SPC
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2002 Nauru Census Main Report

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Demographic Profile of the Republic of Nauru, 1992 - 2002

NAURU

SECRETARIAT OF THE PACIFIC COMMUNITY
Demography/Population Programme

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NAURU BUREAU OF STATISTICS

2002 Nauru Census Main Report

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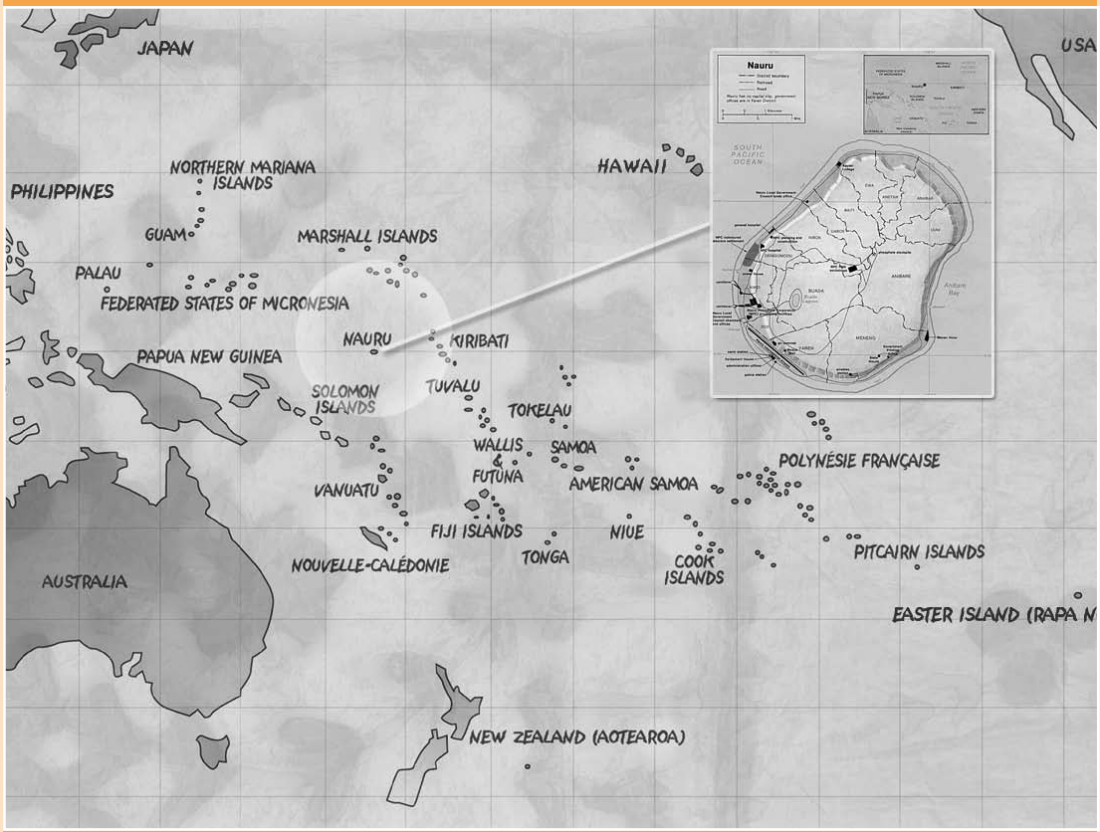
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PART 1

REPUBLIC OF NAURU

NAURU BUREAU OF STATISTICS
DEPARTMENT OF FINANCE

2002 Nauru Census Main Report

This report was prepared by Mr Ipia Gadabu, Acting Assistant Government Statistician, with the assistance of Mr Arthur Jorari, Population Specialist, and Dr Gerald Haberkorn, Demographer, both from the Secretariat of the Pacific Community (SPC) in Noumea, and Mr Andreas Demmke, consultant to SPC. SPC wishes to acknowledge the very generous financial assistance provided by the Australian Government through AusAID, in the form of its ongoing contribution to SPC programme activities. SPC also appreciates receipt of two special grants to its Demography/Population Programme, to provide technical assistance supporting Nauru census activities; these grants facilitated technical advisory and training missions of SPC staff to Nauru, two professional attachments to SPC of the Nauru Acting Assistant Government Statistician, and the recruitment of a consultant to assist with the Nauru demographic analysis and report.

PREFACE

I wish to thank everyone involved in the census for their much valued and tireless efforts in this important undertaking. Firstly the people of Nauru for their support and cooperation, in lending their time and patience to have their say for the potential benefits of being able to plan ahead for themselves as well as their children. The inherent belief by any person in a position of caring about someone or some people is the single most important drive in the success of this census. In this period of hardship the resilience shown by the people of Nauru should be commended, and hopefully this analysis, and any future studies based upon its results, will do them justice.

I wish to acknowledge the Australian Government's aid agency, AusAID, for generously providing the funding for this census. Without their ready support the census would likely have not taken place at this opportune time. The collaboration between SPC and AusAID is respectively acknowledged. I further acknowledge SPC's expert role in paving the way towards the conclusion of this report. The Bureau of Statistics fully acknowledges that the technical expertise provided and the continuous assistance received have been extremely valuable.

I wish to thank the staff of the SPC Demography/Population Programme in Noumea: its former demographer, Dr Christine McMurray, for her important and valuable role and support in getting everything in motion up to the end of enumeration prior to her departing office, and also its current demographer, Dr Gerald Haberkorn (with whom, along with Mr Andreas Demmke, SPC's former population specialist, I had the pleasure of working in the production of the Nauru population profile, based on the 1992 census), for his continued drive in pushing for a final product. In mentioning Mr Demmke, I wish to further acknowledge his expert assistance in providing the demographic analysis embodied in this report. His work is the culmination of a complete report never previously achieved.

I am also very thankful for the assistance of SPC's population specialist, Mr Arthur Jorari, who became the primary link in the transition from the former to the current demographer, and who provided continued assistance and skills transfer throughout the entire census process. Without his expertise and input, the final aim for Census 2002 would still be long in the making.

In closing, I wish to thank the census staff for the teamwork shown throughout the enumeration and their dedication – without it, the exercise would not have been as successful. And lastly my staff in the Bureau of Statistics, who have managed to overcome numerous obstacles and personal hardships during the census undertaking, of which I am deeply humbled.

Ipia Gadabu

Acting Assistant Government Statistician

1. INTRODUCTION

'Many changes had occurred in Nauru since the heydays of the phosphate industry. The 1980s had been a period of strong economic growth, and the population of Nauru had experienced prosperity that was well documented (Nauru at that time enjoyed one of the highest incomes per capita in the world).'

Nauru National Population Census, April 1992

On 23 September 2002, the fourth local national population census was held amidst the increasing hardship and difficulties of the people of Nauru. Unlike in 1992, this census was funded by the aid branch of the Australian Government, AusAID, under a memorandum of understanding with SPC in Noumea.

It was decided from the high annual growth rate in 1992 that a population census may be necessary to assess the visibly growing population during 1997; however, attempts to hold a national census at that time did not reach high-priority status. In 2001 it became evident that a socio-economic reassessment of Nauru's position in view of the noticeable economic shift should be placed in high priority.

The need for a national census became obvious to the Census Office (Bureau of Statistics) during 1997 when a memo was submitted to government officials proposing the need for a national census in an attempt to update old socio-economic figures. The then Acting Director of the Bureau of Statistics and his predecessor shared a similar view: that the 'heydays' and 'prosperity' were nearing their end. This may not have been apparent, as it took until almost mid-2001 for the current Acting Government Statistician to receive instructions to prepare planning for a national census targeted for 2002.

It has been repeatedly said that for adequate planning at the national level, information about the characteristics of the society is required. With such information, potential impacts can be forecast and policies can be designed for the improvement and benefit of society. Without it, the people, national planners and leaders will inevitably face uncertainties.

The 1992 census hinted at the shift in distribution and socio-economic situation of the people due to the steadily falling economy that resulted from the depletion of phosphate resources after 1990.

This analysis is based upon the census that took place on 23 September 2002. It aims to give detailed information about the characteristics and living conditions of the people of Nauru and will form the basis of socio-economic strategies for planning and policy-making for effective development concerning the continued future of Nauru.

1.1 Administrative framework

The Census Office

The Bureau of Statistics was established in 1994. Under the Bureau of Statistics Act 1994, the Bureau was authorised to perform the functions surrounding censuses and survey-type undertakings. For the 2002 census, the Bureau was also known as the Census Office.

With former census activities undertaken by the Department of Island Economic Development (IED; formerly Island Development and Industry), the 2002 census was the first census run by the Bureau of Statistics and its current staff. It was a privileged learning experience for all.

Staffing and recruitment

The recruitment of external personnel was somewhat restricted due to time and financial constraints. To address this issue, the Census Office invited any staff from the public service who had past census experience to apply. Recruits were mainly from the public service and teachers. Overall, 15 supervisors and 60 enumerators were hired.

The area requiring the most staff resources was 'Location', which contained 103 housing blocks. Each block contained eight units or flats, with each of these enumerated as one household unless otherwise stated by the occupants. As well as these 103 blocks there were just under 20 ruins, bringing the total to over 600 habitable houses. The added problem of people speaking different languages housed randomly throughout Location meant recruiting enumerators who could speak various languages.

Census laws and regulations

The census was conducted under the Census Act 1976, according to the provisions set by the minister responsible. The act provides for the legal taking of censuses and provides the Census Office with the authority to ask questions of the residents of Nauru. The act also gives the minister the power to make appropriate regulations relating to the census.

1.2 Mapping and listing operations

Mapping and listing were part of the preparations completed before the enumeration phase on 23 September. Two Census Office staff did preliminary household listings and mapping over a period of two weeks during early 2001, and then again during February 2002 due to a housing construction scheme that had been undertaken jointly by the Taiwan and Nauruan governments, and repatriation of housing formerly occupied by foreign workers. Mapping and listing operations proved very time-consuming in Location due to communication problems with the many different ethnic communities residing in the area. At the same time, the most recent maps (1992) were acquired from the Nauru Rehabilitation Corporation (NRC) and updated.

Mapping

The Office of Lands and Survey was the obvious first choice to provide maps. Unfortunately the size and scale of their maps made it impossible to create copies with existing copy machines on the island. This led to the second option of approaching NRC, who provided their most recent maps using some of the latest technology available. Throughout the census preparation and up until the day before enumeration, NRC provided the necessary expertise with census maps and production, incorporating rough locations of new houses.

Each district was divided into four or five enumeration areas (EAs), depending on the number of houses. Each enumerator was required to enumerate 10–14 houses. The recruitment of specific staff for Location meant further improvising because of the language barriers mentioned earlier, which required good and constant communication between each enumerator and his/her supervisor. Realising the challenges and time involved in maintaining such ongoing coordination and communication, it was decided to place a second supervisor in this area. The SPC demographer, Dr Chris McMurray, volunteered to assist in Location.

By enumeration day, all enumerators were provided with a map of their respective areas, with demarcations incorporating any changes they themselves had previously made. Each supervisor was provided with copies of the enumerator maps of the area they were supervising.

Household listing

As mentioned above, preliminary household listings were completed during the preparation stages. These listings were compared to the maps for credibility. Updating at a later time meant only minor changes were necessary during the first visit by the enumerators on 22 September. On each occasion, it took census staff around two weeks to complete these tasks. The actual process of allocating EAs within districts, and then listing the respective household heads, was important to prevent double-counting – of which, incidentally, no cases were reported.

The questionnaire

The questionnaire was based on the Pacific Islands Model Population and Housing Census Form and the 1992 census, and comprised two parts: a set of household questions, asked only of the head of household, and an individual questionnaire, administered to each household member. Unlike the previous census, which consisted of a separate household form plus two separate individual forms for Nauruans and non-Nauruans, the 2002 questionnaire consisted of only one form separated into different parts and sections. Instructions (and skips) were designed in such a way as to easily guide individuals through all relevant questions. As with the previous census form, the questionnaire was divided into thematic sections targeting specific characteristics.

The questionnaire cover recorded various identifiers: district name, enumeration area, house number, number of households (family units) residing, total number of residents, gender, and whether siblings of the head of the house were also recorded. The second page, representing a summary page, listed every individual residing within the house. This list was taken by the enumerator on the first visit, on the eve of census night.

The first part of the census questionnaire focused on housing-related questions. It was administered only once in each household, with questions usually asked of the household head. The household form asked the same range of questions as those covered in the 1992 census, relating to type of housing, structure of outer walls, water supply sources and storage, toilet and cooking facilities, lighting, construction materials and subsistence-type activities.

The second part of the census questionnaire focused on individual questions covering all household members. This section was based on the 1992 questions, with notable differences being the exclusion of income-level questions and the expansion of fertility and mortality questions. As in 1992, a problem emerged during questionnaire design regarding the question of who or what should determine a 'Nauruan'. Unlike the 1992 census, where the emphasis was on blood ties, the issue of naturalisation and citizenship through the sale of passports seriously complicated matters in 2002. To resolve this issue, it was decided to apply two filtering processes: Stage 1 identified persons with tribal heritage through manual editing, and Stage 2 identified persons of Nauruan nationality and citizenship through designed skips in the questionnaire that were incorporated in the data-processing programming.

1.3 Publicity and training

Publicity

Publicity played an important role in the census operation. In order for any census to be successful, widespread publicity has to be achieved. The aim of every publicity campaign of this nature is twofold: to raise public awareness, and to educate. On an island as small as Nauru, such a campaign was organised with relative ease.

The Census Office decided to rely on three means of communication, which were also used for the 1992 census. The first was to publish a teachers' manual containing the most basic information about the census, its application and its importance to planners and governments. This manual was a modified version of the 1992 teachers' manual. The purpose was to incorporate census awareness into the school curriculum. The second means of communication was using radio and television to broadcast the message. The third was through the local medium known as the 'coconut wireless' or word of mouth, and depended entirely on the success of the former two and on census staff. Publicity was done during the training, with a crew from Nauru Television sent to cover two days of the training. On these two occasions selected participants of the census-training workshop were interviewed, and a prepared speech was given by the Acting Assistant Government Statistician describing the importance of the census and the benefits to the people in terms of future planning.

Unfortunately it was not possible to achieve the same scale of publicity enjoyed during the 1992 census. Although enumerators reported that none of the houses enumerated was ignorant that a census was being conducted, the fact remains that messages conveyed over the radio and television did not reach everybody as expected. It was found that households located in

the northern part of the island did not receive radio or television transmission due to poor infrastructure. This situation contributed to some tension and hostilities during the enumeration phase, as well as disinterest and in some cases the temporary disappearance of entire listed households. Despite these obstacles, overall non-response was very low.

Training

Training of census supervisors and enumerators was conducted jointly with the assistance of the former SPC demographer, Dr McMurray. The training took approximately two weeks (including listing and training of additional enumerator assistants) to ensure all aspects were adequately covered. The sessions comprised three days of lectures, one half-day of field testing the questionnaire, five days of listing and two extra days of training enumerator assistants due to late staff withdrawals. Sundays were days off. Due to the length of the questionnaire, the group was pressed to cover everything adequately.

The same training manual was provided for each recruit and the questions were addressed one by one, followed by thorough discussions of the topics covered. With everyone exposed to the same training, supervisors were selected for their demonstrated initiative and their general understanding of the questionnaire, as well as for previous census experience.

Census

Census night was Monday 23 September 2002. The first stage of enumeration began the day before. This was known as the *first visit*, where enumerators visited each house within their allocated EA and listed every individual living within the house. The first visit also allowed enumerators to make changes to existing maps and household lists if required. Any changes to the maps were handed to NRC, who made the necessary alterations. The Census Office and the respective supervisor updated their own lists where necessary.

During enumeration, each enumerator kept track of enumerated households using their maps and household listing, or field control sheets. Each supervisor was provided with a control sheet identical to the field control sheets, and maps that he/she was required to check for consistency. Once they completed work in their respective EA, the enumerators were required to hand in all forms to their supervisor, who subsequently checked for completeness and quality of the information provided, returning any unsatisfactory form(s) to the enumerator for re-enumeration. All these operations were coordinated by the Acting Government Statistician, who visited each supervisor during the field operations.

Once all forms had been quality-checked by the respective supervisors, they were submitted to the Census Office together with field control sheets and a summarised control sheet. The control sheets were collected and entered into a computer, and a provisional count of the population was made.

1.4 Data processing

Data processing covers coding of questionnaires, data entry, data edits and tabulation of results.

Coding, data entry and editing

Coding took longer than expected when the Census Office found that more quality-control checks were required before coding could take place and that a large number of forms still required attention. While these quality-control checks were supposed to have been done by the supervisors in the field, the Census Office decided to review all census forms before commencing the coding. This process took approximately three months, before actual data processing could begin.

The amount of additional time required to recheck the quality of every census form meant that data processing fell behind schedule. The Census Office had to improvise, with a little pressure from external stakeholders, and coding, in conjunction with data entry, began after recruiting two additional data entry personnel. All four Census Office staff became actively involved with coding, with one staff member alternating between coding and data entry, depending on which process was dropping behind schedule. In the end, the whole process took almost two months to complete.

Prior to commencing data entry, the Census Office had to familiarise itself with the data entry processing system. For this purpose, SPC's Demography/Population Programme was invited to lend assistance. Two office staff were appointed to work with Mr Arthur Jorari, SPC Population Specialist, who began by revising their skills for the data processing software that had been introduced by Dr McMurray. This training attachment took two weeks to complete. Data entry was undertaken using the 2.3 version of the US Census Bureau's census and surveying processing software, or CSPro2.3. This version was later updated to CSPro2.4, and all data were transferred accordingly.

Technical assistance for data editing was provided by Mr Jorari over a two-week period. While most edits were completed during this period, it was discovered that some batches of questionnaires had not been entered during the initial data capturing. Therefore, batch-edit application had to be regenerated. This process was frequently interrupted by power outages prevailing at the time, which delayed data processing considerably and also required much longer periods of technical support to the two Nauru data processing staff via phone or email (when available).

Tabulation

The advantage of using CSPro was that the same package used for data entry and edits could also be used for producing different types of tabulations, including complex cross-tabulations, and that former problems associated with using separate software packages to perform different tasks were eliminated. Tables were created using CSPro2.4 during a short-term professional attachment by the Acting Assistant Government Statistician in Noumea, in collaboration with colleagues from SPC's Demography/Population Programme.

2. POPULATION CHARACTERISTICS

Nauru is a coral island located in the central Pacific, 60 km south of the equator. It belongs to the region of Micronesia and its nearest neighbour is Banaba (Ocean Island) in the Republic of Kiribati, 330 km to the east. Nauru is bordered to the south-west by the Solomon Islands and to the north and north-west by the Marshall Islands and the Federated States of Micronesia. Its total land area is 21.1 square km. Nauru is 6 km in length (from the north-east to the south-west) and 4 km in width (from the north-west to the south-east), and its circumference measures 19 km.

Nauru's population and environment are largely, if not entirely, affected by its phosphate deposits. The country consists of one main island, divided into 14 small districts of various sizes and varying numbers of inhabitants. Due to phosphate mining, at least three-quarters of the island is deemed uninhabitable and unsuitable for any kind of livelihood. In general, the distribution of the population is effected by the situation of businesses and commerce. Therefore, most people are distributed along the southern part of the island because of its accessibility to shopping centres and employment bodies. The two main employers are situated in the southern parts of Nauru: the Nauru Phosphate Corporation and the public service sector. The Nauru Phosphate Corporation's main office is based in the district of Aiwo, which explains the Location settlement being located in Denigomodu, the neighbouring district of Aiwo.

2.1 Size

The population size of Nauru, like that of all countries, holds a very important position in the consideration of policies. Like most islands of Micronesia, land will always play a key role in policy development for both social and economic matters. In Nauru's case, the mining industry has played a major part in rendering approximately three-quarters of the 21 square km of land mass uninhabitable. Current policies surrounding the rehabilitation of this wasteland have not yet been realised despite the establishment of NRC in 1999.

The impact of this issue is becoming evident with the increasing number of land disputes being registered in court each year. A number of causes may be responsible for this, but one important indication is the increase in crude population density. The absence of accurate estimates of land use and availability of land has meant that total land mass has been consistently used in calculating crude population density. When the current population is divided by what arable land is still available to be inhabited, the population density should realistically be higher. Therefore, coupling the latest in land use figures and population figures is important in portraying a more accurate account of some aspects of the living conditions in Nauru.

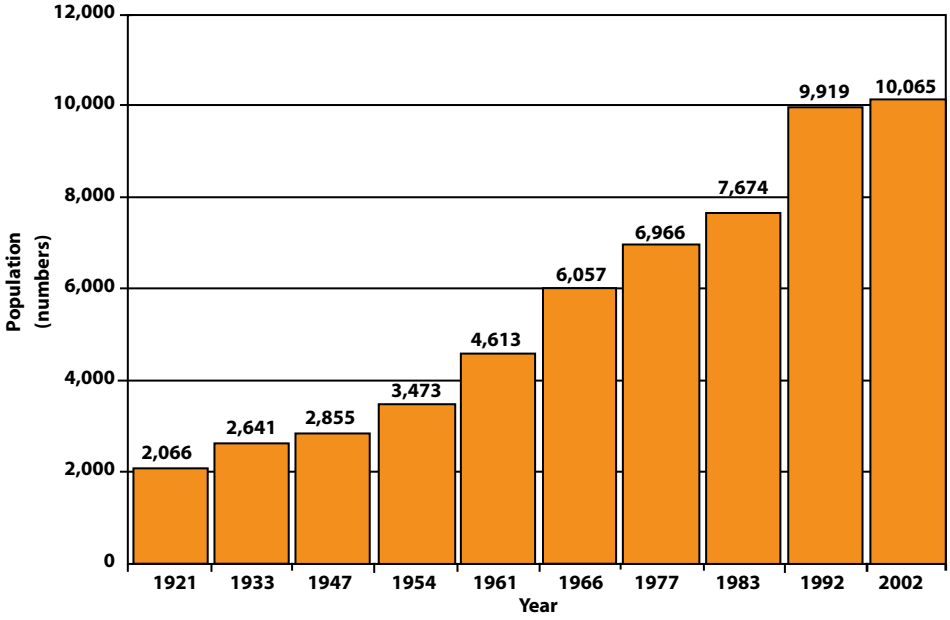
The total population of the Republic of Nauru as enumerated on 23 September 2002 stands at 10,065 people: 5,136 males and 4,929 females. As the 2002 census was a *de facto* count, this number includes all persons present on census night in Nauru. It is made up of 9,872 permanent

residents and 193 short-term visitors, tourists and temporary contract workers (non-residents). It excludes residents away from Nauru at the time of the census (even if they intended to be away only for a short time). The Nauru resident population in 2002 consists of 7,572 indigenous Nauruans and 2,300 non-Nauruans, mainly I-Kiribati, Tuvaluan and Chinese (Figure 2.3).

2.2 Growth

The population count reflects an increase of only 146 people from the 1992 census (which counted the total population as 9,919). Figure 2.1 illustrates Nauru's population growth from 1921 to 2002, highlighting two distinct developments: a continuous increase from the 1920s, reaching almost 10,000 people in 1992, and population growth almost coming to a standstill since the early 1990s, as reflected in the net increase of just 146 people over 10 years.

Figure 2.1: Nauruan total population from 1921 to 2002



This modest net increase of 146 residents between 1992 and 2002 translates into an annual overall population growth rate of just 0.14% – by far the lowest rate since the first census was taken in Nauru in 1921. The Nauruan population component, in contrast, increased at a slightly higher rate of 1%, with 7,572 residents claiming to be Nauruans compared to 6,831 people in 1992.

This modest rate of annual growth represents a serious change from the high population growth experienced during the 1950s and 1960s, with even the 1980s witnessing annual growth well in excess of 3%. To what extent this recent turnaround has been shaped by changes in fertility, mortality and migration is the subject of a more detailed demographic analysis, presented in Part 2 of this report.

Figure 2.2 and Table 2.1 further illustrate the size of the population since 1921. It is evident that since 1951, after Nauru recovered from World War II and celebrated its second Angam Day, the population continuously increased over the years.

Figure 2.2: Cumulative population growth 1921–2002

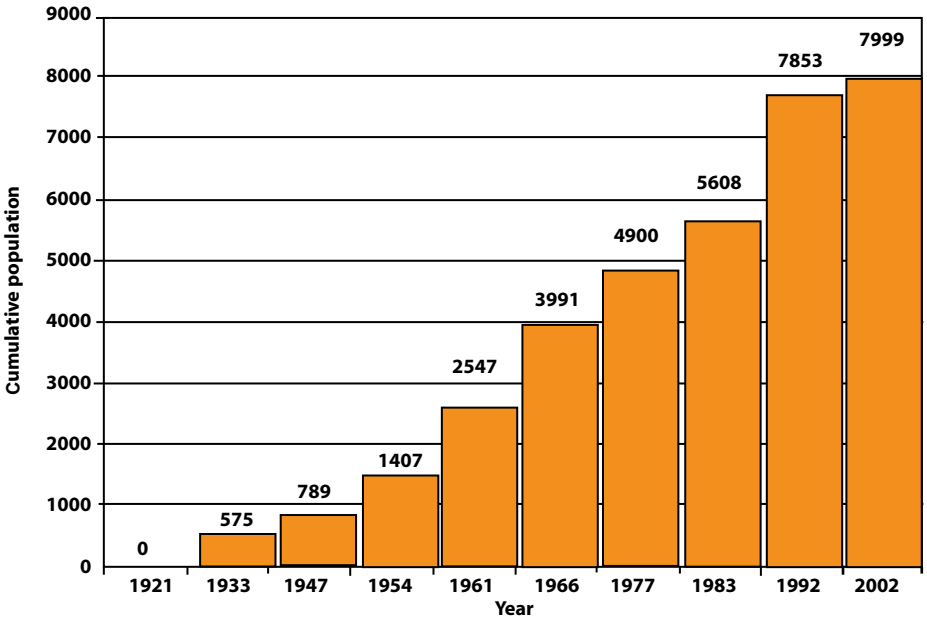


Table 2.1: Population growth during the intercensal periods

Intercensal period	Interval (years)	Pop. at T1 (P1)	Pop. at T2 (P2)	Population growth			Doubling time (years)
				Absolute	Relative (%)	Annual (r) (%)	
1921–1933	12.33	2,066	2,641	575	27.8	2.26	31
1933–1947	14.00	2,641	2,855	214	8.1	0.58	121
1947–1954	7.00	2,855	3,473	618	21.6	**3.09**	23
1954–1961	7.00	3,473	4,613	1,140	32.8	**4.69**	15
1961–1966	5.00	4,613	6,057	1,444	31.3	**6.26**	11
1966–1977	10.56	6,057	6,966	909	15.0	1.42	49
1977–1983	6.30	6,966	7,674	708	10.2	1.61	43
1983–1992	8.93	7,674	9,919	2,245	29.3	**3.28**	21
1992–2002	10.43	9,919	10,065	146	1.5	0.14	496

2.3 Density and distribution

The modest overall population growth led to a small increase in Nauru's population density between 1992 and 2002, from 472 to 479 people per square kilometre.

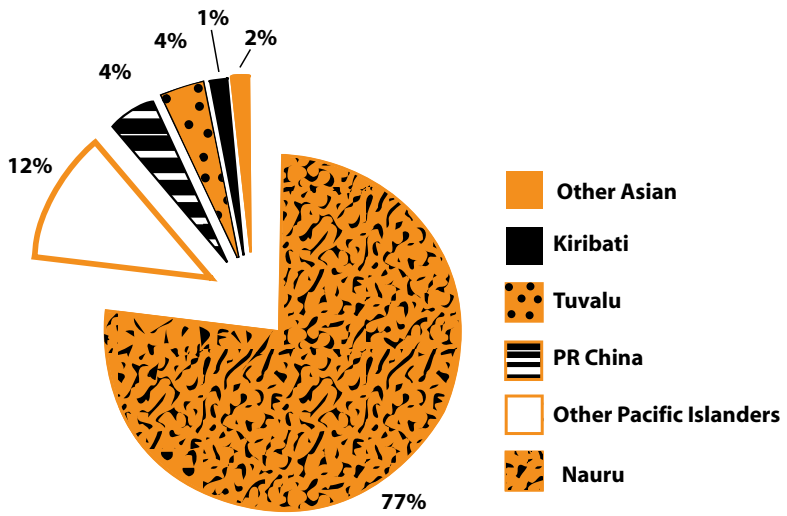
While population distribution varies somewhat between districts, showing some signs of inter-district mobility, there have been few marked changes in overall population distribution between 1992 and 2002; this suggests that people largely live in the same areas they occupied in 1992. The most noticeable changes have occurred in Aiwo, Anibare and Nibok (Table 2.2). Aiwo's population has increased by some 20%, which is largely the result of many indigenous landowners returning there to establish residence following the repatriation of settlement areas formerly designated to the mining corporation's expatriate staff. The remote community of Anibare shows a 40% population increase, from 165 to 232 residents. Nibok, on the other hand, lost just under 20% of its population during the same period.

The area known as Location, which provides housing for mining company and government expatriate workers, represents almost 24% of the total population in 2002 – a similar proportion to 1992. And as in 1992, Meneng still represents the largest Nauruan community on the island, comprising 13% of Nauru's resident population – a slight decrease from its 14% 10 years earlier.

Table 2.2: Population by district in 1992 and 2002

District	1992		2002	
	Total	Proportion of total population (%)	Total	Proportion of total population (%)
Yaren	672	6.8	632	6.3
Boe	750	7.6	731	7.3
Aiwo	874	8.8	1,051	10.4
Buada	661	6.7	673	6.7
Denig	325	3.3	292	2.9
Nibok	577	5.8	479	4.8
Uaboe	447	4.5	386	3.8
Baitsi	450	4.5	443	4.4
Ewa	355	3.6	397	3.9
Anetan	427	4.3	498	4.9
Anabar	320	3.2	378	3.8
Ijuw	206	2.1	169	1.7
Anibare	165	1.7	232	2.3
Meneng	1,389	14.0	1,323	13.1
Location	2,301	23.2	2,381	23.7
Total	**9,919**	**100.0**	**10,065**	**100.0**

Figure 2.3: Resident population by nationality, 2002



2.4 Age and sex

The resident population in 2002 consists of 5,040 males and 4,832 females. A higher presence of males (+208) than females translates into a sex ratio of 104, which means there are 104 males for every 100 females. The sex ratio for the Nauruan population in 2002 stands at 101, with about equal numbers of males (3,807) and females (3,765). The non-Nauruan population, in contrast, comprises more males (1,233) than females (1,067), reflected in a sex ratio of 116 (Table 2.3).

Because the proportion of the population aged 0–14 has decreased since 1992 and the proportion of the working-age population (15–59) has increased (Table 2.4), the median age of Nauru's resident population has increased by 1.6 years since 1992, from 19.1 to 20.7 years. This means that half of the resident population is younger and half is older than 20.7 years.

The median age of the Nauruan population was and still is much lower than that of the non-Nauruan population. The difference is almost 14 years. The Nauruan median age increased from 15.9 to 18.5 years, and the median age of the non-Nauruan population increased from 29.6 to 32.2 years during the intercensal period 1992–2002.

Table 2.3: Population by median age, dependency and sex ratio, 1992 and 2002

	Population size		Median age		Dependency ratio		Sex ratio	
	1992	2002	1992	2002	1992	2002	1992	2002
Total population	9,919	10,065	19.4	20.7	82.7	69.8	105	104
Resident population	9,600	9,872	19.1	20.7	84.1	69.7	106	104
Nauruans	6,831	7,572	15.9	18.5	103.2	77.8	102	101
Non-Nauruans	2,769	2,300	29.6	32.2	49.3	47.5	115	116

The difference in the median age of the different population groups is the result of their different population structures. While more than 40% of the Nauruan population is younger than 15 years, this percentage is only 28% in the non-Nauruan population. While only 56% of the Nauruan population is in the working ages 15–59, this percentage is almost 68% in the non-Nauruan population. The percentage of the population older than 60 years is, with just over 2% of the Nauruan population, very low, and it is not much higher (3.9%) for the non-Nauruan population.

A common way to describe a population's age structure is via the so-called dependency ratio, which compares the economically dependent component of a country's population to its productive component. This is conventionally expressed as the ratio of the young (0–14) plus the old (60+), to the population of working age (15–59). The dependency ratio of Nauru's resident population is 70: this means that for every 100 people of working age, there are 70

people of dependent age (Table 2.3). This dependency ratio has decreased since the 1992 census, when it was 84:1.

The dependency ratio of the Nauruan population decreased from 103 in 1992 to 78 in 2002, while the dependency ratio of the non-Nauruan population remained just under 50.

Table 2.4: Population by broad age groups (percentage distribution), 1992 and 2002

	0–14		15–59		60+	
	1992	2002	1992	2002	1992	2002
Total population	42.5	38.5	54.7	58.9	2.8	2.6
Resident population	42.9	38.5	54.3	58.9	2.8	2.6
Nauruans	48.1	41.6	49.2	56.2	2.7	2.2
Non-Nauruans	30.2	28.3	67.0	67.8	2.8	3.9

A population pyramid (Figures 2.4–2.6) shows the number of males and females in five-year age groups, starting with the youngest age group at the bottom and increasing with age towards the top of the pyramid. The number of males is depicted on the left side of the pyramid and the number of females on the right.

A distinctive feature of the Nauru resident population pyramid is the smaller base featuring the youngest age group (0–4 years) compared to 5–9-year-olds. Such a pattern is usually indicative of a recent decline in fertility, as will be shown in the detailed demographic analysis in Part 2. The age structure of the non-Nauruan population is distinctively different from the Nauruan population, featuring a much smaller proportion of children and 15–29-year-olds and highlighting the predominance of people of prime working age.

Figure 2.4: Population pyramid, total population, 2002

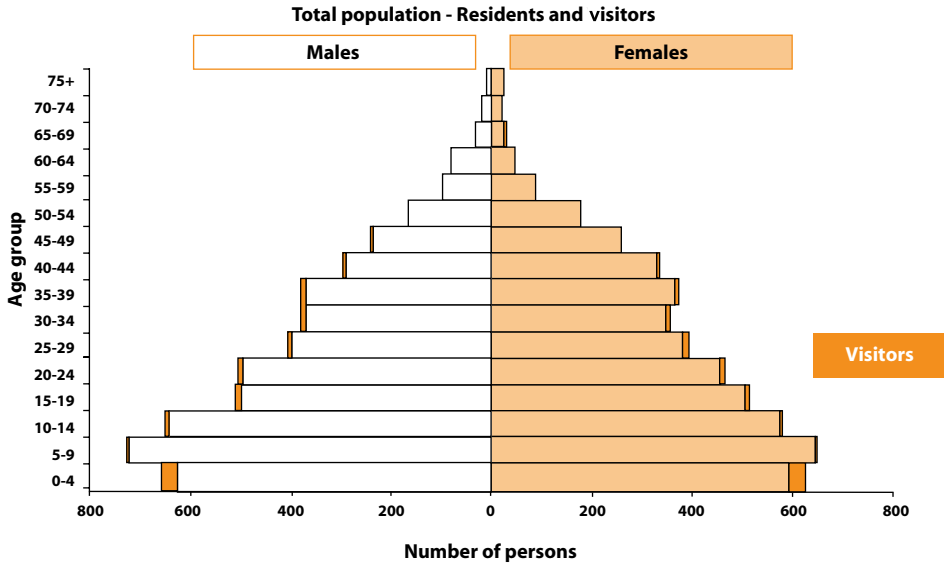


Figure 2.5: Population pyramid, Nauruan population, 2002

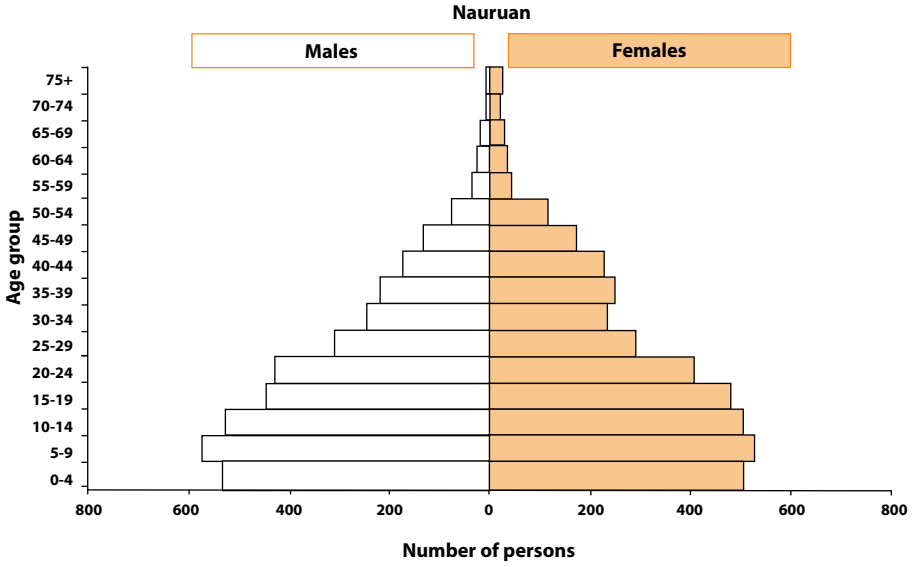
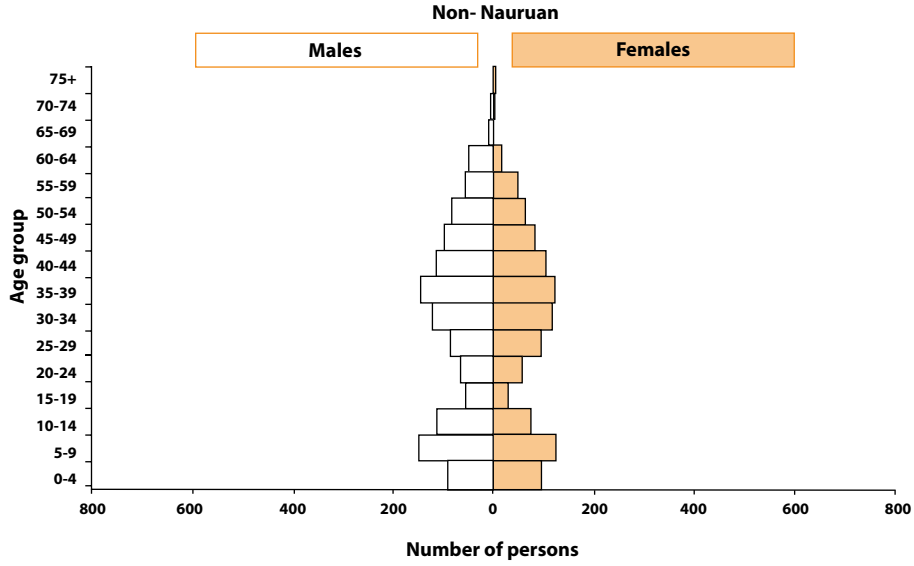


Figure 2.6: Population pyramid, non-Nauruan population, 2002



2.5 Marital status

At the time of the 2002 census, 52% of Nauruans 15 years and older were either married (48%) or living in a *de facto* relationship (4%), with these proportions applying near equally to men and women (Table 2.5). A more pronounced contrast between males and females, however, appears across all other marital status categories:

- A slightly higher proportion of men (41.9%) than women (37.9%) appears in the *never married* category.
- Although divorce/separation affects less than 3% of Nauruans aged 15 years and older, there are more divorced/separated women (N=78) than men (N=49).
- An even more pronounced gender imbalance emerges amongst widows and widowers, with women (N=144) outnumbering men (N=50) at a ratio of 3:1 – the result of both higher life expectancy for women and a greater propensity for widowers than widows to remarry.

Table 2.5: Nauruan population 15 years and over by marital status and sex

Marital status	Total	%	Male	%	Female	%
Total	**4,460**		**2,191**		**2,269**	
Never married	1,779	39.9	918	41.9	861	37.9
Now married	2,155	48.3	1,078	49.2	1,077	47.5
De facto	183	4.1	87	4.0	96	4.2
Now divorced	42	0.9	17	0.8	25	1.1
Now separated	85	1.9	32	1.5	53	2.3
Now widowed	194	4.3	50	2.3	144	6.3
Not stated	*22*	*0.5*	*9*	*0.4*	*13*	*0.6*

2.6 Religion

A question on religion was included in the 2002 census questionnaire. While it was asked of all respondents, answering this question was not compulsory. Some care with interpretation is advisable, as the recorded religion of a respondent is the religion stated by the head of the household during the census interview, which may not be the same as the church/sect that each and every household member usually attends. That is, heads of households often report *all* household members as belonging to the church/sect he or she belongs to him- or herself.

Forty-five per cent of the Nauruan population report that they are members of the Nauru Congregational Church, with followers of the Roman Catholic faith and members of the Nauru Independent Church accounting for a further 35.6% and 13.5% respectively (Table 2.6). Only 11 Nauruans claim not to follow any religion (0.1% of the population), compared to 18% of non-Nauruan residents, of which the vast majority (42.6%) claim to adhere to other religions or to the Roman Catholic faith (25.8%).

Table 2.6: Population by religion and citizenship

Religion	Total		Nauru citizen		Other citizen*	
	Number	%	Number	%	Number	%
Total	**10,063**	**100.0**	**7,572**	**100.0**	**2,491**	**100.0**
Nauru Congregational	3,563	35.4	3,406	45.0	157	6.3
Roman Catholic	3,342	33.2	2,699	35.6	643	25.8
Nauru Independent	1,049	10.4	1,019	13.5	30	1.2
Other	1,417	14.1	355	4.7	1,062	42.6
No religion	456	4.5	11	0.1	445	17.9
Not stated	*238*	*2.4*	*82*	*1.1*	*156*	*6.3*

* Excludes those with citizenship 'not stated'.

3. EDUCATION

The 1992 and 2002 censuses collected detailed information on education characteristics of members of the population aged five years and over; they also collected detailed information on the labour force participation and economic activity of the population 16 years and older. Both education and economic activity questions were asked only of the indigenous Nauruan population.

Census questions on education focused on current school attendance, the highest level of formal education attained, qualifications achieved and languages spoken. Overall, the 2002 census questionnaire contained 15 questions on education and two questions on language spoken, directly comparable to the 1992 census questions on education. The focus of this section is on describing school attendance, highest level of educational attainment achieved, highest qualifications obtained, age of leaving formal education and main languages spoken. The Nauru 2002 Census Tabulation report contains additional information on training courses attended; field of study at university, college or vocational institution; time period between completing education and starting first paid work; and whether or not a respondent had sponsorship for overseas studies.

3.1 School attendance

Table 3.1 describes the level of school attendance in primary and secondary schools at the time of the 2002 census. It shows that about one-third of Nauruans are still at school, either full-time or part-time, while almost two-thirds (64%) have left school. Just over 1% of the population (N=87) claims never to have been to school.

Table 3.1: School attendance of the Nauruan population five years and over, 2002

School attendance	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**6,553**	**100.0**	**3,280**	**100.0**	**3,273**	**100.0**
Yes, full-time	2,146	32.7	1,094	33.4	1,052	32.1
Yes, part-time	26	0.4	14	0.4	12	0.4
Left school	4,194	64.0	2,080	63.4	2,114	64.6
Never been to	87	1.3	47	1.4	40	1.2
Not stated/not applicable	*100*	*1.5*	*45*	*1.4*	*55*	*1.7*

Note: This question was administered only to the Nauruan population.

The vast majority of Nauruans currently attending school attend government primary (43%) and secondary (18%) schools, with non-government primary (13.7%) and secondary (6.4%) schools catering for a further a 20% (Table 3.2). Pre-schools account for 17% of school attendance.

Table 3.2: Full- and part-time school attendance by type of institution

Type of education institution	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**2,172**	**100.0**	**1,108**	**100.0**	**1,064**	**100.0**
Pre-school	379	17.4	189	17.1	190	17.9
Primary, government	932	42.9	484	43.7	448	42.1
Primary, non-government	297	13.7	167	15.1	130	12.2
Secondary, government	397	18.3	189	17.1	208	19.5
Secondary, non-government	140	6.4	64	5.8	76	7.1
Tertiary	6	0.3	3	0.3	3	0.3
Other institution	17	0.8	10	0.9	7	0.7
Not stated/not applicable	*4*	*0.2*	*2*	*0.2*	*2*	*0.2*

While attendance numbers *per se* provide useful information, from a planning and policy perspective ***attendance ratios*** represent more important information, as they capture the proportion of the population of a specific age group – primary school or secondary school age, for example – that is actually attending school. The school attendance ratios for the Nauruan population aged 5–19, males and females, attending primary and secondary schools at the time of the 2002 census are provided in Table 3.3. Primary school age in Nauru is 5–9 and secondary school age is 10–19.

Table 3.3: School attendance ratios of 5–19-year-old Nauruan population, by age and sex

Type of school	Population 5–19			Attending school			School attendance ratio (%)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total (5–19)	**3,001**	**1,530**	**1,471**	**1,766**	**904**	**862**	**58.8**	**59.1**	**58.6**
Primary (5–9)	1,079	567	512	651	352	299	60.3	62.1	58.4
Secondary (10–19)	1,922	963	959	1115	552	563	58.0	57.3	58.7

Current attendance ratios at both primary and secondary age are a low 59%, with primary age attendance only slightly higher than the attendance ratio of children aged 10–19. Slightly more young boys (62%) than girls (58%) attend school, with a reverse pattern emerging amongst older children and teenagers. Considering the relative smallness of the island, and with communication and transport difficulties hampering accessibility in most Pacific Island countries, access alone

cannot explain these extremely low attendance ratios. Given the importance of education and training to all facets of social and economic development, these very low attendance ratios should cause some alarm amongst parents and policy-makers. If left unattended, they do not augur well for Nauru's future.

Representing these figures in a different way, one can focus more specifically on the primary age group (5–11) and an older age-cohort (12–29) to allow for a comparison with 1992 census data[1] and an assessment of primary and secondary school attendance over time. This highlights two important features and trends (Table 3.4):

- current primary enrolment stands at 69.7%, with slightly more boys (71.3%) than girls (67.8%) in attendance, whereas only one in four Nauruans aged 12–29 is attending a secondary institution; and
- enrolment ratios have declined over the past 10 years, most noticeably at primary school level (from 75.3% to 69.7%).

Table 3.4: Nauruan population attending primary and secondary schools, by age and sex, 1992 and 2002

Age groups	1992			2002			Change (in %)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Now attending	1,775	897	878	1,766	904	862			
5–11 (%)	**75.3**	76.3	74.4	**69.7**	71.3	67.8	**-5.6**	-5.0	-6.6
12–29 (%)	**27.5**	26.6	28.4	**25.1**	23.2	27.0	**-2.4**	-3.4	-1.4

3.2 Highest level of educational attainment

Table 3.5 summarises the highest level of educational attainment achieved by the Nauruan population over five years of age who have left school. Highest level of educational attainment is defined as the highest formal educational level completed (primary school, secondary school or university/college) at the time of the 2002 census. All post-secondary qualifications at certificate, diploma or degree level have been recorded as 'tertiary'. Respondents were recorded only once: someone with a university diploma is recorded as having 'tertiary' level education despite the fact that he/she has also completed a full six years of secondary education.

1 It would have been preferable to have a more appropriate age breakdown, such as 12–19 (and 20–29), as few 20–29-year-olds would be attending secondary school, but the format of the 1992 census data does not allow for such a disaggregation. Including a large number of Nauruans (N=1,152) aged 20–29 in the denominator, with only a small number attending secondary school (represented in the numerator), explains the low 12–29 school attendance ratios.

Table 3.5: Highest level of education completed*

Highest education level	Total		Male		Female		Sex ratio
	Number	%	Number	%	Number	%	
Total	**4,194**	**100.0**	**2,080**	**100.0**	**2,114**	**100.0**	**98**
Primary 1	13	0.3	8	0.4	5	0.2	160
Primary 2	20	0.5	12	0.6	8	0.4	150
Primary 3	9	0.2	7	0.3	2	0.1	350
Primary 4	26	0.6	19	0.9	7	0.3	271
Primary 5	33	0.8	21	1.0	12	0.6	175
Primary 6	105	2.5	63	3.0	42	2.0	150
Secondary 1	190	4.5	102	4.9	88	4.2	116
Secondary 2	323	7.7	168	8.1	155	7.3	108
Secondary 3	572	13.6	272	13.1	300	14.2	91
Secondary 4	1,498	35.7	709	34.1	789	37.3	90
Secondary 5	783	18.7	385	18.5	398	18.8	97
Secondary 6	347	8.3	158	7.6	189	8.9	84
Tertiary	136	3.2	72	3.5	64	3.0	113
Not stated/ not applicable	*139*	*3.3*	*84*	*4.0*	*55*	*2.6*	*153*

* Refers to Nauruans over five years of age who have left school.

Table 3.5 highlights that 92% of Nauruans who have left school have progressed past primary education and attended some years of secondary education. Just over one-third (35.7%) completed 4th-year secondary school, with a further 30% completing Year 5 (18.7%) or Year 6 (8.3%) or achieving some tertiary education (3.2%). The table also highlights that girls remain in school longer than boys, as evident from the low sex ratios in secondary years 3–6, which, depending on level, vary between 84 and 97 boys per 100 girls. This information also shows that one in three Nauruans (30.7%) did not move past 3rd-year secondary education – which, alongside the low enrolment ratios referred to above, ought to call for some attention amongst Nauru's policy-makers.

3.3 Highest level of formal qualifications achieved

Table 3.6 provides a brief summary of formal qualifications achieved by Nauruans who have left school. The vast majority (54.7%) list Secondary Certificate as their highest formal qualification, with a slightly higher proportion of females (56.6%) achieving this distinction than males (52.9%), and a further 8.8% matriculating.

Eighty-seven Nauruans, or 2.1% of all adult Nauruans, achieved some tertiary qualifications: 60 of those were at diploma/certificate level, 19 were at degree level, and eight achieved a postgraduate degree, with males (N=52) outnumbering females (N=35) at this level of qualification.

Table 3.6: Highest level of formal qualifications achieved

Highest qualification	Total		Male		Female		Sex ratio
	Number	%	Number	%	Number	%	
Total	**4,194**	**100**	**2,080**	**100**	**2,114**	**100**	**98**
Secondary Certificate	2,296	54.7	1,101	52.9	1,195	56.5	92
Matriculation Certificate	369	8.8	167	8.0	202	9.6	83
Diploma/certificate	60	1.4	37	1.8	23	1.1	161
Degree (undergraduate)	19	0.5	12	0.6	7	0.3	171
Postgraduate degree	8	0.2	3	0.1	5	0.2	60
Other	9	0.2	4	0.2	5	0.2	80
None	1,329	31.7	694	33.4	635	30.0	109
Not stated/ not applicable	*104*	*2.5*	*62*	*3.0*	*42*	*2.0*	*148*

This table also shows that one in three Nauruans (31.7%) have no formal qualifications; while this does not mean they have not undertaken any formal education or training, it highlights the fact that they have not completed whatever they started, as is illustrated in the case of those who left secondary education before achieving their secondary certificate[2].

3.4 Age of school leavers

Low school attendance ratios and levels of educational attainment are not recent developments – as indicated in Table 3.7, which shows that one in three adult Nauruans left school before turning 16, with another 39% leaving at age 16. This corresponds with completing 4th-year secondary education (and achieving the Secondary Certificate). The high sex ratios for ages 12–14 suggest that amongst Nauruans who have left school, more boys than girls left school early, whereas the low sex ratios in the 15–18 age group suggest more teenage girls than boys left school at those ages – patterns that differ from current attendance ratios (Table 3.3). Further

2 This does not include people who started a university course or an apprenticeship but did not complete it. Those who would have, for example, reported 'tertiary education' as their highest level of education achieved (Table 3.5) but did not achieve specific tertiary qualifications (136 - 87 = 49) are not included here, as they would have had to achieve a Matriculation Certificate in order to get to university.

attention should be given by policy-makers to the current prevalent trends showing youths leaving school before the age of 16 contrary to existing laws – not to mention the impact this has on the job market and crime, amongst other social concerns.

Table 3.7: Age of school leavers

Age left school	Total		Male		Female		Sex ratio
	Number	%	Number	%	Number	%	
Total	**4,194**	**100.0**	**2,080**	**100.0**	**2,114**	**100.0**	**98**
12 years or younger	226	5.4	138	6.6	88	4.2	157
13 years	197	4.7	105	5.0	92	4.4	114
14 years	304	7.2	159	7.6	145	6.9	110
15 years	654	15.6	301	14.5	353	16.7	85
16 years	1,653	39.4	791	38.0	862	40.8	92
17 years	591	14.1	293	14.1	298	14.1	98
18 years	234	5.6	104	5.0	130	6.1	80
19 years	51	1.2	27	1.3	24	1.1	113
20 years	19	0.5	9	0.4	10	0.5	90
21 years or older	52	1.2	27	1.3	25	1.2	108
Not stated/ not applicable	*213* -	*5.1* -	*126* -	*6.1* -	*87* -	*4.1* -	*145* -

3.5 Main language spoken

With this question asked only of the indigenous Nauruan population over five years of age, it is not surprising that Nauruan emerges as the main language spoken in general (98%) and spoken at home (96%), as shown in Table 3.8.

Table 3.8: Main language spoken at home*

Main language spoken at home	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**6,170**	**100.0**	**3,088**	**100.0**	**3,082**	**100.0**
Nauruan	5,912	95.8	2,962	95.9	2,950	95.7
English	50	0.8	20	0.6	30	1.0
Other	75	1.2	43	1.4	32	1.0
Not stated	*133*	*2.2*	*63*	*2.0*	*70*	*2.3*

* Refers to Nauruan population over five years of age.

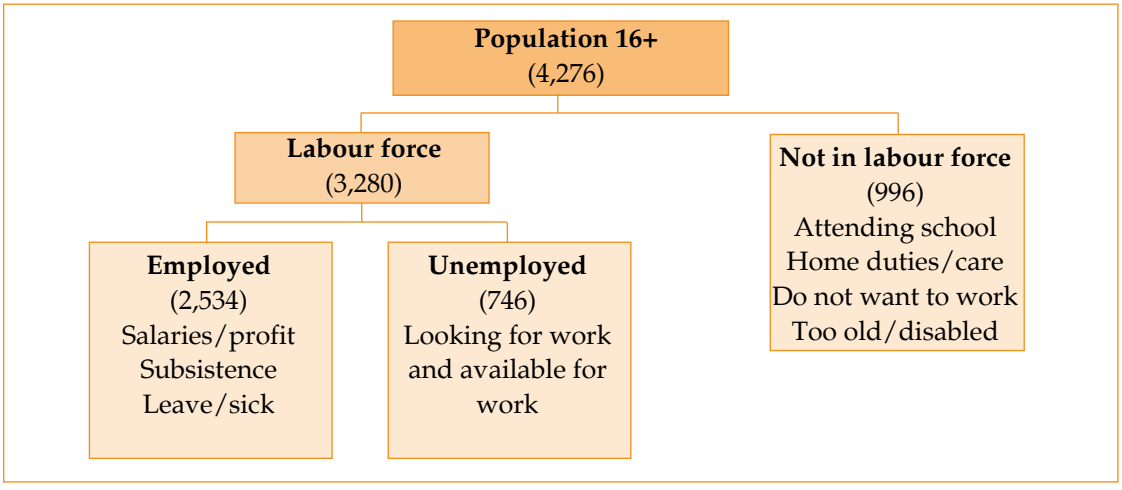
4. ECONOMIC ACTIVITY

This section describes the economic activity of the Nauruan population. The last two censuses included questions on the basic economic characteristics of respondents aged 16 and over. A question on current activity was followed by some more detailed questions concerning type of activity, occupation, type of employer, hours of work and source of income. These additional questions were asked only of persons in the money-earning labour force. Economic activity questions in the 2002 census[3] were not directly comparable to the 1992 census questions: although the recent census adopted most of the questions (including the economic activity questions) from the 1992 census, the minimum age of entry into the labour force was different. The 1992 minimum age was set at 14 years while the 2002 age was set at 16 years.

4.1 Labour force

In 2002, Nauru's labour force comprised 3,280 out of 4,276 residents 16 years of age or older, of whom 2,534 persons were employed and 746 were unemployed. This represents a labour force participation rate of 77%. The category 'employed' refers to all persons who had a paid job, persons working to earn money and persons working in activities such as farming, planting, fishing and handicrafts for family consumption or for sale during the seven days prior to the census. All residents not undertaking such activities but who were actively looking for a job, either for the first time or otherwise, are defined as 'unemployed'. And everyone 16 years and older who attended school or training courses during the reference period, was engaged in

Figure 4.1: Nauruan population aged 16 years and over by economic activity status*



* Includes 'not stated' cases.

3 Questions on income bracket and salary/wage earnings were omitted, and anticipated to be addressed in the Household Income and Expenditure Survey (HIES) in 2004.

housework and caring, or was not engaged in any work (but also did not actively look for work) is referred to as 'not in labour force' (Figure 4.1).

Table 4.1 shows a higher presence of men (1,789) than women (1,491) in the Nauru labour force, yielding labour force participation rates of 85% and 68% respectively. Analogously, more than twice as many women (686) than men (310) are not in the labour force. In terms of age differentials, just over 50% of the labour force (1,685) is under 30 years of age, with the age-cohort 20–24, amongst both men and women, accounting for the biggest age group.

Table 4.1: Nauruan population 16 years and over by age, sex and labour force status, 2002

Age group	Total population 16+			Labour force			Not in labour force		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	**4,276**	**2,099**	**2,177**	**3,280**	**1,789**	**1,491**	**996**	**310**	**686**
16–19	724	349	375	491	261	230	233	88	145
20–24	818	425	393	687	392	295	131	33	98
25–29	588	308	280	507	288	219	81	20	61
30–34	470	245	225	396	231	165	74	14	60
35–39	460	221	239	397	209	188	63	12	51
40–44	394	175	219	331	159	172	63	16	47
45–49	302	136	166	237	118	119	65	18	17
50–54	190	80	110	131	65	66	59	15	44
55–59	76	39	37	48	28	20	28	11	17
60–64	59	29	30	21	15	6	38	14	24
65+	103	44	59	18	14	4	85	30	55
Not stated	*92*	*48*	*44*	*16*	*9*	*7*	*76*	*39*	*37*

Table 4.2 summarises labour force participation by age and sex, pointing to:

- the highest labour force participation rates of 80% and more in the 20–44 age groups;
- considerable gender differentials (males showing rates of 90% and more, compared to values of 70% amongst women); and
- declining labour force participation rates with age.

Table 4.2: Nauruan labour force participation rates by age and sex, 2002

Age group	Labour force participation rates		
	Total	Male	Female
Total	**76.7**	**85.2**	**68.5**
16–19	67.8	74.8	61.3
20–24	84.0	92.2	75.1
25–29	86.2	93.5	78.2
30–34	84.3	94.3	73.3
35–39	86.3	94.6	78.7
40–44	84.0	90.9	78.5
45–49	78.5	86.8	71.7
50–54	68.9	81.3	60.0
55–59	63.2	71.8	54.1
60–64	35.6	51.7	20.0
65+	17.5	31.8	6.8
Not stated	*17.4*	*18.8*	*15.9*

4.2 Economic activity

Of the 3,280 Nauru residents in the labour force, 2,534 are economically active (77%), either working in paid employment (or for profit), engaged in subsistence activities or temporarily not at work due to illness or being on leave (Figure 4.1). On the other hand, 746 Nauruans in the labour force are not working and are actively looking for work, and thus are considered unemployed (23%).

Of the 2,534 economically active people, a total of 2,481 provided information on their current work status, which is summarised in Table 4.3.

Table 4.3: Nauruan population 16 years and over by sex and work type, 2002

Type of work	Total		Male		Female	
	Total	%	Total	%	Total	%
Total	**2,481**	**100.0**	**1,465**	**100.0**	**1,016**	**100.0**
Traditional work only	47	1.9	27	1.8	20	2.0
Paid regular work only	2,081	83.9	1209	82.5	872	85.8
Other type of work only	49	2.0	18	1.2	31	3.1
Combination	291	11.7	204	13.9	87	8.6
Not stated	*11*	*0.4*	*6*	*0.4*	*5*	*0.5*
Not applicable	*2*	*0.1*	*1*	*0.1*	*1*	*0.1*

Over 80% reported that they are engaged in 'regular work', that is, working for salaries or wages in a formal setting, with another 12% engaged in a combination of activities, including some formal and informal sector work. Only 47 Nauruans, or 2% of the economically active population, are engaged in traditional work such as agriculture and fishing activities (Table 4.5). No noticeable differences emerge between male and female activities, apart from a slightly higher percentage of women (85.8%) engaged in paid formal employment than men (82.5%).

More pronounced gender differentials do emerge in employment status, with more women reporting to be actively looking for work (441) than men (305), translating to unemployment rates of 29.6% and 17% respectively (Table 4.4).[4] Considerable contrasts in unemployment rates also emerge across age groups, with, not surprisingly, teenagers (57.6%) and young adults (23.9%) affected most.

Table 4.4: Unemployment by age and sex, 2002

Age group	Total labour force			Unemployed			Unemployment rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	**3,280**	**1,789**	**1,491**	**746**	**305**	**441**	**22.7**	**17.0**	**29.6**
16–19	491	261	230	284	132	152	57.8	50.6	66.1
20–24	687	392	295	164	74	90	23.9	18.9	30.5
25–29	507	288	219	89	27	62	17.6	9.4	28.3
30–34	396	231	165	49	14	35	12.4	6.1	21.2
35–39	397	209	188	54	22	32	13.6	10.5	17.0
40–44	331	159	172	44	12	32	13.3	7.5	18.6
45–49	237	118	119	41	14	27	17.3	11.9	22.7
50–54	131	65	66	10	3	7	7.6	4.6	10.6
55+	87	57	30	8	5	3	9.2	8.8	10.0
Not stated	*16*	*9*	*7*	*3*	*2*	*1*			

4 Out of the 746 people unemployed, 735 were available for work.

As highlighted in Table 4.3, only 47 Nauruans, or just under 2% of all economically active Nauruans, are engaged in 'traditional work' (agriculture or fishing), either for known consumption or for sale. Amongst these activities, fishing plays a more prominent role than agriculture, with the latter attracting only 12 out of 2,481 working Nauruans (Table 4.5).

Numerous factors have to be considered when interpreting Table 4.5. In general the level of traditional work individually reported is considered to be misrepresented. This can be considered in the case of bird hunting (noddying), which is off-season and considered illegal during September–December each year. Other factors may involve the weather and its effect on sea conditions. Household figures show higher instances of traditional activities – specifically fishing and agriculture (see Appendix Tables 22, 23 and 24) – where the question is not specifically referring to any particular period of time. Based on prevailing assumptions, households with extended family orientations are generally involved as one unit in subsistence activities. Most households (family units) on Nauru are considered to exist in an extended family situation. One way of trying to capture the level of subsistence activity of households is to derive a base figure for further study from the Household Income and Expenditure Survey (HIES) in 2004.

Table 4.5: Economically active Nauruans engaged in 'traditional work', 2002

Activity description	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**47**	**100.0**	**27**	**100.0**	**20**	**100.0**
Fishing	28	59.6	23	85.2	5	25.0
Diving	1	2.1	1	3.7	0	0.0
Gardening/ agriculture	12	25.5	1	3.7	11	55.0
Arts and craft	0	0.0	0	0.0	0	0.0
Noddying	1	2.1	1	3.7	0	0.0
Other	2	4.3	0	0.0	2	10.0
Not stated	3	6.4	1	3.7	2	10.0

Table 4.6 highlights that of the 996 Nauruans classified as not being in the labour force, most were engaged in housework (245) or were recorded as not wanting to work (203), with a large proportion (27.6%) not providing any information about not participating in the labour force.

Table 4.6: Nauruan population 16 years and older not in the labour force, 2002

Reason for not working	Total		Male		Female	
	Total	%	Total	%	Total	%
Total	**996**	**100.0**	**310**	**100.0**	**686**	**100.0**
Student/at school	98	9.8	43	13.9	55	8.0
Retired/Too old	142	14.3	50	16.1	92	13.4
Disabled	33	3.3	16	5.2	17	2.5
Do not want to work	203	20.4	36	11.6	167	24.3
Housework	245	24.6	46	14.8	199	29.0
Not stated/not applicable	*275*	*27.6*	*119*	*38.4*	*156*	*22.7*

4.3 Occupations

Of the 2,481 Nauruans engaged in paid employment, the vast majority and near equal numbers work as clerks, unskilled sales and service workers or service workers or in crafts and trades, with only 15% engaged in professional and technical occupations (Table 4.7). Comparison by sex shows that females are dominant in clerical and professional occupations while men dominate occupations related to crafts and trades and plant and machine operation, with few notable gender differentials emerging across other occupation categories.

Table 4.7: Nauruans in paid employment by occupation and sex, 2002

Occupation	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**2,481**	**100.0**	**1,453**	**100.0**	**1,028**	**100.0**
Legislators, senior officials	61	2.5	51	3.5	10	1.0
Professionals	203	8.2	57	3.9	146	**14.2**
Technicians	180	7.2	119	8.2	61	5.9
Clerks	486	19.5	104	7.1	382	**37.1**
Service workers	418	16.8	256	17.6	162	15.7
Agriculture and fishery	18	0.7	15	1.0	3	0.3
Crafts and trades	413	16.6	384	**26.4**	29	2.8
Plant and machine operators	174	7.0	160	**11.0**	14	1.4
Unskilled sales and service	437	17.6	273	18.8	164	15.9
Not stated	*91*	*3.7*	*34*	*2.3*	*57*	*5.5*

4.4 Hours worked

Two out of every three working Nauruans worked more than 25 hours per week in their jobs during the seven days prior to the census, with just under 20% (17.2%) claiming to have worked less than 10 hours. No notable contrast emerges between men and women (Table 4.8).

Table 4.8: Nauruans in paid employment by hours of work and sex, 2002

Hours of regular work	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**2,481**	**100.0**	**1,453**	**100.0**	**1,028**	**100.0**
Less than one hour	13	0.5	7	0.5	6	0.6
1–5 hours	77	3.1	45	3.1	32	3.1
6–10 hours	337	13.6	207	14.2	130	12.6
11–15 hours	19	0.8	13	0.9	6	0.6
16–20 hours	26	1.0	11	0.8	15	1.5
21–25 hours	144	5.8	75	5.2	69	6.7
26–30 hours	323	13.0	198	13.6	125	12.1
30–35 hours	576	23.2	325	22.3	251	24.4
36 hours or more	735	29.6	457	31.4	278	27.0
Not stated	*231*	*9.3*	*115*	*7.9*	*116*	*11.3*

4.5 Other sources of income

Just under half of all Nauruans (1,118) engaged in regular paid employment claim to have access to income sources other than their wages or salaries, with income from land rent and *ronwan*[5] accounting for 90% of this income (Table 4.9).

Table 4.9: Supplementary income sources of Nauruans in regular paid employment, by income type and sex, 2002

Description of other income	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**1,118**	**100.0**	**626**	**100.0**	**492**	**100.0**
Pension	21	1.9	10	1.6	11	2.2
Compensation	4	0.4	4	0.6	0	0.0
Interest (bank)	9	0.8	6	1.0	3	0.6
Rent	501	44.8	290	46.3	211	42.9
Ronwan	524	46.9	290	46.3	234	47.6
Second job	16	1.4	9	1.4	7	1.4
Investments	1	0.1	0	0.0	1	0.2
Royalties	18	1.6	8	1.3	10	2.0
Other	11	1.0	2	0.3	9	1.8
Not stated	*13*	*1.2*	*7*	*1.1*	*6*	*1.2*

5 *Ronwan* is the Republic of Nauru landowners' trust fund, set up from the sale of phosphate.

5. HOUSEHOLD AND HOUSING CHARACTERISTICS

5.1 Households

The 2002 census enumerates a total of 1,677 households in Nauru, living in 1,652 private dwellings, with 24 families sharing accommodation (listed as 'Not applicable' in Table 5.1) and one non-private dwelling (institution).

Table 5.1: Distribution of households and dwellings by building type

Type of building	Frequency	
	Number	%
Total	**1,677**	**100.0**
Permanent single	828	49.4
Permanent multiple	174	10.4
Apartment	578	34.5
Attached to shop	23	1.4
Lodging house	3	0.2
Traditional	5	0.3
Improvised	26	1.6
Other	15	0.9
Institution	1	0.1
Not applicable	*24*	*1.4*

Residents of non-private dwellings in Nauru were not covered in the census, as many of these residents were visitors. Staff working in these non-private dwellings were enumerated at their usual places of residence.

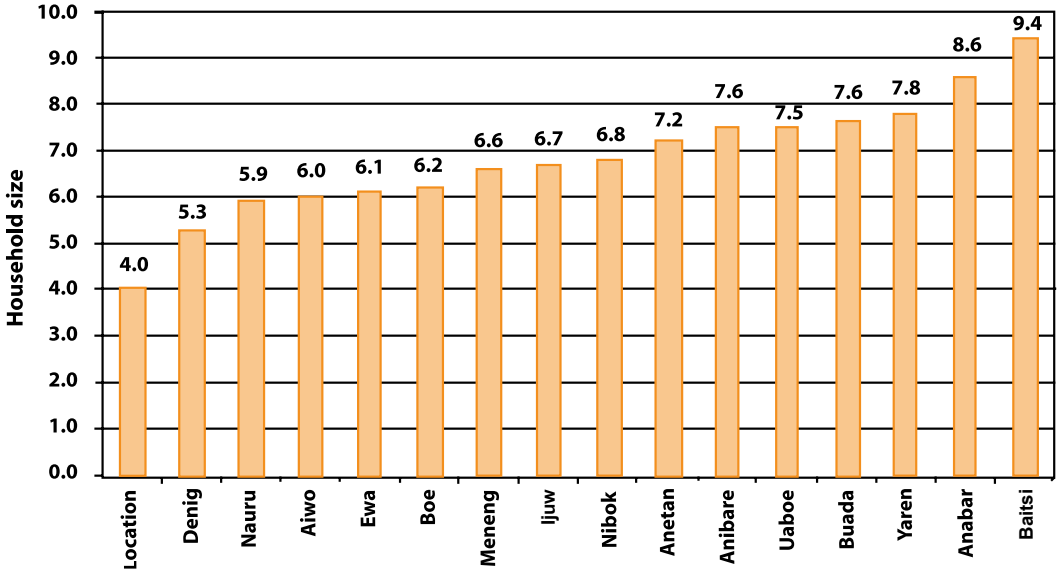
5.1.1 Household size

Table 5.2 presents a summary of the resident population, number of households and average household size by district, with the latter averaging about six persons per private dwelling. The lowest average household size is noted in Location (four persons), while the highest is found in Baitsi with about nine persons. Location has the highest concentration of both population and households, and the lowest household size. This is because most residents in this district are foreign nationals living and working in Nauru.

Table 5.2: Average household size by district, Nauru, 2002

District	Resident population		Households		Household size
	Number	%	Number	%	
Total	**9,872**	**100.0**	**1,676**	**100.0**	**5.9**
Yaren	625	6.3	80	4.8	7.8
Boe	728	7.4	117	7.0	6.2
Aiwo	1,042	10.6	175	10.4	6.0
Buada	673	6.8	89	5.3	7.6
Denig	283	2.9	53	3.2	5.3
Nibok	479	4.9	70	4.2	6.8
Uaboe	385	3.9	51	3.0	7.5
Baitsi	443	4.5	47	2.8	9.4
Ewa	394	4.0	65	3.9	6.1
Anetan	497	5.0	69	4.1	7.2
Anabar	378	3.8	44	2.6	8.6
Ijuw	168	1.7	25	1.5	6.7
Anibare	231	2.3	31	1.8	7.5
Meneng	1,316	13.3	199	11.9	6.6
Location	2,230	22.6	561	33.5	4.0

Figure 5.1: Average household size by district



The districts of Meneng and Aiwo are also heavily populated, but the average household size is about the same as the national average of six persons per household. Figure 5.1 shows the distribution of average household size by district.

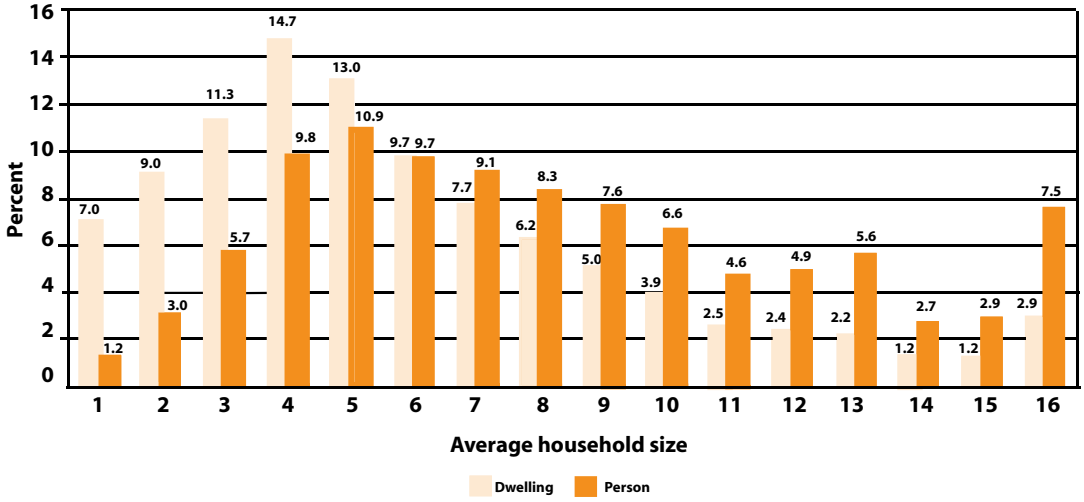
Table 5.3 and Figure 5.2 provide another look at variations in household size in Nauru, highlighting amongst other features that:

- 4.2% of the population lives in households comprising 1–2 people, which make up 16% of Nauru households; whereas
- at the other extreme, 10.4% of the population lives in households with 15 or more members, which make up 4.1% of all households.

Table 5.3: Private dwellings by household size, and number of person per dwelling

Household size	Private dwellings		Persons per dwelling	
	Number	%	Number	%
Total	**1,652**	**100.0**	**9,872**	**100.0**
1	116	7.0	116	1.2
2	148	9.0	296	3.0
3	187	11.3	561	5.7
4	243	14.7	972	9.8
5	215	13.0	1,075	10.9
6	160	9.7	960	9.7
7	128	7.7	896	9.1
8	103	6.2	824	8.3
9	83	5.0	747	7.6
10	65	3.9	650	6.6
11	41	2.5	451	4.6
12	40	2.4	480	4.9
13	37	2.2	555	5.6
14	19	1.2	266	2.7
15	19	1.2	285	2.9
16+	48	2.9	738	7.5

Figure 5.2: Distribution of private dwellings and persons by average household size



5.1.2 Household composition

Of Nauru's resident population of 9,872, the census identified 1,634 residents as heads of households[6]. While most households are headed by men (73%), a sizeable number (N=441 or 27%) are headed by women (Table 5.4).

Of all household members, 68% comprise husbands and wives and their children (and adopted children). The fact that 11% of household members represent grandchildren of the household head, with the remaining 21% of household members comprising in-laws and other relatives, shows the continued importance of the extended family and extended support network in Nauru.

6 Considering that the census listed 1,652 private dwellings, it appears that in 18 of these the head of the household was either absent during the census enumeration or not identified as such.

Table 5.4: Resident population by relationship to head of household

Relationship to head	Total		Male		Female	
	Number	%	Number	%	Number	%
Total	**9,872**	**100.0**	**5,040**	**100.0**	**4,832**	**100.0**
Head	1,634	16.6	1,193	23.7	441	9.1
Wife/husband	1,158	11.7	187	3.7	971	20.1
Son/daughter	3,699	37.5	1,910	37.9	1,789	37.0
Adopted son/daughter	240	2.4	127	2.5	113	2.3
Son-in-law/ daughter-in-law	332	3.4	194	3.8	138	2.9
Grandson/ granddaughter	1,076	10.9	537	10.7	539	11.2
Brother/sister	328	3.3	161	3.2	167	3.5
Brother-in-law/ sister-in-law	166	1.7	91	1.8	75	1.6
Father/mother	30	0.3	8	0.2	22	0.5
Father-in-law/ mother-in-law	24	0.2	7	0.1	17	0.4
Other relative	892	9.0	469	9.3	423	8.8
Not related	289	2.9	153	3.0	136	2.8
Not stated	*4*	*0.0*	*3*	*0.1*	*1*	*0.0*

5.1.3 Household economic characteristics

The 2002 census also collected information on household economic activities. Unlike the individual economic activity questions discussed in Chapter 4, questions on household economic activity were (i) administered to all private households, Nauruan and non-Nauruan, and (ii) did not refer to any specific reference period. This means the results can be interpreted as either 'current' or 'usual' activity. The census asked five 'traditional activity' questions covering gardening, crops for sale, types or names of crops sold, and fishing for own use and sales, and also included a question on livestock ownership[7]. Results are summarised in Table 5.5, which highlights the omnipresence of fishing in Nauru, with one in two households engaged in such activity. Household food gardening or subsistence activities play a less prominent role, involving only one in five households (17%).

7 These questions were also asked in the 1992 census, and readers interested in comparisons between 1992 and 2002 are advised to contact the Nauru Statistics Bureau for assistance.

Table 5.5: Household economic activities

Activity	Households engaged in activity		
	No. of HH	Yes	No
Kitchen gardening	1,652	285	1,367
Selling crops	285	26	259
Fishing	1,652	810	842
Selling fish	810	17	793

Activities are clearly household- or family-oriented, with only a small number claiming to sell some of their produce. Pumpkin and pawpaw are the most common produce sold.

As with gardening activities, only a small proportion of Nauru households are engaged in raising livestock (Table 5.6). Of those who do raise animals, either for their own consumption or for sale, most raise pigs.

Table 5.6: Households raising livestock

Livestock	Households	Number of livestock raised			
		None	1–9	10–19	20+
Pigs	1,652	1,382	222	38	10
Chickens	1,652	1,508	66	45	33
Ducks	1,652	1,599	43	5	5
Other	1,652	1,632	17	2	1

5.2 Housing characteristics

The appendix provides a comprehensive set of tables describing Nauru's housing infrastructure and amenities, including access to water supply and sanitation. Here are some of the main features.

Age of dwelling

Table A2 highlights that most private dwellings in Nauru were constructed over 20 years ago. Only two out of every 100 were constructed in the last two years, with one in 10 constructed over the past 10 years.

Home ownership

Of all private dwellings, 59.7% (N=987) are owned outright, with a further 25%, or 411 dwelling units, provided by employers. These include 128 government dwelling units (Table A3).

Construction material (outer walls)

Most private dwellings (63%) are constructed of concrete, with a further 24% made of wood and timber, and only 4% made of tin or iron (Table A1). The remaining houses are built of other materials.

Bedrooms

Most of Nauru's 1,652 private dwellings (N=721) follow a standard three-bedroom layout (44%), with four-bedroom facilities (N=388), two-bedroom houses (N=229) and one-bedroom units (N=173) accounting for a further 23%, 14% and 10% respectively (Table A4).

Amenities

Appendix tables A5 to A12 inform on various amenities, such as the number of kitchens, other rooms and bathrooms, the main source of lighting and the principal fuel used for cooking. Electricity appears as the dominant source of lighting (99%) and cooking (96%), with government-provided electricity meeting the power requirements of 85% of all private dwellings in Nauru.

Water supply

Of the 1,652 private dwellings, 1,403 (85%) have access to drinking water (A13), with dispatches from the desalination plant operated by the government providing the main source of drinking water for 81% of private dwellings (A14). The remaining dwellings use rainwater (14%), wells or other means. Table A15 provides information on water storage tank capacity, and Table A17 summarises household access to water during 'dry' periods.

Household sanitation (toilet facilities)

Most private dwellings (83%) have access to modern indoor toilet facilities (tank-flush), with a further 12% having access to external tank or pour-flush facilities (A18). Only 2% (N=28) of private dwellings claim not to have access to a toilet facility.

Household items

Table A21 provides a comprehensive stocktake of household items, with more than 80% of households having at least one ceiling fan, television or refrigerator. About half of all households own a motorbike (45%) and 37% own a car, with Land Rovers (21%) and minivans/trucks (18%) providing other forms of popular household transport. Only 6% of households claim to have access to a private telephone.

APPENDIX TABLES TO CENSUS REPORT

Appendix Table A1: Number of buildings by type and material of outer walls

Type of building	Total	Concrete	Wood	Tin/ iron	Other	ns
Total	1,652	1,032	397	72	135	16
Permanent single	828	373	374	34	104	3
Permanent multiple	174	91	43	26	10	4
Apartments	578	550	18	3	7	0
Attached to shop	23	16	4	0	3	0
Lodging house	3	0	1	2	0	0
Traditional	5	0	3	1	1	0
Improvised	26	2	13	5	5	1
Other	15	0	1	1	5	8

Appendix Table A2: Number of buildings by type and years since construction

Type of building	Total	Number of years since construction						
		< 2	2–5	6–10	11–20	21–50	50+	ns
Total	1,652	32	72	91	169	851	415	22
Permanent single	828	24	48	69	127	364	185	11
Permanent multiple	174	1	12	10	22	80	47	2
Apartments	578	1	1	2	10	388	176	0
Attached to shop	23	2	3	4	2	6	5	1
Lodging house	3	0	1	1	1	0	0	0
Traditional	5	1	2	2	0	0	0	0
Improvised	26	3	2	2	6	12	1	0
Other	15	0	3	1	1	1	1	8

Appendix Table A3: Number of buildings by type and tenure

Tenure status	Total	Permanent single	Permanent multiple	Apartments	Attached to shop	Lodging house	Trad.	Improv.	Other
Total	1,652	828	174	578	23	3	5	26	15
Own	987	734	156	44	18	3	5	22	5
Rent privately	54	6	1	45	1	0	0	1	0
Rent from housing authority	9	4	1	4	0	0	0	0	0
Employer's house	283	33	10	238	0	0	0	0	2
Government house	128	24	1	101	2	0	0	0	0
Squatters	8	3	0	3	0	0	0	2	0
Occupy in other way	59	14	5	38	2	0	0	0	0
Other	105	7	0	98	0	0	0	0	0
Not stated	19	3	0	7	0	0	0	1	8

Appendix Table A4: Number of buildings by type and number of bedrooms

Type of building	Total	0	1	2	3	4	5+	ns
Total	1,652	23	173	229	721	388	93	25
Permanent single	828	7	86	140	229	311	49	6
Permanent multiple	174	0	11	17	43	63	39	1
Apartments	578	8	54	61	441	5	1	8
Attached to shop	23	1	7	5	5	5	0	0
Lodging house	3	0	2	1	0	0	0	0
Traditional	5	2	0	0	2	0	0	1
Improvised	26	3	11	2	1	4	4	1
Other	15	2	2	3	0	0	0	8

Appendix Table A5: Number of buildings by type and number of 'dining rooms'

Type of building	Total	0	1	2	3	4	5+	ns
Total	1,652	371	1,011	15	0	1	0	254
Permanent single	828	129	514	3	0	1	0	181
Permanent multiple	174	37	96	9	0	0	0	32
Apartments	578	174	384	3	0	0	0	17
Attached to shop	23	10	8	0	0	0	0	5
Lodging house	3	0	3	0	0	0	0	0
Traditional	5	2	1	0	0	0	0	2
Improvised	26	16	4	0	0	0	0	6
Other	15	3	1	0	0	0	0	11

Appendix Table A6: Number of buildings by type and number of kitchens

Type of building	Total	0	1	2	3	4	5+	ns
Total	1,652	86	1,479	23	2	0	0	62
Permanent single	828	24	766	4	0	0	0	34
Permanent multiple	174	7	143	18	1	0	0	5
Apartments	578	46	523	1	1	0	0	7
Attached to shop	23	3	19	0	0	0	0	1
Lodging house	3	0	3	0	0	0	0	0
Traditional	5	1	2	0	0	0	0	2
Improvised	26	2	21	0	0	0	0	3
Other	15	3	2	0	0	0	0	10

Appendix Table A7: Number of buildings by type and number of 'other rooms'

Type of building	Total	0	1	2	3	4	5+	ns
Total	1,652	681	736	21	7	0	0	207
Permanent single	828	203	471	11	5	0	0	138
Permanent multiple	174	50	85	3	0	0	0	36
Apartments	578	411	155	3	2	0	0	7
Attached to shop	23	5	13	0	0	0	0	5
Lodging house	3	3	0	0	0	0	0	0
Traditional	5	0	3	0	0	0	0	2
Improvised	26	8	6	4	0	0	0	8
Other	15	1	3	0	0	0	0	11

Appendix Table A8: Distribution of dwellings by status of 'bathroom share'

Type of building	Total	Yes	No	Not stated
Total	1,652	286	1,343	23
Permanent single	828	79	743	6
Permanent multiple	174	118	56	0
Apartments	578	64	511	3
Attached to shop	23	8	13	2
Lodging house	3	2	1	0
Traditional	5	1	2	2
Improvised	26	11	13	2
Other	15	3	4	8

Appendix Table A9: Distribution of dwellings by status of 'kitchen share'

Type of building	Total	Yes	No	Not stated
Total	1,652	225	1,378	49
Permanent single	828	59	763	6
Permanent multiple	174	112	62	0
Apartments	578	37	510	31
Attached to shop	23	6	16	1
Lodging house	3	0	3	0
Traditional	5	0	4	1
Improvised	26	9	15	2
Other	15	2	5	8

Appendix Table A10: Distribution of dwellings by source of lighting

Type of building	Total	Electricity	Gas	Kerosene	Other	Not stated
Total	1,652	1,634	1	0	3	14
Permanent single	828	823	1	0	2	2
Permanent multiple	174	174	0	0	0	0
Apartments	578	575	0	0	0	3
Attached to shop	23	23	0	0	0	0
Lodging house	3	3	0	0	0	0
Traditional	5	5	0	0	0	0
Improvised	26	25	0	0	0	1
Other	15	6	0	0	1	8

Appendix Table A11: Distribution of dwellings by source of main fuel for cooking

Type of building	Total	Electricity	Gas	Kerosene	Wood/ open fire	Other	Not stated
Total	1,652	1,588	11	32	3	6	12
Permanent single	828	796	8	17	2	4	1
Permanent multiple	174	172	1	1	0	0	0
Apartments	578	561	2	12	0	1	2
Attached to shop	23	23	0	0	0	0	0
Lodging house	3	3	0	0	0	0	0
Traditional	5	4	0	1	0	0	0
Improvised	26	23	0	1	1	0	1
Other	15	6	0	0	0	1	8

Appendix Table A12: Distribution of dwellings by source of electricity supply

Type of building	Total	Government	Own generator	Solar	No electricity	Other source	Not stated
Total	1,652	1,402	13	2	4	218	13
Permanent single	828	797	4	1	4	21	1
Permanent multiple	174	161	9	0	0	4	0
Apartments	578	386	0	1	0	188	3
Attached to shop	23	21	0	0	0	2	0
Lodging house	3	3	0	0	0	0	0
Traditional	5	4	0	0	0	1	0
Improvised	26	24	0	0	0	1	1
Other	15	6	0	0	0	1	8

Appendix Table A13: Distribution of dwellings by status of accessibility to drinking water

Type of building	Total	Yes	No	Not stated
Total	1,652	1,403	234	15
Permanent single	828	669	157	2
Permanent multiple	174	141	32	1
Apartments	578	551	25	2
Attached to shop	23	16	6	1
Lodging house	3	2	1	0
Traditional	5	3	2	0
Improvised	26	14	11	1
Other	15	7	0	8

Appendix Table A14: Distribution of dwellings by main source of drinking water

Type of building	Total	Dispatch/ desa. plant	Well/ ground	Rain	Other	Not stated
Total	1,652	1,340	10	236	43	23
Permanent single	828	651	5	137	31	4
Permanent multiple	174	122	0	44	5	3
Apartments	578	520	4	46	3	5
Attached to shop	23	16	1	4	2	0
Lodging house	3	2	0	0	1	0
Traditional	5	4	0	1	0	0
Improvised	26	19	0	3	1	3
Other	15	6	0	1	0	8

Appendix Table A15: Distribution of dwellings by main water supply source

Type of building	Total	Cistern (tank) – gallons				Well brackish	Other source	Not stated
		< 3,000	3,000–5,000	5,000–10,000	10,000+			
Total	1,652	240	544	321	290	40	186	31
Permanent single	828	60	205	247	211	25	65	15
Permanent multiple	174	13	43	46	56	12	4	0
Apartments	578	155	287	16	9	1	106	4
Attached to shop	23	5	2	7	3	1	4	1
Lodging house	3	1	0	1	0	0	1	0
Traditional	5	1	3	0	0	0	1	0
Improvised	26	5	2	2	9	1	4	3
Other	15	0	2	2	2	0	1	8

Appendix Table A16: Distribution of dwellings with status of water share during 'dry' periods

Type of building	Total	Yes	No	Not stated
Total	1,652	625	999	28
Permanent single	828	280	537	11
Permanent multiple	174	114	60	0
Apartments	578	197	376	5
Attached to shop	23	10	11	2
Lodging house	3	1	2	0
Traditional	5	1	4	0
Improvised	26	16	8	2
Other	15	6	1	8

Appendix Table A17: Distribution of dwellings with water availability during 'dry' periods

Type of building	Total	Never	Sometimes	Frequently	Not stated
Total	1,652	302	952	367	31
Permanent single	828	203	438	174	13
Permanent multiple	174	62	60	51	1
Apartments	578	21	428	125	4
Attached to shop	23	8	14	1	0
Lodging house	3	3	0	0	0
Traditional	5	0	4	0	1
Improvised	26	3	6	14	3
Other	15	2	2	2	9

Appendix Table A18: Distribution of dwellings by toilet facilities

Type of building	Total	Tank-flush inside	Tank-flush outside	Tank-flush share	Pour-flush inside	Pour-flush outside	Pour-flush share	None	Not stated
Total	1,652	1,378	41	87	74	4	16	28	24
Permanent single	828	694	22	28	56	2	6	15	5
Permanent multiple	174	136	6	16	5	0	10	1	0
Apartments	578	522	7	27	12	0	0	0	10
Attached to shop	23	17	2	2	0	0	0	2	0
Lodging house	3	0	2	0	0	0	0	1	0
Traditional	5	1	1	0	0	0	0	3	0
Improvised	26	5	1	11	1	2	0	5	1
Other	15	3	0	3	0	0	0	1	8

Appendix Table A19: Distribution of dwellings by toilet water

Type of building	Total	Fresh	Brackish	Well	Other	Not stated
Total	1,652	517	755	34	284	62
Permanent single	828	355	386	27	36	24
Permanent multiple	174	40	119	3	8	4
Apartments	578	107	218	3	238	12
Attached to shop	23	6	12	0	2	3
Lodging house	3	1	1	0	0	1
Traditional	5	1	1	0	0	3
Improvised	26	5	14	1	0	6
Other	15	2	4	0	0	9

Appendix Table A20: Distribution of dwellings by toilet flush

Type of building	Total	Sewerage	Septic	Other	Not stated
Total	1,652	649	905	26	72
Permanent single	828	118	662	19	29
Permanent multiple	174	11	158	4	1
Apartments	578	519	40	0	19
Attached to shop	23	1	18	1	3
Lodging house	3	0	2	0	1
Traditional	5	0	2	0	3
Improvised	26	0	17	2	7
Other	15	0	6	0	9

Appendix Table A21: Distribution of dwellings by number of household items owned

Household item	Number of items per household									
	Total	None	At least 1	At least 1 (%)	1	2	3	4	5+	ns
Ceiling/floor fan	1,652	142	1,510	91.4	291	316	235	6	1	19
Television	1,652	204	1,448	87.7	957	300	108	2	1	17
Refrigerator	1,652	344	1,308	79.2	1,141	116	24	0	0	20
Videotape recorder	1,652	380	1,272	77.0	934	220	60	13	10	20
Air-conditioning unit	1,652	743	909	55.0	547	214	77	8	8	17
Deep freezer	1,652	758	894	54.1	810	54	4	0	0	19
Radio	1,652	793	859	52.0	658	130	41	0	1	16
Motorbike	1,652	906	746	45.2	503	146	54	0	0	16
Motor car	1,652	1,047	605	36.6	472	86	21	0	0	17
Garbage collection	1,652	1,053	599	36.3	457	98	18	0	0	16
Garage	1,652	1,227	425	25.7	374	31	2	4	0	23
Bicycle	1,652	1,277	375	22.7	251	67	24	0	0	26
Land Rover	1,652	1,299	353	21.4	274	44	15	2	5	20
Truck/van/minibus	1,652	1,351	301	18.2	251	29	1	39	16	28
Microwave oven	1,652	1,368	284	17.2	248	7	2	21	11	26
Other hot-water system	1,652	1,489	163	9.9	131	15	1	9	2	19
Traditional canoe	1,652	1,496	156	9.4	131	6	2	0	0	18
Motor boat – aluminium	1,652	1,502	150	9.1	118	11	2	22	23	26
Telephone	1,652	1,553	99	6.0	67	7	7	220	370	78
Solar hot-water system	1,652	1,554	98	5.9	70	1	5	2	2	18
Outboard motor	1,652	1,559	93	5.6	71	3	3	0	0	16
Other items	1,652	1,589	63	3.8	35	11	0	3	3	20
Motor boat – fibreglass	1,652	1,610	42	2.5	24	0	1	0	0	18
Motor boat – wood	1,652	1,636	16	1.0	0	0	0	0	0	17

Appendix Table A22: Nauruan households by district and kitchen gardening

District	Total	Yes	No	Not stated
Total	**1,048**	**234**	**791**	**23**
Yaren	77	20	57	0
Boe	111	8	94	9
Aiwo	140	30	109	1
Buada	86	15	66	5
Denig	41	11	29	1
Nibok	66	11	55	0
Uaboe	50	13	37	0
Baitsi	47	9	38	0
Ewa	56	24	32	0
Anetan	58	13	45	0
Anabar	39	13	25	1
Ijuw	21	2	19	0
Anibare	31	10	20	1
Meneng	180	54	122	4
Location	45	1	43	1

Appendix Table A23: Nauruan households involved in selling crops

District	Total	Yes	No	Not stated
Total	**1,048**	**19**	**1,000**	**29**
Yaren	77	1	76	0
Boe	111	0	100	11
Aiwo	140	2	137	1
Buada	86	0	81	5
Denig	41	4	36	1
Nibok	66	3	63	0
Uaboe	50	1	48	1
Baitsi	47	0	47	0
Ewa	56	1	54	1
Anetan	58	1	57	0
Anabar	39	0	39	0
Ijuw	21	0	21	0
Anibare	31	0	30	1
Meneng	180	6	167	7
Location	45	0	44	1

Appendix Table A24: Nauruan households involved in fishing

District	Total	Yes, own use	Yes, sell	No	Not stated
Total	**1,048**	**560**	**4**	**403**	**81**
Yaren	77	38	0	38	1
Boe	111	59	1	41	10
Aiwo	140	73	1	49	17
Buada	86	38	0	43	5
Denig	41	28	0	11	2
Nibok	66	39	0	23	4
Uaboe	50	33	0	17	0
Baitsi	47	35	0	12	0
Ewa	56	36	0	20	0
Anetan	58	45	0	8	5
Anabar	39	27	0	8	4
Ijuw	21	10	0	7	4
Anibare	31	14	0	9	8
Meneng	180	77	1	82	20
Location	45	8	1	35	1

PART 2

SECRETARIAT OF THE PACIFIC COMMUNITY
Demography/Population Programme

&

NAURU BUREAU OF STATISTICS

Demographic Profile of the Republic of Nauru, 1992–2002

This profile was prepared by Mr Andreas Demmke, consultant to the Secretariat of the Pacific Community (SPC), with the assistance of Mr Ipia Gadabu, Acting Assistant Government Statistician, Republic of Nauru; Dr Gerald Haberkorn, Demographer and Mr Arthur Jorari, Population Specialist from SPC in Noumea. SPC wishes to acknowledge the very generous financial assistance provided by the Australian Government through AusAID, in the form of its ongoing contribution to SPC programme activities. SPC also appreciates receipt of two special grants to its Demography/Population programme, to provide technical assistance supporting Nauru census activities; these grants facilitated technical advisory and training missions of SPC staff to Nauru, two professional attachments to SPC of the Nauru Acting Assistant Government Statistician, and the recruitment of a consultant to assist with the final demographic analysis and preparation of this report.

Summary of main indicators

	Total	Males	Females
Total enumerated population (September 2002)	**10,065**	**5,136**	**4,929**
Resident population size (September 2002)	**9,872**	**5,040**	**4,832**
Rate of annual growth (%), 1992–2002	0.3		
Rate of natural increase, 1992–2002	2.5		
Crude net migration rate, 1992–2002	-2.2		
Nauruan population size (September 2002)	**7,572**	**3,807**	**3,765**
Rate of annual growth (%), 1992–2002	1.0		
Rate of natural increase, 1992–2002	2.5		
Crude net migration rate, 1992–2002	-1.5		
Fertility	**Residents**	**Nauruans**	
Average annual number of births, 1997–2002	319	241	
Crude birth rate (CBR), 1997–2002	32.7	32.9	
Total fertility rate (TFR), 1997–2002	4.0	4.0	
Teenage fertility rate, 1997–2002	93.0	78.0	
Mean age at childbearing (MAC), 1997–2002	27.3	28.0	
General fertility rate (GFR), 1997–2002	125	129	
Migration	**Residents**	**Nauruans**	
Average annual number, 1992–2002			
Total	-218	-109	
Males	-105	-53	
Females	-113	-56	

Mortality	Residents	Nauruans	
Average annual number of deaths, 1997–2002	94	75	
Crude death rate (CDR), 1997–2002	9.6	10.2	
Life expectancy at birth, 1997–2002			
Total	55.0	52.6	
Males	52.5	49.0	
Females	58.2	56.9	
Infant mortality rate (IMR), 1997–2002			
Total	42.3	36.6	
Males	50.9	49.4	
Females	32.8	23.7	
Child mortality rate (1q5), 1997–2002			
Total	13.7	13.1	
Males	12.0	13.3	
Females	15.4	12.8	

Note: The exact time period between the 1992 and 2002 censuses amounted to 10.4 years, and this forms the basis for all growth calculations adopted here.

SUMMARY

The 2002 Nauru census recorded a total ***de facto* population** of 10,065 people, which included 193 short-term visitors. Nauru's **resident population**, defined as comprising all people who have had an established residence in Nauru for at least one year, was enumerated at 9,872. This compares to 9,600 residents in 1992, representing a small **annual population growth** of 0.27%. Nauru's **indigenous population**, totalling 7,572 people, accounted for 77% of the resident population. Compared to 6,831 Nauruans in 1992, this represents an annual growth rate of 1%. The number of non-Nauruans declined from 2,769 in 1992 to 2,300 in 2002, and includes mainly people from Kiribati, Tuvalu and the People's Republic of China.

The low overall population growth was largely the result of a high level of emigration during the intercensal period 1992–2002, with a modest decline in the number of births as a result of declining fertility and some recent changes in mortality also contributing to this process. **Migration**, however, made the single biggest contribution, with 2,270 more residents having left than entered Nauru during the intercensal period, accounting for an average annual net loss of some 218 people. Of this total net loss of some 2,270 residents, about half (-1130) represented indigenous Nauruans, with most others representing residents of Tuvaluan origin (as also reflected in the departure of several boats for Tuvalu just before the census).

The average number of **births** declined from about 337 per year during the period 1992–1997 to 319 during the period 1997–2002. The total **fertility** rate (TFR[1]) declined from 4.3 for the period 1992–1997 to about 4.0 for all residents for the period 1997–2002, amounting to 3.9 during the most recent three-year period, 2000–2002.

Based on registered number of deaths, life expectancies at birth are estimated at 52.5 and 58.2 years for resident males and females respectively. Corresponding estimates for indigenous Nauruans are even lower, with 49 years for males and 56.9 years for females, pointing to a marked deterioration in the general health status of Nauru's population in recent years.

Nauru's **infant mortality** rate (IMR) was estimated at 42.3 for the resident population and 36.6 for the Nauruan population in the period 1997–2002. This represents a substantial increase compared to the situation in the early to mid-1990s, when infant mortality rates amounted to 21.4 and 12.5 for the resident and Nauruan population components respectively.

1 Average number of births per woman. These fertility estimates are based on the number of registered births rather than census-reported births, as vital registration in Nauru is widely regarded as complete.

ABBREVIATIONS

ASFR	age-specific fertility rate
CBR	crude birth rate
CDR	crude death rate
GFR	general fertility rate
IMR	infant mortality rate
MAC	mean age at childbearing
TFR	total fertility rate

1. INTRODUCTION

Drawing from 2002 and 1992 Nauru census data and vital registration records from the same period, the principal aim of this report is to provide a demographic analysis of recent Nauru population developments. This includes:

- a situational profile of current fertility, mortality and migration features;
- an analysis of recent developments;
- a set of medium-term population projections (2002–2027); and
- a brief discussion on likely impacts of some of these patterns and developments on wider social and economic development issues.

The small size of Nauru's population, and the random fluctuations of demographic events in this context, make it difficult to calculate meaningful demographic indicators such as rates, ratios or percentages on an annual – let alone a quarterly or monthly – basis, e.g. crude birth or death rates, fertility rates, infant mortality rates, and life expectancies at birth. This is because those age groups more prominently affected than others by specific demographic events can be or become so small that random demographic events (like births and deaths) can seriously distort annual (quarterly, monthly) accounts, and thus provide a very misleading picture.

To rule out the distorting impact of such chance events, it is recommended to always use period averages (1992–1997 and 1997–2002), as employed throughout this report[2].

Recent economic difficulties experienced by Nauru pose serious challenges to making meaningful assumptions about likely future demographic developments (particularly as regards migration), which has obvious implications for any long-term population estimates and forecasts. Hence, the population projections contained in this report ought to be treated with care.

The report compares, where possible, levels and trends of demographic indicators between the total resident and indigenous Nauruan populations – the difference between both categories comprising mainly I-Kiribati, Tuvaluan and Chinese residents.

2 Given the time gap of 10.4 years between the 1992 (April) and 2002 (September) censuses, data for 1997 appear in both the 1992–1997 and the 1997–2002 averages.

2. POPULATION GROWTH

Population dynamics refer to the processes in a population that lead to its growth or decline. The three demographic components of a population's dynamic are fertility, mortality and migration, which counterbalance each other. While fertility leads to growth, mortality leads to a decrease of the population. Migration can be either a growth factor or, as in recent years in Nauru, can lead to a slowing of population growth.

The most basic way of describing population growth is simply calculating the difference in population size at two different points in time.

The total enumerated population of Nauru increased by only 146 people between 1992 and 2002, from 9,919 in 1992 to 10,065 in 2002. This is an increase of 1.5% during the intercensal period, and represents an average annual rate of growth of 0.14% (Table 1).

Table 1: Population change between 1992 and 2002

	Population size		Population change		Average annual rate of growth (%)
	1992	2002	Number	%	
Total population	9,919	10,065	146	1.5	0.14
Resident population	9,600	9,872	272	2.8	0.27
Nauruans	6,831	7,572	741	10.8	0.99
Non-Nauruans	2,769	2,300	-469	-16.9	-1.78

Note: Time between 1992 and 2002 censuses was 10.4 years.

The resident population of Nauru – those whose usual residential address has been in Nauru for at least one year – was 9,872 at the time of the 2002 census, representing an increase of 272 since the 1992 census. This represents an increase of 2.8% between 1992 and 2002, with an average annual rate of growth of 0.27%.

The indigenous Nauruan population grew by 1% annually and increased from 6,831 to 7,572 people between 1992 and 2002, representing an increase of 741 or 10.8%.

Apart from the Nauruan population, which makes up 77% of all residents, the resident population includes mainly people from Kiribati (903), the People's Republic of China (367), Tuvalu (241), Fiji (168) and Australia (154). This non-Nauruan population component decreased from 2,769 to 2,300 between 1992 and 2002, and its proportion of the total resident population declined from 28.8% to 23.3% during the intercensal period.

As mentioned earlier, population growth defines the change in a country's population as the result of births, deaths and migration.

Natural increase defines population growth in terms of births and deaths, with growth occurring in a given time period when births exceed the number of deaths. If deaths exceed the number of births, growth is negative and the population declines.

Natural increase = births - deaths

However, population growth is also shaped by migration. Migrants are those people who come into the country to settle or seek residency and who are referred to as *immigrants*, and those who leave a country seeking residence elsewhere and who are referred to as *emigrants*. The term 'net migration' refers to the sum of immigrants minus emigrants.

Overall population growth is thus represented as the sum total of natural increase plus net migration, as highlighted in what is commonly known as the *balancing equation*:

Population growth = natural increase + net migration (immigration - emigration)

In Nauru, a total of 3,398 births and 855 deaths were registered in the 10.4-year intercensal period of 1992–2002, and it is assumed that almost all were births and deaths of Nauru residents, as few visitors either have a baby or die in Nauru. Subtracting the number of deaths from the number of births yields a *natural increase* of 2,543 people for this period (3,398 - 855 = 2,543). In other words, had no migration occurred between 1992 and 2002, or had net migration been zero, Nauru's resident population in 2002 would have totalled 12,143 (resident population in 1992 = 9,600 + 2,543).

Despite this natural increase of 2,543 people, the resident population has only increased marginally, from 9,600 to 9,872, between 1992 and 2002, showing a net gain of only 272 during the intercensal period – which suggests migration has played a major role in Nauruan population dynamics in recent years. Applying the balancing equation can provide us with a crude estimate of net migration during the intercensal period: applying all the known components to this equation (1992–2002 overall population growth, plus the actual natural increase), as illustrated in Step 1 below, and solving this equation by isolating 'net migration' (Step 2), points to a net migration of 2,271 people between the two censuses.

Population growth$_{1992–2002}$ = natural increase + net migration (immigration - emigration)

Step 1: (272) = (2,543) + net migration
Step 2: Net migration = 272 – 2,543
Net migration = -2,271

In other words, between 1992 and 2002 about 2,271 more Nauruan residents left the country than established residence there, resulting in a net migration averaging 218 persons per year (Table 2a).

The most basic demographic measures referring to births and deaths are the *crude birth rate (CBR)* and the *crude death rate (CDR)*. They refer to the number of births and deaths in a given year for 1,000 people and are normally calculated by simply dividing the number of births and/or deaths of a given year by the (mid-year) total population size of that year, multiplied by 1,000. For small populations such as Nauru it is advisable to use multi-year averages, as the random fluctuations of annual events can be considerable with very small numbers. Therefore, rates should be calculated as an average of several years. In this report, we have reported 1992–1997 and 1997–2002 averages.

In this case, the CBR and CDR are calculated by dividing the average annual number of births and deaths of the intercensal period 1992–2002 by the mid-period population size of the intercensal period [((resident population in 1992 = 9,600) + (resident population in 2002 = 9,872)) /2 = 9,736].

An annual average of 325 births during the period 1992–2002 translates into an average CBR of 33.4 [(325/9,736)*1,000], and an average of 82 deaths during the same period results in an average CDR of 8.4 [(82/9,736)*1,000].

Subtracting the CDR (8.4) from the CBR (33.4) yields a *rate of natural increase* of 25 per 1,000 or, expressed in the more frequently used percentage term, 2.5% per year. This means if it had not been for migration, Nauru's resident population would have grown at an annual rate of 2.5%, which would see the population double in about 28 years.

Applying all corresponding rates during the intercensal period to the balancing equation would yield an annual *crude net migration rate* of -2.23%.

Population growth$_{1992–2002}$ = natural increase + net migration (immigration - emigration)

0.27% = 2.5% + net migration rate
Net migration rate = 0.27 - 2.5%
Net migration rate = **-2.23%**

Applying the same calculations of birth, death and migration rates for the Nauruan population yields the results shown in Tables 2b and 3, with Figure 1 and Appendix Table 1 illustrating comparative CBRs and CDRs for resident and indigenous Nauruan populations.

Table 2a: Number of births and deaths, estimated net migrants and overall population change for the resident population, 1992–2002

	Total number	Average annual number	Rate*	
	1992–2002[a]	1992–2002	1992–2002	
Births	3,398	325	33.4	CBR
Deaths	855	82	8.4	CDR
Net migrants	-2,271	-218	-22.3	Migration rate
Overall change	**272**	**26**	**0.27**	Average annual rate of growth

[a] Intercensal period 1992–2002 is 10.44 years; period total number of births and deaths has been calculated by multiplying the average annual numbers by 10.44 years, the exact time between the two censuses.

* Based on mid-period population size.

Table 2b: Number of births and deaths, estimated net migrants and overall population change for the Nauruan population, 1992–2002

	Total number	Average annual number	Rate*	
	1992–2002[a]	1992–2002	1992–2002	
Births	2,550	244	33.9	CBR
Deaths	676	65	9.0	CDR
Net migrants	-1,133	-109	-15.1	Migration rate
Overall change	**741**	**71**	**1.0**	Average annual rate of growth

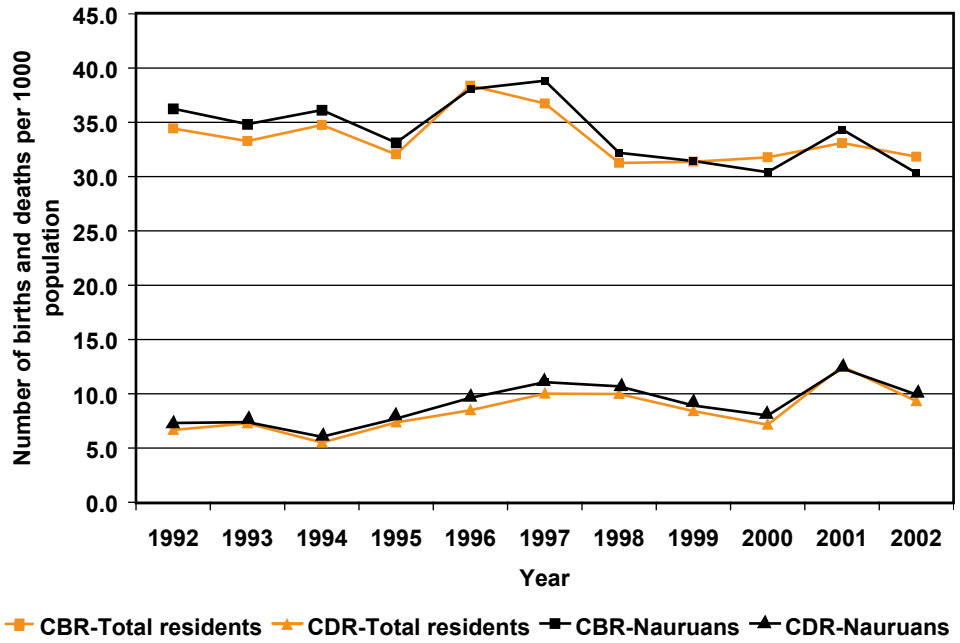
[a] See comments in Table 2a.

* See T able 2a

Table 3: Comparison of the average annual number of births and deaths, and natural increase, of the periods 1992–1997 and 1997–2002

	1992–1997			1997–2002		
	Births	Deaths	Natural increase	Births	Deaths	Natural increase
Residents	337	73	264	319	94	226
Nauruans	253	57	196	241	75	167

Figure 1: CBR and CDR, total resident and Nauruan population, 1992–2002



3. FERTILITY

Fertility refers to the reproductive behaviour of a population, relating to the number of live births women have had.

The most frequently used measure of fertility, CBR, relates the number of births in a given year to the mid-year population of that year.

$$\textbf{CBR} = \frac{\text{No. of births in year}}{\text{Mid-year population}} \times 1{,}000$$

With CBR not representing a true fertility measure as it considers the total population as the main reference population ('denominator') rather than the one population group that gives birth (women in their reproductive years), the general fertility rate (GFR) provides some improvement in that it relates the number of births in a given year to the mid-year population of women of childbearing age.

$$\textbf{GFR} = \frac{\text{Births in year}}{\text{Mid-year female population aged 15–49}} \times 1{,}000$$

While introducing some controls for age and sex as it relates births only to those at risk of having these births, there is still room for considerable variation in demographic composition of the same population over time, or between different populations. This happens when, for example, one district (A) has few women of childbearing age (such as when most women are under 20 or over 50 years of age), compared to another district (or the same population at a different time) that has a more balanced population distribution and that subsequently features a higher GFR than district A simply because more women live there who are in their main reproductive years.

The only way to properly allow for such variations over time or between different populations is to ***standardise fertility***. This means examining fertility behaviour in particular age groups. The age-specific fertility rate (ASFR) relates the number of births to women of a particular age group in a specific year to the mid-year population of all women belonging to that age group (Table 5), with the total fertility rate (TFR) combining these different age-specific rates into one single indicator telling us how many children a woman would give birth to, on average, during her reproductive life if she were to progress through her childbearing years conforming to the ASFRs of a given year.

Data from the vital registration system and data gathered during the census are compared and evaluated against each other.

During the 2002 census women older than 15 years of age were asked:

- how many live births they had ever had;
- how many of those were still living at the time of the census; and
- the date of their last birth, and whether or not that child was still alive.

Unfortunately these questions were only asked of Nauruan women and excluded the non-Nauruan resident population, which comprised 23% of the resident population.

Based on the 2002 census data, the total number of children ever born to Nauruan women aged 15 years and older was 4,483 (Table 4). Out of the total of 1,989 women aged 15 years and older, 1,169 (59%) were reported to have given birth to at least one child, and 40% (798) had not had a child. Of all women who had children, most had between one and three; 48 women had more than 10.

The average number of children ever born to all women (average parity) was 2.25 children per woman. The average parity increases with the age of women. While the 15–19-year-old women had on average only 0.17 children (every sixth woman had one child), women aged 45–49 had 4.6 children.

Crude fertility measures

During the 2002 census, Nauruan women reported 192 births during the one-year period before the census (24 September 2001 to 23 September 2002), and the average age of women at the birth of their last child was 27.4 years. The *general fertility rate (GFR)* is the number of births per year per 1,000 women aged 15–49 years. Dividing the reported number of 192 births during the year before the census by the enumerated Nauruan women aged 15–49 gives a GFR of 96.5. This compares to a GFR of 150 in 1992.

Fertility estimates derived from registration data are much higher than corresponding information available from the 2002 census, as reflected in much lower reported numbers of births during the year before the census (192), compared to data available from Nauru civil registration records covering the same period (235). Under these circumstances it seems futile to calculate fertility rates and indicators based on census information, especially as it is based on information referring to just a single year (the census year 2002). With annual vital events (like births and deaths) likely to vary considerably from year to year, multi-year averages should be relied upon to calculate more robust demographic indicators.

Fortunately the Nauru vital registration system is fairly complete and reliable, so a more in-depth analysis of fertility (levels and patterns) can be based on its data.

Table 4: Nauruan females 15 years and older by number of children ever born alive, 2002

Age of women	Number of women	Number of children ever born													Average parity
		0	1	2	3	4	5	6	7	8	9	10	NS	Total	
15–19	467	396	54	7	2	1	0	0	0	0	0	0	7	78	0.167
20–24	393	185	104	53	35	9	2	0	0	0	0	0	5	361	0.919
25–29	280	76	37	56	47	31	19	7	4	1	0	0	2	587	2.096
30–34	225	45	25	31	36	18	23	17	16	6	2	4	2	711	3.160
35–39	239	42	21	19	28	27	21	17	22	29	8	5	0	971	4.063
40–44	219	29	20	24	20	22	21	18	11	19	10	23	2	1,007	4.598
45–49	166	25	12	15	14	11	23	12	12	15	7	16	4	768	4.627
Total	**1,989**	**798**	**273**	**205**	**182**	**119**	**109**	**71**	**65**	**70**	**27**	**48**	**22**	**4,483**	**2.254**

Source: Nauru Population Census 2002

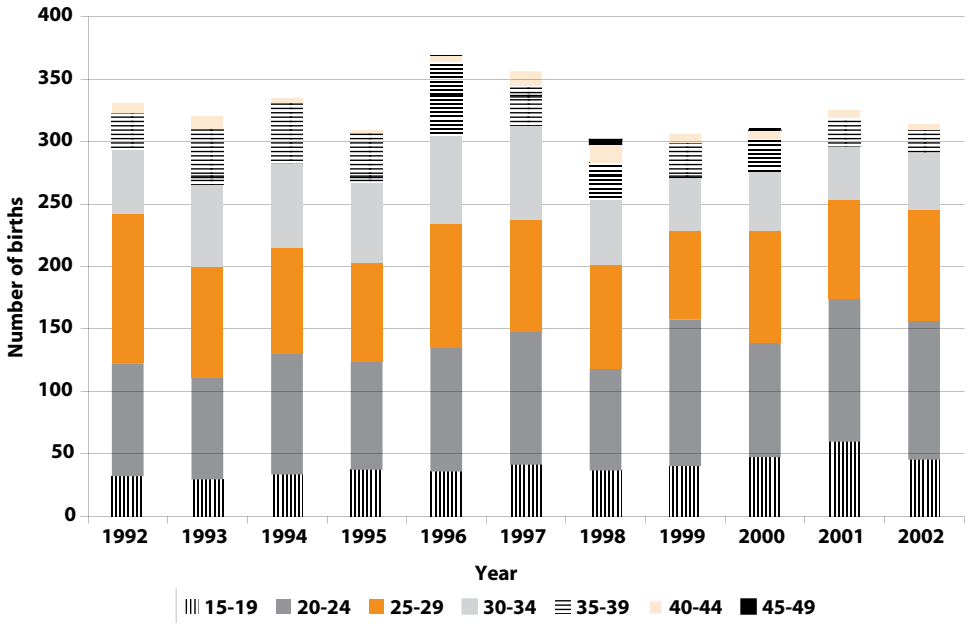
Table 5: Reported number of children born during the 12 months before the 2002 census, ASFR, TFR and MAC

Age of women	Number of women	Number of children born during year prior to the census	ASFR
15–19	467	33	0.071
20–24	393	71	0.181
25–29	280	41	0.146
30–34	225	31	0.138
35–39	239	12	0.050
40–44	219	4	0.018
45–49	166	0	0.000
Total	**1,989**	**192**	**0.604**
TFR			**3.0**
GFR			**96.5**
MAC			**27.3**

Source: Nauru Population Census 2002

Between 1992 and 2002 the number of annual births did not change significantly (Figure 2, Appendix Table 2), although the average number of births for the period 1992–1997 (337 births) was slightly higher than the corresponding annual average for 1997–2002 (319). Considering that the number of women of childbearing age increased between 1992 and 2002, an overall decline in fertility can be ascertained.

Figure 2: Number of registered births by age of mother, 1992–2002



Source: Registration of births by age of mother, Bureau of Statistics, Nauru

ASFR, TFR and MAC

As indicated earlier, the most widely used measure of fertility is based on age-specific fertility. Based on the enumerated number of women by age in the 1992 and 2002 censuses, the number of women by age of each intercensal year can be estimated. Together with the annual registered numbers of births by age of mother (Figure 2 and Appendix Table 2), the calculation of the ASFR and TFR is a straightforward exercise (number of births by age of mother, divided by the number of women by age).

Figure 3 and Appendix Table 3 compare the average ASFR of the period 1992–1997 to the period 1997–2002. They show that there was a fertility decline mainly among older women, especially those aged 30–39 years. Fertility rates of women aged 25 years and younger, and of women older than 40, remained virtually unchanged. While women aged 20–24 and 25–29 reported the highest numbers of births during the period 1992–1997, it was women aged 20–24 who reported most births during the period 1997–2007. This resulted in an ASFR of 0.237, the highest of all age groups, which means there were 237 births to 1,000 women in this age group. Forty-five children were born to the 483 women aged 15–19 years, resulting in a teenage ASFR of 0.093, indicating 93 births per 1,000 young women in this age group, or one in 10, reflecting one of the highest contemporary ASFRs in the region.

The estimated TFR for every year between 1992 and 2002 is shown in Figure 4. Until 1997, the average number of children per woman was well above four. Since the peak period in 1996/1997, it appears that the TFR declined to below four children per woman. The average TFR for the period 1992–1997 was 4.3, which compares to a TFR of 4.0 for the period 1997–2002 (Appendix Table 3). However, the TFR of the years 1998–2002 was consistently between 3.8 and 3.9.

The TFR of the Nauruan population has declined even more sharply in recent years, from 4.6 during 1992–1997 to 4.0.

In conjunction with decreasing fertility rates, the average age at childbearing decreased by about 0.8 years during the period 1992–2002 (Figure 5). While the MAC stood at 28.1 years during the years 1992–1997, it decreased to 27.3 during the period 1997–2002. As shown earlier, it was especially older women who showed a reduction in their fertility rates, resulting in the declining average age at childbearing.

The MAC of Nauruan women (28.0) was slightly higher than that of the total resident population.

Figure 3: ASFR – average of the periods 1992–1997 and 1997–2002

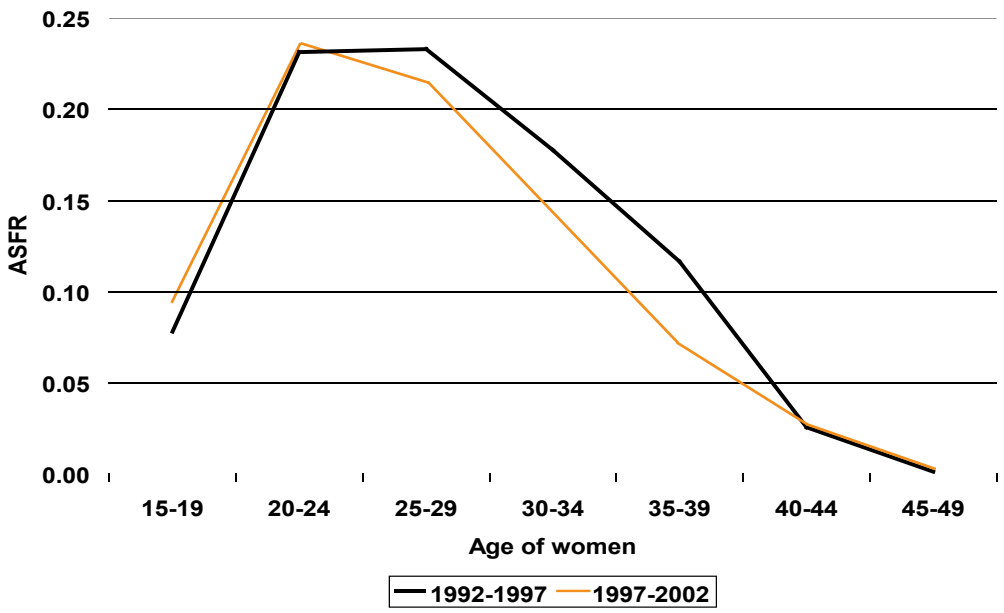


Figure 4: TFR, 1992–2002

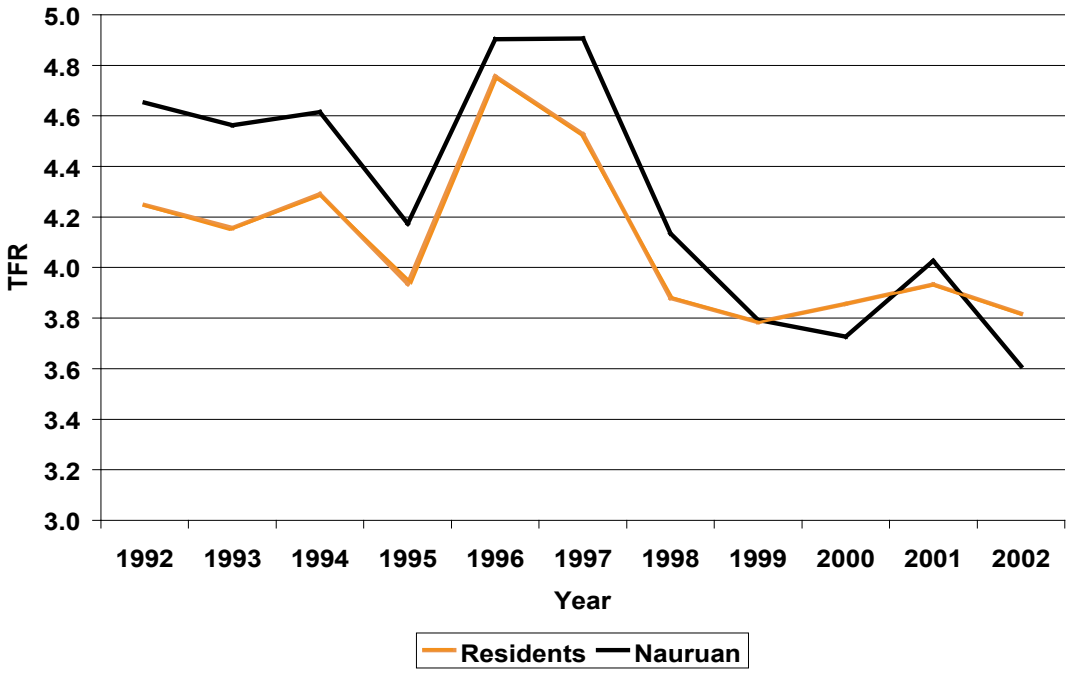
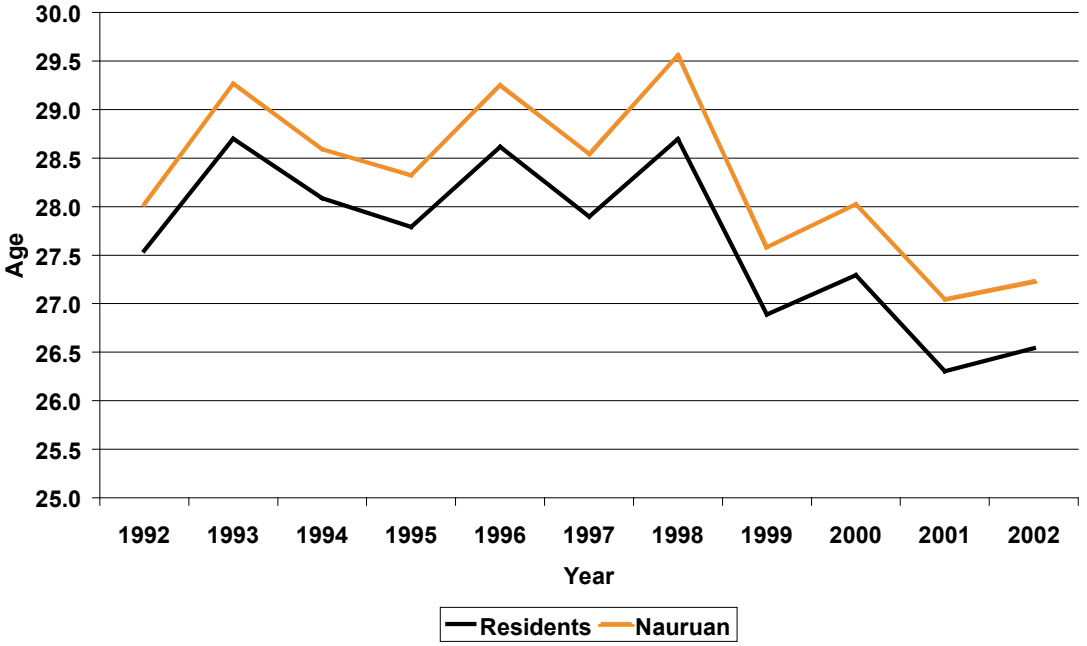


Figure 5: MAC, 1992–2002



4. MORTALITY

The incidence of death reveals a lot about a population's standard of living and its general state of health. For example, *infant mortality* and *life expectancy at birth* are widely used as indicators of the overall development status of a country.

The *mortality* of a population depends on various factors, including:

- demographic composition of the population, i.e. age and sex distribution;
- the quality and utilisation of health and medical services such as immunisation programmes, maternal and child health care, primary health care, etc.;
- environmental conditions and availability of infrastructure such as housing, water supply, sanitation and waste disposal;
- exposure to risk factors, such as abuse of alcohol and tobacco;
- work-related dangers;
- exposure to events outside individual control, such as natural disasters and war; and
- socio-economic status.

The 2002 census questions relating to mortality were:

1. the number of children ever born and still alive; and
2. whether the father and mother of the respondent were still alive.

As with fertility, these questions were asked only of the Nauruan population.

From all children born to women 15 years and older (4,483), 94.1% (4,218) were still alive and 265 had died (Table 6). The proportion of surviving children decreased with the age of women. While more than 97% of all children ever born to women 15–19 were still alive, only 92.3% of children born to women aged 45–49 were still alive.

Table 6: Nauruan female population 15 years and older by number of children ever born, number of children still alive and number of children dead, 2002

Age of mother	Number of children ever born alive			Number of children still alive			Proportion of children ever born still living		
	Boys	Girls	Both	Boys	Girls	Both	Boys	Girls	Both
15–19	32	46	78	32	44	76	100.0	95.6	97.4
20–24	180	181	361	165	177	342	91.7	97.8	94.7
25–29	311	276	587	297	269	566	95.5	97.5	96.4
30–34	364	347	711	340	325	665	93.4	93.7	93.5
35–39	502	469	971	473	445	918	94.2	94.9	94.5
40–44	534	473	1,007	492	450	942	92.1	95.1	93.5
45–49	379	389	768	343	366	709	90.5	94.1	92.3
Total	**2,302**	**2,181**	**4,483**	**2,142**	**2,076**	**4,218**	**93.1**	**95.2**	**94.1**

Source: Nauru Population Census 2002

The proportion of surviving females was higher than that of males. While 95.2% of all female children born were still alive, only 93.1% of all male children were.

In general, the proportion of surviving children decreases continuously by age of mother. This is not the case in Nauru because of the very small data set involved, which is not sufficient to calculate reliable infant and child mortality indicators. As a consequence, and as in the case with fertility, mortality estimates have to rely on Nauru's vital registration system, which records deaths by age and sex. These data can be used to directly calculate a life table from data of deaths by five-year age groups. Because the possibility of random fluctuations is high when dealing with very small numbers, as is the case with the Nauru data, it is imperative to work with multi-year averages to derive meaningful indicators.

Adult mortality estimates can be obtained by using orphanhood data from the last census, acquired from the questions on survival of parents, classified by five-year age groups of respondents (Table 7).

Comparing data on the survival of parents, 78.2% of the interviewed population reported that their mother was still alive, compared to only 64.2% with their father still alive. The difference has to be partly explained by the fact that mothers are usually younger than fathers (their spouses).

Table 7: Number and proportion of father and mother still alive by five-year age groups, 2002

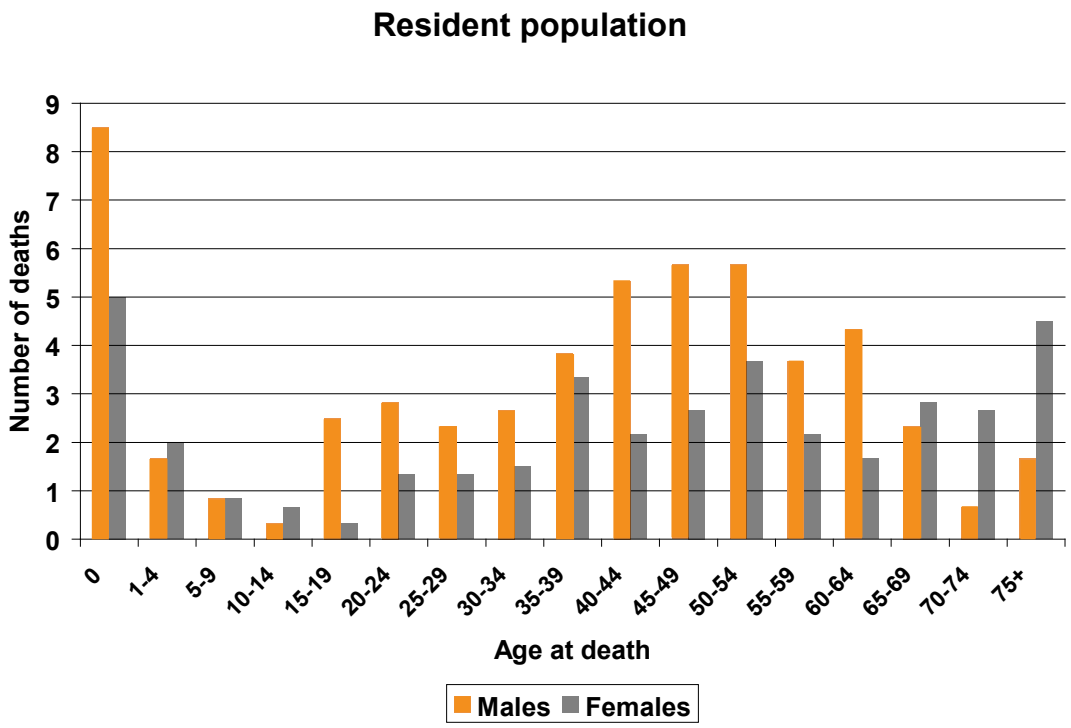
Age group of respondent	Father		Mother		Proportion still alive	
	Alive	Dead	Alive	Dead	Father	Mother
0–4	942	60	998	8	94.0	99.2
5–9	967	95	1,044	25	91.1	97.7
10–14	864	138	954	51	86.2	94.9
15–19	663	234	837	63	73.9	93.0
20–24	512	291	701	106	63.8	86.9
25–29	311	263	453	125	54.2	78.4
30–34	210	256	300	167	45.1	64.2
35–39	128	326	222	234	28.2	48.7
40–44	74	313	140	249	19.1	36.0
45–49	35	260	74	220	11.9	25.2
50–54	13	177	43	147	6.8	22.6
55–59	5	69	5	68	6.8	6.8
60–64	2	56	7	51	3.4	12.1
65–69	0	47	1	46	0.0	2.1
70+	0	55	0	55	0.0	0.0
Total	**4,726**	**2,640**	**5,779**	**1,615**	**64.2**	**78.2**

Figure 6 shows the average number of registered deaths by age and sex for the period 1997–2002.

As was shown in Section 2 (Figure 1 and Appendix Table 1), the average CDR for the resident population was calculated at 9.6 for the period 1997–2002. This compares to a CDR of 7.6 for the period 1992–1997. The corresponding CDRs for the Nauruan population were slightly higher, with 8.2 for 1992–1997 and 10.2 for 1997–2002.

From annual death registration data (Appendix Table 4), average numbers of deaths by age and sex were calculated for the years 1992–1997 and 1997–2002 (Figure 6). Age-specific death rates, *M(x)-values*, are calculated by dividing the annual average number of deaths of one period by the estimated mid-period population by age and sex (Appendix Table 5), with these values (Figure 7) forming the basis for calculating separate *life tables*[3] for the male and female resident populations (Appendix Tables 6a and 6b), and for male and female Nauruan populations (Appendix Tables 7a and 7b)[4].

Figure 6: Average annual number of registered deaths by age and sex, 1997–2002

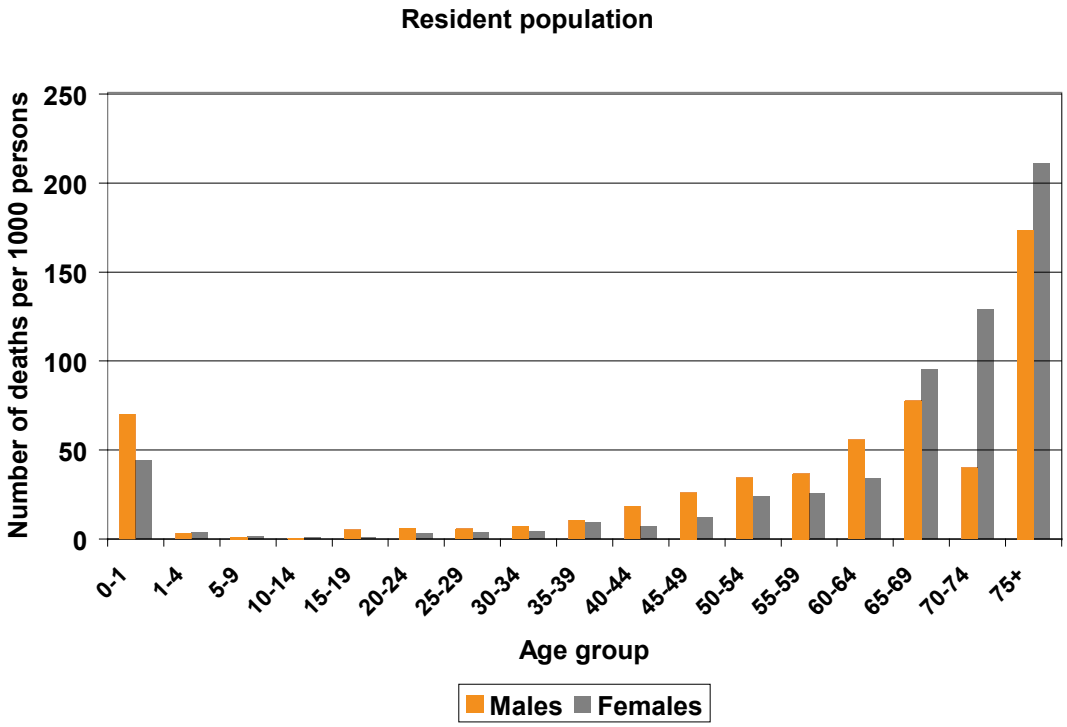


Source: Registration of deaths by age and sex, Bureau of Statistics, Nauru

3 A brief description of life tables is given on page 104.

4 The procedure 'LTPOPDTH' of the software programme PAS of the US Census Bureau was used for the calculations of the respective life tables.

Figure 7: Estimated age-specific central death rates [M(x)] of the total resident population, average of years 1997–2002



Life expectancy at birth for males and females has been estimated at 52.5 and 58.2 years respectively. The difference in life expectancy of almost six years in favour of females is consistent with the fact that 42% more male than female deaths were reported during the period 1997–2002 (329 male deaths were registered compared to 232 female deaths). It is also consistent with data on widowhood, which can be used as an indication of the number of male and female spouses who have died. Considerably higher numbers of widowed females than males were reported in the 2002 census. While only 19% of all males 60 years and older were widowed, 61% of females of the same age group were; 40% of all males 65 years and older were widowed compared to 77% of females of the same age group. These trends are also consistent with orphanhood data, showing a significantly higher number of surviving mothers than fathers (Table 7).

Life expectancy of the Nauru resident population decreased by an average of four years during the period 1992–2002 (Table 8), amounting to 59.1 years during the period 1992–1997; the corresponding value for the period 1997–2002 was 55. For males life expectancy decreased from 56.3 to 52.5, and for females from 62.4 to 58.2. For indigenous Nauruans the changes were even more dramatic, with values declining from 55.8 to 52.6; for Nauruan males it decreased from 52.2 to 49 years, and for Nauruan females from 59.9 to 56.9 years.

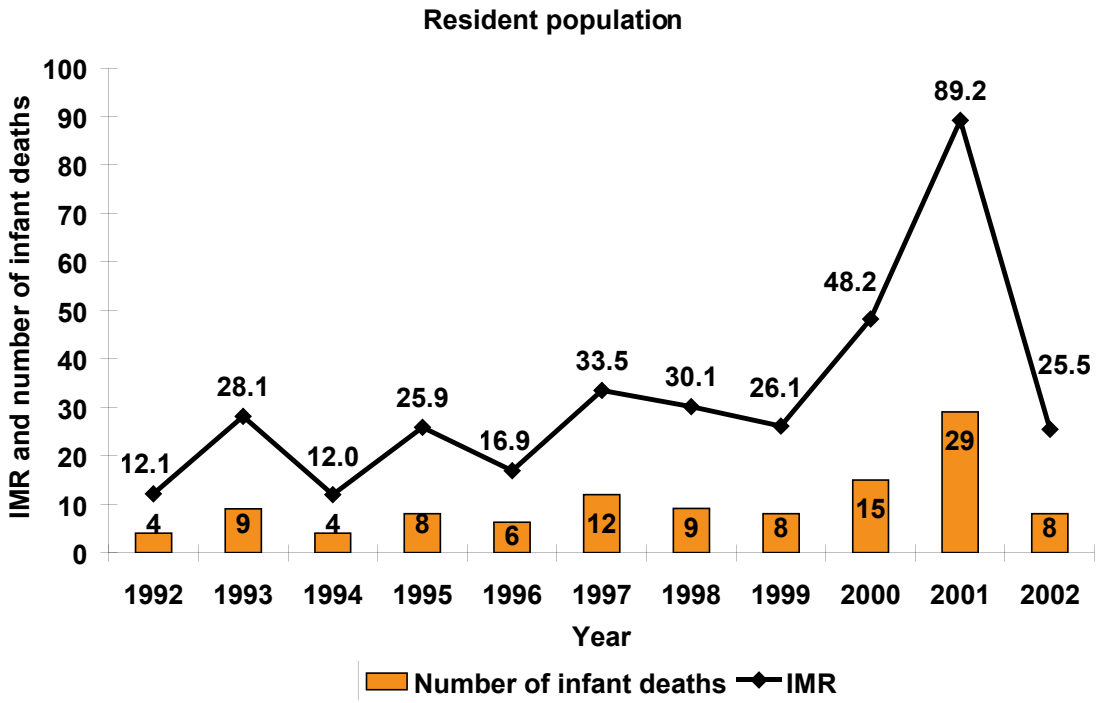
Table 8: Life expectancies by sex, total resident and Nauruan population, 1992–2002

	1992–1997		1997–2002		1992–2002	
	Residents	**Nauruans**	**Residents**	**Nauruans**	**Residents**	**Nauruans**
Males	56.3	52.2	52.5	49.0	54.7	50.8
Females	62.4	59.9	58.2	56.9	60.2	58.3
Total	**59.1**	**55.8**	**55.0**	**52.6**	**57.2**	**54.3**

The *infant mortality rate (IMR)* is the most common and basic measurement of early age mortality. It measures the number of deaths of under-one-year-old children in relation to 1,000 births in a given time interval (usually a calendar year). During the period 1997–2002, 81 infant deaths were recorded (Figure 8). During the same period, 1,916 births were registered. Dividing the number of infant deaths by the number of births results in an average IMR of 42.3 for the period 1997–2002 (Table 9). Male infant mortality was; with 50.9 per 1,000, considerably higher than female infant mortality, with 32.8 infant deaths per 1,000 live births. The IMR of the Nauruan population was, with 36.6, slightly lower than that of the total resident population (non-Nauruans).

Generally, the data show a considerable increase in the number of infant deaths and corresponding IMRs during the period 1992–2002, highlighting that the incidence of infant deaths (N=81) in recent years (1997–2002) nearly doubled when compared with the number of infant deaths (N=43) for the period 1992–1997, when the IMR stood at 'only' 21.3 for the total resident population (compared to 42.3 in 1997–2002) and 12.5 for the Nauruan population, compared to a three-times increase in recent years!

Figure 8: Number of registered infant deaths and IMR, 1992–2002



Source: Registration of deaths, Bureau of Statistics, Nauru

Table 9: Number of registered infant deaths, number of births, and IMR by sex, total resident and Nauruan population, 1992–2002

	1992-1997			1997-2002			1992-2002		
	M	F	T	M	F	T	M	F	T
				Infant deaths					
Residents	20	23	43	51	30	81	64	48	112
Nauruans	8	11	19	36	17	53	39	26	65
				Births					
Residents	1047	975	2,022	1,002	914	1,916	1,870	1,712	3,582
Nauruans	791	726	1,517	729	718	1,447	1,380	1,307	2,687
				Infant mortality rate (IMR					
Residents	19.1	23.6	21.3	50.9	32.8	42.3	34.2	28.0	31.3
Nauruans	10.1	15.2	12.5	49.4	23.7	36.6	28.3	19.9	24.2

Child mortality, or the probability of dying between age 1 and exact age 5, was estimated at about 13.7 deaths per 1,000 persons in that age group (Table 10). Between 1997 and 2002, 49 deaths of children aged between 1 and 4 years were recorded: 23 boys and 26 girls.

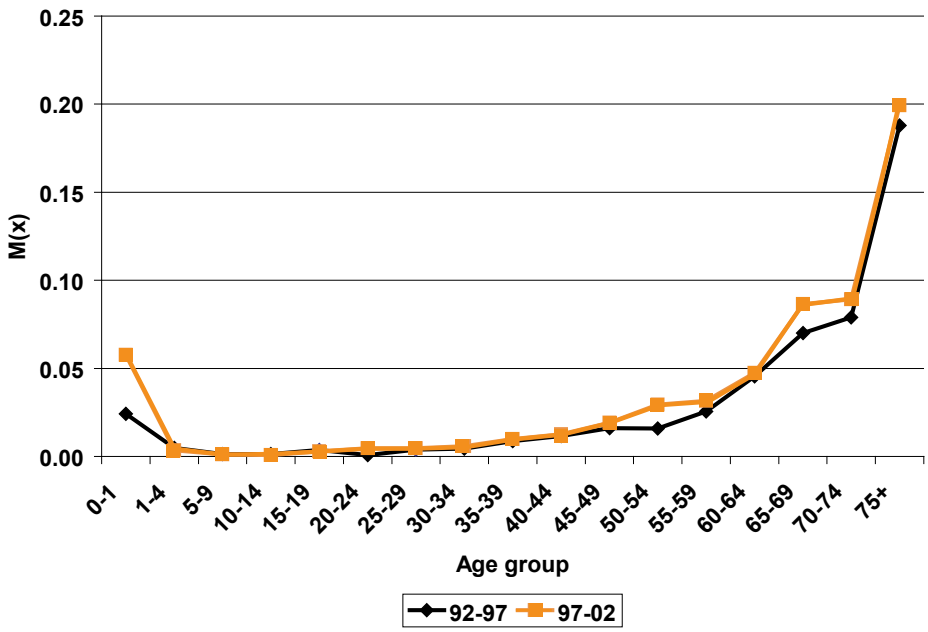
Sometimes mortality indicators can be estimated by calculating the proportion of persons, by sex and age group, who have survived from one census to the next (cohort survival). As was shown earlier, Nauru is influenced by a significant amount of migration and the available methodologies are not suitable, as it would be impossible to establish whether a person has died or migrated.

Table 10: Mortality indicators, total resident and Nauruan population, 1997–2002

Indicator	All residents			Nauruans		
	Total	Males	Females	Total	Males	Females
Life expectancy at birth, E(0)	55.0	52.5	58.2	52.6	49.0	56.9
Infant mortality rate (IMR)	42.3	50.9	32.8	36.6	49.4	23.7
Child mortality rate (4q1)	13.7	12.0	15.4	13.1	13.3	12.8
Under-five mortality (q5)	**56.0**	**62.9**	**48.2**	**49.7**	**62.7**	**36.5**

In conclusion, comparing estimated age-specific death rates, *M(x)*, for the period 1992–1997 with those of 1997–2002, it becomes clear that the decline in mortality rates is due to an increase of both early-age mortality and adult mortality (Figure 9).

Figure 9: Comparison of age-specific death rates, *M(x)*, of the total resident population, 1992–1997 and 1997–2002



5. INTERNATIONAL MIGRATION

Migration is the movement of people across a certain *boundary* for the purpose of establishing a new residence. Alongside fertility and mortality, migration is the third component of population change.

When movements traverse national boundaries or borders, we speak of international migration and refer to people involved in this movement as *immigrants* (people moving into a country) or *emigrants* (people leaving a country). When the movement of people occurs within a country, such as between islands, districts or villages, we speak of internal migration and refer to people involved in this process as *in-migrants* or *out-migrants*. As movement usually involves mobility in both directions, the term *net migration* describes the actual impact of migration on a particular population. It shows the net effect of immigration and emigration on a particular population and is usually defined in terms of an increase/decrease per 1,000 people in a given area, or as an annual growth rate in percentage.

Apart from this spatial consideration, *time* plays a major role in the analysis of migration. Someone coming for a short visit is not a migrant – he or she is a visitor. *Intent* is also of crucial importance, as a visitor can turn into a migrant if deciding to stay for a longer time; for example, if a sudden job opportunity emerges. Along the same lines, a person intending to migrate may turn into a visitor if, for example, the expected job opportunity does not materialise and the person decides to return to his or her place of departure.

The consideration of *time* and *intent* alongside obvious spatial phenomena highlights two key challenges when it comes to measuring migration: whether or not a particular person qualifies as a migrant can only be established after a certain period of time, in order to establish whether the arriving or departing person qualifies as a visitor or a migrant. One year has emerged as the most frequently used benchmark in censuses worldwide.

The Nauru census contained two questions related to migration:
1. place of birth; and
2. how long (number of months/years) the person had resided in Nauru.

The question regarding length of residence was only asked of the non-Nauruan population.

One in five residents (21.4%) indicated that they were born overseas, whereas most indigenous Nauruans (95.6%) reported that they were born in Nauru (Table 11); only 333 Nauruans were born overseas, mainly in Australia (142). Of the 2,113 residents born overseas, the vast majority originated from neighbouring Kiribati (43%) and Tuvalu (11%)[5], and the People's Republic of China (17%).

5 This number would have been higher had it not been for several hundred Tuvaluans returning to Tuvalu just before the 2002 census.

Regarding *length of residence*, 30% (N=700) of the non-Nauruan resident population reported having lived in Nauru for less than five years, of which 216 people reported having moved to Nauru between one and two years prior to the census; a further 30% reported having lived in Nauru between five and nine years, and 29% reported having lived in Nauru for more than 10 years (Appendix Table 8)[6].

Table 11: Total resident and Nauruan population by place of birth, 2002

	All residents			Nauruans		
Place of birth	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Nauru	7,724	3,906	3,818	7,227	3,636	3,591
Kiribati	903	417	486	37	11	26
Tuvalu	241	138	103	11	2	9
Australia	154	89	65	142	81	61
New Zealand	24	16	8	13	9	4
Fiji	168	98	70	64	34	30
Solomon Islands	30	22	8	12	6	6
Philippines	77	50	27	0	0	0
PR China	367	210	157	2	1	1
Republic of China	12	7	5	0	0	0
Hong Kong	6	6	0	0	0	0
India	12	8	4	0	0	0
Other	119	56	63	52	20	32
Not stated	35	17	18	12	7	5
Total	**9,872**	**5,040**	**4,832**	**7,572**	**3,807**	**3,765**
Total overseas-born	2,113	1,117	996	333	164	169
Born overseas (%)	21.4	22.2	20.6	4.4	4.3	4.5

As discussed earlier (Tables 2a and 2b), about 2,270 more Nauru residents left than arrived in Nauru during the intercensal period. About 1,100 more indigenous Nauruans left than arrived during the same period. These figures represent crude migration estimates, derived from the balancing equation.

Comparing 1992 and 2002 census populations by five-year cohorts, and taking the registered number of births and deaths by age and sex into consideration, it can be shown that it was foremost the young population who left Nauru during the intercensal period (Figure 10a and Appendix Table 9a): more than half (52.6%) of all migrants were younger than 15 years of age, and a further 13% were aged between 15 and 19 years. Another 19% were 40–59 years old.

6 Eleven per cent did not answer the question on length of residence.

With the bulk of net migration affecting children (0–14) and adults (40–59), totalling 72% of all migrants, and a further 13% referring to teenagers (15–19) who would have finished their education and/or continued their education or looked for work overseas, two distinct contemporary migration patterns seem to emerge from Nauru:

- families leaving Nauru and returning home (mainly to Kiribati and Tuvalu), as also illustrated in the classic *migration-shape* age pyramid shown in Figure 10a; and
- 'normal' movement of young people looking to further their education/work overseas.

All in all, there were about equal numbers of male and female migrants.

Figure 10a: Population pyramid of resident net migrants, 1992–2002

Comparing Figures 10a and 10b highlights completely different migration patterns between total residents and indigenous Nauruans. The proportion of children is significantly higher for the total resident population than for the Nauruan population, and the proportion of young adults (20–39 age group) is very small amongst the total resident population. The explanation for this pattern is that there was a net surplus of non-Nauruans in the age group 20–39, particularly 25–29-year-old males, who contributed to this peculiar pattern (Figure 10c).

The compilation of annual migration estimates and more detailed migration analyses should be a fairly straightforward exercise, with Nauru authorities recording all arriving and departing passengers at Nauru's one international airport. However, it appears that arrival and departure cards are not consistently completed and/or collected from all arriving and departing passengers, and the prevalence of regular power cuts in recent years has disrupted the (timely) computerisation of customs data, including the number of arriving and departing passengers. These factors have posed a serious threat to the compilation of timely and reliable migration records.

Figure 10b: Population pyramid of Nauruan net migrants, 1992–2002

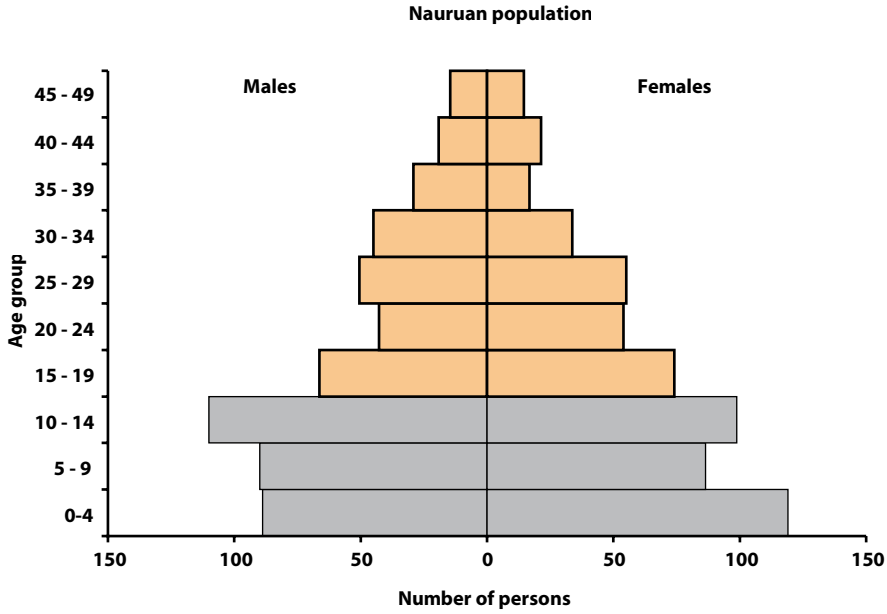
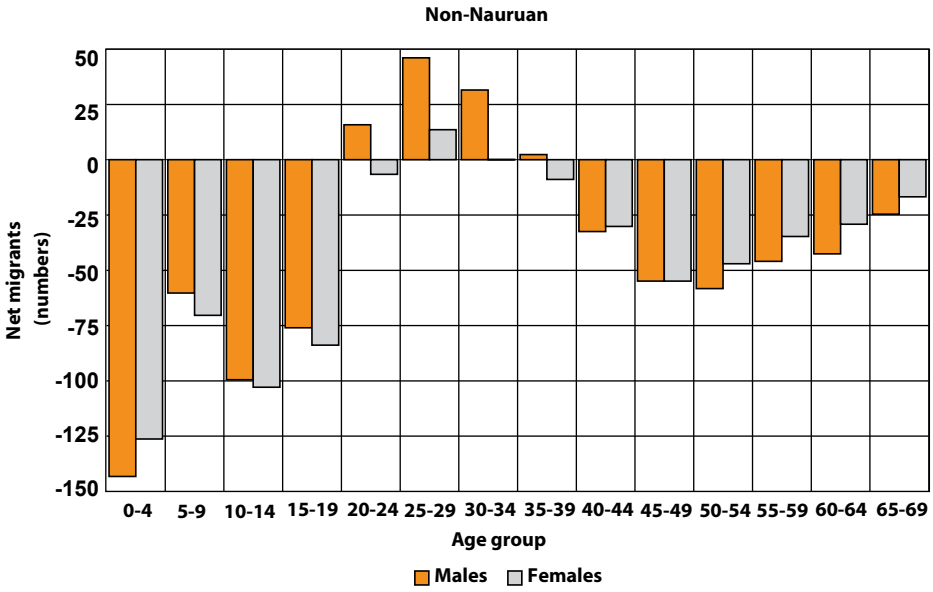


Figure 10c: Non-Nauruan net migrants, 1992–2002



6. POPULATION PROJECTIONS

In formulating socio-economic development plans, population variables have to be considered in conjunction with economic and social conditions. For governments to cater effectively for the specific needs of different population groups at different points in time, it is important that planners and policy-makers gain an idea of what their population might look like in the future. The appropriate method for doing this is to provide a series of population scenarios, in order to anticipate changes in the population's size and characteristics.

The starting point for any projections is a reliable age–sex distribution of a population – in this case it is the Nauru 2002 census age and sex distribution of the total Nauru resident population – and information on fertility, mortality and migration.

The *cohort–component method* was used to compute the population projections presented here. This procedure simulates population changes as a result of changes in the components of growth: fertility, mortality and migration. Based on past information, assumptions are made about future trends in these components of change. The assumed rates are applied to the age and sex structure of the population in a simulation that takes into account that people die according to their sex and age, that women have children, and that some people change their residence. The cohort–component method of projecting a population follows each cohort of people of the same age and sex throughout their lifetime according to their exposure to fertility, mortality and migration[7].

The key to making meaningful projections lies in the choice of assumptions about future population developments. These assumptions concern possible future birth, death and migration rates.

Given the relatively high level of negative net migration (that is, far more residents leaving Nauru over the past 10 years than moving/returning to Nauru), which is not sustainable in the long run, much care is advised when interpreting these population projections. It is important to highlight that population projections are not forecasts suggesting what is going to happen in the future; population projections are meant to provide policy-makers and planners with *'what-if scenarios'* – that is, information about what future populations will look like under given assumptions. These projections are not meant to suggest that the assumptions will materialise (e.g. certain fertility, mortality and migration patterns and developments will eventuate); they merely suggest that certain population outcomes will definitely happen if specific fertility, mortality and migration trends eventuate/prevail in the coming years. While fertility and mortality are relatively stable, which means that dramatic changes usually do not occur overnight, migration patterns and trends can change suddenly and dramatically, particularly in societies exposed to sudden or sustained economic and political uncertainties such as those currently prevailing in Nauru.

7 *Population Analysis with Microcomputers*, Volume I, Presentation of Techniques, by Eduardo E. Arriaga and Associates, US Bureau of the Census, 1995, pp.309–310.

6.1 Projection assumptions

To gain a better understanding of Nauru's future population situation, several projections have been prepared, covering a 25-year period from 2002 to 2027. While some readers may question the wisdom of undertaking projections in the current context of political and economic uncertainties, it needs to be re-emphasised that the main purpose of these projections is to provide planners and policy-makers with credible future population scenarios that are based on current knowledge and thus may assist in formulating policies and plans aimed at contributing to equitable and sustainable social and economic development for Nauru.

The following demographic inputs were used for the projections.

Base population

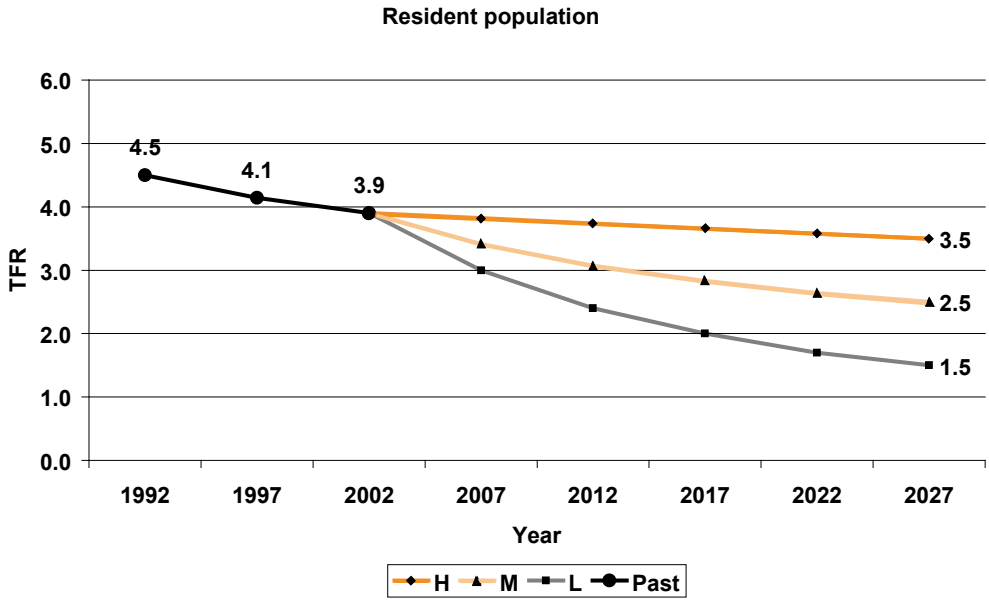
2002 census age and sex distribution of the resident population (Appendix Table 10).

Fertility

Current TFR (3.9) and associated ASFRs, as described in Section 3, were used as starting points, with three different assumptions made about future fertility developments (Figure 11):

- Assumption 1: High fertility – Fertility decreases slightly from its current level to 3.5 in 2027
- Assumption 2: Medium fertility – Fertility decreases to 2.5 in 2027, and resembles exactly the intermediate level between the high fertility assumption and the low fertility assumption
- Assumption 3: Low fertility – Fertility decreases to 1.5 in 2027

Figure 11: Fertility assumptions for projections, 2002–2027



Mortality

Normally, population projections assume a rising trend in life expectancy for males and females according to the United Nations working models for mortality improvement as described in *World Population Prospects* (United Nations, 1995, p.144). However, such an assumption is clearly unrealistic for Nauru, since life expectancies there have actually declined during the recent intercensal period, 1992–2002.

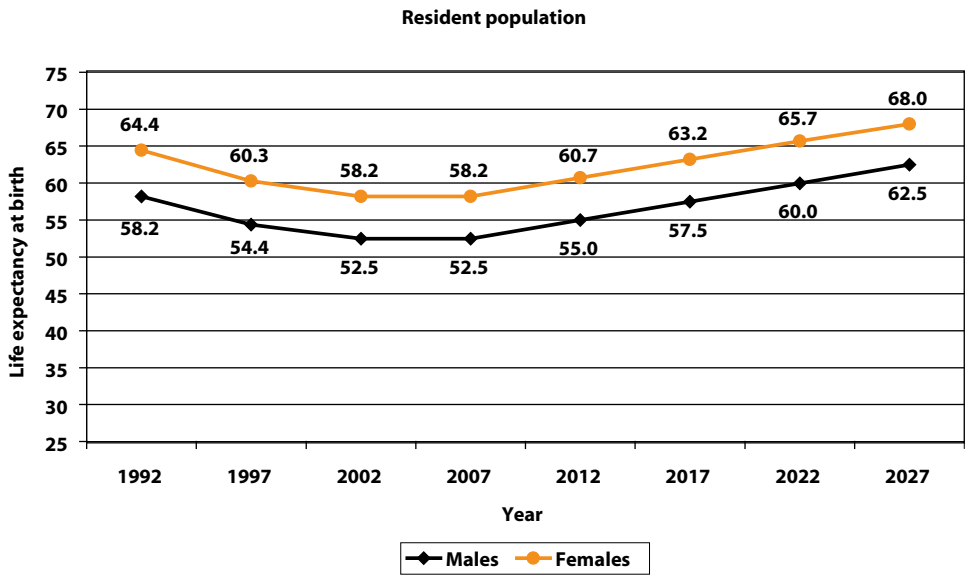
Hence, life expectancies at birth E(0) of 52.5 years and 58.2 years, for males and females respectively, are used as the starting point for the projections in 2002. These estimates are based on the number of registered deaths by age and sex of the years 1997–2002, as outlined in Section 4.

- Assumption

  For the purpose of these projections we assume, perhaps optimistically, that current life expectancies will not further decrease but remain stable at 1997–2002 levels for the first five-year projection period, 2002–2007, before they start to improve slightly, as outlined in Figure 12. Life expectancies are then assumed to reach 62.5 and 68 years in 2027 for males and females respectively[8].

Only one assumption regarding mortality is made. The reason for this is that variations in mortality levels (varying assumptions) usually have only a minor impact on final projection results; they also would require the production of too many different scenarios that ultimately would only complicate the presentation of results.

Figure 12: Mortality assumption (life expectancy at birth) for projections, 2002–2027



8 According to the UN's software package MORTPAK3.0 (procedure COMPARE), the Far East Asian Model of the UN's model life tables is most similar to the observed age structure of mortality.

Migration

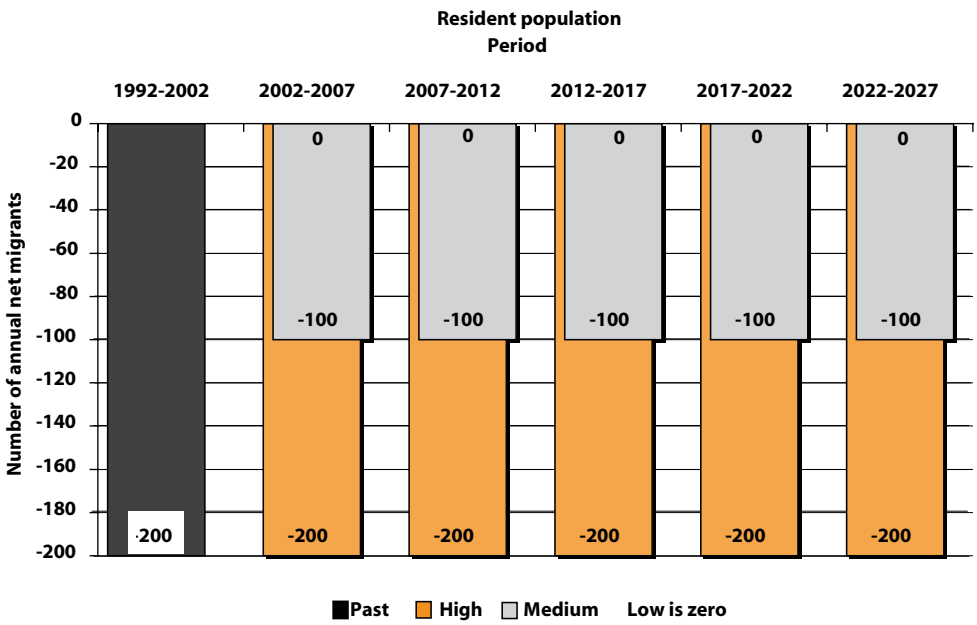
Making meaningful assumptions about future migration developments provides the single greatest difficulty for undertaking population projections, as many of the social and economic parameters shaping migration patterns depend largely on countries' overall social, economic and political developments. These can fluctuate widely, as Nauruans have experienced first hand during the past 20 years, and are notoriously hard to predict.

In the past, Nauruans were not known for migrating to other countries like other Pacific Islands peoples did, but this might have changed during the last few years. As has been shown in Section 2, about 2,270 more people left Nauru than established residence there during the years 1992–2002, resulting in an annual average net migration of -218.

The estimated pattern (percentage distribution by age and sex) of net migrants of the resident population of the intercensal period 1992–2002 has been used as the base for the projection scenarios (Section 5, Figure 10a and Appendix Table 9a), which are based on three different migration assumptions (Figure 13):

- Assumption 1: High migration – Estimated level of annual net migration of the period 1992–2002 of -200 persons per year is kept constant for the entire projections period 2002–2027
- Assumption 2: Medium migration – Estimated annual net migration of the period 1992–2002 for the entire projections period is half of that used in Assumption 1 (-100)
- Assumption 3: Zero migration – Net migration is assumed to be zero for the entire projections period

Figure 13: Migration assumptions for projections, 2002–2027



6.2 Projection results

The combination of these three different fertility and migration assumptions, with one prevailing mortality assumption, results in nine scenarios, of which only three are described in detail (the high, medium and low population variants). The different scenarios highlight the impact of different levels of fertility on the one hand and the impact of migration on the other (Table 12).

Table 12: Resident population size in the year 2027 according to nine projection scenarios (combination of three different fertility and migration assumptions)

		Migration assumption		
		Zero	**Medium (-100)**	**High (-200)**
Fertility assumption (TFR 2002–2027)	Slow decline (**3.9 → 3.5**)	**16,665 (high population growth variant)**	13,394	10,077
	Medium decline (**3.9 → 2.5**)	15,210	**12,147 (medium population growth variant)**	9,031
	Fast decline (**3.9 → 1.5**)	13,555	10,711	**7,827 (low population growth variant)**

Scenario 1 (high population growth variant)

- *High fertility:* The estimated current TFR of 3.9 will slightly decrease to 3.5 until 2027.
- *Mortality:* After the period 2002–2007 of stagnating life expectancies, the estimated level of life expectancy at birth will gradually increase, from 52.5 years and 58.2 years for males and females to 62.5 years and 68.0 years respectively in the year 2027.
- *Zero migration:* Net migration is assumed to be zero.

Scenario 2 (medium population variant)

- *Medium fertility:* The estimated TFR of 3.9 in 2002 will gradually decrease to 2.5 in the year 2027.
- *Mortality:* Same as Scenario 1.
- *Medium migration:* The high level of negative net migration of the period 1992–2002 of -200 people per annum is reduced to -100 people per annum for the entire projections period 2002–2027.

Scenario 3 (low population variant)

- *Low fertility:* The estimated TFR of 3.9 in 2002 will decrease to 1.5 in the year 2027.
- *Mortality:* Same as Scenarios 1 and 2.
- *High migration:* The high level of negative net migration of the years 1992–2002 will continue for the entire projections period 2002–2027.

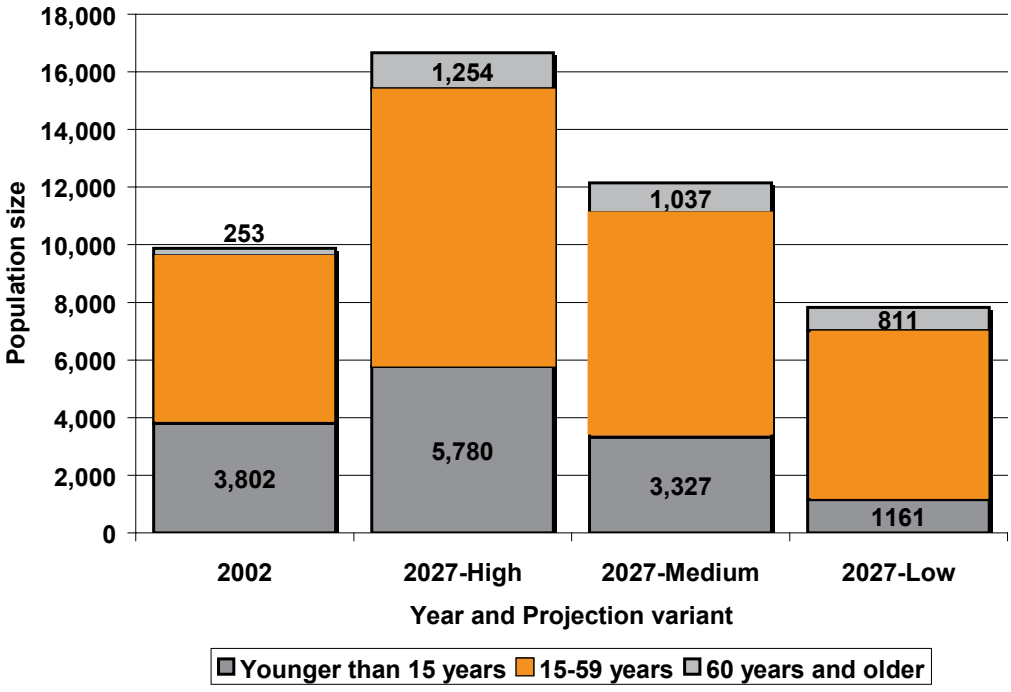
Tables 12 and 13 and Figure 14 feature the comparative results of the various projections, highlighting the differential impact on population size, growth and structure as a result of fertility and migration assumptions made.

Table 13: Population indicators in 2027 according to three projection variants

Indicator	2002 population	2027 population		
		High variant	Medium variant	Low variant
Median age (years)	20.7	29.0	28.5	35.5
Dependency ratio (15–59)	69.7	73.0	56.1	33.7
Annual growth rate 2001–2021	0.3*	2.1	0.8	-0.9
Sex ratio	104.3	102.8	103.5	106.8

*1992–2002 growth rate

Figure 14: Population size by broad age groups in 2027, according to three projection variants



Scenario 1: High population growth variant

- Under the assumption of near-constant fertility, and the assumption that net migration will be zero, Nauru's resident population will increase to 16,665 people in the year 2027 (Table 12 and Figures 14 and 15).
- The population under 15 years of age will increase by 1,978, from 3,802 in 2002 to 5,780 in 2027, and the working-age population (15–59 years) will increase by 3,814, from 5,817 in 2002 to 9,631 in 2027.
- The *dependency ratio* will increase only slightly from 69.7 to 73.0 during the same period, because of only a very modest change in the dependent age groups (younger than 15, older than 59), from 41% of the total population in 2002 to 42% in 2027, combined with an equally small decrease in the working-age population, from 59% of the total population in 2002 to 58% in 2027.
- The *median age* of the population, however, will increase from 20.7 to 29.0 years.

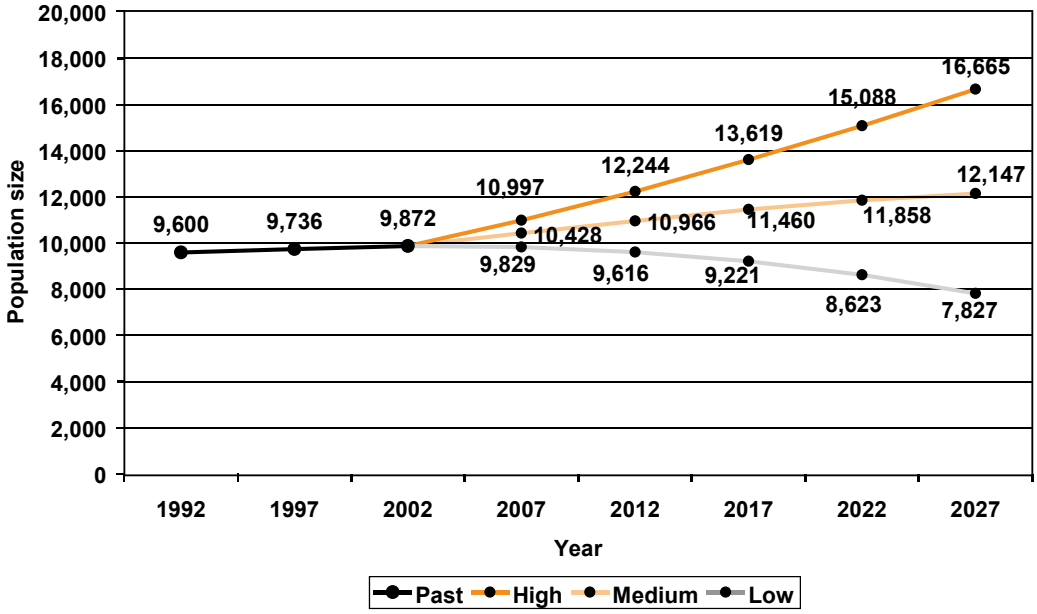
Scenario 2: Medium population growth variant

- Based on the assumption that fertility will decrease from its current level of 3.9 to 2.5 in the year 2027, and the number of net migrants will gradually decrease from its current high level of -200 people annually to -100 during the period 2002–2027, the population is expected to increase to 12,147 people in the year 2027.
- The overall number of children (0–14) will decrease from 3,802 in 2002 to 3,327 in 2027 (-475), and the working-age population will increase from its current level by 1,966 people to 7,783 people in 2027.
- The *dependency ratio* will decrease to 56.1 as a result of a proportional increase of the working-age population (from 59% in 2002 to 64.1% in 2027), and a proportional decrease of the population 15 years and younger (from 38.5% to 27.4%).
- The *median age* of the population will again increase, by almost eight years, from 20.7 to 28.5 years.

Scenario 3: Low population growth variant

- If fertility decreases from its current level of 3.9 to 1.5 in the year 2007, and the number of net migrants remains at its current level of -200 people per year, Nauru's resident population will decrease to 7,827 people in 2027.
- The number of children will be 1,161 – less than a third of the current number (3,802) – whereas the working-age population will more or less remain at its current size at 5,855.
- The *dependency ratio* will decrease quite substantially from the current 69.7, to 33.7 in 2027. This is the expected result of a marked proportional increase in Nauru's resident working-age population, with three in four Nauru residents in this age group, and a decrease in the population younger than 15 years, from 38.5 to 15%.
- These developments will see a significant ageing of the population, reflected in the *median age* rising to 35.5 years, with 10% of the total population expected to be older than 60 years of age in the year 2027.

Figure 15: Future population trend according to three projection variants, 2002–2027



General comments

Table 12 highlights that the impact of fertility on Nauru's population dynamics, particularly future population growth, is less pronounced than that of migration.

All three scenarios have the following characteristics in common:

- the population will be stable or increase until the year 2007;
- the working-age population in 2027 will be higher than in 2002;
- the population 60 years and older will proportionally and in absolute numbers increase; and
- the median age of the population will increase considerably.

Although the *low population growth variant* projection assumptions may seem drastic, it needs to be pointed out that this variant assumes migration rates that are the same as those of the intercensal period 1992–2002, and that fertility has already declined to below a TFR of two in many parts of the world (including New Zealand and Australia).

Population changes close to those presented in Scenario 2 (*medium population growth variant*), appear to be the most likely outcome because:

- the relatively high level of fertility is expected to decline, although slowly, as it has in the recent past and is furthermore expected to do so based on historical worldwide observations of countries with a similar level of fertility. Therefore, the *high population growth variant*, with the assumption of a near-constant high level of fertility, seems to be an unlikely outcome.
- On the other hand, a more rapid fertility decline is not expected to occur because it seems

'uncharacteristic' for Pacific Islands populations. Hence, the *low population growth variant*, assuming a continued fast fertility decline, appears an equally unlikely outcome.

- While it is impossible to predict future migration patterns and levels, the *medium population growth variant* assumption appears to be the most realistic because the high levels of -200 people per annum of the period 1992–2002 were the result of many Tuvaluans and I-Kiribati leaving Nauru just before the census, and an already diminished 'pool' of potential migrants is not conducive to such sustained high negative future net migration rates. On the other hand, continued economic uncertainties as experienced on Nauru may well be conducive to continued negative migration rates for years to come.

7. IMPLICATIONS OF DEMOGRAPHIC TRENDS

7.1 Population dynamics

Fertility

Without current levels of negative migration, fertility levels of four live births per woman and a high rate of natural population growth of 2.5% per annum would see Nauru's population double in just over one generation (28 years).

Should the government wish to promote a reduction in fertility rates, provisions need to be put in place for easier access to family health and planning services that are accessible to both males and females. This would include improving the awareness, knowledge, acceptability, availability and degree of satisfaction of family planning methods and services, especially amongst men and women of childbearing age and adolescents, in order to raise the level of contraceptive usage. This would involve information and counselling services available in all villages through well-trained community workers.

Declining fertility (a reduced number of children per woman) will have the following impact on the population and on development planning and policies:

- a decreasing natural growth rate;
- Nauru's population becoming older (as it reduces the proportion of children); and
- a gradual decline in the number of schoolchildren and, in the medium-to-long term, less pressure on the labour market with fewer school leavers looking for employment.

Mortality

From studies on the level of mortality presented in this profile, it seems that life expectancy at birth, especially for males, has been decreasing and is very low. This unfortunate situation could be counteracted by intensifying health advocacy/public health awareness campaigns promoting healthier lifestyles, as the low overall life expectancy seems to be caused by a growing prevalence of lifestyle diseases such as diabetes, combined with high alcohol consumption, smoking and little exercise.

Furthermore, concerted efforts should be undertaken to improve infant, child and maternal health care programmes, leading to better overall child care, as it is difficult to understand such high infant mortality rates in an environment like Nauru, which does not experience the climate, health conditions (e.g. vector-borne diseases), physical environment, inaccessibility to health services and general communication problems that are prevalent in high IMR Pacific countries such as Solomon Islands, PNG, Vanuatu and Kiribati.

Improved mortality rates mean healthier people living longer lives. The following efforts should be made to continue working towards this goal:

- improve infant, child and maternal health by improving primary health care programmes;
- expand programmes of immunisation;

- provide a hygienic and safe living environment;
- promote healthy nutrition;
- advocate a general healthy lifestyle, including regular physical exercise; and
- discourage smoking and excessive alcohol consumption.

International migration

Nauru's low population increase during the period 1992–2002 was mainly due to high levels of negative net migration that almost counterbalanced Nauru's natural growth. If the current economic situation prevails, this trend will most likely continue in the near future.

It is important to improve migration statistics to be able to maintain an up-to-date population register for planning purposes. This requires reliable compilation of arrival and departure information from all incoming and outgoing passengers, with minimum information requirements concerning data about age, sex and nationality.

7.2 Crosscutting development issues

Health

The health status of each individual and his/her family members is probably the most important concern people have. Therefore, the availability, utilisation and affordability of quality health and medical services are major issues in people's decisions on where to live.

While it cannot be expected that certain special health care facilities will be available to a small and remote population such as Nauru's (because the low number of cases prohibit the operation of state-of-the-art health services that would include the employment of specialists and the purchase and maintenance of expensive equipment), provisions need to be in place to ensure a system of efficient referrals to the nearest health facilities. Also, regular visits of overseas medical specialists are a useful way to meet people's health needs, demands and expectations.

A large concentration of inhabitants in certain districts, for example in Denigomodu at Location, can lead to overcrowded households, which could be the cause of health problems due to poor sanitation, hygiene and sewerage facilities.

Due to Nauru's economic crisis in recent years, some households and families might not be capable of sustaining an acceptable, healthy lifestyle and may need the extra attention of the government or community, since overcrowded, unhealthy living environments will affect everybody in the long run. In particular, the following minimum housing conditions should be ensured: availability of and access to safe and clean water, public electricity and hygienic waste disposal.

The foremost consequence of improved mortality is healthier people living longer lives. As the low life expectancy of the Nauruan population – currently the lowest of all Pacific Island

countries – is predominantly a result of high adult mortality rates, especially amongst men, and also very high infant mortality rates, health promotion should play a far more prominent role in the government's and its development partners' development agendas.

Education

The educational level of a population is a key indicator of the development and quality of life of a country. Education plays an important role in development through its links with demographic, as well as economic and social, factors. In general, there is a close and complex relationship between education, fertility, morbidity, mortality and mobility: when couples are better educated, they tend to have fewer children, and their children's health status improves and their survival rates tend to increase. Higher levels of educational attainment also contribute to a better-qualified workforce and better economic performance.

In this regard, it is of benefit that young people leave the country to study at higher educational institutions overseas. However, these people need to be assured of suitable employment in Nauru after completing their education, otherwise it will be difficult to entice them to return.

The Nauruan Government should be concerned about the relatively high level of dropouts, as only a proper education can provide the country with the skilled labour force it needs to maintain or even lift its current living standard. A higher level of education (tertiary level) should be encouraged as much as possible, as this will provide a better yield of workers for the future – people who are able to specialise in areas needed for Nauru's employment requirements.

The government might want to consider re-establishing deterrents against truancy, such as the liaison officers of the past. More emphasis could be placed on broadening the range of subjects and activities offered to make education (and enrolment) more attractive. More well-qualified teachers are urgently required: a student–teacher ratio of 32 at one Nauru secondary school is not conducive to providing a quality learning environment, even less so in the context of high dropout rates at this level.

Changes in Nauru's demographic structure will affect the proportion and size of its school-age population. As outlined by the Medium Variant projection, if the level of fertility does not decrease rapidly, the school-age population will increase from about 2,220 pupils aged 5–15 years in 1992 to over 3,000 by the year 2012. Considering that the average student–teacher ratio is 21, this increase in school-age population will require increased financial commitment to support more teachers, classrooms and learning materials. Some 40 additional teachers and classrooms will be required by 2012 just to maintain current student–teacher ratios.

Students should be encouraged to achieve as advanced an education as possible, as better-educated people have the knowledge to care well for themselves and their families, communities and countries. In general, better-educated people usually have fewer and healthier children and earn a higher income than people with a lower educational background.

Economic activity

Economic activity and employment are shaped by the size of the working-age population, the educational skill level of the labour force, and the economic resources available to a country.

Migration movements depend on economic opportunities in Nauru and overseas, and socio-economic developments in Nauru are very much interwoven with developments overseas.

With the government and the Nauru Phosphate Corporation being the main employers in Nauru, any dramatic developments in these two sectors will have serious social and economic consequences. With a downsizing of the public sector expected to occur in the near future in the context of the government's social and economic reform programme, and employment opportunities in the phosphate industry also not expected to increase any further, the government faces a considerable challenge in providing alternative employment opportunities for its growing working-age population.

In Nauru, where the income of the population is mainly derived from outside sources such as trust funds, fishing rights, phosphate royalties etc., which need to be redistributed among the people, a fast-growing and larger population will place increased pressure on these limited resources and lower the average standard of living in the long run if alternative sources of income cannot be found.

Good governance

Good governance and effective policy-making should provide the framework for sustainable development within which the interrelationship of population, environment and all possible socio-economic aspects of a country can prosper cohesively.

In this regard, it is important that policy-makers, planners, political parties and community leaders are aware of the needs and aspirations of the people of their country so they can effectively provide for the specific needs of the population and the different population sub-groups. Governments need to be aware of their country's population structure, population processes and socio-economic characteristics in order to plan for an adequate standard of living, and for proper provision and distribution of goods and services.

APPENDIX TABLES

Appendix Table 1: Registered number of births, deaths and infant deaths, and estimated CBR, CDR and IMR, total resident and Nauruan population, 1992–2002

Year/ Period	RESIDENTS							NAURUANS						
	Mid-year/ period population	Births	Deaths	Infant deaths	CBR	CDR	IMR	Mid-year/ period population	Births	Deaths	Infant deaths	CBR	CDR	IMR
1992	9,602	331	64	4	34.4	6.7	12.1	6,841	248	50	0	36.3	7.3	0
1993	9,613	320	70	9	33.3	7.3	28.1	6,891	240	51	3	34.8	7.4	12.5
1994	9,628	335	53	4	34.8	5.5	12.0	6,946	251	42	2	36.1	6.0	8.0
1995	9,645	309	71	8	32.1	7.4	25.9	7,004	232	54	3	33.1	7.7	12.9
1996	9,666	371	82	6	38.4	8.5	16.9	7,067	269	68	4	38.1	9.6	14.9
1997	9,691	356	97	12	36.7	10.0	33.5	7,135	277	79	7	38.8	11.1	25.3
1998	9,718	304	97	9	31.3	10.0	30.1	7,207	232	77	6	32.2	10.7	25.9
1999	9,749	306	82	8	31.4	8.4	26.1	7,284	229	65	3	31.4	8.9	13.1
2000	9,783	311	70	15	31.8	7.2	48.2	7,367	224	59	10	30.4	8.0	44.6
2001	9,821	325	123	29	33.1	12.5	89.2	7,455	256	92	21	34.3	12.3	82.0
2002	9,862	314	92	8	31.8	9.3	25.5	7,549	229	75	6	30.3	9.9	26.2
1992–2002	9,736	326	81.9	10	33.4	8.4	31.4	7,202	244	64.7	6	33.9	9.0	24.2
1992–1997	9,637	337	72.8	7.2	35.0	7.6	21.4	6,975	253	57.3	3.2	36.2	8.2	12.5
1997–2002	9,766	319	93.5	13.5	32.7	9.6	42.3	7,326	241	74.5	8.8	32.9	10.2	36.6

Appendix Table 2: Registered number of births by age of mother, resident and Nauruan population, 1992–2002

RESIDENTS														
Age of mother	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**TOTAL**	**1992–1997**	**1997–2002**
15–19	32	29	33	37	36	41	37	40	47	60	45	438	209	270
20–24	91	81	97	87	99	107	81	118	92	114	111	1,078	562	623
25–29	120	89	84	79	99	90	84	71	90	79	89	974	561	503
30–34	51	65	68	64	70	75	51	43	47	43	45	623	393	304
35–39	29	44	48	40	59	32	30	27	26	23	18	377	253	156
40–44	8	11	4	3	6	12	14	8	7	6	5	84	42	53
45–49	0	0	0	0	1	0	4	0	1	0	0	7	1	5
NS	0	0	0	0	0	0	3	0	0	0	0	3	0	3
TOTAL	**331**	**320**	**335**	**309**	**371**	**356**	**304**	**306**	**311**	**325**	**314**	**3,583**	**2,022**	**1,917**

NAURUANS														
Age of mother	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**TOTAL**	**1992–1997**	**1997–2002**
15–19	24	22	25	28	26	32	28	30	34	47	33	329	157	204
20–24	68	61	73	65	72	83	62	88	66	90	81	809	422	470
25–29	90	67	63	59	72	70	64	53	65	62	65	730	421	379
30–34	38	49	51	48	51	58	39	32	34	34	33	467	295	230
35–39	22	33	36	30	43	25	23	20	19	18	13	282	189	118
40–44	6	8	3	2	4	9	11	6	5	5	4	63	32	40
45–49	0	0	0	0	1	0	3	0	1	0	0	5	1	4
NS	0	0	0	0	0	0	2	0	0	0	0	2	0	2
TOTAL	**248**	**240**	**251**	**232**	**269**	**277**	**232**	**229**	**224**	**256**	**229**	**2,687**	**1,517**	**1,447**

Appendix Table 3: Comparison of estimated ASFR and TFR based on number of registered births, 1992–1997 and 1997–2002

TOTAL RESIDENTS						
Age group of women	Estimated mid-period number of resident women*		Average annual number of registered births		ASFR	
	1992-1997	1997-2002	1992-1997	1997 - 2002	1992-1997	1997-2002
15 - 19	445	483	35	45	0.078	0.093
20 - 24	405	438	94	104	0.232	0.237
25 -29	401	388	94	84	0.233	0.216
30 - 34	368	355	65	51	0.178	0.143
35 - 39	361	364	42	26	0.117	0.071
40 - 44	275	309	7	9	0.026	0.028
45 - 49	167	219	0	1	0.001	0.004
Total	**2,423**	**2,555**	**337**	**319**		
CFR					**139**	**125**
MAC					**28.1**	**27.3**
TFR					**4.3**	**4.0**

NAURUANS						
Age group of women	Estimated mid-period number of resident women*		Average annual number of registered births		ASFR	
	1992-1997	1997-2002	1992-1997	1997 - 2002	1992-1997	1997-2002
15 - 19	380	437	26	34	0.069	0.078
20 - 24	301	360	70	78	0.234	0.217
25 -29	280	282	70	63	0.250	0.224
30 - 34	245	234	49	38	0.200	0.164
35 - 39	230	238	32	20	0.137	0.083
40 - 44	151	194	5	7	0.035	0.034
45 - 49	74	126	0	1	0.002	0.005
Total	**1,661**	**1,871**	**253**	**241**		
CFR					**152**	**129**
MAC					**28.7**	**28.0**
TFR					**4.6**	**4.0**

* Estimated based on age-specific growth rates of female population between 1992 and 2002 censuses

Appendix Table 4: Number of registered deaths by age and sex, 1992–2002

	1992			1993			1994			1995			1996			1997			1998			1999			2000			2001			2002		
Age group	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
0	3	1	4	2	7	9	2	2	4	4	4	8	2	4	6	7	5	12	3	6	9	7	1	8	10	5	15	19	10	29	5	3	8
1–4	1	1	2	1	0	1	2	7	9	4	4	8	5	2	7	4	3	7	2	4	6	3	1	4	0	0	0	1	0	1	0	4	4
5–9	2	0	2	1	0	1	0	1	1	0	2	2	2	0	2	2	1	3	0	1	1	0	3	3	1	0	1	0	0	0	2	0	2
10–14	1	0	1	2	0	2	2	0	2	1	1	2	1	0	1	0	1	1	0	0	0	0	1	1	0	1	1	1	1	2	1	0	1
15–19	2	2	4	3	1	4	0	0	0	3	2	5	2	1	3	3	0	3	5	0	5	2	0	2	4	0	4	1	1	2	0	1	1
20–24	0	0	0	1	0	1	1	0	1	1	1	2	0	0	0	0	0	0	2	2	4	4	1	5	3	2	5	4	3	7	4	0	4
25–29	2	0	2	4	1	5	3	0	3	2	0	2	3	0	3	3	1	4	1	1	2	1	0	1	5	1	6	4	2	6	0	3	3
30–34	3	2	5	1	1	2	0	1	1	1	1	2	2	2	4	4	2	6	3	2	5	1	0	1	3	0	3	1	3	4	4	2	6
35–39	5	6	11	2	0	2	3	1	4	5	1	6	6	3	9	2	3	5	4	3	7	6	3	9	6	0	6	3	6	9	2	5	7
40–44	1	5	6	5	1	6	2	1	3	1	1	2	8	2	10	6	6	12	4	3	7	7	2	9	1	0	1	11	1	12	3	1	4
45–49	3	1	4	1	2	3	3	3	6	5	0	5	4	3	7	8	1	9	6	5	11	5	2	7	3	2	5	5	3	8	7	3	10
50–54	1	4	5	3	1	4	5	0	5	4	2	6	2	0	2	3	2	5	6	2	8	6	3	9	8	3	11	5	10	15	6	2	8
55–59	4	1	5	5	0	5	2	1	3	2	2	4	4	2	6	4	2	6	6	4	10	4	3	7	0	2	2	2	1	3	6	1	7
60–64	5	4	9	1	4	5	2	3	5	2	5	7	2	0	2	6	1	7	4	2	6	3	2	5	0	1	1	7	3	10	6	1	7
65–69	3	0	3	2	4	6	2	1	3	4	0	4	6	1	7	2	3	5	6	4	10	3	1	4	0	0	0	1	4	5	2	5	7
70–74	0	0	0	4	1	5	1	1	2	1	3	4	4	0	4	1	2	3	1	2	3	1	2	3	0	4	4	0	3	3	1	3	4
75+	0	1	1	4	5	9	1	0	1	0	2	2	4	5	9	3	6	9	0	3	3	1	3	4	1	4	5	4	3	7	1	8	9
Total	36	28	**64**	42	28	**70**	31	22	**53**	40	31	**71**	57	25	**82**	58	39	**97**	53	44	**97**	54	28	**82**	45	25	**70**	69	54	**123**	50	42	**92**

Appendix Table 5: Estimated total resident and Nauruan population by age and sex, mid-period 1997–2002

Age group	Total residents			Nauruans		
	Males	Females	Total	Males	Females	Total
0–1	121	113	234	116	108	223
1–4	550	515	1,065	446	412	858
5–9	724	665	1,389	568	532	1,099
10–14	622	563	1,185	516	482	998
15–19	476	483	959	427	437	864
20–24	469	438	907	395	360	756
25–29	402	388	790	306	282	588
30–34	368	355	722	241	234	475
35–39	363	364	727	219	238	457
40–44	288	309	597	165	194	359
45–49	217	219	436	109	126	235
50–54	164	152	316	72	94	165
55–59	100	85	185	41	39	80
60–64	78	49	126	32	32	64
65–69	30	30	60	22	27	49
70–74	17	21	37	12	16	28
75+	10	21	31	9	18	27
Total	**4,997**	**4,769**	**9,766**	**3,695**	**3,631**	**7,326**

Appendix Table 6a: Abridged life table based on deaths and population: total resident males, 1997–2002

Age (x)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex
0	0.0702	0.0666	100000	6660	94899	0.9308	5247037	**52.5**
1	0.0030	0.0120	93340	1122	370503	0.9879	5152138	55.2
5	0.0012	0.0057	92218	529	459767	0.9958	4781636	51.9
10	0.0005	0.0027	91689	245	457830	0.9857	4321868	47.1
15	0.0053	0.0259	91443	2370	451292	0.9722	3864038	42.3
20	0.0060	0.0298	89073	2651	438740	0.9708	3412746	38.3
25	0.0058	0.0286	86423	2472	425932	0.9679	2974006	34.4
30	0.0073	0.0356	83950	2990	412276	0.9566	2548074	30.4
35	0.0106	0.0514	80960	4164	394391	0.9305	2135798	26.4
40	0.0185	0.0885	76796	6796	366992	0.8952	1741406	22.7
45	0.0261	0.1226	70000	8583	328546	0.8605	1374414	19.6
50	0.0345	0.1587	61418	9749	282717	0.8369	1045868	17.0
55	0.0368	0.1683	51669	8697	236602	0.7968	763151	14.8
60	0.0559	0.2450	42972	10530	188534	0.7198	526549	12.3
65	0.0781	0.3267	32442	10599	135712	0.7316	338015	10.4
70	0.0400	0.1819	21843	3973	99282	0.5092	202303	9.3
75	0.1735	1.0000	17870	17870	103021		103021	5.8

Appendix Table 6b: Abridged life table based on deaths and population: total resident females, 1997–2002

Age (x)	nMx	nqx	lx	ndx	nLx	5Px	Tx	ex
0	0.0441	0.0426	100000	4260	96497	0.9514	5819284	**58.2**
1	0.0039	0.0154	95740	1474	379208	0.9877	5722786	59.8
5	0.0013	0.0062	94266	589	469859	0.9939	5343578	56.7
10	0.0012	0.0059	93677	553	467004	0.9953	4873720	52.0
15	0.0007	0.0034	93124	321	464818	0.9907	4406716	47.3
20	0.0030	0.0151	92803	1401	460512	0.9839	3941898	42.5
25	0.0034	0.0170	91402	1557	453115	0.9810	3481386	38.1
30	0.0042	0.0209	89844	1880	444524	0.9673	3028270	33.7
35	0.0092	0.0448	87965	3937	429983	0.9603	2583747	29.4
40	0.0070	0.0345	84028	2895	412904	0.9534	2153764	25.6
45	0.0122	0.0591	81133	4797	393674	0.9144	1740860	21.5
50	0.0241	0.1138	76337	8684	359973	0.8833	1347186	17.6
55	0.0255	0.1199	67653	8115	317976	0.8626	987212	14.6
60	0.0341	0.1572	59538	9360	274290	0.7392	669236	11.2
65	0.0950	0.3838	50178	19256	202750	0.5769	394946	7.9
70	0.1287	0.4870	30922	15058	116964	0.3914	192197	6.2
75	0.2109	1.0000	15864	15864	75232		75232	4.7

Appendix Table 7a: Abridged life table based on deaths and population: Nauruan males, 1997–2002

Age (x)	nMx	nqx	lx	nDx	nLx	5Px	Tx	ex
0	0.0519	0.0498	100000	4983	95943	0.9457	4898134	**49.0**
1	0.0034	0.0133	95017	1268	376903	0.9892	4802192	50.5
5	0.0009	0.0044	93749	412	467718	0.9962	4425289	47.2
10	0.0006	0.0032	93338	301	465936	0.9849	3957571	42.4
15	0.0055	0.0270	93037	2508	458912	0.9700	3491636	37.5
20	0.0067	0.0332	90528	3004	445133	0.9686	3032723	33.5
25	0.0060	0.0295	87525	2585	431160	0.9601	2587590	29.6
30	0.0104	0.0506	84939	4296	413957	0.9366	2156430	25.4
35	0.0160	0.0768	80643	6194	387731	0.9030	1742473	21.6
40	0.0253	0.1188	74449	8842	350141	0.8463	1354742	18.2
45	0.0428	0.1933	65607	12683	296327	0.7644	1004601	15.3
50	0.0673	0.2880	52924	15244	226509	0.7406	708274	13.4
55	0.0493	0.2193	37680	8262	167745	0.7172	481765	12.8
60	0.0891	0.3643	29418	10716	120300	0.6443	314020	10.7
65	0.0826	0.3422	18702	6399	77511	0.6990	193720	10.4
70	0.0541	0.2383	12303	2932	54183	0.5337	116209	9.4
75	0.1511	1.0000	9371	9371	62026		62026	6.6

Appendix Table 7b: Abridged life table based on deaths and population: Nauruan females, 1997–2002

Age (x)	nMx	nqx	lx	nDx	nLx	5Px	Tx	ex
0	0.0264	0.0258	100000	2576	97752	0.9686	5685786	**56.9**
1	0.0032	0.0128	97424	1250	386550	0.9914	5588034	57.4
5	0.0006	0.0031	96174	301	480119	0.9950	5201485	54.1
10	0.0014	0.0069	95873	660	477716	0.9956	4721365	49.2
15	0.0004	0.0019	95213	181	475612	0.9910	4243649	44.6
20	0.0032	0.0161	95032	1525	471346	0.9832	3768037	39.7
25	0.0035	0.0176	93506	1642	463427	0.9772	3296691	35.3
30	0.0057	0.0281	91864	2584	452863	0.9605	2833264	30.8
35	0.0105	0.0513	89281	4576	434965	0.9472	2380401	26.7
40	0.0112	0.0544	84705	4607	412007	0.9319	1945437	23.0
45	0.0172	0.0827	80098	6622	383934	0.8858	1533430	19.1
50	0.0321	0.1485	73476	10912	340101	0.8320	1149495	15.6
55	0.0422	0.1909	62564	11946	282958	0.8109	809394	12.9
60	0.0412	0.1868	50619	9456	229453	0.7186	526436	10.4
65	0.0993	0.3977	41162	16372	164883	0.5265	296982	7.2
70	0.1711	0.5993	24791	14857	86811	0.3428	132100	5.3
75	0.2193	1.0000	9934	9934	45289		45289	4.6

Appendix Table 8: Non-Nauruan population by years spent in Nauru, 2002

Years spent in Nauru	Total	Male	Female
1	216	111	105
2	190	104	86
3	152	75	77
4	142	71	71
5	144	81	63
6	144	73	71
7	143	76	67
8	138	81	57
9	115	62	53
10–14	233	132	101
15–19	185	109	76
20–24	112	69	43
25+	129	68	61
Not stated	116	46	70
Blank	141	75	66
Total	**2,300**	**1,233**	**1,067**

Appendix Table 9a: Estimated total number and percentage distribution of net migrants by age and sex, total resident population, 1992–2002

Age group	Total numbers			Percentage distribution		
	Total	Males	Females	Total	Males	Females
0–4	-477	-232	-245	21.0	10.2	10.8
5–9	-307	-150	-157	13.5	6.6	6.9
10–14	-411	-210	-202	18.1	9.2	8.9
15–19	-300	-142	-158	13.2	6.3	7.0
20–24	-87	-27	-61	3.8	1.2	2.7
25–29	-46	-4	-41	2.0	0.2	1.8
30–34	-47	-13	-34	2.1	0.6	1.5
35–39	-53	-27	-26	2.3	1.2	1.1
40–44	-103	-52	-52	4.5	2.3	2.3
45–49	-139	-69	-69	6.1	3.1	3.1
50–54	-105	-58	-47	4.6	2.6	2.1
55–59	-81	-46	-35	3.6	2.0	1.5
60–64	-72	-43	-29	3.2	1.9	1.3
65–69	-41	-25	-17	1.8	1.1	0.7
Total	**-2,270**	**-1,098**	**-1,172**	**100.0**	**48.4**	**51.6**

Source: Based on 1992 and 2002 census population, and interpolation of birth cohorts

Appendix Table 9b: Estimated total number and percentage distribution of net migrants by age and sex, Nauruan population, 1992–2002

Age group	Total numbers			Percentage distribution		
	Total	**Males**	**Females**	**Total**	**Males**	**Females**
0–4	-208	-89	-119	18.4	7.9	10.5
5–9	-176	-90	-86	15.6	8.0	7.7
10–14	-209	-110	-99	18.5	9.7	8.7
15–19	-140	-66	-74	12.4	5.9	6.6
20–24	-97	-43	-54	8.5	3.8	4.8
25–29	-106	-51	-55	9.3	4.5	4.9
30–34	-79	-45	-34	7.0	4.0	3.0
35–39	-46	-29	-17	4.1	2.6	1.5
40–44	-40	-19	-21	3.6	1.7	1.9
45–49	-29	-15	-15	2.6	1.3	1.3
Total	**-1,130**	**-556**	**-574**	**100.0**	**49.2**	**50.8**

Source: Based on 1992 and 2002 census population, and interpolation of birth cohorts

Appendix Table 10: Base population for projections: 2002 census resident population by age and sex

Age group	Total	Males	Females
0–4	1,219	625	594
5–9	1,368	723	645
10–14	1,215	641	574
15–19	1,006	502	504
20–24	953	496	458
25–29	778	397	381
30–34	717	369	348
35–39	735	369	366
40–44	619	289	329
45–49	488	235	254
50–54	339	163	176
55–59	183	95	88
60–64	125	78	47
65–69	57	30	26
70–74	37	18	19
75+	33	9	24
Total	**9,872**	**5,040**	**4,832**

Note: 'Not stated' cases of the 2002 census are distributed proportionately according to the population by age.

Technical note on life tables

A life table is used to simulate the lifetime mortality experience of a population. It does so by taking that population's age-specific death rates and applying them to a hypothetical population of 100,000 people born at the same time. For each year on the life table, death inevitably thins the hypothetical population's ranks until, in the bottom row of statistics, even the oldest people die.

Column 'nMx' shows the proportion of each age group dying in each age interval. These data are based on the observed mortality experience of a population.

Column 'lx' shows the number of people alive at the beginning of each age interval, starting with 100,000 at birth.

Column 'ndx' shows the number who would die within each age interval.

Column 'nLx' shows the total number of person-years that would be lived within each age interval.

Column 'Tx' shows the total number of years of life to be shared by the population in the age interval and in all subsequent intervals. This measure takes into account the frequency of deaths that will occur in this and all subsequent intervals. As age increases and the population shrinks, the total person-years that the survivors have to live necessarily diminish.

Life expectancy is shown in Column 'ex' – the average number of years remaining for a person at a given age interval. The first value in column 'ex' represents life expectancy at birth.

Source: *The Population Reference Bureau's Population Handbook* by Arthur Haupt & Thomas T. Kane, 4th international edition, Population Reference Bureau, 1998.

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