
55	5	0.00868	0.04255	83395	3549	408722	0.94614	1993000	23.9	2.674
60	5	0.01393	0.06745	79847	5386	386708	0.91345	1584278	19.8	2.674
65	5	0.02305	0.10934	74461	8142	353240	0.86172	1197570	16.1	2.658
70	5	0.03751	0.17218	66319	11419	304392	0.78899	844331	12.7	2.618
75	5	0.05897	0.25797	54901	14163	240164	0.68220	539938	9.8	2.575
80	5	0.09713	0.39064	40738	15914	163839	0.45346	299775	7.4	2.496
85 +		0.18262	.....	24824	24824	135936	.....	135936	5.5	5.476

Vanuatu - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.04033	0.03900	100000	3900	96703	0.94705	6560124	65.6	0.155
1	4	0.00816	0.03200	96100	3075	376822	0.97990	6463421	67.3	1.535
5	5	0.00097	0.00482	93025	448	464005	0.99592	6086600	65.4	2.500
10	5	0.00067	0.00334	92577	309	462113	0.99597	5622594	60.7	2.500
15	5	0.00101	0.00506	92268	467	460252	0.99368	5160482	55.9	2.669
20	5	0.00152	0.00759	91801	697	457343	0.99172	4700230	51.2	2.614
25	5	0.00178	0.00886	91104	807	453557	0.99039	4242886	46.6	2.565
30	5	0.00212	0.01055	90297	953	449196	0.98778	3789330	42.0	2.595
35	5	0.00287	0.01427	89345	1275	443705	0.98290	3340133	37.4	2.633
40	5	0.00413	0.02046	88070	1802	436117	0.97490	2896428	32.9	2.652
45	5	0.00621	0.03062	86268	2642	425169	0.96172	2460311	28.5	2.664
50	5	0.00967	0.04729	83626	3955	408892	0.94109	2035142	24.3	2.664
55	5	0.01501	0.07252	79672	5778	384805	0.90947	1626250	20.4	2.654
60	5	0.02356	0.11161	73894	8247	349969	0.86256	1241445	16.8	2.636
65	5	0.03642	0.16748	65647	10995	301868	0.79738	891476	13.6	2.602
70	5	0.05531	0.24358	54652	13312	240704	0.71201	589609	10.8	2.554
75	5	0.08219	0.34071	41340	14085	171383	0.60501	348904	8.4	2.493
80	5	0.12138	0.46178	27255	12586	103689	0.41591	177522	6.5	2.411
85 +		0.19868	.....	14669	14669	73833	.....	73833	5.0	5.033

Vanuatu Urban - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.04137	0.04000	100000	4000	96680	0.95404	7419265	74.2	0.170
1	4	0.00379	0.01500	96000	1440	380341	0.99034	7322585	76.3	1.459
5	5	0.00033	0.00164	94560	155	472412	0.99863	6942244	73.4	2.500
10	5	0.00022	0.00110	94405	104	471764	0.99871	6469832	68.5	2.500
15	5	0.00031	0.00154	94301	145	471157	0.99825	5998068	63.6	2.620
20	5	0.00039	0.00197	94155	185	470334	0.99772	5526910	58.7	2.611
25	5	0.00053	0.00264	93970	248	469261	0.99694	5056576	53.8	2.622
30	5	0.00071	0.00354	93722	332	467827	0.99571	4587316	48.9	2.640
35	5	0.00104	0.00519	93390	485	465821	0.99351	4119489	44.1	2.669
40	5	0.00161	0.00803	92905	746	462799	0.98986	3653668	39.3	2.683
45	5	0.00254	0.01263	92159	1164	458104	0.98396	3190870	34.6	2.687
50	5	0.00405	0.02006	90995	1825	450757	0.97439	2732766	30.0	2.689
55	5	0.00654	0.03223	89170	2874	439214	0.95851	2282008	25.6	2.691
60	5	0.01081	0.05272	86296	4549	420990	0.93097	1842794	21.4	2.694
65	5	0.01848	0.08861	81747	7243	391927	0.88611	1421804	17.4	2.679
70	5	0.03077	0.14342	74504	10686	347292	0.82236	1029876	13.8	2.639
75	5	0.04902	0.21938	63818	14001	285599	0.72211	682584	10.7	2.608
80	5	0.08427	0.34887	49818	17380	206235	0.48050	396986	8.0	2.534
85 +		0.17005	.....	32438	32438	190751	.....	190751	5.9	5.881

Vanuatu Urban - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.02348	0.02300	100000	2300	97950	0.96617	6954682	69.5	0.109
1	4	0.00609	0.02400	97700	2345	385134	0.98543	6856732	70.2	1.584
5	5	0.00061	0.00307	95355	293	476043	0.99735	6471599	67.9	2.500
10	5	0.00045	0.00222	95062	211	474783	0.99726	5995555	63.1	2.500
15	5	0.00070	0.00350	94851	332	473482	0.99565	5520773	58.2	2.675
20	5	0.00104	0.00519	94519	490	471423	0.99432	5047291	53.4	2.614
25	5	0.00123	0.00611	94028	575	468744	0.99337	4575868	48.7	2.568
30	5	0.00146	0.00728	93454	680	465637	0.99146	4107124	43.9	2.602
35	5	0.00203	0.01011	92774	938	461660	0.98766	3641487	39.3	2.647
40	5	0.00302	0.01500	91835	1378	455965	0.98120	3179827	34.6	2.669
45	5	0.00472	0.02336	90458	2113	447394	0.97011	2723862	30.1	2.684
50	5	0.00766	0.03765	88344	3326	434019	0.95207	2276468	25.8	2.684
55	5	0.01235	0.06003	85018	5104	413217	0.92374	1842449	21.7	2.674
60	5	0.01994	0.09525	79914	7612	381704	0.88132	1429231	17.9	2.653
65	5	0.03135	0.14588	72303	10548	336402	0.82155	1047528	14.5	2.619
70	5	0.04837	0.21647	61755	13368	276372	0.74078	711125	11.5	2.576
75	5	0.07328	0.31008	48387	15004	204732	0.63490	434753	9.0	2.520
80	5	0.11106	0.43245	33383	14436	129984	0.43490	230021	6.9	2.442
85 +		0.18940	.....	18947	18947	100037	.....	100037	5.3	5.280

Vanuatu Rural - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.07382	0.07000	100000	7000	94820	0.91630	6738086	67.4	0.260
1	4	0.00921	0.03600	93000	3348	363329	0.97679	6643266	71.4	1.410
5	5	0.00066	0.00332	89652	297	447517	0.99722	6279937	70.0	2.500
10	5	0.00045	0.00223	89355	199	446275	0.99735	5832420	65.3	2.500
15	5	0.00065	0.00322	89155	287	445094	0.99635	5386145	60.4	2.624
20	5	0.00082	0.00407	88868	362	443471	0.99537	4941052	55.6	2.600
25	5	0.00105	0.00525	88506	464	441417	0.99404	4497581	50.8	2.604
30	5	0.00136	0.00676	88042	596	438788	0.99210	4056164	46.1	2.615
35	5	0.00186	0.00924	87446	808	435320	0.98897	3617376	41.4	2.635
40	5	0.00264	0.01313	86638	1137	430518	0.98403	3182056	36.7	2.649
45	5	0.00390	0.01930	85501	1650	423644	0.97614	2751538	32.2	2.660
50	5	0.00593	0.02923	83851	2451	413536	0.96346	2327894	27.8	2.668
55	5	0.00924	0.04521	81400	3680	398424	0.94299	1914357	23.5	2.670
60	5	0.01472	0.07117	77719	5531	375709	0.90910	1515934	19.5	2.670
65	5	0.02419	0.11443	72188	8261	341558	0.85580	1140225	15.8	2.653
70	5	0.03916	0.17907	63928	11448	292306	0.78109	798667	12.5	2.612
75	5	0.06138	0.26702	52480	14013	228316	0.67302	506361	9.6	2.568
80	5	0.10015	0.40005	38467	15389	153661	0.44735	278045	7.2	2.487
85 +		0.18554	.....	23078	23078	124384	.....	124384	5.4	5.390

Vanuatu Rural - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.04567	0.04400	100000	4400	96344	0.94089	6444266	64.4	0.169
1	4	0.00894	0.03500	95600	3346	374103	0.97785	6347922	66.4	1.520
5	5	0.00108	0.00540	92254	498	460025	0.99545	5973819	64.8	2.500
10	5	0.00074	0.00370	91756	340	457931	0.99556	5513794	60.1	2.500
15	5	0.00111	0.00556	91416	508	455897	0.99305	5055863	55.3	2.668
20	5	0.00168	0.00836	90908	760	452727	0.99089	4599967	50.6	2.614
25	5	0.00196	0.00973	90148	877	448603	0.98943	4147239	46.0	2.564
30	5	0.00233	0.01159	89271	1035	443863	0.98661	3698636	41.4	2.594
35	5	0.00314	0.01558	88236	1374	437921	0.98142	3254773	36.9	2.629
40	5	0.00447	0.02213	86862	1922	429785	0.97299	2816851	32.4	2.647
45	5	0.00666	0.03279	84939	2785	418176	0.95924	2387066	28.1	2.659
50	5	0.01026	0.05009	82154	4115	401133	0.93794	1968890	24.0	2.658
55	5	0.01578	0.07606	78039	5936	376240	0.90548	1567757	20.1	2.649
60	5	0.02458	0.11614	72103	8374	340677	0.85740	1191517	16.5	2.631
65	5	0.03782	0.17337	63729	11048	292098	0.79086	850840	13.4	2.597
70	5	0.05720	0.25083	52681	13214	231010	0.70439	558742	10.6	2.548
75	5	0.08458	0.34874	39467	13764	162721	0.59727	327732	8.3	2.485
80	5	0.12411	0.46929	25703	12062	97188	0.41102	165011	6.4	2.403
85 +		0.20113	.....	13641	13641	67823	.....	67823	5.0	4.972

Malampa Province - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.02974	0.02900	100000	2900	97497	0.95612	6937904	69.4	0.137
1	4	0.00816	0.03200	97100	3107	380560	0.98096	6840407	70.4	1.477
5	5	0.00086	0.00430	93993	404	468955	0.99650	6459846	68.7	2.500
10	5	0.00054	0.00269	93589	252	467315	0.99681	5990891	64.0	2.500
15	5	0.00078	0.00390	93337	364	465825	0.99545	5523576	59.2	2.637
20	5	0.00105	0.00523	92973	486	463705	0.99409	5057751	54.4	2.609
25	5	0.00133	0.00664	92487	614	460963	0.99252	4594046	49.7	2.597
30	5	0.00169	0.00844	91874	775	457513	0.99026	4133083	45.0	2.607
35	5	0.00226	0.01125	91098	1024	453057	0.98678	3675570	40.3	2.623
40	5	0.00313	0.01553	90074	1398	447066	0.98136	3222513	35.8	2.637
45	5	0.00451	0.02230	88676	1978	438731	0.97268	2775447	31.3	2.651
50	5	0.00675	0.03323	86698	2881	426746	0.95876	2336715	27.0	2.660
55	5	0.01039	0.05072	83817	4251	409148	0.93651	1909969	22.8	2.663
60	5	0.01635	0.07876	79566	6266	383171	0.90028	1500821	18.9	2.661
65	5	0.02650	0.12469	73299	9140	344960	0.84398	1117650	15.2	2.644
70	5	0.04249	0.19279	64159	12369	291139	0.76547	772689	12.0	2.602
75	5	0.06618	0.28478	51790	14749	222858	0.65518	481551	9.3	2.553
80	5	0.10609	0.41818	37041	15490	146012	0.43558	258693	7.0	2.470
85 +		0.19126	.....	21552	21552	112681	.....	112681	5.2	5.228

Malampa Province - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.07942	0.07500	100000	7500	94436	0.91602	6215023	62.2	0.258
1	4	0.00687	0.02699	92500	2497	363575	0.97950	6120587	66.2	1.427
5	5	0.00124	0.00620	90003	558	448620	0.99482	5757011	64.0	2.500
10	5	0.00083	0.00415	89445	371	446296	0.99511	5308392	59.3	2.500
15	5	0.00121	0.00603	89074	537	444114	0.99235	4862095	54.6	2.667
20	5	0.00187	0.00933	88536	826	440715	0.98984	4417981	49.9	2.618
25	5	0.00218	0.01082	87711	949	436239	0.98825	3977266	45.3	2.563
30	5	0.00259	0.01289	86761	1119	431111	0.98517	3541026	40.8	2.592
35	5	0.00347	0.01719	85642	1472	424716	0.97960	3109915	36.3	2.625
40	5	0.00489	0.02419	84170	2036	416052	0.97066	2685200	31.9	2.642
45	5	0.00720	0.03542	82135	2909	403845	0.95627	2269148	27.6	2.653
50	5	0.01097	0.05345	79225	4235	386183	0.93419	1865303	23.5	2.652
55	5	0.01668	0.08025	74990	6018	360769	0.90077	1479121	19.7	2.643
60	5	0.02578	0.12146	68972	8377	324971	0.85139	1118352	16.2	2.626
65	5	0.03947	0.18022	60595	10920	276676	0.78331	793380	13.1	2.592
70	5	0.05941	0.25920	49675	12876	216723	0.69564	516704	10.4	2.542
75	5	0.08736	0.35791	36799	13171	150762	0.58845	299981	8.2	2.477
80	5	0.12726	0.47780	23628	11290	88716	0.40546	149219	6.3	2.394
85 +		0.20394	.....	12339	12339	60503	.....	60503	4.9	4.903

Penama Province - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.06508	0.06200	100000	6200	95263	0.92739	6880688	68.8	0.236
1	4	0.00713	0.02800	93800	2626	368433	0.98159	6785425	72.3	1.423
5	5	0.00063	0.00312	91174	285	455158	0.99740	6416992	70.4	2.500
10	5	0.00042	0.00208	90889	189	453974	0.99754	5961834	65.6	2.500
15	5	0.00060	0.00299	90700	271	452858	0.99660	5507860	60.7	2.626
20	5	0.00076	0.00382	90429	345	451320	0.99565	5055002	55.9	2.603
25	5	0.00099	0.00493	90084	445	449357	0.99439	4603682	51.1	2.605
30	5	0.00128	0.00639	89640	572	446835	0.99252	4154325	46.3	2.618
35	5	0.00176	0.00877	89067	781	443491	0.98948	3707490	41.6	2.638
40	5	0.00253	0.01256	88286	1109	438825	0.98466	3263999	37.0	2.652
45	5	0.00375	0.01859	87177	1620	432096	0.97697	2825174	32.4	2.663
50	5	0.00573	0.02827	85556	2419	422144	0.96459	2393078	28.0	2.669
55	5	0.00896	0.04387	83138	3648	407197	0.94457	1970933	23.7	2.672
60	5	0.01432	0.06930	79490	5509	384626	0.91128	1563736	19.7	2.672
65	5	0.02362	0.11188	73981	8277	350504	0.85876	1179110	15.9	2.656
70	5	0.03834	0.17563	65704	11539	300999	0.78503	828606	12.6	2.615
75	5	0.06017	0.26251	54165	14219	236294	0.67759	527607	9.7	2.572
80	5	0.09864	0.39538	39946	15794	160110	0.45039	291314	7.3	2.491
85 +		0.18408	.....	24152	24152	131204	.....	131204	5.4	5.432

Penama Province - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.04033	0.03900	100000	3900	96703	0.95273	6520076	65.2	0.155
1	4	0.00506	0.02000	96100	1922	379663	0.98568	6423373	66.8	1.535
5	5	0.00115	0.00571	94178	538	469546	0.99512	6043710	64.2	2.500
10	5	0.00081	0.00405	93640	379	467253	0.99494	5574165	59.5	2.500
15	5	0.00130	0.00650	93261	606	464890	0.99219	5106912	54.8	2.665
20	5	0.00182	0.00904	92655	838	461262	0.99019	4642021	50.1	2.597
25	5	0.00211	0.01050	91817	964	456736	0.98859	4180759	45.5	2.564
30	5	0.00252	0.01251	90853	1137	451526	0.98559	3724023	41.0	2.592
35	5	0.00337	0.01672	89716	1500	445019	0.98013	3272497	36.5	2.626
40	5	0.00477	0.02359	88216	2081	436177	0.97134	2827478	32.1	2.644
45	5	0.00705	0.03466	86135	2985	423675	0.95713	2391301	27.8	2.655
50	5	0.01076	0.05248	83150	4364	405510	0.93527	1967626	23.7	2.654
55	5	0.01642	0.07905	78786	6228	379263	0.90212	1562116	19.8	2.645
60	5	0.02543	0.11994	72558	8702	342142	0.85311	1182853	16.3	2.627
65	5	0.03900	0.17826	63856	11383	291883	0.78546	840711	13.2	2.593
70	5	0.05878	0.25682	52473	13476	229263	0.69813	548828	10.5	2.544
75	5	0.08657	0.35531	38997	13856	160055	0.59095	319565	8.2	2.479
80	5	0.12636	0.47540	25141	11952	94584	0.40703	159510	6.3	2.396
85 +		0.20314	.....	13189	13189	64926	.....	64926	4.9	4.923

Shefa Province - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.07163	0.06800	100000	6800	94927	0.92195	7023883	70.2	0.254
1	4	0.00713	0.02800	93200	2610	366049	0.98160	6928955	74.3	1.413
5	5	0.00040	0.00202	90590	183	452492	0.99829	6562906	72.4	2.500
10	5	0.00028	0.00141	90407	127	451716	0.99835	6110414	67.6	2.500
15	5	0.00040	0.00199	90280	180	450969	0.99778	5658698	62.7	2.616
20	5	0.00049	0.00246	90100	222	449966	0.99716	5207729	57.8	2.602
25	5	0.00065	0.00326	89878	293	448689	0.99624	4757763	52.9	2.616
30	5	0.00087	0.00433	89584	388	447004	0.99482	4309074	48.1	2.632
35	5	0.00124	0.00620	89197	553	444689	0.99236	3862070	43.3	2.658
40	5	0.00188	0.00935	88644	829	441289	0.98833	3417381	38.6	2.672
45	5	0.00290	0.01440	87815	1265	436139	0.98186	2976092	33.9	2.679
50	5	0.00456	0.02254	86550	1951	428229	0.97141	2539953	29.3	2.682
55	5	0.00728	0.03579	84599	3028	415985	0.95421	2111724	25.0	2.685
60	5	0.01189	0.05787	81571	4721	396935	0.92479	1695740	20.8	2.687
65	5	0.02009	0.09596	76850	7375	367083	0.87740	1298805	16.9	2.672
70	5	0.03317	0.15375	69476	10682	322077	0.81030	931722	13.4	2.631
75	5	0.05258	0.23341	58794	13723	260978	0.70745	609645	10.4	2.596
80	5	0.08895	0.36437	45071	16422	184630	0.47047	348667	7.7	2.520
85 +		0.17465	.....	28648	28648	164037	.....	164037	5.7	5.726

Shefa Province - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.02870	0.02800	100000	2800	97544	0.95993	6888693	68.9	0.123
1	4	0.00686	0.02700	97200	2624	382420	0.98367	6791149	69.9	1.569
5	5	0.00064	0.00318	94576	301	472128	0.99728	6408729	67.8	2.500
10	5	0.00045	0.00226	94275	213	470844	0.99726	5936601	63.0	2.500
15	5	0.00069	0.00345	94062	325	469555	0.99564	5465757	58.1	2.676
20	5	0.00106	0.00528	93737	495	467508	0.99421	4996202	53.3	2.621
25	5	0.00125	0.00622	93242	580	464800	0.99325	4528693	48.6	2.568
30	5	0.00149	0.00741	92662	686	461664	0.99131	4063893	43.9	2.602
35	5	0.00207	0.01028	91976	946	457652	0.98747	3602230	39.2	2.647
40	5	0.00307	0.01523	91030	1386	451918	0.98094	3144578	34.5	2.669
45	5	0.00479	0.02367	89644	2122	443303	0.96975	2692660	30.0	2.683
50	5	0.00775	0.03806	87522	3331	429892	0.95159	2249357	25.7	2.683
55	5	0.01247	0.06058	84191	5100	409082	0.92310	1819465	21.6	2.673
60	5	0.02010	0.09598	79090	7591	377625	0.88047	1410382	17.8	2.652
65	5	0.03158	0.14686	71499	10500	332488	0.82045	1032757	14.4	2.618
70	5	0.04868	0.21772	60999	13281	272789	0.73945	700269	11.5	2.575
75	5	0.07369	0.31151	47718	14865	201713	0.63349	427480	9.0	2.519
80	5	0.11154	0.43384	32853	14253	127783	0.43400	225767	6.9	2.440
85 +		0.18983	.....	18600	18600	97983	.....	97983	5.3	5.268

Sanma Province - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.05640	0.05400	100000	5400	95745	0.93180	6927702	69.3	0.212
1	4	0.00869	0.03400	94600	3216	370155	0.97929	6831957	72.2	1.436
5	5	0.00059	0.00292	91384	267	456252	0.99756	6461802	70.7	2.500
10	5	0.00039	0.00196	91117	179	455137	0.99768	6005551	65.9	2.500
15	5	0.00056	0.00281	90938	256	454082	0.99681	5550414	61.0	2.624
20	5	0.00072	0.00357	90682	324	452634	0.99592	5096331	56.2	2.603
25	5	0.00093	0.00464	90358	419	450788	0.99472	4643697	51.4	2.607
30	5	0.00121	0.00602	89939	542	448407	0.99292	4192909	46.6	2.620
35	5	0.00167	0.00833	89398	744	445232	0.98997	3744502	41.9	2.641
40	5	0.00242	0.01202	88653	1065	440768	0.98528	3299270	37.2	2.655
45	5	0.00361	0.01789	87588	1567	434281	0.97778	2858502	32.6	2.665
50	5	0.00554	0.02732	86021	2350	424633	0.96571	2424220	28.2	2.671
55	5	0.00868	0.04255	83671	3560	410073	0.94614	1999587	23.9	2.674
60	5	0.01393	0.06745	80110	5404	387986	0.91345	1589514	19.8	2.674
65	5	0.02305	0.10934	74707	8169	354407	0.86172	1201528	16.1	2.658
70	5	0.03751	0.17218	66538	11456	305398	0.78899	847121	12.7	2.618
75	5	0.05897	0.25797	55082	14210	240957	0.68220	541723	9.8	2.575
80	5	0.09713	0.39064	40872	15966	164381	0.45346	300765	7.4	2.496
85 +		0.18262	.....	24906	24906	136385	.....	136385	5.5	5.476

Sanma Province - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.04889	0.04700	100000	4700	96135	0.93380	6479842	64.8	0.178
1	4	0.01131	0.04400	95300	4193	370765	0.97346	6383707	67.0	1.511
5	5	0.00090	0.00451	91107	411	454508	0.99623	6012942	66.0	2.500
10	5	0.00061	0.00304	90696	276	452793	0.99646	5558434	61.3	2.500
15	5	0.00087	0.00435	90421	393	451189	0.99437	5105641	56.5	2.672
20	5	0.00140	0.00699	90028	629	448647	0.99235	4654452	51.7	2.629
25	5	0.00164	0.00817	89399	731	445215	0.99113	4205804	47.0	2.566
30	5	0.00196	0.00973	88668	863	441268	0.98869	3760589	42.4	2.597
35	5	0.00267	0.01324	87805	1163	436278	0.98407	3319321	37.8	2.636
40	5	0.00386	0.01913	86643	1657	429328	0.97642	2883043	33.3	2.656
45	5	0.00585	0.02887	84985	2454	419206	0.96372	2453715	28.9	2.669
50	5	0.00919	0.04501	82532	3715	403996	0.94367	2034509	24.7	2.668
55	5	0.01439	0.06961	78817	5487	381238	0.91277	1630512	20.7	2.659
60	5	0.02273	0.10785	73330	7908	347982	0.86684	1249274	17.0	2.639
65	5	0.03526	0.16257	65422	10636	301645	0.80284	901292	13.8	2.606
70	5	0.05373	0.23749	54786	13011	242174	0.71843	599647	10.9	2.559
75	5	0.08018	0.33392	41775	13950	173985	0.61160	357473	8.6	2.499
80	5	0.11908	0.45537	27826	12671	106409	0.42008	183488	6.6	2.418
85 +		0.19661	.....	15155	15155	77079	.....	77079	5.1	5.086

Tafea Province - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.02348	0.02300	100000	2300	97974	0.95987	7242729	72.4	0.119
1	4	0.00921	0.03600	97700	3517	381960	0.98005	7144755	73.1	1.487
5	5	0.00047	0.00236	94183	222	470360	0.99804	6762795	71.8	2.500
10	5	0.00031	0.00155	93961	146	469441	0.99818	6292434	67.0	2.500
15	5	0.00044	0.00220	93815	207	468585	0.99749	5822994	62.1	2.625
20	5	0.00057	0.00284	93609	266	467407	0.99673	5354408	57.2	2.609
25	5	0.00075	0.00374	93342	349	465880	0.99572	4887001	52.4	2.613
30	5	0.00099	0.00491	92994	457	463884	0.99416	4421122	47.5	2.627
35	5	0.00139	0.00695	92537	643	461173	0.99151	3957238	42.8	2.652
40	5	0.00207	0.01030	91894	946	457259	0.98724	3496064	38.0	2.666
45	5	0.00315	0.01566	90947	1424	451422	0.98039	3038805	33.4	2.673
50	5	0.00491	0.02428	89523	2174	442568	0.96933	2587383	28.9	2.678
55	5	0.00779	0.03827	87349	3343	428994	0.95124	2144815	24.6	2.681
60	5	0.01264	0.06140	84007	5158	408077	0.92059	1715820	20.4	2.682
65	5	0.02119	0.10094	78848	7959	375673	0.87154	1307743	16.6	2.667
70	5	0.03478	0.16066	70890	11389	327413	0.80228	932071	13.1	2.626
75	5	0.05497	0.24268	59501	14440	262678	0.69786	604657	10.2	2.588
80	5	0.09204	0.37441	45061	16871	183311	0.46397	341980	7.6	2.511
85 +		0.17766	.....	28190	28190	158668	.....	158668	5.6	5.629

Tafea Province - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.03186	0.03100	100000	3100	97308	0.94948	6436604	64.4	0.132
1	4	0.01104	0.04300	96900	4167	377431	0.97388	6339296	65.4	1.560
5	5	0.00115	0.00572	92733	530	462340	0.99515	5961865	64.3	2.500
10	5	0.00080	0.00397	92203	366	460099	0.99512	5499526	59.6	2.500
15	5	0.00125	0.00621	91837	570	457853	0.99242	5039426	54.9	2.666
20	5	0.00179	0.00890	91266	813	454384	0.99033	4581574	50.2	2.603
25	5	0.00208	0.01035	90454	936	449988	0.98877	4127190	45.6	2.564
30	5	0.00248	0.01232	89518	1103	444933	0.98580	3677202	41.1	2.592
35	5	0.00332	0.01648	88414	1457	438613	0.98039	3232270	36.6	2.627
40	5	0.00471	0.02329	86957	2025	430014	0.97167	2793656	32.1	2.644
45	5	0.00697	0.03428	84932	2912	417832	0.95755	2363642	27.8	2.656
50	5	0.01066	0.05200	82020	4265	400097	0.93581	1945810	23.7	2.655
55	5	0.01629	0.07845	77755	6100	374415	0.90280	1545714	19.9	2.646
60	5	0.02526	0.11918	71655	8540	338020	0.85397	1171299	16.3	2.628
65	5	0.03876	0.17728	63116	11189	288658	0.78654	833279	13.2	2.594
70	5	0.05846	0.25562	51926	13274	227041	0.69937	544621	10.5	2.545
75	5	0.08617	0.35400	38653	13683	158787	0.59220	317580	8.2	2.480
80	5	0.12591	0.47419	24970	11840	94034	0.40782	158794	6.4	2.398
85 +		0.20274	.....	13129	13129	64760	.....	64760	4.9	4.932

Torba Province - Females

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.32453	0.26800	100000	26800	82580	0.73299	5194680	51.9	0.350
1	4	0.01186	0.04600	73200	3367	283914	0.95089	5112100	69.8	1.361
5	5	0.00077	0.00383	69833	268	348496	0.99670	4828185	69.1	2.500
10	5	0.00055	0.00277	69565	193	347345	0.99668	4479689	64.4	2.500
15	5	0.00082	0.00407	69373	282	346190	0.99555	4132344	59.6	2.614
20	5	0.00097	0.00482	69091	333	344649	0.99456	3786154	54.8	2.584
25	5	0.00123	0.00615	68758	423	342774	0.99305	3441505	50.1	2.599
30	5	0.00158	0.00785	68335	537	340393	0.99090	3098732	45.3	2.610
35	5	0.00212	0.01055	67798	715	337295	0.98753	2758339	40.7	2.627
40	5	0.00296	0.01470	67083	986	333091	0.98228	2421044	36.1	2.641
45	5	0.00430	0.02128	66097	1406	327187	0.97386	2087953	31.6	2.654
50	5	0.00647	0.03187	64691	2062	318634	0.96035	1760766	27.2	2.662
55	5	0.01000	0.04886	62629	3060	306001	0.93869	1442132	23.0	2.665
60	5	0.01580	0.07620	59569	4539	287241	0.90323	1136132	19.1	2.664
65	5	0.02572	0.12126	55030	6673	259446	0.84792	848890	15.4	2.647
70	5	0.04138	0.18823	48357	9102	219989	0.77064	589444	12.2	2.606
75	5	0.06458	0.27891	39254	10949	169533	0.66105	369455	9.4	2.558
80	5	0.10412	0.41224	28306	11669	112069	0.43944	199923	7.1	2.475
85 +		0.18937	.....	16637	16637	87853	.....	87853	5.3	5.281

Torba Province - Males

Age	Width (n)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex	nax
0	1	0.00100	0.00100	100000	100	99905	0.97506	6663205	66.6	0.045
1	4	0.01314	0.05100	99900	5095	387627	0.97025	6563301	65.7	1.650
5	5	0.00084	0.00421	94805	399	473028	0.99614	6175674	65.1	2.500
10	5	0.00070	0.00351	94406	332	471201	0.99396	5702646	60.4	2.500
15	5	0.00184	0.00916	94074	862	468356	0.99126	5231445	55.6	2.660
20	5	0.00155	0.00772	93213	719	464260	0.99177	4763089	51.1	2.493
25	5	0.00181	0.00900	92493	832	460440	0.99023	4298829	46.5	2.565
30	5	0.00215	0.01072	91661	982	455942	0.98759	3838388	41.9	2.595
35	5	0.00292	0.01448	90679	1313	450283	0.98266	3382446	37.3	2.632
40	5	0.00419	0.02073	89365	1853	442474	0.97458	2932163	32.8	2.651
45	5	0.00629	0.03098	87512	2711	431228	0.96131	2489689	28.5	2.663
50	5	0.00977	0.04775	84802	4049	414543	0.94057	2058461	24.3	2.663
55	5	0.01514	0.07311	80752	5903	389908	0.90881	1643918	20.4	2.653
60	5	0.02373	0.11236	74849	8410	354352	0.86170	1254010	16.8	2.635
65	5	0.03666	0.16846	66439	11192	305344	0.79629	899659	13.5	2.601
70	5	0.05562	0.24479	55246	13524	243143	0.71073	594315	10.8	2.553
75	5	0.08259	0.34206	41722	14272	172809	0.60371	351171	8.4	2.491
80	5	0.12184	0.46305	27451	12711	104326	0.41509	178362	6.5	2.410
85 +		0.19909	.....	14740	14740	74036	.....	74036	5.0	5.023

Chapter 7 – Migration

7.1. Introduction

With improvement of economic conditions and the increase of communication and transportation systems, people increase their desire to change residence. A mere change of residence, however, does not always constitute migratory movement. Although there is no precise definition for migration, it is understood that it involves a certain distance. Thus, a change of residence within a relatively small area (a town or a smallest administrative division like village) is not considered a migratory movement. A migratory movement implies an intention that the move be permanent. Hence, a migrant is a person who moves a certain distance with the intention that the move be permanent or semi-permanent, and the move affects the population growth of the area of both origin and destination. Migration is therefore, the third component of population growth of any specific area, together with fertility and mortality.

From an administrative or legal point of view, migration may be classified into two categories – internal and international. Internal migration is movement within the boundaries of a single country, while international migration is movement from one country to another.

Although migration is sometimes an important component of population growth, it is not well recorded in many countries. Only a few countries in the world maintain population registers (Vital Registration Systems) which record not only births and deaths, but also other changes in the civil status of its citizens, such as marriages, employment and change of residence. Since Vanuatu does not have a population register to collect information on migration, this component of population change has been estimated from censuses.

Internal migration – the techniques for detecting the number of migrants are based on two kinds of information:

- (1) Information collected specifically for the measurement of migration, such as place of previous residence.
- (2) Information not collected specifically for the purpose of measuring migration, such as the age structure of a population.

International migration – techniques are based on information on place of birth and other questions for detecting out-migration.

Two questions that are often used for internal migration analysis will not be used in this chapter. The first is place of birth compared to current residence, and the second is place of enumeration compared to place of residence. Place of birth will not be used in detail as the question in the 1999 Census asked the respondent to state only their country of birth. To use this question in this migration analysis, we would need to know in which province the respondent was born (a basic breakdown of country of birth will however be included). Place of birth is often used when looking at lifetime and international migration.

For the purpose of internal lifetime migration analysis, the respondent's *home province*¹⁰ will be compared to the current residence, as well as place of residence five years previously.

Place of enumeration will not be used as an indicator of migration in this chapter as the analysis in this Report is based on the *de jure*¹¹ population and not the *de facto*¹² population. Any person wishing to use place of enumeration data is free to do so using tables from the Main Report or consult the Census Administrator for specific tabulations.

This chapter presents some migration information based on census questions on current and previous place of residence. Internal migration is presented first, followed by a discussion on international migration. The analysis of net-gains and losses and out-migration rates will be presented first. This will be followed by details of the background socio-economic characteristics of those who have moved from one province to another in the preceding five years. In terms of lifetime migration, only net migration figures are presented. The lifetime migrants' background characteristics will not be presented because of the possibility that some socio-economic characteristics may have been acquired over the years at the current province of residence.

7.2. Internal Migration

Social and economic development is associated with increasing importance of internal migration as a component of population growth, especially in those areas attracting the migrants. Job opportunities and better salaries, better education opportunities and health services, and other factors attract people from other areas of the country. To plan for the redistribution of the population, it is necessary to know the number and characteristics of the migrants.

As cited above, migration implies a change of residence, a certain distance from previous to current residence, and a time period of residence. The latter is required in order to estimate the number of migrants per year or for any other specified period. Based on this general definition of migrants, the 1999 Vanuatu Census included questions about the place of residence 5 years previously of the population enumerated in the country. Respondents were asked to state the province of residence 5 years before the census date. From this information, cross tabulations of the population by place of usual residence (not place of enumeration) and place of residence 5 years previously has provided a measure of recent migration. That is, it gave a general idea of the migratory level and pattern in the country in the recent 5 years before the census. Since the reference period is 5 years, migration is estimated for the 5-year period prior to the census. There are other options but the question about residence 5 years previously is the most common and is used in this report.

¹⁰ *Home Province* is where the respondent's father's family originates from. In Vanuatu, when asked where you are from, people will tell you the name of their family's *home island*, regardless of whether they have ever lived there or not

¹¹ *De jure* - enumerated where the respondents usually live (place of usual residence)

¹² *De facto* - enumerated where the respondents were at census night (place of enumeration)

7.2.1. Recent Migration

As stated elsewhere, recent migration refers to the movement of people between the provinces within the last 5 years before the census. All data used in the following calculations are from the resident population of Vanuatu aged five years and over.

The data show that in the five years preceding the 1999 census, Malampa province had a net gain of 409 migrants from all the other provinces. Penama had a net gain of 562 migrants, Tafea had a net gain of 390 migrants and Torba had a net gain of 347 migrants (Table 7.1). Two provinces, Shefa and Sanma, had net losses of – 682 and – 1,026 persons respectively.

Table 7.1. Inter-province migration five years before the Census

	In Migrants*	Out Migrants*	Net Migrants
Total	10,323	10,323	-
Malampa	2,010	1,601	409
Penama	1,551	989	562
Sanma	1,654	2,680	- 1,026
Shefa	3,024	3,706	- 682
Tafea	1,430	1,040	390
Torba	654	307	347

Note: * In-Migrants and Out-Migrants do not include residents who have moved in to the provinces from overseas, or residents who have left provinces to go overseas

As these two provinces are home to the two urban areas in Vanuatu¹³ this loss would seem unlikely. However, there are two main factors that could have influenced this result:

(1) The Census was conducted during the school holidays.

All schools closed for the Christmas holidays two weeks early in 1999 to assist the National Census. This was an agreement made with the Ministry of Education to enable Census training to be held in schools. Also, all census enumerators were students from around the country and all census supervisors were teachers. A large number of students are at secondary school in both Shefa and Sanma and many would have returned to their home islands for the holidays. Although their usual place of residence is in fact one of the towns, they may have reported that their usual place of residence is where they were at the time of the enumeration.

(2) CRP redundancies in the Public Service

The Comprehensive Reform Programme (CRP) was originally set up in 1997. In the process of re-sizing and reforming the public service, a large number of government

¹³ Port Vila (Shefa) and Luganville (Sanma)

employees were made redundant in 1998. After receiving pay outs, many of these people who lived in the urban areas saw no need to stay in the towns and returned to their home islands, most often taking their families back with them.

When the data are compared to the 1989 Census migration data, the results follow the same pattern. In the 1989 Census Demographic and Migration Analysis Report, the results show that the net migration for Port Vila (net gain of 63) and Luganville (net loss of 153)¹⁴ were much lower than expected. A number of factors were listed to account for these figures, including the fact that enumeration was carried out in the school holidays.

Inter-Provincial migration has also been tabulated by province and sex. For a complete set of these tables, see 1999 Census Main Report. Figure 7.1 is a graph of the age specific breakdown of net migration numbers for Shefa province, (see Table 7.2).

Table 7.2: Age specific net migration figures for Shefa province

Age Groups	In Migrants	Out Migrants	Net Migrants
Total	3,022	3,706	-684
5-9	312	477	-165
10-14	339	321	18
15-19	571	288	283
20-24	611	680	-69
25-29	352	695	-343
30-34	253	409	-156
35-39	190	276	-86
40-44	129	168	-39
45-49	108	138	-30
50-54	47	79	-32
55-59	32	68	-36
60-64	25	39	-14
65-69	30	26	4
70-74	10	16	-6
75+	13	26	-13

Figure 7.1 shows that the highest proportion of net migrants that migrated to Shefa in the last five years were aged 15 - 19. These people are likely to be both school children and

¹⁴ These migration figures are for the two urban areas for the period 1988-1999 and are based on a de facto population. 1989 Demographic and Migration Analysis, page 41.

young people moving to the towns in search of employment. A higher number of in migrants at this age group would be expected but this is consistent with the Census taking place in the school holidays and many children returning to other provinces. The graph also shows that the highest proportions of out migrants were aged 20 – 39 and 5 – 9. This is family movement, consistent with the explanation of redundant workers from CRP returning to their home provinces with their families. As expected, the net migration out of Shefa province for the population aged 50+ is negative. This is the national retirement age and many people who have been working in the urban centres return to their home islands after retiring.

Figure 7.1: Net Migration for Shefa Province

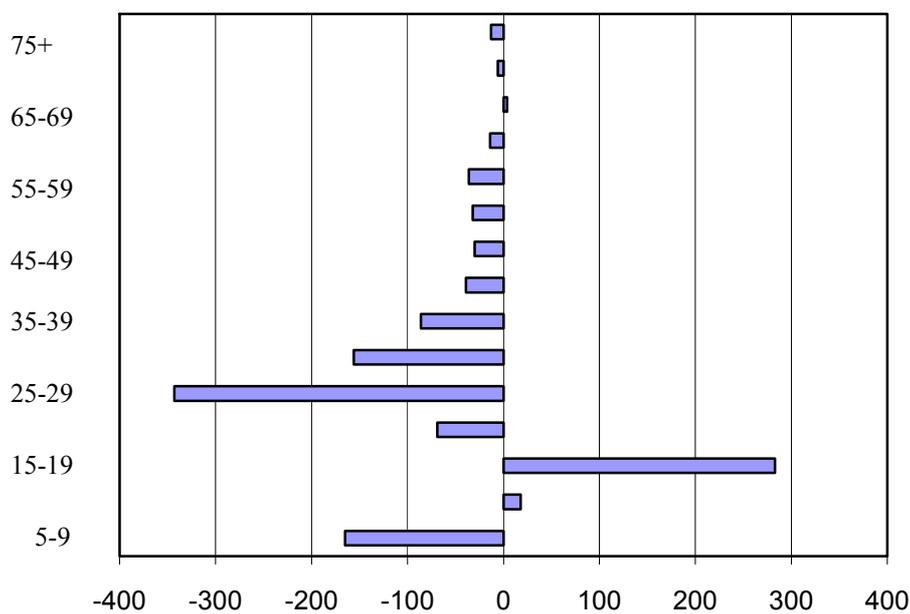
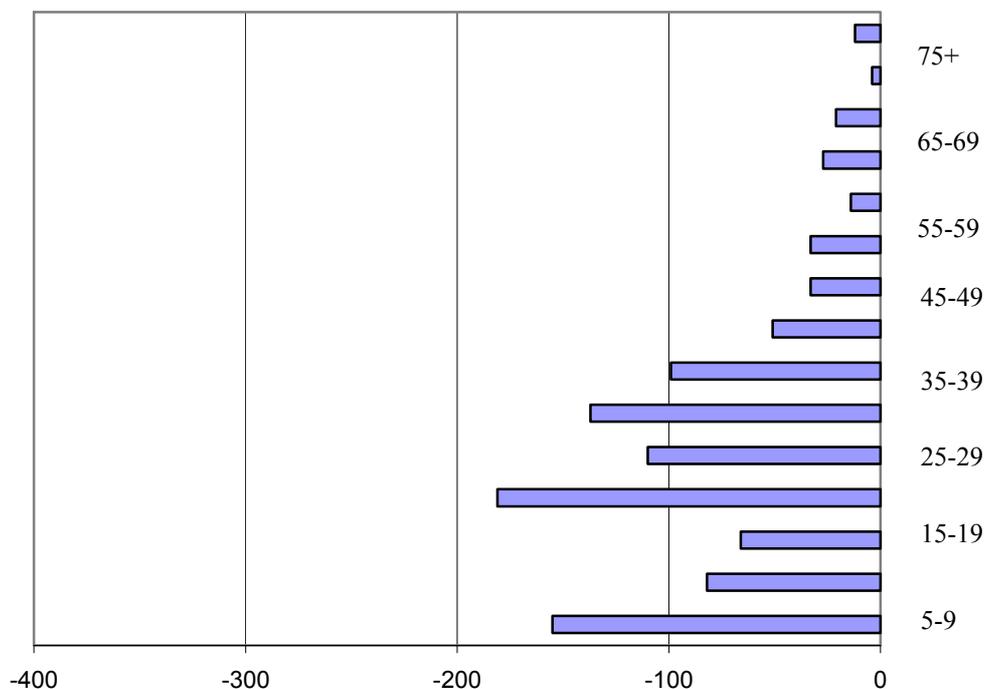


Table 7.3 and Figure 7.2 show net migration for Sanma province by age group. Unlike Shefa, all age groups show negative migration. The basic shape is the same as the bar chart for Shefa province and the reasons for the chart to be shaped this way remains the same. The difference is that the age group 10 – 19 also shows negative migration. A couple of factors may account for this difference. Firstly, the proportion of young people aged 15 – 19 that have moved to the provinces where the urban centres are located would definitely be higher for Shefa province than for Sanma province. The second reason is related to the fact that the census was conducted in the school holidays.

Table 7.3: Age specific net migration figures for Sanma province

Age Groups	In Migrants	Out Migrants	Net Migrants
Total	1,654	2,679	-1,025
5-9	194	349	-155
10-14	191	273	-82
15-19	255	321	-66
20-24	298	479	-181
25-29	228	338	-110
30-34	149	286	-137
35-39	105	204	-99
40-44	73	124	-51
45-49	63	96	-33
50-54	35	68	-33
55-59	28	42	-14
60-64	12	39	-27
65-69	7	28	-21
70-74	7	11	-4
75+	9	21	-12

Figure 7.2: Net Migration for Sanma Province



The above could be done for all other provinces if required.

Table 7.4 presents the same net migration in a different way. In this table the current resident population includes people who now reside in Vanuatu but did not five years ago (moved from outside the country), and those who did not state their province of residence. It is therefore necessary to subtract these people from the current resident population. As expected, the net gain column is equal to the net-migrants column of Table 7.1.

Table 7.4: Current resident population of each province compared to population 5 years ago

	Current Resident Population	5 yrs ago resident population	Gain 1994 – 1999	Moved to Vanuatu From overseas and not stated	NET GAIN
Total	154,044	152,153	1,891	1,891	-
Malampa	27,891	27,333	558	149	409
Penama	22,436	21,755	681	119	562
Sanma	28,731	29,496	-765	261	- 1,026
Shefa	45,619	45,088	531	1,213	- 682
Tafea	22,900	22,383	517	127	390
Torba	6,467	6,098	369	22	347

Table 7.5 shows the total annual out-migration rates for the last 5 years calculated for each province, from data in Table 7.2. The top row has the provinces from which people have moved from and the first column lists the names of the provinces they have moved to. The table shows that an average of 12 persons per 1,000 people moved out of Malampa each year during the five years period preceding the census, and into other provinces. In the same time frame nine out of every 1,000 people moved out of Penama each year, 19 out of every 1,000 people moved out of Sanma, 17 out of every 1,000 moved out of Shefa, nine out of every 1,000 moved out of Tafea and 10 persons per 1,000 people moved out of Torba province.

Table 7.5: Annual Out-Migration Rates

Current Residence	Residence 5-years ago					
	Malampa	Penama	Sanma	Shefa	Tafea	Torba
Total	11.6	9.0	18.5	16.6	9.2	9.8
Malampa		1.1	4.8	4.9	0.6	1.1
Penama	1.0		4.4	2.9	0.4	2.5
Sanma	4.0	2.8		2.7	0.5	4.0
Shefa	5.9	4.0	5.8		7.7	2.0
Tafea	0.4	0.4	0.8	5.4		0.2
Torba	0.3	0.7	2.8	0.6	0.1	

The provinces that registered a higher number of out migrants (in Table 7.1) had higher out migration per year in the last five years (Sanma 18.49, Shefa 16.56) as would be expected.

The body of the table shows migrants' destinations within the last five years. For example, the first column indicates that an average of 1 person per 1000 persons residing in Malampa province five years ago, left to live in Penama province each year during the five year period preceding the 1999 census.

The total out migration rates were calculated by dividing the number of a particular group of migrants by the average population of the province of origin during the 5 year period and by the 5 years.

For example: From Malampa to the other provinces:

Gives us total residents of all other provinces that used to live in Malampa	$[1,000 \times (27,333 - 25,732) / \frac{1}{2} (27,891 + 27,333)]/5 = 11.63$
--	--

(An average of 11.6 persons per 1,000 people residing in Malampa moved out each year during the 5 – year period preceding the Census)

The following formula is used to calculate the out migration rates from each individual province to the new province of residence.

For example: From Malampa to Sanma province:

Total residents of Sanma province that used to live in Malampa	$[1,000 \times 556 / \frac{1}{2} (27,891 + 27,333)]/5 = 4.04$
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(An average of 4.0 persons per 1,000 people residing in Malampa left to live in Shefa province each year during the 5 – year period preceding the Census)

7.2.2. Background Characteristics of Recent Migrants

This section will look at the characteristics of those people who migrated to another province in the five years preceding the census. Data are summarised for social, educational and economic characteristics of 5.5% of the resident population of Vanuatu aged five years and over (see Table 7.6 and Figure 7.3).

Table 7.6. Population migrating to another province in the preceding 5 years

Population (aged 5 +)	Resident Population	Percent
Population that has changed province of residence in the last five years	10,323	6.7
Population that has not changed province of residence in the last five years	143,721	93.3
Total	154,044	100.0

Figure 7.3. Population migrating to another province in the preceding 5 years

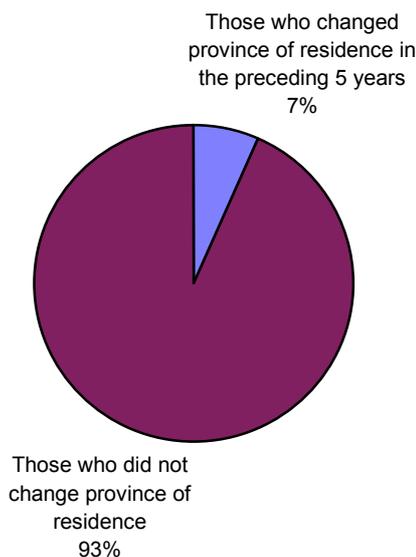
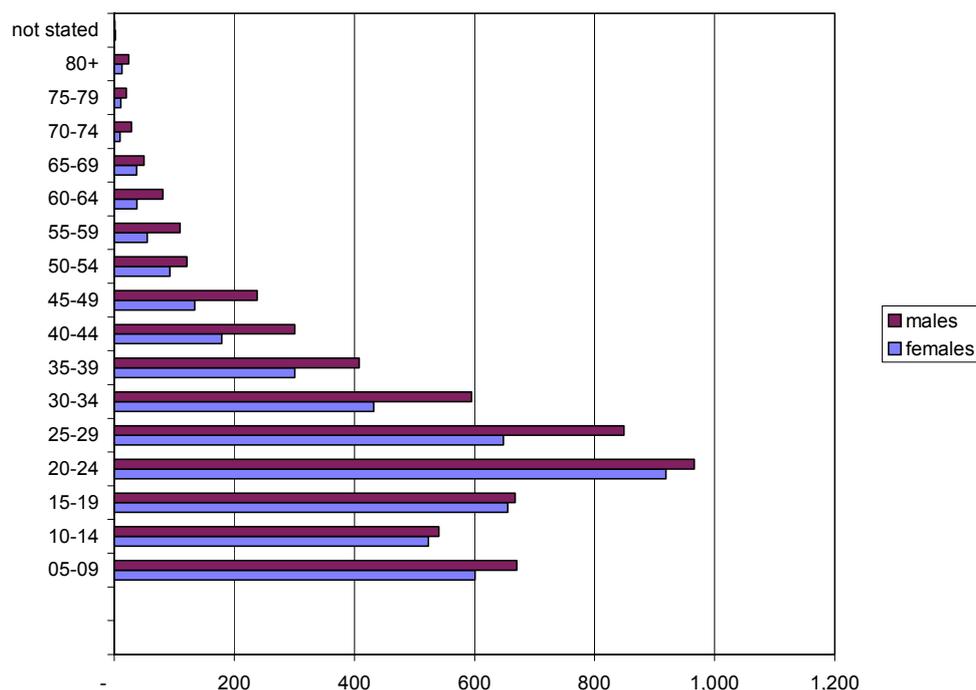


Figure 7.4 is a bar chart of the age distribution of internal migrants. It can be seen that the majority of inter-provincial migrants are in the working ages. There is also a high proportion aged 5-14. These are most likely to be the children of those in the working age group that are migrating. Figure 7.4 also shows the breakdown by sex. It is clear that in every age group, more males than females have migrated between provinces in the last five years (especially for ages 25+).

Figure 7.4: Proportion of the population that have migrated to another province in the last 5 years



As regards the marital status of migrants, the focus is on those aged 15 and over. Table 7.7 shows the percentages never married, married or living in de facto relationships and those who are divorced, separated or widowed. The table also sub-divides marital status by sex, and here some differences can be seen in the marital status of male migrants and female migrants.

Table 7.7: Marital status of inter-province migrants (aged 15+)

Marital Status	Males (percent)	Females (percent)	Total (percent)
Never Married	39.8	32.9	36.8
Married / Defacto	55.9	60.7	50.0
Separated / Divorced / Widowed	4.3	6.4	5.2

This table shows that more single males than single females moved to another province in the preceding five years. It can also be seen that a higher proportion of married or de-facto migrants were female. When married males move to other areas in Vanuatu for work they either go with their wives, or their wives stay in their village. When married females move to other areas in Vanuatu they are often accompanying their husbands. The proportion of migrants divorced, separated or widowed is higher for females than males.

Figure 7.5 shows the educational attainment of people that moved from one province to another (aged 5 and over). The graph shows that the difference in educational attainment between males and females is minimal, although males tend to be slightly better educated

than females. The proportions that have never been to school are equal for males and females. It is immediately obvious from the graph that primary level of educational attainment is the most common. Fifty-four percent of the inter-provincial migrating population aged five and upwards had only primary education (see Table 7.8), and twenty-one percent had junior secondary education. Migrants who had a senior secondary education, vocational or post secondary education comprised 13 percent, and one percent had tertiary education. Eight percent of inter-provincial migrants had never been to school.

Table 7.8: Educational Attainment of inter-provincial migrants (aged 5+)

Educational Attainment	Females		Males		Total	
	count	%	Count	%	count	%
Never been to school	373	8.0	434	7.7	807	7.8
Kindergarten	153	3.3	181	3.2	334	3.2
Primary	2,605	56.0	2,925	51.6	5,530	53.6
Junior Secondary	915	19.7	1,211	21.4	2,126	20.6
Senior Secondary	254	5.5	342	6.0	596	5.8
Vocational	148	3.2	257	4.5	405	3.9
Post Secondary	139	3.0	208	3.7	347	3.4
Tertiary	43	0.9	80	1.4	123	1.2
Not stated	21	0.5	34	0.6	55	0.5
Total	4,651	100.0	5,672	100.0	10,323	100.0

Figure 7.5: Educational Attainment of inter-provincial migrants (aged 5+)

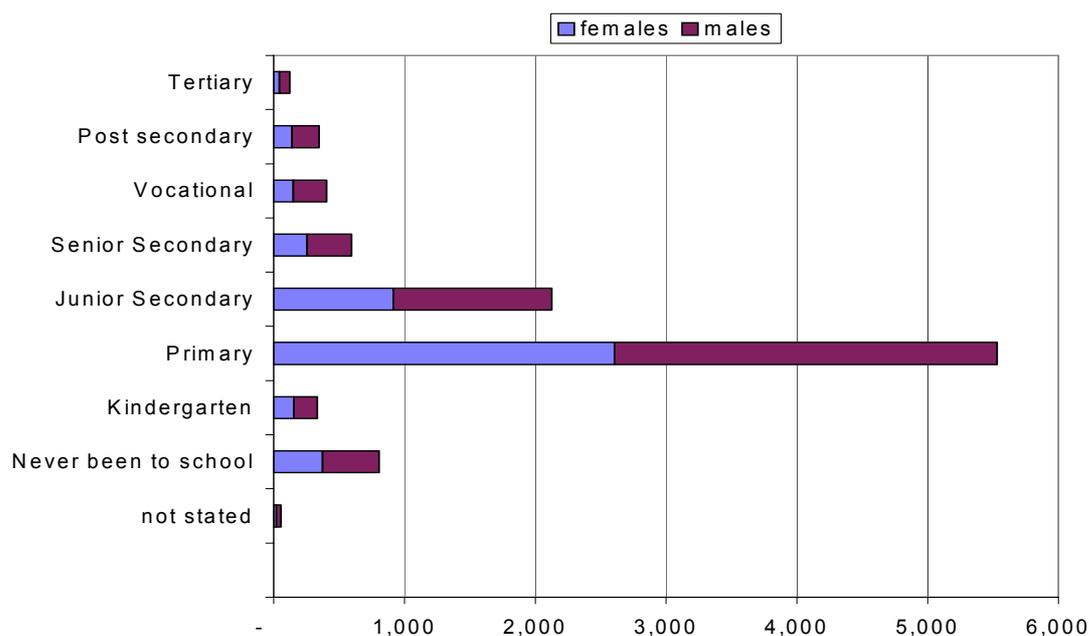
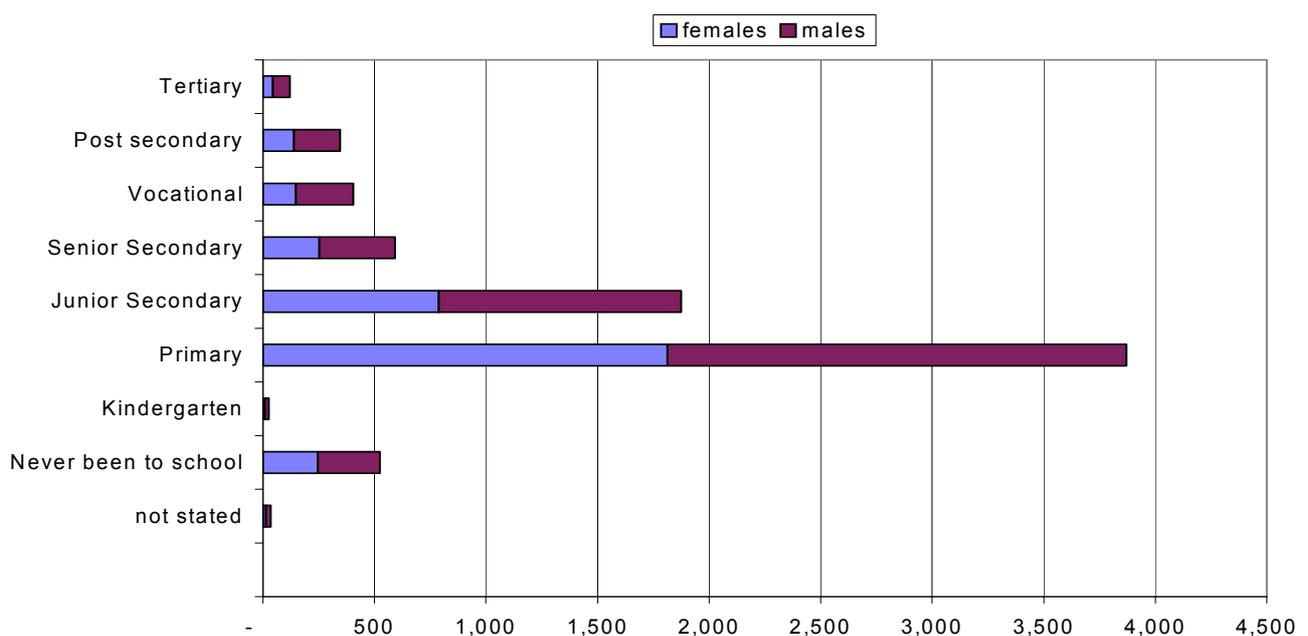


Figure 7.6 shows the educational attainment of inter-provincial migrants in the working ages (15-64 years). The proportion who had only a primary education was 50 percent (see Table 7.9). Twenty-one per cent had junior secondary education and 17 percent senior secondary, vocational, or post secondary education. Two percent of this population had attained tertiary education and 7 percent had never attended school.

Table 7.9: Educational attainment of inter-provincial migrants (aged 15-64)

Educational Attainment	Females		Males		Total	
	Count	%	Count	%	count	%
Never been to school	247	7.2	276	6.4	523	6.7
Kindergarten	9	0.3	17	0.4	26	0.3
Primary	1,814	52.5	2,057	47.4	3,871	49.7
Junior Secondary	787	22.8	1,087	25.1	1,874	24.1
Senior Secondary	253	7.3	338	7.8	591	7.6
Vocational	148	4.3	256	5.9	404	5.2
Post Secondary	139	4.0	206	4.7	345	4.4
Tertiary	43	1.2	79	1.8	122	1.6
Not stated	14	0.4	21	0.5	35	0.4
Total	3,454	100.0	4,337	100.0	7,791	100.0

Figure 7.6: Educational Attainment of inter-provincial migrants (aged 15-64)



School attendance is an important variable that can influence internal migration. School attendance indicates whether people were attending a primary, secondary, or tertiary institutions at the time of the census. This question also shows whether respondents attended school in the past or have never attended school. Figure 7.7 shows school attendance for the population aged five and upwards.

Figure 7.7: School attendance of inter-provincial migrants (aged 5+)

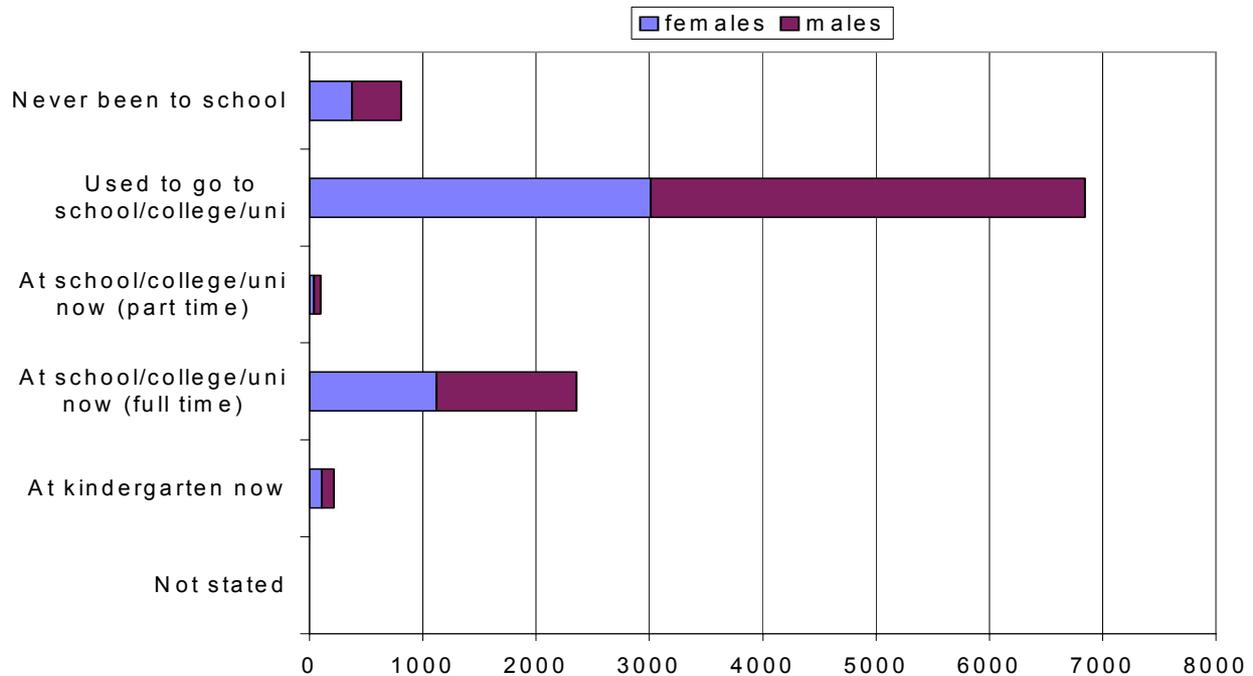


Table 7.10 shows the proportions attending school by sex. The table shows that 24 percent of the population (aged 5+) were attending school, college or university at the time of the November 1999 Census. This figure includes both full-time and part-time students. Sixty-six percent of the population attended school, college or university in the past, and 8 per cent (as reported for the educational attainment question) had never been to school. Two per cent of this population were attending kindergarten at the time of the Census.

Table 7.10: School attendance of inter-provincial migrants (aged 5+)

School Attendance	Females		Males		Total	
	Count	%	Count	%	count	%
Never been to school	373	8.0	433	7.6	806	7.8
At kindergarten now	106	2.3	110	1.9	216	2.1
At school/college/uni (full time)	1,120	24.1	1,235	21.8	2,355	22.8
At school/college/uni (part time)	41	0.9	58	1.0	99	1.0
Used to go to school/college/uni	3,010	64.7	3,834	67.6	6,844	66.3
Not stated	1	0.0	2	0.0	3	0.0
Total	4,651	100.0	5,672	100.0	10,323	100.0

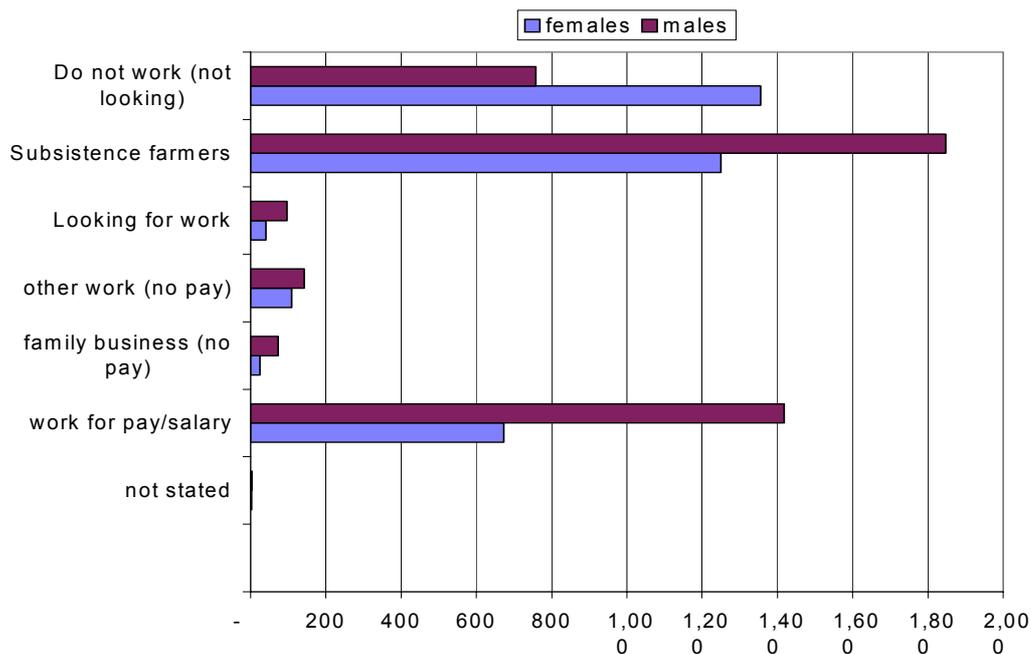
It is also of interest to note the economic activity of the population aged 15 – 64 that have migrated from one province to another in the five years preceding the census. Forty per cent of the migrant population work as subsistence farmers (see Table 7.11). Twenty-seven percent work for pay, salary or profit, five percent work for no pay, either helping in the family business or doing some other work (for example community work). The percentage of this population who said they are looking for work was very small (2 %), while twenty-seven per cent stated that they did not work and were not looking for work. This group included people who stayed at home doing housework, students, those who had retired and disabled people who were unable to work, as well as those who did not want to work.

It is interesting to compare economic activity of male and female migrants. Thirty-three percent of male migrants worked for pay, salary or profit compared to 20 percent of female migrants. Forty-three percent of male migrants worked as subsistence farmers compared to 36 percent of female migrants. Thirty-nine per cent of female migrants did not work and were not looking for work, compared to 18 percent of male migrants. A large proportion of women who gave this answer would be housewives doing housework and looking after young children at home. Figure 7.8 clearly shows the differences between the answers given by males and females in this age group.

Table 7.11: Economic activity of inter-provincial migrants (aged 15-64)

Economic Activity	Females		Males		Total	
	Count	%	Count	%	count	%
Work for pay/salary	673	19.5	1,418	32.7	2,091	26.8
Family business (no pay)	25	0.7	73	1.7	98	1.3
Other work (no pay)	109	3.2	142	3.3	251	3.2
Looking for work	40	1.2	96	2.2	136	1.7
Subsistence farmers	1,250	36.2	1,847	42.6	3,097	39.8
Do not work (not looking)	1,355	39.2	758	17.5	2,113	27.1
Not stated	2	0.1	3	0.1	5	0.1
Total	3,454	100.0	4,337	100.0	7,791	100.0

Figure 7.8. Economic activity of inter-provincial migrants (aged 15-64)



Another important characteristic is the percentage of the population aged 15–64 that worked in the seven days preceding the census.

Table 7.12 summarises responses to this question, which was asked only of those who had answered in the previous question that:

- they worked for pay, salary or profit,
- they were helping the family business (without pay),
- they were subsistence farmers, or

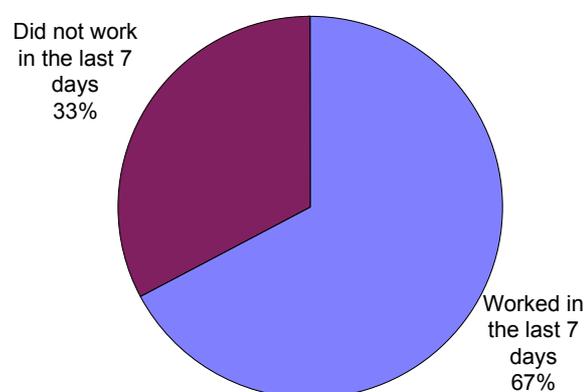
- that they were engaged in some other work (without pay).

Table 7.12: Work in the last seven days by inter-provincial migrants (aged 15-64)

Work in the last 7 days	Females		Males		Total	
	count	%	Count	%	count	%
Worked in the last 7 days	1,913	55.4	3,310	76.3	5,224	67.0
Did not work in the last 7 days	1,539	44.6	1,023	23.6	2,562	32.9
Not stated	2	0.1	4	0.1	6	0.1
Total	3,454	100.0	4,337	100.0	7,792	100.0

The table shows that in the seven days preceding the census a total of 67 percent of the working age migrant population (aged 15-64) worked. Thirty-three percent stated that they did not work during the seven days in question. Comparing answers from male and female migrants, 76 percent of male migrants stated that they worked in the preceding seven days, compared to 54 percent of female migrants. Figure 7.9 depicts this information for all migrants aged 15-64.

Figure 7.9: Proportions of inter-provincial migrants working in the seven days preceding the census



7.2.3. Lifetime Migration

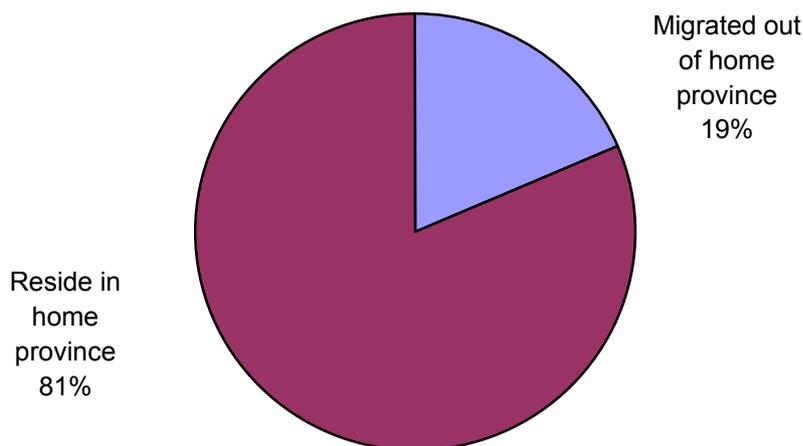
As mentioned in the introduction to Internal Migration (Section 7.2), home province can be compared to usual place of residence to obtain lifetime migration. For lifetime migration, the following information is of interest:

- the percentage who were not residing in their home province at the time of the enumeration, and
- the percentage who were not residing in their home province five years previously.

The census question, 'What is your home island' was asked only of Vanuatu citizens, therefore the tables concern only this group of people. The tables are based on the population aged five and upwards, ie. those who were alive five years previously.

Figure 7.10 shows the percentage of Vanuatu citizens, aged five and over, that had migrated from their home province to another province.

Figure 7.10. Lifetime Migration proportions



The data show that the direction of lifetime migration flows mainly towards Sanma and Shefa province (Table 7.13). A total of 9,993 people whose home province was not Sanma moved into Sanma province, while only 726 people from Sanma province moved to the other provinces. A total of 17,298 people who were not from Shefa moved into Shefa province, while only 769 people from Shefa moved out. In contrast, only 440 people who were not from Malampa province had moved into Malampa province, while 12,100 people from Malampa moved out to other provinces.

Table 7.13: Inter-provincial lifetime migration

Province	In-Migrants	Out-Migrants	Net Migrants
Total	28,403	28,403	-
Malampa	440	12,100	- 11,660
Penama	271	7,249	- 6,978
Sanma	9,993	726	9,267
Shefa	17,298	769	16,529
Tafea	270	5,225	- 4,955
Torba	131	2,334	- 2,203

The net migrant figures show that more people migrated into the two provinces that contain the urban centres. All other provinces (Malampa, Penama, Tafea and Torba) show negative net migration, which means that more people migrated out of these provinces than migrated into them.

Table 7.14 shows where the people residing in each province said they are from, that is, their home province. For example, 60 percent of the population residing in Shefa were actually from Shefa province. The remaining 40 percent of Shefa residents were from other provinces in Vanuatu (17.4% from Malampa, 11.2% from Tafea, 8.3% from Penama, 1.5% from Torba and 1.4% from Sanma). The table also shows that Penama province has the highest proportion of people stating that they resided in their home province (98.8%).

Table 7.14: Percentage distribution of the resident population of each province by home island

	Home Province							Total
	Malampa	Penama	Sanma	Shefa	Tafea	Torba	Not stated	
Residence								
Malampa	98.4	0.6	0.2	0.4	0.2	0.2	0.0	100.0
Penama	0.4	98.8	0.3	0.1	0.1	0.3	0.0	100.0
Sanma	15.5	11.8	63.7	2.1	1.2	5.6	0.1	100.0
Shefa	17.4	8.3	10.4	60.0	11.2	1.5	0.2	100.0
Tafea	0.4	0.3	0.0	0.3	98.7	0.2	0.1	100.0
Torba	0.5	0.7	0.4	0.2	0.2	98.0	0.0	100.0

7.3. International Migration

International migration is the movement of people from one country to another, where permanent residential address changes. Numbers of people and background characteristics of those who have moved from overseas to Vanuatu within the last five years are analysed in this section. The first part of question P13 in the census questionnaire asked each respondent:

Where were you living in November 1994 (*five years ago*)

1. Current island of residence
2. On another island in Vanuatu
3. In another country

This section focuses on the group of people aged five and upwards that gave option three as their answer.

A total of 1,332 respondents answered that their permanent address five years previously was overseas. Table 7.15 shows the distribution of this population by broad age group and sex.

Figure 7.11 shows the age distribution of this group as a bar chart. We can see that people aged 25-40 are the main age group to migrate to Vanuatu. More immigrants were males than females. Data for this chart can be seen in Table 7.15.

This group of people will either be immigrating to Vanuatu or returning to Vanuatu. A proportion of the age group aged 15+ will be Ni-Vanuatu who have returned from studying overseas in the last five years. The group aged 5-14 are likely to be children of families that are moving permanently to Vanuatu.

The census question, '*where were you born*' showed that a total of 2,439 people, or 1.3 percent of the resident population aged 5 upwards had been born overseas (see Table 7.16 and Figure 7.12).

Table 7.15. Age distribution of those whose permanent address 5 years previously was overseas

Age	Females	Males	Total
Total	573	759	1,332
5-9	52	63	115
10-14	51	40	91
15-19	23	38	61
20-24	76	61	137
25-29	91	132	223
30-34	80	124	204
35-39	63	99	162
40-44	37	59	96
45-49	34	53	87
50-54	21	36	57
55-59	18	20	38
60-64	13	12	25
65-69	8	11	19
70-74	1	6	7
75-79	3	5	8
Not stated	2	-	2

Figure 7.11. Age distribution of those whose permanent address 5 years previously was overseas

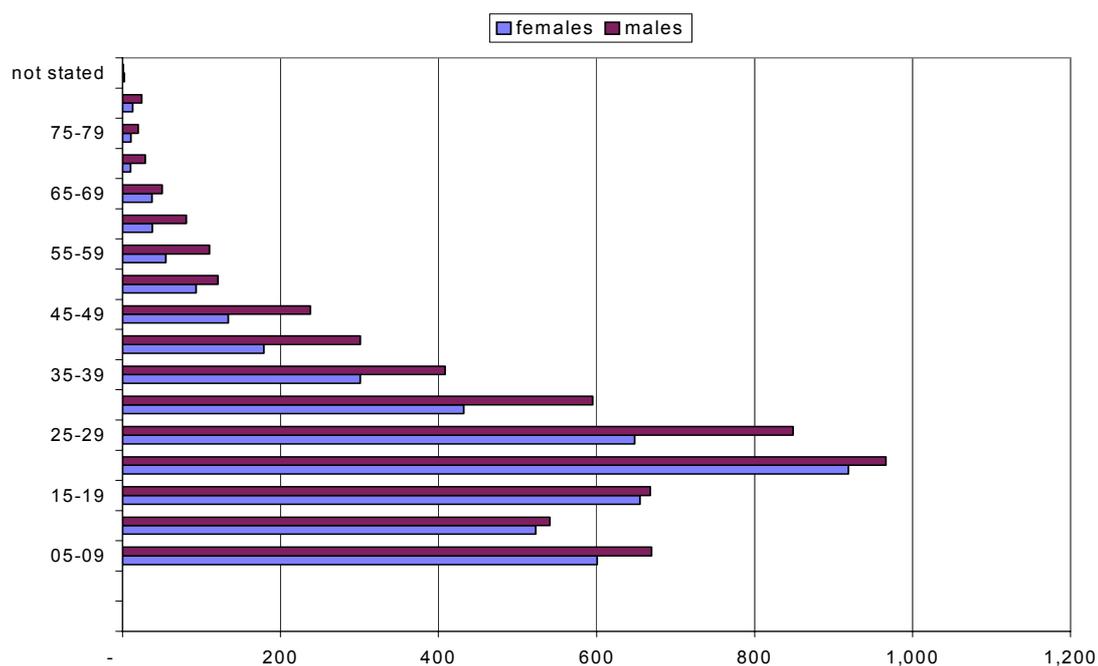


Table 7.16: Population Numbers Born Overseas

Province	Vanuatu	Overseas	Not stated	Total
Total	183,821	2,439	418	186,678
Malampa	32,481	213	11	32,705
Penama	26,547	91	8	26,646
Sanma	35,759	270	55	36,084
Shefa	52,422	1,714	303	54,439
Tafea	28,898	108	41	29,047
Torba	7,714	43	-	7,757

Figure 7.12. Percentage of resident population (all ages) born in Vanuatu and overseas

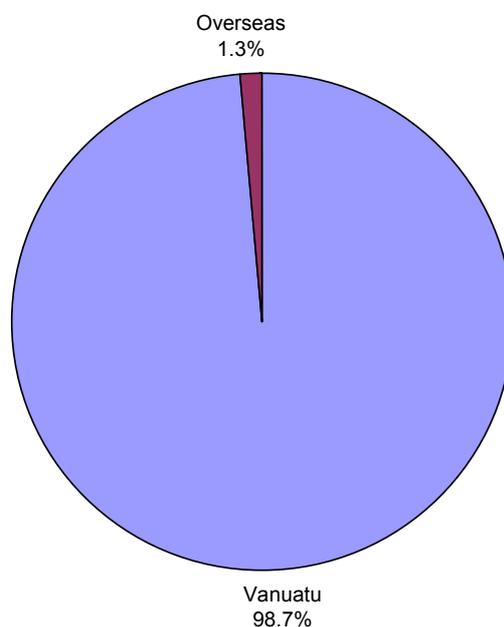


Table 7.17 shows that 45 percent of those who moved from overseas are of Ni-Vanuatu ethnicity, followed by 42 percent European ethnicity (this group includes Australians, New Zealanders, English and French)

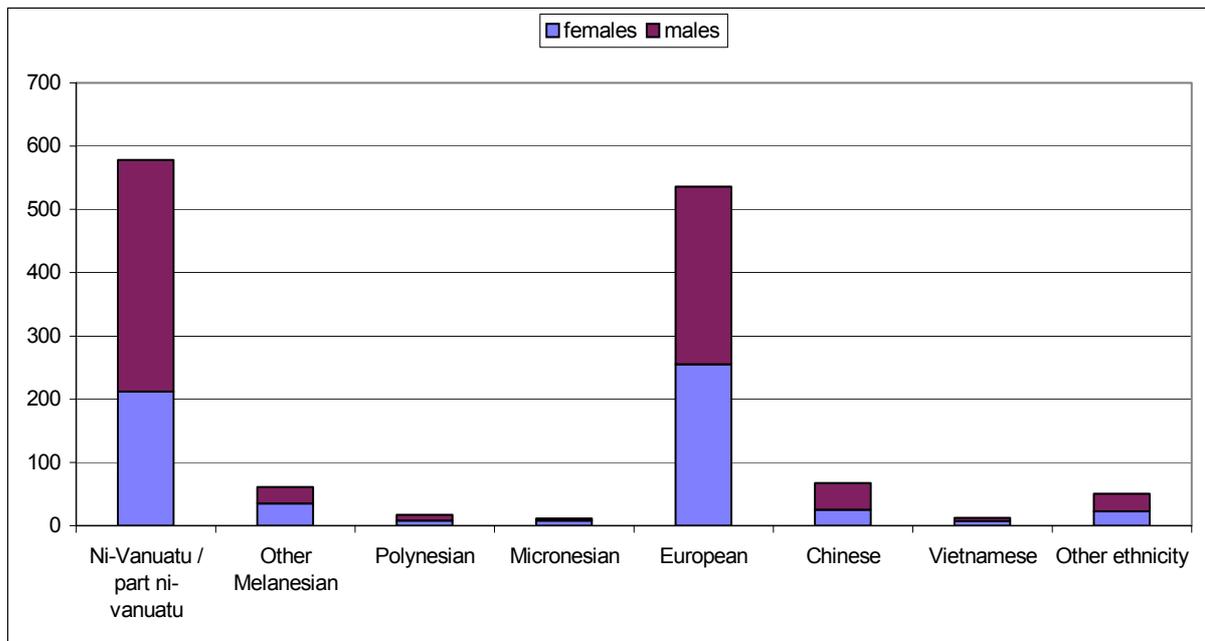
Table 7.17: Ethnicity of those who have moved from overseas to Vanuatu in the preceding five years

Ethnicity	Females		Males		Total	
	Count	%	count	%	count	%
Ni Vanuatu / part Ni Vanuatu	212	38.5	366	50.0	578	45.1
Other Melanesian	35	6.4	26	3.6	61	4.8
Polynesian	8	1.5	9	1.2	17	1.3
Micronesian	8	1.5	3	0.4	11	0.9
European	255	46.4	281	38.4	536	41.8
Chinese	25	4.5	42	5.7	67	5.2
Vietnamese	7	1.3	5	0.7	12	0.9
Other ethnicity	23	4.0	27	3.6	50	3.7
Total	573	100.0	759	100.0	1,332	100.0

Figure 7.13 portrays the data in Table 7.17. The graph shows clearly that the two major groups of immigrants in the preceding 5 years are:

- ❖ Ni – Vanuatu people returning to Vanuatu
- ❖ Europeans migrating into Vanuatu

Figure 7.13: Ethnicity of those who have moved from overseas to Vanuatu in the Preceding five years



The educational attainment of these migrants is shown separately for the Ni-Vanuatu (Table 7.18), and other ethnic groups (Table 7.19). Table 7.18 shows, that 25 percent of the 493 Ni-Vanuatu immigrants stated that they had attained tertiary education. Twenty-five per cent had attained senior secondary, vocational or post-secondary education. Twenty-one percent had junior secondary education and 22 percent primary education.

Table 7.18. Educational attainment of those of Ni-Vanuatu ethnicity returning to Vanuatu to live (age 15 +)

Educational attainment	Females		Males		Total	
	Count	%	count	%	count	%
Never been to school	1	0.6	6	1.9	7	1.4
Primary	32	18.1	77	24.4	109	22.1
Junior secondary	44	24.9	59	18.7	103	20.9
Senior secondary	27	15.3	50	15.8	77	15.6
Vocational	7	4.0	15	4.7	22	4.5
Post secondary	10	5.6	14	4.4	24	4.9
Tertiary	44	24.9	78	24.7	122	24.7
Not stated	12	6.8	17	5.4	29	5.9
Total	177	100.0	316	100.0	493	100.0

It can be seen in Table 7.19 that the percentage of other ethnic groups who did not answer the educational attainment question was high (39%). This is probably because their education overseas followed a different system and they were unsure about the enumerators' definitions. Twenty-three percent stated that they had received a tertiary education, 17 percent a junior secondary education, and 16 percent a senior secondary, vocational or post-secondary education.

Table 7.19. Educational attainment of those of other ethnicity returning to Vanuatu to live (age 15+)

Educational attainment	Females		Males		Total	
	Count	%	count	%	count	%
Primary	19	6.5	17	5.0	36	5.7
Junior secondary	53	18.2	52	15.3	105	16.6
Senior secondary	32	11.0	43	12.6	75	11.9
Vocational	8	2.7	5	1.5	13	2.1
Post secondary	8	2.7	5	1.5	13	2.1
Tertiary	66	22.7	76	22.4	142	22.5
Not stated	105	36.1	142	41.8	247	39.1
Total	291	100.0	340	100.0	631	100.0

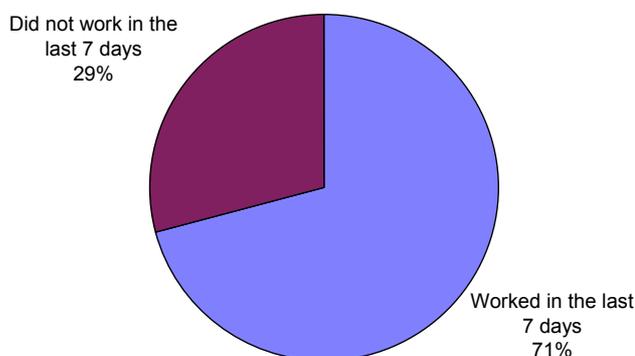
Table 7.20 shows the economic activity of all migrants, aged 15-64, to Vanuatu from overseas in the preceding five years. Forty-six per cent stated that they were working for pay, salary or profit, 18 per cent stated that they were not working or were looking for work and 8 per cent were subsistence farmers at the time of the census. The percentage working for no pay (either helping in the family business or doing other work) was very small (5%).

Table 7.20. Economic activity of population migrating from overseas to Vanuatu in the preceding 5 years (age 15 – 64)

Economic Activity	Females		Males		Total	
	Count	%	count	%	count	%
Work for pay/salary	167	36.6	334	52.7	501	46.0
Family business (no pay)	13	2.9	16	2.5	29	2.7
Other work (no pay)	13	2.9	14	2.2	27	2.5
Looking for work	4	0.9	9	1.4	13	1.2
Subsistence farmers	17	3.7	69	10.9	86	7.9
Do not work (not looking)	141	30.9	54	8.5	195	17.9
Not stated	101	22.1	138	21.8	239	21.9
Total	456	100.0	634	100.0	1,090	100.0

The question on whether people had worked in the seven days preceding the census shows that of the immigrant population (aged 15-64), 71 per cent stated that they had worked in the preceding seven days. See Appendix table * for the distribution by males and females. Figure 7.14 depicts this information in a pie chart.

Figure 7.14. Percentage that worked in the seven days preceding the census, immigrants aged 15-64 that had moved from overseas to Vanuatu in the preceding five years



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