

NAURU Population Profile

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A GUIDE FOR PLANNERS AND POLICY MAKERS



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NAURU
POPULATION PROFILE

A guide for planners and policy-makers

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FOREWORD

For almost 15 years, SPC's Population/Demography Programme has assisted Pacific Island countries and territories in the population sector. With generous assistance from UNFPA until the end of 1992, SPC was able to provide assistance over a broad range of demographic issues and activities to its 22 Pacific Island members. Most of its activities concentrated on population censuses and surveys, covering all aspects from design, data collection and processing to analysis, including training and institutional capacity building in these areas. The SPC Population/Demography Programme established a tradition of providing quality advisory services throughout the region, in a technical discipline which most Pacific Island governments still find difficult to address due to a lack of suitably-qualified national staff.

From 1993 onwards, the main SPC Population/Demography Programme emphasis has shifted from data collection, processing and demographic analysis to data utilisation, paying greater attention to the interrelationship between population and development. This new and more applied emphasis is in response to demands from our member countries and territories, acknowledging that most planners have had no formal and/or first-hand experience with population matters. They were, therefore, neither in a position to incorporate population considerations into development planning processes, nor to appropriately digest highly technical demographic analyses.

To redress this situation was the main objective of the SPC *Integration of Population Issues into Development Planning* project (1994–1997), which was supported through a generous multi-year financial assistance arrangement with the Australian Agency for International Development (AusAID). One of the project's two key objectives was to pay greater attention to the analytical component in 'demographic analysis', and undertake more policy- and planning-relevant demographic analyses to assist member countries and territories in the formulation of their national development plans and strategy frameworks.

The continued importance of providing planning- and policy-relevant population information is acknowledged in our programme's current project activity focussing on *Population and Governance* (1998–2000), again funded by AusAID. The Nauru Population Profile is the ninth since the inception of this series. Unlike more traditional demographic analyses, which are usually indigestible by non-demographers, we try to write for a non-technical audience, paying less attention to discussing mathematically complex demographic concepts at great length, and, instead, more attention to specific implications for planners. Some key points are summarised in 'boxes' at the end of each section, and it goes without saying that these references are by no means exhaustive, but examples of some key implications.

This profile is mainly based on the results of the 1992 Nauru Census and data provided by the Nauru Statistics Office.

This volume was prepared under the leadership of Mr Andreas Demmke, and like all previous profiles involved all members of the SPC's Population/Demography Programme.

We would like to extend our gratitude to Mr Ipia Gadabu, Assistant Statistician, who worked with us for three weeks on a training attachment. During that time, he was able to write the basis for this profile. We also would like to thank Mr Martin Hunt, Government Assistant Statistician, for his tireless effort to supply us with data.

We would also like to thank Jim Thompson, Jipé Le-Bars and Patricia Martin, for their skills and contributions in editing, artwork, and layout respectively.

Gerald Haberkorn
Demographer
Secretariat of the Pacific Community

SUMMARY

1992 Census population	
Total population	9,919
Nauruan population	6,831
Non-Nauruan population	3,088
Mid-1999 population estimate	
Total population	11,280
Nauruan population	8,280
Non-Nauruan population	3,000
Population density, estimated (1999)	535 per km ²
Annual rate of growth, estimated (1997–2002)	
Total population	2.0 %
Nauruan population	2.7 %
Non-Nauruan population	0.0 %
Median age, estimated (1999)	
Total population	20.2 years
Nauruan population	17.8 years
Non-Nauruan population	29.4 years
Sex ratio, estimated (1999)	
Total population	105
Nauruan population	102
Non-Nauruan population	111
Dependency ratio, 15–64, estimated (1999)	
Total population	70.5
Nauruan population	82.0
Non-Nauruan population	45.7
Crude Birth Rate (CBR), estimated (1997–1999)	
Nauruan population	33.45 ‰
Crude Death Rate (CDR), estimated (1997–1999)	
Nauruan population	6.59 ‰
Average household size, Nauruan population, 1992	10
Total Fertility Rate (TFR), Nauruan population, 1992–1995	4.4
Infant Mortality Rate (IMR), Nauruan population, 1991–1993	12.5 ‰
Life expectancy at birth (E ₀), Nauruan population, 1991–1993	
Both sexes combined	57.6 years
Males (see explanation on page 32)	(54.4 years)
Females (see explanation on page 32)	(61.2 years)

The aim of this profile is to provide a brief overview of some of the demographic features of the population of Nauru. The emphasis is on identifying the key implications of observed demographic levels and trends for planners and policy-makers.

Nauru is a coral island located in the central Pacific, 60 kilometres south of the equator. It belongs to the sub-region of Micronesia. 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 kilometres. Nauru is six km in length (from the north-east to the south-west) and four km in width (from north-west to south-east), and its circumference measures 19 km.

Nauru's population and environment are largely, if not entirely, affected by its phosphate deposits. Due to phosphate mining, at least three-quarters of the island is considered uninhabitable and unsuitable for any kind of livelihood today. Depending on market prices and demand, some phosphate mining might be possible for the next 20 years, before the island will be completely mined out.

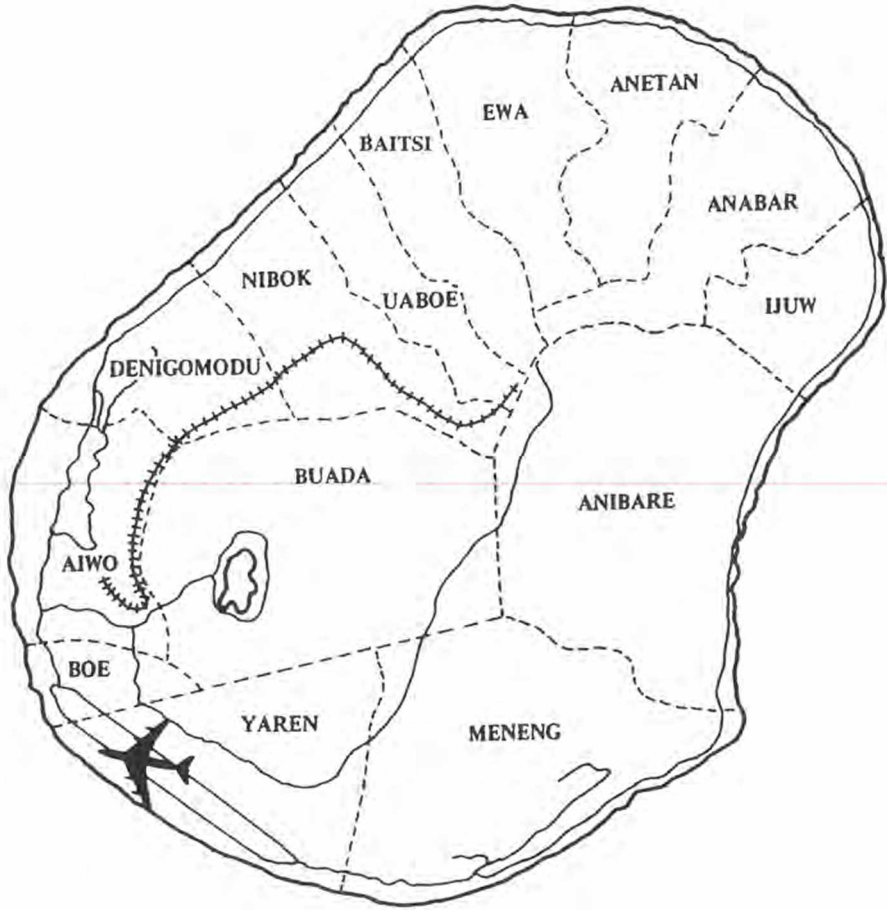
The 1992 Census enumerated the total population at 9,919 people of which 6,831 were indigenous Nauruans. The 1999 mid-year population estimate is calculated at about 8,280 indigenous Nauruans. Together with an estimate of 3,000 Non-Nauruans, the total population of Nauru is estimated at about 11,280 people in 1999.

The total population of Nauru is estimated to grow at a rate of about 2.0 per cent per annum, which is entirely due to the relatively high natural increase of its indigenous population, with a growth rate of about 2.7 per cent per annum. This rate of growth would cause the indigenous population to double in about 26 years, its working age population would more than double, and the school age population would increase by nearly 50 per cent until the year 2012.

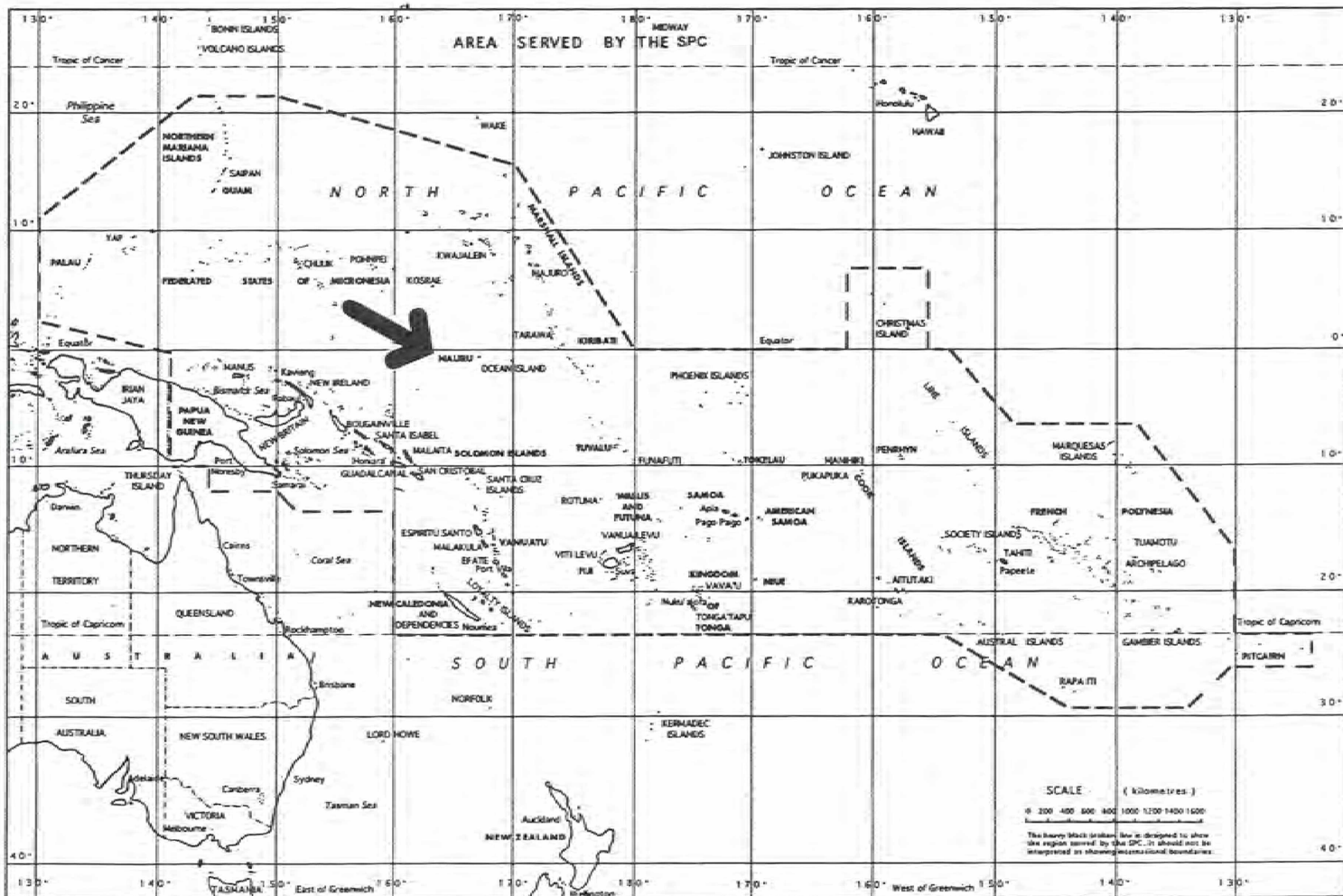
Nauru's growth rate is caused by a high natural increase, that is, a much larger number of births compared to the number of deaths. The Total Fertility Rate (TFR) of the indigenous Nauruan population is estimated at 4.4 for the period 1992–1995. This means that on average, every woman gives birth to between 4 and 5 children during her reproductive life.

Another important demographic feature is the huge proportion of widowed females at ages older than 45 years, indicating that male life expectancy is significantly lower than that of females. Furthermore, during the period 1991–1996, 60 per cent more male deaths have been registered than female deaths. The estimated life expectancy at birth for both sexes combined of 57.6 years was very low compared to other countries in the region. As infant and child mortality is lower than in other countries in the region, the causes for the rather high overall mortality rates have to be sought in lifestyle diseases such as cardiovascular disease, stroke, cancer, diabetes etc. This situation underlines the importance of health as a key development priority for Nauru.

NAURU



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1. INTRODUCTION

Throughout the various stages of their lifetimes, people make different demands on different services. Almost every aspect in life is somehow associated with age, and age 'creates' very specific demands. For example:

- young children need special health care (immunisation);
- children usually commence their formal education at around age six (schools, teachers, materials);
- young people leave their parents' houses (housing);
- school leavers search for work (employment opportunities);
- child-bearing is usually confined to women aged 15–49 (demand for maternal child health/family planning services); and
- elderly people make special demands on health care, transport, housing, pension entitlements, etc.

For governments to effectively cater for the specific needs of different population groups, it is important that planners have a clear picture of the demographic make-up of the population. In other words: planners need to be aware of their country's population structure and population processes.

Population structure refers to population size, geographic distribution, age–sex structure and socio-economic characteristics (economic activity, educational attainment of population). Population processes refer to population growth, fertility, mortality and migration (including urbanisation).

Apart from playing an important role in shaping a country's economic and social development, population structure and processes can also be the direct result of development. This is quite evident in situations where policies are incorporated into development plans with an aim to alter specific population variables:

- greater budget allocation to a country's ministry/department of health to expand its maternal and child health and family planning services can lead to fewer deaths of infants, children, and women;
- incorporating family health education in school curricula may lead to a lowering of fertility and a healthier lifestyle for future generations.

It should be kept in mind that population policies, even when well implemented, do not usually produce results for quite some time.

Accepting that population factors are important components of development, and accepting the premise that development is ultimately about people (specifically, about improving people's lives), it will be clear to everyone involved in planning and policy-making that incorporating population considerations into the planning process is at the very heart of planning and development.

The aim of this profile is twofold:

- 1) to familiarise planners and policy-makers with some of the key features of the demography of Nauru; and
- 2) to discuss some of the key implications for development planning and policy.

More detailed analyses can be undertaken on any other specific sectoral issue or subject, of course, subject to the availability of data.

This analysis mainly draws on the following source material: 1992 Nauru National Population Census, April 1992, Main Report (published in December 1993); and data and information provided by the Nauru Bureau of Statistics, Ministry of Finance.

This profile had to focus mainly on the indigenous Nauruan population, because the 1992 Census asked detailed questions only to that group. Therefore a detailed analysis of demographic and socio-economic indicators of the relatively large expatriate population of Nauru was not possible.



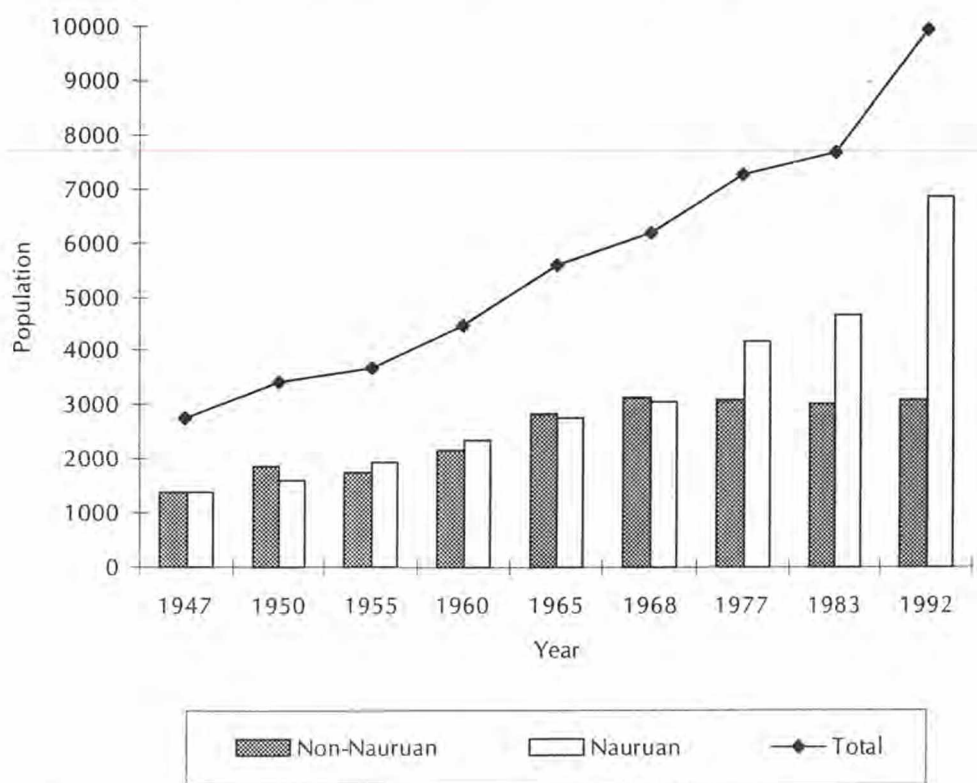
2. POPULATION STRUCTURE

With people representing both consumers and producers of goods and services, population factors such as size and growth have major roles in determining overall development objectives. Therefore, plans regarding production, consumption, investment, distribution, education, health, housing and so forth need to be closely connected with population factors.

2.1 Size and distribution

There has been a constant rise in the population of Nauru from 1947 to 1992 (Figure 1). Until 1968, the Nauruan and expatriate population grew at about the same rate. Thereafter the expatriate population stagnated at about 3,000 people whereas the indigenous Nauruan population grew very rapidly.

Figure 1: Population of Nauru, 1947 to 1992



Note: the estimates from 1947 to 1968 were made by the Australian trusteeship administration, the 1977 to 1992 estimates came from national censuses conducted by the independent Republic of Nauru.

The development of the Nauruan population shows the typical growth curve that relates to a population that has constantly increased by a high rate of growth of over 3 per cent per annum (see also Table 11 in Section 4.1)

The 1992 Census enumerated the population of Nauru at 9,919 people, 6,831 indigenous Nauruans and 3,088 Non-Nauruans. With a total land area of 21.1 km², the population density in 1992 was 470 people per km². Considering the estimated total population of Nauru of about 11,280 people in mid-1999, the population density would have increased to about 535 people per km².

This calculation, however, includes three-quarters of the uninhabitable interior of Nauru. As most of Nauru's population lives along the coast line, and mainly on the west and south western side of Nauru, population densities vary widely by district, but average about 2,000 persons per km² on the non-phosphate land which makes Nauru one of the most densely populated areas in the Pacific Islands.

Nauru consists of only one island which is divided into fourteen small districts, each of which are of various sizes and numbers of inhabitants. The districts with the highest number of inhabitants are Denigomodu (Denig), Meneng, and Aiwo, with numbers exceeding one thousand people (Table 1). The district of Denigomodu has the largest population, accounting for 25.7 per cent of Nauru's total population. This is mainly due to the Location Settlement being situated in this district, which houses all expatriate contract labour.

In general, population distribution is affected by the location 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. 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 main office is based in the district of Aiwo, which explains the Location Settlement being located in neighbouring Denigomodu.

The district of Meneng features the second largest number of total inhabitants, and the largest local population. Meneng district also accommodates Nauru Government's expatriate workers. The settlement area where Government expatriate workers are accommodated is generally known as Meneng Terrace. Although Anibare and Ijuw have the least number of inhabitants, they cover almost one third of the total area of the island.

Some land and houses at Meneng Terrace might be offered back to the traditional land owners, which may result in population movements within the districts of Aiwo, Meneng and Denig and a slight increase in the number of expatriate workers in the districts of Aiwo and Denig. Consequently, there will be an increase in the number of Nauruan households situated in the district of Meneng. Most Nauruans who would move to allocated houses in the Meneng Terrace settlement area already live in the district of Meneng, but in over-populated households.

Table 1: Population distribution by district, Nauru, 1992

District	Total population		Nauruans		Non-Nauruans	
	no.	%	no.	%	no.	%
Yaren	672	6.8	639	9.4	33	1.1
Boe	750	7.6	697	10.2	53	1.7
Aiwo	756	7.6	728	10.7	28	0.9
Buada	661	6.7	633	9.3	28	0.9
Denigomodu	247	2.5	199	2.9	48	1.6
Nibok	577	5.8	544	8.0	33	1.1
Uaboe	447	4.5	428	6.3	19	0.6
Baitsi	450	4.5	427	6.3	23	0.7
Ewa	355	3.6	338	4.9	17	0.6
Anetan	427	4.3	412	6.0	15	0.5
Anabar	320	3.2	302	4.4	18	0.6
Ijuw	206	2.1	186	2.7	20	0.6
Anibare	165	1.7	156	2.3	9	0.3
Meneng	1,123	11.3	1,061	15.5	62	2.0
The Location (Denigomodu)	2,301	23.2	47	0.7	2,254	73.0
Gov. Settlement (Meneng)	146	1.5	0	0.0	146	4.7
NPC Settlement (Aiwo)	196	2.0	34	0.5	162	5.2
Filipino Camp (Aiwo)	120	1.2	0	0.0	120	3.9
Total	9,919	100	6,831	100	3,088	100

Source: 1992 Nauru Census

IMPLICATIONS FOR PLANNING

- The large concentration of people in certain districts, for example in Denigomodu at The Location, can lead to overcrowded households, with resulting health problems, due to poor sanitation, hygiene and sewage facilities.
- It is important to note that three-quarters of Nauru's total land area has been rendered uninhabitable due to phosphate mining. Considering that high population densities mean more stress on an already 'stressed' environment, it is important to rehabilitate and develop the depleted landscape of the mined area of Nauru's interior as soon as possible in order to create opportunities for residential and recreational activities.

2.2 Age and sex

Development and planning objectives are often formulated with respect to population groups, whose characteristics are usually associated with age – such as infants, children and adolescents, workers, students, elderly persons and so forth. Therefore, the age distribution of a country's population is a very important consideration in planning.

In 1992, 5,075 males and 4,844 females have been counted, resulting in a sex ratio of 105 for the total population of Nauru, which means that there were 105 males for 100 females. Sex ratios, however, varied widely by age and by population groups (Appendix Tables 1 and 2). The overall sex ratio of the Nauruan population was only 102, compared to 111 for the non-Nauruan population.

While the very low sex ratios of the population over 65 years can be explained by the fact that males die at earlier ages than females (Section 4.3), the wide variation of the age-specific sex ratios of the non-Nauruan population is mainly due to age and sex-selective migration. Especially at ages 40–64, the non-Nauruan population is predominantly male, as it is usually men who work as expatriate contract workers in the phosphate mines. During the late 1960s and early 1970s, expatriate workers from mainly Kiribati and Tuvalu were recruited when labour was being sought for the Nauru Phosphate Corporation (NPC), formerly the British Phosphate Corporation (BPC).

The distribution of the population by age in 1992 shows a very young population (Table 2, and Figure 2). This is expressed in a median age of 19.4 years for the total population and 15.9 years for the Nauruan population. However, the median age of the non-Nauruan population was 29.4 years.

Table 2: Distribution of populations by broad age-groups, median age and dependency ratio, Nauru, 1992

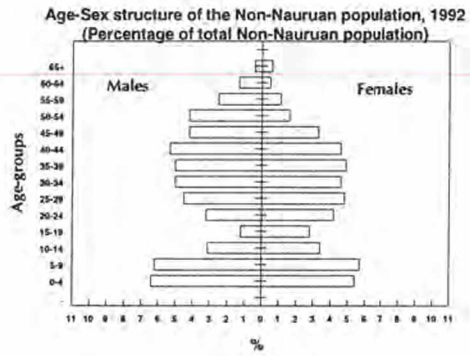
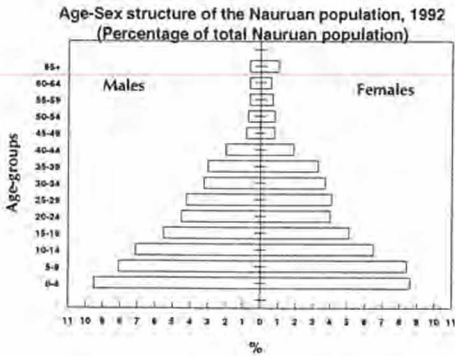
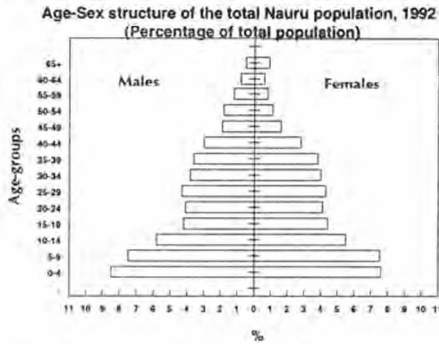
Age-group	Nauruans (%)	Non- Nauruans (%)	Total population (%)
0–14	48.1	30.4	42.5
15–64	50.3	68.6	56.1
65+	1.6	1.0	1.4
Median age	15.9	29.4	19.4
Dependency ratio	99.0	46.0	78.0

Source: 1992 Nauru Census

The relatively small proportion of Nauruans over 45 years of age is not only due to a low life expectancy at birth (see Section 4.3), but has also some historical roots: during World War II, 1,201 Nauruans were deported to Chuuk in the Federated States of Micronesia, of whom many died, and only 737 returned at the end of the war.

As the non-Nauruan population is made up mainly of contract workers and their dependents, and with the retirement age set at 65, only a few non-Nauruan people older than 65 years of age remain in Nauru.

Figure 2: Population pyramids, Nauru, 1992



The wide base of Nauru's population pyramid means that Nauru's population will continue to experience high population growth for many years to come. This wide base is caused by a sustained high level of fertility which means a high number of births. By growing older, these young people move up in the pyramid and will form first the future school-age population and later on the working-age population. Most importantly, by reaching their reproductive ages (15–49 years of age), they will marry or form another form of congenital union, form families and have children on their own. Even if these people, who greatly outnumber their parents, have on average less children than their parents, they can altogether produce more or the same number of children as their parents. The result for the next 10 to 20 years to come is a sustained high population growth despite a declining level of fertility. This is clearly illustrated by the Medium Variant projection (see Section 5.2) which assumes a moderate fertility decline in the future. Despite this assumed decline of the average number of children per women in

future years, the overall population growth rate would initially even increase before it declines to just below its current level in 10 to 15 years' time.

IMPLICATIONS FOR PLANNING

- A country's age structure has important implications for all its development policies and programmes, as people make different demands on different services throughout their lives.
- Of particular relevance to Nauru is, as is the case in all countries with young populations and high population growth, considerable pressure in the near future on social services. Considering the broad base of Nauru's population, heavy demands on education (classrooms, teachers) will be an immediate challenge, as will be the pressure to find employment for a rapidly growing domestic labour force.
- With Nauru's population growing at an annual rate of 2.7 per cent, its population is expected to double in just 26 years, which in the context of an already very high population density will mean even greater pressure on an already very fragile environment.

2.3 Households

Knowledge about household characteristics is important for planning and policy purposes, to help establish, for example, demands for housing and assess related requirements for land allocation, energy and water consumption, waste disposal and sewage connections, telephones and general infrastructure.

Household size and composition depend mainly on socio-economic and cultural factors, such as prevailing family structures (nuclear, extended), the age at which young people leave their parents' house to form their own household, and whether they do this with or without family (single household, couples with/without children). The availability and costs of suitable housing, and the availability of land to build upon, also have a big impact on household formation and composition.

Most houses on Nauru are situated along the outskirts of the island, with the inland District of Buada the sole exception. Today's houses are mainly built of materials such as concrete, imported wood, tin, asbestos and imported bricks. Fifty-seven per cent of all buildings in Nauru are made of mainly imported woods, 25 per cent are mainly made of concrete, 2 per cent of tin, and the rest are made of other materials (Republic of Nauru, 1992).

At the time of the 1992 Census, 685 Nauruan households were enumerated, so the average household size was therefore 10 persons per household (Table 3). Five hundred and twenty-nine households (77%) had between 5 and 7 rooms, and most Nauruan families lived in extended family households (Republic of Nauru, 1992).

According to the definition of the Census Advisory Committee, one separate house comprises one household, even if its members share cooking arrangements and/or other facilities or responsibilities with members of other houses. In the light of this definition, it is clear that Nauru has indeed a very high number of persons per household/house (Table 3). Forty-eight per cent of all households were occupied by more than 10 people, and 21 per cent by more than 15 people! Sixty-eight per cent of the Nauruan population lived in households with more than 10 people, and 37 per cent lived in households with more than 15 persons per household. By any standard, these are very high numbers.

As mentioned earlier, possible repatriation of the government settlement area at the Meneng Terrace back to local people will consequently increase the overall number of houses owned by local Nauruans, specifically in the district of Meneng. Houses once occupied by expatriates will either be leased or offered back to the land owners. This would help alleviate the strain where several families occupy one house, and consequently, the average household size may decline in the future. However, if new houses are not built, the average household size would automatically increase due to Nauru's natural increase.

Three out of four non-Nauruans lived in settlements such as The Location. Those who work for Government lived in the Meneng Terrace, or together with local Nauruans, especially those with Nauruan family ties.

Table 3: Number of Nauruan households, household size and average number of persons per household, Nauru, 1992

Household size	Households		Persons		Average number of persons per household
	number	%	number	%	
1-3	45	6.6	104	1.5	2.3
4-6	145	21.2	751	11.0	5.2
7-9	168	24.5	1,334	19.5	7.9
10-14	182	26.6	2,127	31.1	11.7
15+	145	21.2	2,515	36.8	17.3
Total	685	100	6,831	100	10.0

Source: 1992 Nauru Census

IMPLICATIONS FOR PLANNING

- With its current high rate of population growth, the indigenous Nauruan population is expected to double in size in 26 years. Just in order to maintain the current household size of 10 people per household would mean that the number of houses would have to be doubled by then.
- Households and families that are not economically capable of sustaining an acceptable, healthy lifestyle 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 and access to safe and clean water, public electricity, and hygienic waste disposal.
- In this regard, it is hoped that the rehabilitation and development of Nauru's interior of depleted and unusable landscape of limestone pinnacles will commence as soon as possible, thus providing Nauruans with new opportunities in the not too distant future.
- More detailed questions on household composition need to be included in the next population and housing census, to enable a better understanding of the exact composition, household formation and pattern of occupancy of Nauruan houses. This information is needed because different and growing demands for housing are closely linked to demands for land allocation, energy and water consumption, waste disposal and sewage.

3. SOCIO-ECONOMIC PROFILE

3.1 Ethnic composition

During the 1992 Census, many different nationalities lived in Nauru, mainly because of the Government's policy of recruiting workers from various countries around the region and even from other parts of the world (Table 4). Sixty-nine per cent of Nauru's population was made up of indigenous Nauruans, although it needs to be mentioned that many 'Nauruans' have intermarried with other nationalities. Almost 24 per cent were other Pacific Islanders, mainly from Kiribati and Tuvalu; 6 per cent were Asians, mainly from the Philippines and China; and less than 2 per cent were Australians or from other countries.

Table 4: Ethnicity, Nauru, 1992

Ethnic group	Males	Number of females	Total	Percentage of total population
Indigenous Nauruans	3,451	3,380	6,831	68.9
Pacific Islanders	1,158	1,197	2,355	23.7
I-Kiribati	592	675	1,267	12.8
Tuvaluans	443	418	861	8.7
Solomon Islanders	85	17	102	1.0
Fijians	22	45	67	0.7
Other Pacific Islands	16	42	58	0.6
Asians	388	197	585	5.9
Filipinos	183	67	250	2.5
Chinese	142	91	233	2.3
Indians	56	32	88	0.9
Other Asian countries	7	7	14	0.1
Australians	42	40	82	0.8
Other countries	36	30	66	0.7
Total	5,075	4,844	9,919	100.0

Source: 1992 Nauru Census

3.2 Marital status

The main reason a question on marital status is included in a census questionnaire, is that marriage patterns can be important determinants of fertility, especially in societies where the use of modern contraceptives is limited, and where marriage is the entry into sexual union. The proportion of the population that is married, and the pace at which marriage occurs, together with the frequencies of widowhood and divorce, have an impact on the number of children born. Furthermore, the incidence of widowhood can be a useful indicator of mortality differences between males and females.

Although age at first marriage is frequently used as a determinant of fertility by demographers worldwide, some caution is advised when using this concept uncritically in Pacific Island countries where childbirth is not as directly linked to marriage as in some other societies. Nauruan men marry on average about one year later than women as is reflected in average ages at first marriage (the singulate mean age at first marriage, or SMAM) of 25 and 24 years respectively (Republic of Nauru, 1992).

Looking at marital status across various age groups, the most striking finding appears in the very high proportion of widowed females (Table 5), with more than half of all Nauruan women over 60 years of age widowed. The reason is the higher mortality rates of males, and to a lesser degree, the fact that males are more likely to remarry after the death of their spouse or divorce. Divorce and separation play no major role, with only about 3 per cent of the population 15 years and older falling into this category.

Table 5: Proportion of Nauruan population 15 years and older by marital status and age and sex, Nauru, 1992

Age	Never married		Married		Widowed		Divorced	
	Males	Females	Males	Females	Males	Females	Males	Females
15-19	89.9	84.1	5.7	12.8	0.0	0.0	0.3	0.6
20-24	49.0	44.4	44.7	48.9	0.0	0.0	1.3	1.5
25-29	31.8	29.6	64.0	65.3	0.0	0.7	2.8	3.6
30-34	24.0	22.3	69.1	67.6	0.9	2.0	5.1	7.3
35-39	14.9	14.0	75.7	74.8	1.0	4.1	5.9	4.5
40-44	11.4	14.6	80.3	73.1	3.0	4.6	2.3	4.6
45-49	9.1	11.1	76.4	66.7	1.8	16.7	9.1	5.6
50-54	6.0	7.1	86.0	55.4	2.0	26.8	4.0	7.1
55-59	11.6	4.4	67.4	44.4	11.6	46.7	7.0	4.4
60-64	7.7	5.3	76.9	42.1	12.8	52.6	2.6	0.0
65+	10.0	6.0	60.0	29.9	25.0	61.2	2.5	3.0
Total	39.4	35.0	51.5	50.9	1.7	7.1	2.9	3.4

Note: Because of 'Not Stated' cases, the different categories do not always add up to 100%.

Source: 1992 Nauru Census

3.3 Educational characteristics

A population's level of formal education is a key indicator in the development and quality of life of a country. There is a close and well documented linkage between levels of educational attainment and workforce productivity, and there are also many complex relationships between education, fertility, morbidity, mortality and mobility.

The education system in Nauru is heavily government-subsidised, which means that the costs for parents to educate their children from kindergarten through to secondary school level in Nauru are very minimal. There are no school fees, and the only costs incurred are for school uniforms; all other school materials like exercise books and writing utensils are supplied. There are three different types of educational institutions available on Nauru: the government-subsidised schools or public schools with four infant or kindergarten schools, three primary schools and one secondary school; the semi-private Catholic school, Kayser College; and The Location school which provides education for the expatriate workers' children living within the Location Settlement.

The vocational education centre caters for people 16 years and over who are interested in developing trade skills. Tertiary education on Nauru is offered by the University of the South Pacific (USP), through correspondence classes, or by studying overseas in Australia, New Zealand and at the University of the South Pacific.

Overseas education can be obtained either privately, or through the government scholarship scheme. There are two types of scholarships offered. One is a full scholarship, where all funds are met by the government. The other is a half scholarship, where students and their families pay half of the costs involved.

3.3.1 Educational attainment and qualifications

Ninety-nine per cent of the indigenous Nauruan population 5 years and older in 1992 have attended, or are still attending school. This percentage is the same for males and females. It is an increase by 2 per cent compared to the 1983 Census results, which means that nearly every person has attended school at least some time during their life.

There is virtually no gender difference in educational qualifications gained until secondary education (Table 6). However, males seem to have a slight advantage when it comes to tertiary education; amongst an overall small proportion of people with a tertiary education (4.1%), males (5%) did somewhat better than females (3.2%). Overall, the number of Nauruans with a tertiary certificate increased from 97 in 1983 to 228 in 1992.



Table 6: Population 5 years and older and highest qualification gained, Nauru, 1992

Qualification gained	Males		Females		Both	
Primary education or no qualification	2,152	76.4	2,195	78.3	4,347	77.4
Secondary education	361	12.8	365	13.1	726	12.9
secondary school leaving cert.	336	11.9	338	12.1	674	12.0
matriculation certificate	25	0.9	27	1.0	52	0.9
Tertiary education	140	5.0	88	3.2	228	4.1
diploma/certificate	83	2.9	58	2.1	141	2.5
degree (under-graduate)	10	0.4	2	0.1	12	0.2
post-graduate degree	3	0.1	1	0.0	4	0.1
other qualifications	44	1.6	27	1.0	71	1.3
Not stated	162	5.8	155	5.5	317	5.6
Total	2,815	100	2,803	100	5,618	100

Note: As there are no certificates for the successful completion of primary level studies awarded in Nauru, those who have attended or completed primary education are included with those who have never gained a qualification.

Source: 1992 Nauru Census

3.3.2 School enrolment

With school enrolment of children under 15 years of age averaging 96 per cent (with attendance rates slightly higher for boys than girls), the census records a dramatic drop amongst older teenagers (15 to 19) which is due to education being non-compulsory after the age of sixteen (Form 4). The drop-out level from primary school to secondary school is probably due to truancy.

The highest enrolment of children was amongst 5 to 9 year-olds, with a school attendance of 97 per cent; this attendance rate decreased slightly to 93 per cent for the 10 to 14 year-olds, and was lowest amongst the 15 to 19 year-olds with 34 per cent (Table 7).

The number of students attending school from kindergarten through to year 12 in 1997 was 3,288. Seven hundred and ninety-six students were attending infant schools, 1,379 were attending primary school, and 1,113 were attending secondary school (Table 8). The student-teacher ratio stood at 21 at both primary and secondary levels; it was highest at the Nauru Secondary School, where there were about 32 students per teacher. It is important to cater for this particular level of education, which acts as an introduction

to further study for young adolescents. These years also play a vital role in whether a student decides to drop-out at the end of year 10, or continues with her or his education.

Table 7: School enrolment rates, Nauru, 1992

Age	Nauruan population			Still in school			Enrolment rate		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
5-9	539	561	1,100	527	544	1,071	97.8	97.0	97.4
10-14	472	433	905	448	398	846	94.9	91.9	93.5
15-19	368	345	713	117	126	243	31.8	36.5	34.1
Total	1,379	1,339	2,718	1,092	1,068	2,160	79.2	79.8	79.5

Source: 1992 Nauru Census

The higher than average student-teacher ratio of Aiwo Primary School was due to recent renovations at Denig Primary School, with Aiwo Primary School accommodating almost all students from Denig Primary School.

Table 8: Education statistics, Nauru, 1997

School	Students	Teachers	Student-teacher ratio
Infant Schools	796	42	19.0
Nibok	180	9	20.0
Boe	304	14	21.7
Anetan	132	10	13.2
Meneng	180	9	20.0
Primary Schools	1,379	64	21.5
Aiwo	541	23	23.5
Location	518	24	21.6
Yaren	320	17	18.8
Secondary Schools	1,113	53	21.0
Nauru Sec. Sch.	700	22	31.8
Kayser College	388	21	18.5
Trade School	25	10	2.5
Total	3,288	159	20.7

Source: Bureau of Statistics, Education Department

IMPLICATIONS FOR PLANNING

- The Nauruan Government should be concerned about the relatively high level of drop-outs, as only a proper education can provide Nauru 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 which are needed for Nauru's employment requirements.
- The Government might want to consider re-establishing deterrents against truancy, such as re-introducing 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 secondary teachers are urgently required, as a student-teacher ratio of 32 at the Nauru secondary school is not conducive to providing a quality learning environment, even more so in the context of high drop-out rates at this level.
- In view of the young age structure of Nauru's population and the expected increase of the school age population in the future, more classrooms need be built to cater for a growing number of children that will be attending schools in the following years.
- As the indigenous Nauruan population seems to rely heavily on the recruitment of skilled workers from overseas, it will be necessary to improve the current education system and attitude towards education and training, to improve the skill level of the Nauru labour force, and become less dependent on recruiting foreign labour.

3.4 Economic activity

The everyday activities of the people of a country or community are closely interrelated with population change and patterns. Economic activity and employment are shaped by the size of the working-age population and the educational and skill level of the labour force, and available economic resources. Integrating population into economic and development strategies is vital in achieving desired results such as sustainable development and an improved quality of life for all people.

3.4.1 Labour force

The working age for Nauru starts at the age of 16, and retirement age is set at 65 years of age. Therefore the eligible working-age population should normally refer to the population aged between 16 and 65 years of age. However, as 1992 Census data are only available and tabulated for the population 15 years and older, the following analysis has to be based on these age-groups.

A country's labour force, or economically active population, consists of people who work for wages or salaries, who produce goods to sell for their own profit, who did unpaid work for the benefit of their family or village, including subsistence activities, and those who were unemployed but actively looking for and available for work.

The rest of the population, who did not work and are also not looking for work, are considered not economically active and not part of the labour force: people who did housework, students, retired people, and people who are sick or disabled.

Out of 3,613 people 15 years and older in 1992, 1,947 were formally employed, 59 otherwise employed, 446 unemployed, 911 were not economically active and the rest have not stated their activity status (Figure 3; Republic of Nauru, 1992).

Figure 3: Nauruan population 15 years and older by labour force status, Nauru, 1992



Note: The unemployment rate is 18.2% of the total labour force.

'Otherwise employed' are persons employed with no income or doing subsistence work.

Source: 1992 Nauru Census.

Significant differences exist between male and female labour force participation (Table 9): while about 68 per cent of the total indigenous Nauruan population were in the labour force, 77 per cent of the male population compared to only 59 per cent of the females were in the labour force. Fifty-four per cent were employed, 63 and 45 per cent of males and females, respectively. About 18 per cent of the potential labour force were unemployed, 15 per cent of males and 22 per cent of females.

Table 9: Economic indicators of the Nauruan population 15 years and older, Nauru, 1992

Economic indicators	Males	Females	Both
Labour force participation rate (%)	76.8	58.9	67.9
Employment–population ratio (%)	63.1	44.7	53.9
Unemployment rate (%)	15.4	21.8	18.2

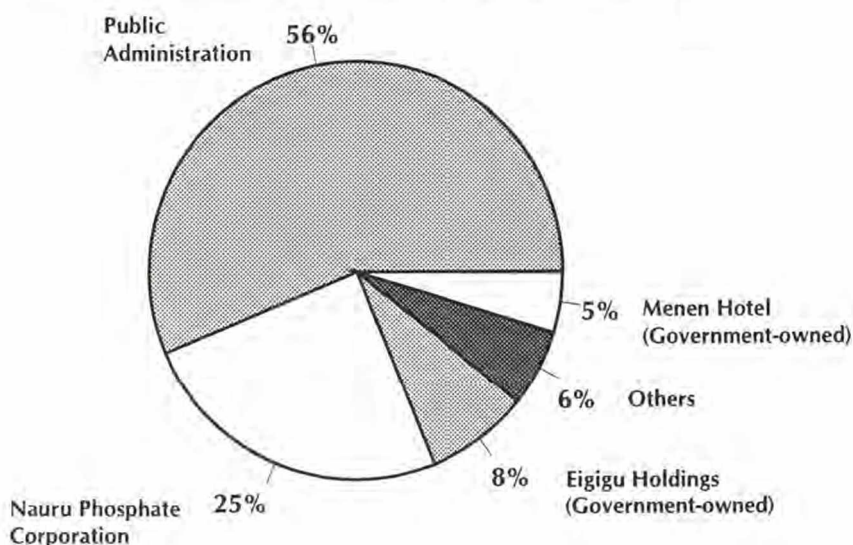
Source: 1992 Nauru Census

In 1997, the Bureau of Statistics embarked on a labour force survey (Appendix Table 3). As is evident from the results of this survey, more people were employed in 1997 (2,134) than during the census in 1992 (2,007), especially considering the fact that not all enterprises were included in the survey. However, this encouraging development has to be seen in the context of an increased labour force in 1997. The population in their working ages is estimated to have increased from 3,613 in 1992 to about 4,300 in 1997 (based on a simple forward-projection of relevant age-groups of the 1992 population by 5 years), which would bring the employment–population ratio in 1997 down to 50 per cent compared to 54 per cent in 1992.

The results of the 1997 survey show that the public administration is responsible for employing over half (56%) of the Nauruan working-age population, followed by the Nauru Phosphate Corporation (25%). These two bodies of employment represent the two major sources of employment on Nauru (81%).

The newly established Eigigu Holdings registered 178 employees, a fairly significant number of the Nauruan work force (Appendix Table 3 and Figure 4). The private employers such as Capelle and Partner, Elli Enterprise Trading and the O'dn Aiwo Hotel together only employ another 50 people, which represents only 2.3 per cent of Nauru's indigenous employees. Were we to add two further private employers which were not included in the survey, Jeremiah and Scotty Enterprises and Pacifica, which together employ a further 20 people, the proportion of Nauruans employed in the private sector would rise to just over 3 per cent. It has to be noted that the 1997 Labour Force Survey only interviewed Nauruan enterprises, which excludes the relatively numerous small private businesses owned by the expatriate population. However, as these are often family businesses such as small restaurants or 'take-aways', they usually only employ non-Nauruans.

Figure 4: Nauruan employees by employer, Nauru, 1997



Note: 'Others' include private and government sector employers.
Source: Labour Force Survey, Bureau of Statistics, Nauru, 1997

3.4.2 Occupation

The biggest occupational groups of Nauru's work force were people employed in Elementary Occupations (20%) or in office jobs such as Clerks (17.7%), followed by Craft & Related Workers (14.9%) and Service, Shop & Market Sales Workers (12.5%) (Table 10). Less than 1 per cent of the work force were employed as Legislators, Senior Officials and Managers.

The differences among occupational groups by gender (Table 10) show that males are predominantly employed as Craft & Related workers, in Elementary Occupations and as Service, Shop & Market Sales Workers. Females mainly occupy office jobs (Clerks), work in Elementary Occupations or as Professionals (teachers and nurses).

While most Professionals and Clerks and Office Workers were females, only 1 out of 18 Legislators, Senior Officials and Managers was a woman. Men, furthermore, dominated occupations such as Craft and Related Workers, Plant, Machine Operators and Assemblers and Elementary Occupations.

Table 10: Occupation by sex of those in the paid labour force, Nauru, 1992

Occupational group	Males		Females		Both	
	no.	%	no.	%	no.	%
Legislators, Senior Officials & Managers	17	1.4	1	0.1	18	0.9
Professionals	70	6.0	138	16.5	208	10.4
Technicians & Associate Professionals	65	5.5	50	6.0	115	5.7
Clerks & Office Workers	98	8.4	257	30.8	355	17.7
Service, Shop & Market Sales Workers	139	11.8	111	13.3	250	12.5
Agriculture & Related Workers	2	0.2	0	0.0	2	0.1
Craft & Related Workers	285	24.3	14	1.7	299	14.9
Plant, Machine Operators & Assemblers	115	9.8	21	2.5	136	6.8
Elementary Occupations	251	21.4	150	18.0	401	20.0
Not Stated	131	11.2	92	11.0	223	11.1
Total	1,173	100	834	100	2,007	100

Source: 1992 Nauru Census

IMPLICATIONS FOR PLANNING

- With the Government and the Nauru Phosphate Corporation providing 8 out of 10 jobs on Nauru, any dramatic developments in these two sectors will have serious social and economic consequences.
- With a down-sizing 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.
- The environmental rehabilitation of Nauru's interior assumes a critical priority status in this context both in terms of providing immediate employment, as well as laying the foundations for productive future land utilisation.

4. POPULATION DYNAMICS

4.1 Population growth

There are two ways for demographers to describe population growth. Natural increase describes population increase as the result of births and deaths only. Growth occurs when the number of births in a given time period (such as a calendar year) exceeds the number of deaths. Negative growth, or population decline, occurs when the number of deaths exceeds the number of births. In other words:

$$\text{Natural increase} = \text{births} - \text{deaths}$$

Throughout the world and throughout time, population growth is and has been shaped by a further component: migration. In most countries, and particularly in many island countries of the Pacific, migration is a major contributing factor to a country's population dynamics. In such circumstances we cannot only look at natural increase. Overall population growth defines the change in a country's population as the result of births, deaths and migration. Migrants are those people who come into the country in order to settle or seek residency (whether or not permanent), the immigrants; and those who leave the country to seek residency (permanent or not) in a foreign country, the emigrants.

The term 'net migration' refers to the sum of the immigrants minus the emigrants.

This relationship is readily summarised in what is commonly referred to as the 'balancing equation':

$$\text{Population growth} = \text{natural increase} + \text{net migration (immigration} - \text{emigration)}$$

Since the census in 1983, the total population of Nauru has increased by 2,245 people, which indicates an annual rate of growth of 2.85 per cent during the intercensal period. The indigenous Nauruan population has increased from 4,654 people in 1983 to 6,831 in 1992, an additional 2,177 people, representing a growth of 4.26 per cent per annum. From these numbers it can be seen that the growth of Nauru's population is almost entirely the result of an increase in its indigenous Nauruan population. However, Figure 1 and Table 11 show that the Nauruan population has always grown between 3 to 4 per cent per annum except for the periods 1947–1950 and 1977–1983. Although it is difficult to verify, it seems justified to assume that the 1983 Census suffered from under-enumeration. This explains the very low growth rate of the period 1977–1983, and at the same time, it also explains the very high growth rate of the period 1983–1992, which is inconsistent with the available numbers of registered births. The average annual growth rate between 1977 and 1992 was 2.1 per cent for the total population, and 3.3 per cent for the Nauruan population. This growth rate is similar to the growth rates of the past (1960s and 1970s) and those estimated for the period 1992–1997. Therefore, the very high growth rate of the intercensal period 1983 to 1992 should be disregarded.

Due to the labour intake for the phosphate industry during the late 1950s and 1960s, the non-Nauruan population increased quickly during that time, but has not grown since 1968.

Table 11: Average annual growth rates of the populations of Nauru, 1947–1992

Year	Non-Nauruan	Nauruan	Total
1947–1950	9.63	4.58	7.20
1950–1955	-1.21	4.03	1.37
1955–1960	4.19	3.70	3.93
1960–1965	5.50	3.22	4.35
1965–1968	3.30	3.81	3.55
1968–1977	-0.15	3.43	1.77
1977–1983	-0.33	1.81	0.94
1983–1992	0.25	4.26	2.85
1992–1997*	0.00	2.66	1.79
1997–2002*	0.00	2.69	1.98

* estimate based on population projections as outlined in Section 5.

The overall growth of the population of Nauru is therefore a result of the high natural increase of its indigenous people plus migration of non-Nauruans. It has to be mentioned here that the non-Nauruan population itself has its own natural growth, of course, but it seems, that this growth has been counterbalanced by the same rate of out-migration.

Based on the registered average number of Nauruan births (248) and deaths (49) of the years 1991 to 1993 (Appendix Table 4), a Crude Birth Rate (CBR) and Crude Death Rate (CDR) of 36.1 and 7.1 respectively have been calculated. These numbers of births and deaths were applied to the estimated mid-year Nauruan population of 6,871 people in 1992 (Appendix Table 8). This results in a natural growth rate of about 2.9 per cent per annum for the Nauruan population around the year 1992:

$$36.1 - 7.1 = 29.0 = 2.9\%$$

The current growth rate (1997–2002) of the indigenous Nauruan population is estimated at 2.7 per cent per annum, based on the medium variant population projection as presented in Section 5.

The 'Non-Nauruan' registered number of births for the period 1991 to 1993 averaged 56 births and 14 deaths per annum, which represents a natural growth of 42 people per year. As the non-Nauruan population does not seem to have grown in the past (Figure 1), it can be assumed that non-Nauruans have left Nauru by the same numbers every year. Therefore there seems to be a net out-migration of about 1.4 per cent a year, which roughly equals their natural rate of growth.

IMPLICATIONS FOR PLANNING

- As indigenous Nauruans might be considered a 'closed population', because they are not subject to (significant) migration, their population growth depends entirely on their rate of natural growth (births – deaths). Were the current estimated growth rate of about 2.7 per cent per annum to persist in the immediate future, the indigenous population of Nauru would double in numbers in 26 years (from 1992), bringing the total number of Nauruans to 14,000 in the year 2018.
- High population growth rates in general are not necessarily a disadvantage for a country. However, in the case of Nauru, where the income of the Nauruan population is mainly derived from outside sources such as trust funds, fishing rights, phosphate royalties etc. which need to be redistributed among its people, a larger population might tend to place pressure on these limited resources and lower the average standard of living in the long run if alternative sources of income can not be found.

4.2 Fertility

Fertility refers to the reproductive behaviour of a population, relating to the number of live births a woman has had. The fertility of a population depends on various factors:

- demographic composition of the population (this refers particularly to number and age of women; populations without many women, particularly women in child-bearing ages, will have fewer births than a population with a large number of women in child-bearing ages);
- fecundity (biological/physiological ability to reproduce);
- age at cohabitation/marriage (as child-bearing, in most countries, is usually closely linked to marriage or cohabitation, the age when men and women begin to live together has an obvious bearing on fertility);
- availability and use of family planning (populations that have access to, and regularly use, family planning methods have lower fertility rates than those where access is limited or denied, thus interfering with regular/efficient use);
- psycho-social and cultural context (this includes practices such as post-partum abstinence and breastfeeding, as well as value/belief systems concerning concepts of ideal family size, and the perceived 'value' of children);
- economic development;
- status of women (place in society, level of education, work status; based on worldwide empirical evidence, we know that higher levels of female education, and access to economic opportunities outside the household, are related to lower fertility and smaller families).

Fertility is, besides migration, the demographic component which has the biggest impact on a country's age-sex composition, as the composition and size of different age-groups depend largely on birth rates. Populations become older with falling birth rates, since these reduce the proportion of children.

The 1992 Census questionnaire asked two questions relating to fertility: the number of children born to every woman over 15 years of age, and date of last child birth. Usually the level of fertility can be estimated through indirect estimation methods using data from both of these questions. However, census data on the number of children ever born often underreport births, and hence in such cases it is unwise to rely on them. Considering that the reported number of births during the year before the census (238) is significantly lower than the totals provided by the Nauru Registrar Office of 253 and 256 Nauruan births in 1991 and 1992 respectively, the following estimate of Nauru's fertility is based on the number of registered births by age of women for the years 1992 to 1995, assuming that the registration of births is fairly complete. As all demographic indicators in small populations, such as Nauru's, are subject to random fluctua-

tions over time, it is advisable to rely on a multi-year average, and an estimated TFR of 4.4 for the period 1992 to 1995 can be regarded as a fairly robust measure of contemporary Nauruan fertility (Table 12). However, a declining trend of the TFR can be detected by comparing single-year fertility rates. The Total Fertility Rate (TFR) of the Nauruan population seems to have declined from 4.9 in 1992 to 4.0 in 1995 (Appendix Table 5).

Table 12: Estimated Age-Specific Fertility Rates (ASFR) and Total Fertility Rate (TFR) of the Nauruan population, Nauru, 1992–1995

Age of women	Estimated average number of females (1992–1995)*	Average number of registered births (1992–1995)	ASFR
15–19	378	24	0.0635
20–24	291	69	0.2371
25–29	276	67	0.2428
30–34	263	48	0.1825
35–39	236	30	0.1271
40–44	164	5	0.0305
45–49	72	0	0.0000
Total	1,680	243	0.8835
TFR			4.4

TFR = sum of ASFRs multiplied by 5.

* Based on a forward projection of the 1992 Census.

IMPLICATIONS FOR PLANNING

- Continued high fertility of more than 4 children per woman would have the following consequences for Nauru:
 - * Nauruan population growth would remain very high, and given the absence of migration, would cause the Nauruan population to double in about 26 years.
 - * Nauru's population would remain very young (as it produces a high proportion of children), which in the immediate future would mean a continued high number of school children requiring education (including teachers, school classes and teaching materials etc.).
 - * It would also place continued and increasing pressure on the Government to provide jobs for a growing number of school leavers.
- Should the Government wish to promote a reduction in population growth, provisions need to be made for easy access to family planning services by 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.

4.3 Mortality

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

- demographic composition of the population (age and sex distribution);
- the availability of health and medical services (immunisation programmes, maternal and child health care, primary health care);
- environmental conditions and availability of infrastructure such as housing, water supply, sanitation, waste disposal, sewage;
- prevailing morbidity, particularly the growing incidence of so-called lifestyle diseases;
- exposure to risk factors, such as substance abuse (alcohol, tobacco);
- work-related dangers;
- exposure to events outside individual control (natural disasters, war);
- social class.

The incidence of death reveals a lot about a population's standard of living and its general state of health. Indicators such as infant mortality and life expectancy at birth are widely used to describe the overall development status of a country.

Life expectancy at birth for the Nauruan population is estimated at 57.6 years for both sexes combined. This estimate is based on the registered number of Nauruan deaths by age and sex for the years 1991 to 1996. The average distribution of deaths by age of the years 1991–1996 is used together with the average total number of deaths of the years 1991–1993 (49). The average number of deaths by age are applied to the mid-year 1992 Nauruan population. From the resulting Age-Specific Death Rates, a Life Table has been calculated (Appendix Table 6).

It needs to be mentioned that the calculated life expectancy is indeed very low, not only compared to other Pacific Island nations, but to countries worldwide. As this estimate is based on the assumption that registration of deaths is complete, the estimated life expectancy would be even lower if there were more deaths than have been registered. The empirical Life Table calculated on the basis of the number of registered deaths produces a relatively low Infant Mortality Rate (IMR) of 12.5. This means that there were on average 12–13 deaths of babies under 1 year of age per 1000 live births. The IMR has fluctuated from a low of only 4.3 in 1995 to a high of 25.4 in 1993 (Appendix Table 4), illustrating very clearly the magnitude of annual fluctuations of such events in small countries like Nauru, which underlines the need to use multi-year averages.

The estimated IMR of 12.5 seems low compared to those which would be produced by model Life Tables of Coale & Demeny and the United Nations models given the same low life expectancy. This 'phenomenon' can be explained by the relatively high

Age-Specific Death Rates at adult ages of the Nauruan population, caused by an unhealthy lifestyle and diet. This specific mortality pattern can also be observed in other Pacific Island countries.

Although the possibility of random fluctuations is very high when dealing with very small numbers as is the case with the Nauru data, it seems safe to assume that Nauruan women have a significantly higher probability of surviving to certain ages than men do (and hence have a higher life expectancy). This assumption is based on:

1. Orphanhood data of the 1992 Census, showing that 79.6 per cent of the Nauruan people have reported that their mother was still alive, compared to only 66.3 per cent of their fathers (the difference has to be partly explained by the fact that mothers are usually younger than fathers – their spouses (Appendix Table 7)).
2. The number of registered deaths by age and sex, showing 60 per cent more male than females deaths during the period 1991–1996.

The difference in life expectancy could be as high as 7 years, with likely values of 54.4 for men, and 61.2 for women (Section 5.2).

IMPLICATIONS FOR PLANNING

- The foremost consequence of improved mortality is healthier people living longer lives. As the relatively low life expectancy of the Nauruan population is predominantly a result of high adult mortality rates, especially for males, health promotion could play a more prominent role in the Government's development agenda,
 - * promoting healthy nutrition,
 - * advocating a generally healthy lifestyle including regular physical exercise,
 - * discouraging smoking and excessive alcohol consumption,
 - * providing a hygienic and safe living environment,
 - * improving infant, child and maternal health by improving primary health care programmes,

4.4 Migration

Migration refers to the movement of people across certain boundaries. When this boundary is a national border, we speak of international migration; otherwise we refer to it as internal migration. The people involved are referred to as migrants. We speak of immigration, when people move into a country, and emigration if they move out of a country. When referring to internal migration (movement within a country, between districts and municipalities, for example), we speak of in-migrants and out-migrants.

Apart from this spatial consideration, time plays a major role. Someone coming for a short visit can hardly be termed a migrant—he or she is a visitor. Apart from time, intent is also of crucial importance, as a visitor can turn into a migrant if confronted with sudden job opportunities, for example. Along the same lines, a person intending to migrate may turn into a visitor if, for example, expected job opportunities do not materialise.

This highlights one of the key problems concerning migration. Whether a particular person qualifies as a migrant or not can only be established *post facto* (after the fact). Planners need, therefore, to base their decisions on past and projected movements of people.

Nauruans are not known for migrating to other countries like other Pacific Island populations. They generally stay on their island, and only move temporarily abroad for educational or medical purposes, to attend meetings, or simply as tourists. However, Nauruans travel frequently; for example, in 1996, over 2,000 visas were issued to Nauruans for travel to Australia alone.

In the past, people from neighbouring islands such as Tuvalu, Kiribati and Solomon Islands have moved to Nauru to work in the phosphate industry. As the phosphate deposits are almost exhausted, the stream of immigrants has declined quite dramatically since the late 1960s (Table 11), and the non-Nauruan population has remained quite static at around 3,000 people since then (Figure 1). With few other employment opportunities available outside the phosphate industry, it is likely that the expatriate population will decrease further in the coming years.

IMPLICATIONS FOR PLANNING

- Continued immigration of skilled labour and professional/technical workers will depend largely on the willingness, ability and availability of the Nauruan population to undertake such tasks.
- It is important to improve migration statistics, to be able to maintain an up-to-date population register for planning purposes. At the most basic, this requires the collection of arrival and departure information from all incoming and outgoing passengers, with minimum information requirements concerning data about age, sex and nationality.

5. LIKELY FUTURE DEVELOPMENTS

5.1 The importance of population projections

It is becoming increasingly recognised in formulating socio-economic development plans, that population variables have to be considered in conjunction with economic and social conditions. For governments to cater effectively for specific needs of different population groups at different points in time, it is important that planners are in a position to provide policy-makers with 'a look into the future'. The appropriate method to do this is to provide a series of future population scenarios, pictures of what Nauru's population may look like in future years under various conditions.

Scenario building is based on population projections. The starting point for any projection is a reliable age-sex distribution of a population (for example the Nauru 1992 Census age and sex distribution) and information on fertility, mortality, and migration. There are various mathematical methods available for computing future population scenarios. This procedure is based on the cohort-component method, and statistics officers and planners who attended the SPC population workshop in Nauru in January 1997 are familiar with this methodology.

The key to making meaningful projections lies in the choice of assumptions regarding our views of future population developments. These assumptions concern in the first place possible future birth, death, and migration rates. The main objective of providing future population scenarios is not to predict the future (what will happen), but to describe 'what-would-happen-if' a specific scenario materialised.

Given the ability to specify future demographic developments, we are in a position to test/evaluate likely outcomes of specific policy interventions without actually having to first implement the policy. Hence, scenario building based on population projections should be treated as an essential planning tool, in importance equivalent to other, more traditional social, economic and financial analyses undertaken by planners world-wide.

Unfortunately, the projections presented here had to be prepared for the Nauruan population only, as estimates on the level of fertility and mortality of the expatriate population of Nauru are very hard, if not impossible to make because of unavailable data. Since many expatriates have children overseas, and with expatriate mortality impossible to gauge (because most eventually die overseas), the registered number of births and deaths of the Non-Nauruan population in Nauru will undoubtedly represent only a fraction of the true vital events of this part of the population. Furthermore, the 1992 Census did not ask detailed questions concerning fertility or mortality of Non-Nauruan people. Users might, however, be able to simply add the estimated number of expatriates to the Nauruan population whenever necessary, with data supplied by the Statistics Office of Nauru.

5.2 Projection assumptions

In order to have a clearer understanding of Nauru's population situation in the future, several projections have been prepared, covering a 20-year period, from 1992 to the year 2012.

The following assumptions are used for the projections:

Base population: the 1992 Census age and sex distribution is used, prorated upward to an estimated total of 6,871 people for mid-year 1992 (Appendix Table 8).

Fertility: the Age Specific Fertility Rates (ASFR), together with a Total Fertility Rate (TFR) of 4.4 as estimated from the 1992–1995 birth registration data are used as the starting level of fertility for the projections in 1992 (as described in Section 4.2).

Mortality: life expectancy at birth $E(0)$ of 54.4 years and 61.2 years for males and females respectively is used as the starting point for the projections in 1992 (Far Eastern Model of the United Nations Model Life Tables). These estimates are based on the number of registered deaths by age and sex (see Section 4.3). However, because of the very low numbers involved, it is not advised to rely too much on these estimates. They have merely been calculated as a rough indicator for the purpose of this projection exercise.

Migration: zero net migration is assumed for the entire projection period (See Section 4.4).

Projection scenarios

Three different projection scenarios have been prepared covering the period 1992 to 2012 in 5-yearly projection periods. They all assume the same rising trend in life expectancy for males and females according to the Medium Variant of the United Nations working model for mortality improvement as described in World Population Prospects (United Nations, 1995). The reason for this is, that assumed differences in mortality usually produce only slight and insignificant differences in total population growth rates and, on the other hand, require the production of too many different scenarios which result in an increasingly confusing presentation of outcomes. Furthermore, under normal circumstances (meaning the absence of catastrophes like wars, famines or epidemics), mortality levels will continuously improve, as has been the situation historically in countries world wide.

According to this procedure, life expectancies in the year 2012 would rise to 64.2 years and 70.5 years for males and females, respectively. This assumption implies that the health situation in Nauru will improve considerably throughout the projection period which could well be overly optimistic.

However, as stated earlier, different mortality assumptions have only a minor impact on the final projection results and would only complicate the presentation of results. For example, if the mortality levels are assumed to remain constant at the current high levels throughout the projection period, the difference in population size of the Medium Vari-

ant projection in the year 2012 would only be about 400 people. Therefore, for matters of practicality and experience, it has been decided to use only one mortality assumption for these projections. According to the procedure COMPARE of the United Nations software package MORTPAK 3.0, the Far Eastern model of the United Nations model life tables compares best to the calculated empirical Life Table of the Nauruan population.

From the estimated level of fertility of 4.4 (TFR) in 1992, three different fertility assumptions are made:

*Assumption 1: **Constant fertility*** – fertility remains at its 1992 level of 4.4 throughout the projection period until 2012;

*Assumption 2: **Slow decline*** – fertility decreases by one birth, to 3.4 in the year 2012;

*Assumption 3: **Fast decline*** – fertility decreases by two births, to 2.4 in the year 2012.

The three different projections enable us to look at the impact of different levels of fertility on the size and structure of the future population of Nauru.

Scenario 1 (High or Constant Variant)

Fertility: the estimated Total Fertility Rate (TFR) of 4.4 in 1992 will remain at that level until the year 2012.

Mortality: life expectancy at birth is assumed to gradually increase from 54.4 years and 61.2 years for males and females in 1992, to 64.2 years and 70.5 years in 2012.

Migration: zero net migration is assumed for the entire projection period.

Scenario 2 (Medium Variant)

Fertility: the estimated Total Fertility Rate (TFR) of 4.4 in 1992 will decrease by one birth to 3.4 in the year 2012.

Mortality: life expectancy at birth is assumed to gradually increase from 54.4 years and 61.2 years for males and females in 1992, to 64.2 years and 70.5 years in 2012.

Migration: zero net migration is assumed for the entire projection period.

Scenario 3 (Low Variant)

Fertility: the estimated total fertility rate (TFR) of 4.4 in 1992 will decrease by two children to 2.4 in the year 2012.

Mortality: life expectancy at birth is assumed to gradually increase from 54.4 years and 61.2 years for males and females in 1992, to 64.2 years and 70.5 years 2012.

Migration: zero net migration is assumed for the entire projection period.

5.3 Projection results

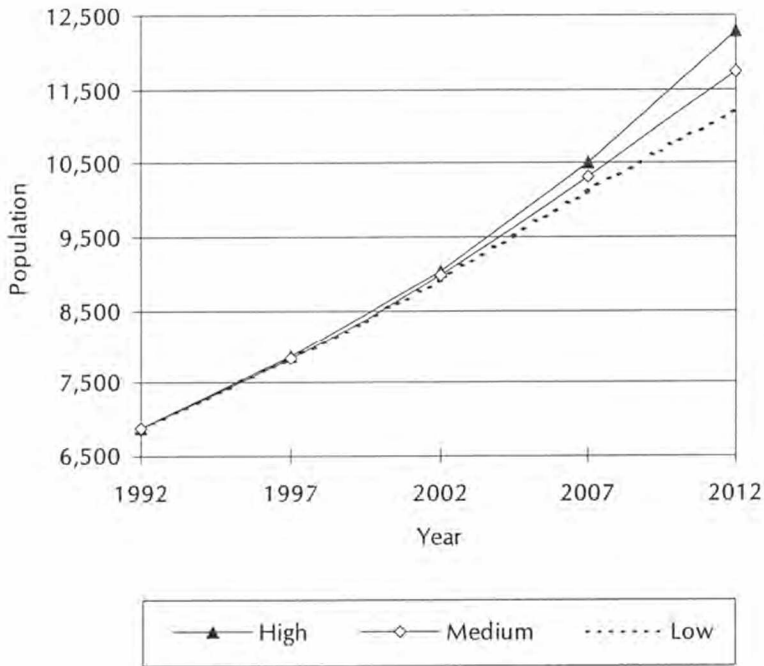
In Table 13 and Figure 5, a comparison is made between the base year of the projections, 1992, and the end year for the three projection scenarios, 2012, which highlights the difference in population size, growth and structure according to a possible decline in the level of fertility, i.e. the average number of children born per woman.

Table 13: Population projections for Nauru by age-groups, 1992 and 2012, under three different fertility scenarios*

Indices	1992 (base year)	2012		
		Scenario 1	Scenario 2	Scenario 3
Population size	6,871	12,226	11,693	11,161
< 16	3,463	5,206	4,675	4,144
65+	110	188	188	188
Working ages (16–64)	3,298	6,832	6,830	6,829
School ages (5–15)	2,219	3,240	3,045	2,855
Population structure				
% < 16	50.4	42.6	40.0	37.1
% 65+	1.6	1.5	1.6	1.7
% working ages (16–64)	48.0	55.9	58.4	61.2
% school ages (5–15)	32.3	26.5	26.0	25.6
Median Age (years)	15.9	20.0	21.1	22.2
Dependency Ratio (16–64)	108.3	79.0	71.2	63.4
Annual Growth Rate (%)		2.9	2.7	2.4
Sex Ratio	102.1	103.5	103.3	103.0

* Assumptions discussed in the text

Figure 5: Future population trends under the three assumptions discussed, Nauru: 1992–2012



Summary of results

The population 16 years and older in the year 2012 does not vary in size regardless of the projection variants (Table 13). The reason is that the different fertility assumptions of the different projection scenarios only start to differ after 1997 because the size of the Nauruan population until then is relatively accurately known, as vital statistics until 1996 are available already. The population older than 16 years of age in the year 2012 was already born in 1997, and is therefore not affected by the different fertility assumptions made. Only the population younger than 16 years of age varies in size, as it is determined by the number of births (fertility assumptions) which will occur between 1997 and 2012.

Scenario 1 (High Variant)

Under the assumption of constant fertility at the current estimated level (TFR = 4.4), the Nauruan population would grow by 2.9 per cent annually and the total population would be 12,226 in the year 2012. The population would double in 24 years time and would be twice its 1992 size in the year 2016 (Table 13 and Figure 5).

The school-age population (5–15 years) would increase by some 50%, from 2,219 in 1992 to 3,240 in 2012, and the working-age population (16–64 years) would increase by more than 100 per cent from 3,298 in 1992 to 6,832 in 2012.

The dependency ratio would decrease from 108 to 79 during the same period because of the relative increase of the working-age population (from 48% of the total population in 1992 to 56% in 2012) and the relative decrease of the population younger than 16 years (from 50% of the total population in 1992, to 43% in 2012).

Scenario 2 (Medium Variant)

Based on the assumption that fertility would slowly decrease by one child to a level of 3.4 in the year 2012, the population would be 11,693 in the year 2012 and would have grown by 2.7 per cent annually.

The school age population (5–15) would grow by 826 to 3,045 children. The working-age population would increase from its current level by more than 100% to 6,830 people in the year 2012, and the dependency ratio would decrease to 71.

Scenario 3 (Low Variant)

If fertility decreased by two births, from 4.4 in 1992 to 2.4 in the year 2012, the Nauruan population would grow by 'only' 2.4 per cent per annum to a total of 11,161 people in the year 2012.

The school age population would only increase by 636 children between 1992 and 2012, and the working-age population would increase at more than 100%, as in previous projection scenarios. The dependency ratio would decrease considerably, from 108.3 in 1992 to 63.4 in 2012. This is the result of a relative increase of the working age population to 61.2 per cent of the total population and a decrease of the population younger than 16 from 50.4 to 37.1 per cent.

Population changes close to those shown in Scenario 2 (Medium Variant), appear to be the most likely outcome because:

- Nauru's relatively high level of fertility is expected to decline, although slowly, as in the recent past; therefore the High Variant with its constant high level of fertility assumed, seems to be an unlikely outcome.
- On the other hand, a more rapid decline is not expected to occur due to cultural preferences for a large family. Therefore, the Low Variant with its faster fertility decline assumed, seems also to be a more unlikely outcome.

All three scenarios have the following aspects in common:

- 1) continued high population growth (in that the population will further grow until the year 2012 by between 2.4 and 2.9 per cent annually);
- 2) while the population 15 years and younger (which includes the school age population) in the year 2012 will be proportionally lower than in 1992; the total number of children of school age will increase by 630 to 1030;

- 3) the proportion and number of people in the working ages in the year 2012 will be considerably higher than in 1992, with the working age population expected to have more than doubled, and comprise about 6,830 people compared to only about 3,300 in 1992;
- 4) Nauru's dependency ratio in the year 2012 will be significantly lower;
- 5) while the median age of the population will have increased by 4 to 6 years, the proportion of the elderly (65+) will not significantly change and the total numbers are expected to remain just under 200.

With the Nauruan population expected to increase by at least 40 per cent between 1992 and 2012, the difference between various projection scenarios amount to some 530 people (Table 13). In other words, a reduction of the TFR by 1 child in 20 years, reduces the growth of the population by about 530 people in a 20-year period, and by more than 1000 people, if the TFR is reduced by 2 births.

According to the 'Medium Variant' projection scenario, the indigenous population of Nauru in mid-year 1999 totals 8,280 people. Adding the expatriate population of about 3,000, would bring the total population of Nauru to approximately 11,280 in mid 1999. This scenario does not foresee a substantial decrease of the overall population growth rate in the near future even if the level of fertility decreases, and the Nauruan population will pass the 10,000 mark in about 2006. The reason for this continuing high growth rate, despite decreasing fertility rates, has to be explained by the so-called population momentum.

Population momentum

Population growth has a built-in tendency to continue even after birth rates have declined. Due to the high fertility in the past, the population has a young age structure (see Section 2.2), a high proportion of children and adolescents. These young people outnumber their parents, and when they reach adulthood during the next 15 years or so, the number of potential child-bearers will be much higher than at present. Even if these women of child-bearing age have on average fewer children than their mothers today, the fact that the total number of women of child-bearing age will be much higher than in the past, will result in a continued population growth and it will take many more years before it levels off.

6. OVERALL IMPLICATIONS FOR PLANNERS AND POLICY-MAKERS

1. The population projection scenarios presented in this report highlight continued high population growth for Nauru of between 2.4 and 2.9 per cent per annum, with the size of the Nauruan population in the year 2012 estimated at between 11,100 and 12,300 people. Under all projection assumptions, the Nauruan indigenous population in future years would be much higher than in 1999, which poses considerable challenges for Nauru's policy-makers and planners.

2. Considering the Medium Variant as the most likely outcome, the total Nauruan population is expected to reach about 11,700 people in the year 2012. This would be the case if fertility decreased slowly by one child from its current level (1992–1995) of a TFR of 4.4 to 3.4 by the year 2012. Under the assumption that Nauru's expatriate population would remain at its current size of 3,000 people, the total population in the year 2012 would be nearly 14,700 people, compared to about 11,280 in mid-1999.

3. The relatively high recent population growth of 2.7 per cent per annum is brought about by Nauru's high rate of natural increase, the result of a high birth rate. It is estimated that a Nauruan woman bears on average 4.4 children during her reproductive life. A lowering of these high fertility levels has to be considered, if a reduction of population growth is seen as an issue of concern by the Government of Nauru. If that is the case, policies and programmes directed towards expansion of family planning services, including widespread information and counselling services, need to be strengthened by improving the availability and accessibility of these services, especially for young men, and women in their childbearing ages.

4. From studies on the level of mortality presented in this profile, it seems that life expectancy at birth, especially for males, is very low. This unfortunate situation could be counteracted by initiating a public campaign to promote healthier lifestyles, as the low overall life expectancy seems to be caused by a high prevalence of lifestyle diseases such as diabetes, combined with high alcohol consumption, smoking and little exercise. Furthermore, a renewed effort to improve infant, child and maternal health care programmes should be undertaken, to expand programmes of immunisation, improve nutrition and foster a hygienic living environment. Events such as the recently organised weight lifting championships might be a way to encourage Nauru's population, especially its youth, to engage in a more active and healthy lifestyle.

5. The population scenarios presented in this report demonstrate that, in future, the age structure of the indigenous Nauruan population will undergo changes, especially if fertility declines as assumed in the Medium and Low Variant projection scenarios. Compared to 1992, there will be, proportionately and in absolute numbers, more people in the adult ages of 16–64. As a result, the dependency ratio in the year 2012 will be much smaller: around 71 (Medium Variant) compared to around 108 in 1992. This anticipated decline of the dependency ratio may be viewed as a positive development, as it eases the strain on the working age population; the lower the dependency ratio, the less the number of dependent people for whom the working age population has to care. It has to be noted,

however, that the whole concept of the dependency ratio only holds true if the working age population is in fact employed and earns a living to be able to support the young (0–15) and elderly (65+). If not enough employment opportunities are created for a rapidly growing working age population, a larger part will be unemployed and must be regarded as dependents themselves.

6. The average household size has been estimated at 10 persons per household. These very crowded living conditions are caused by a high natural growth rate on the one hand, and limited available land to build upon due to phosphate mining. The scarcity of available land is furthermore restricted, as land and buildings are reserved to house Nauru's relatively large expatriate work force. Overcrowded living conditions clearly have a negative impact on people's lives and mean more stress on the environment. In this regard, the Government should begin the rehabilitation and development of Nauru's interior as soon as possible.

7. In general, planners and policy-makers need to be aware of changes in household size and composition, and their impact on different demands for housing and dwellings in order to be able to supply the appropriate quality and quantity of housing units. Different demands for housing are closely linked to demands for land allocation, energy and water consumption, waste disposal, sewage connections and general infrastructure.

8. 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 in 1992 to over 3,000 pupils aged 5–15 years by the year 2012. This will require increased financial commitment to support more teachers, classrooms and learning materials considering the current student–teacher ratio of 21 (Table 8). Some 40 additional teachers and classrooms will be required by 2012, if current teaching quality is just to be maintained.

9. Students should be encouraged to achieve as advanced an education as possible, as better educated people have the knowledge to care well for themselves, 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.

10. As Nauru currently seems to rely heavily on the recruitment of skilled workers from overseas, it is important to improve the current education system and attitude towards education, to achieve more self-reliance with regards to technical and professional skills required in Nauru.

11. The working-age population will increase considerably over the coming years. The population 16 to 64 years of age will reach almost 7,000 people in the year 2012 compared to around 3,300 in 1992. This represents an increase by more than 100 per cent of people in their working ages. A huge challenge lies ahead for the Nauru Government, as well as the private sector, to provide more and suitable employment opportunities for the rapidly increasing population.

12. Unemployment, especially for women, was quite high among indigenous Nauruans in 1992. It is hoped that a strengthening of the private sector will help to absorb more people than it has done in the past.

13. Reliable population statistics (vital statistics, migration data) provide the very basis for meaningful development planning. They are indispensable for keeping population size, growth and indicators up-to-date and form the basis for sensible population projections. The impact and success of any policies, programmes and projects designed to influence any of the population parameters (fertility, mortality, migration) could be readily evaluated with the help of a complete and reliable vital registration system that also includes data on migration. Regarding the collection of population data, improvements could be made. The most important, and much needed change, concerns the strengthening of the system to collect reliable and timely birth, death and migration statistics. The collection of these data should be entered into a computer database in order to ensure a continuously updated and instantly available account of Nauru's population structure and dynamics.

14. Should these improvements prove impossible, it would be necessary to undertake censuses regularly at five- or ten-year intervals. By applying proper demographic methods of analysis, it would be possible, by comparing the two nearest censuses, to calculate desired population indicators. However, this option is more time-consuming and expensive than an effective registration system, and an analysis of data can only be conducted after every census is completed.

15. While availability of good data is one pre-condition for responsible development planning, data analysis and utilisation are of equal importance, requiring adequately trained staff. Population projections are an essential planning tool, and an improved knowledge of the interrelationship between population and development is essential to provide a firm basis for undertaking demographic projections and scenario-building. The SPC Population/Demography Programme's in-country planner workshops are a first attempt at contributing to national capacity building in this area. In addition, the preparation of specific and more detailed and sophisticated projections in such important sectors as education and manpower planning requires close co-operation between demographers, planners and policy-makers.

16. Incorporation of population variables in policy- and decision-making processes will certainly enhance the effectiveness of these processes. Planners and policy-makers should be keen to incorporate population variables in their policy- and decision-making framework.

17. It is important to note that three quarters of Nauru's total land area has been rendered uninhabitable due to phosphate mining. In every respect, it seems of the utmost importance to rehabilitate and develop the depleted landscape of the mined area of Nauru's interior as soon as possible, not only to create alternative opportunities for economic, residential and recreational activities, but perhaps most of all to improve and re-instate Nauru's environmental standard of the past, so that Nauru will once again be recognised as the 'Pleasant Island'.

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APPENDIX TABLES

Appendix Table 1: 1992 Census population

Age	Nauruans			Non-Nauruans			Total population		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
0-4	636	577	1,213	196	167	363	832	744	1,576
5-9	539	561	1,100	191	176	367	730	737	1,467
10-14	472	433	905	97	104	201	569	537	1,106
15-19	368	345	713	39	85	124	407	430	837
20-24	304	268	572	99	129	228	403	397	800
25-29	283	274	557	137	146	283	420	420	840
30-34	217	247	464	154	140	294	371	387	758
35-39	202	222	424	152	150	302	354	372	726
40-44	132	130	262	162	141	303	294	271	565
45-49	55	54	109	127	100	227	182	154	336
50-54	50	56	106	127	49	176	177	105	282
55-59	43	45	88	76	35	111	119	80	199
60-64	39	38	77	40	16	56	79	54	133
65-69	19	35	54	10	8	18	29	43	72
70-74	10	20	30	3	6	9	13	26	39
75+	11	12	23	0	3	3	11	15	26
Not Stated	71	63	134	14	9	23	85	72	157
Total	3,451	3,380	6,831	1,624	1,464	3,088	5,075	4,844	9,919

Source: 1992 Nauru Census

Appendix Table 2: Nauru sex ratios, 1992

Age-group	Indigenous Nauruans	Non-Nauruans	Total population
0-4	110.2	117.4	111.8
5-9	96.1	108.5	99.1
10-14	109.0	93.3	106.0
15-19	106.7	45.9	94.7
20-24	113.4	76.7	101.5
25-29	103.3	93.8	100.0
30-34	87.9	110.0	95.9
35-39	91.0	101.3	95.2
40-44	101.5	114.9	108.5
45-49	101.9	127.0	118.2
50-54	89.3	259.2	168.6
55-59	95.6	217.1	148.8
60-64	102.6	250.0	146.3
65+	59.7	76.5	63.1
Total	102.0	111.0	105.0

Source: 1992 Nauru Census

Appendix Table 3: Number of employees throughout various employment institutions and companies (Nauruan population only), 1997

Employers	Nauruans	Percentage
Government Sector	1,200	56.2
Bank of Nauru (Government-owned)	33	1.5
Eigigu Holdings (Government-owned)	178	8.3
Capelle and Partner (Privately-owned)	9	0.4
Elli Enterprise Trading (Privately-owned)	2	0.1
Nauru Agency Corporation (Government-owned)	5	0.2
Nauru Island Council (Government-owned)	38	1.8
Menen Hotel (Government-owned)	98	4.6
O'dn Aiwo Hotel (Privately-owned)	39	1.8
Nauru Phosphate Corporation	528	24.7
NPC Noddy's Factory	4	0.2
Total	2,134	100

Source: Labour Force Survey, Bureau of Statistics, Nauru, 1997

Appendix Table 4: Vital statistics of births and deaths, 1990–1996

Year	Births			Deaths			Infant deaths Nauruans
	Nauruans	Non-Nauruans	Total	Nauruans	Non-Nauruans	Total	
1996	266	*N/A	N/A	65	N/A	N/A	4
1995	230	N/A	N/A	54	N/A	N/A	1
1994	248	N/A	N/A	37	N/A	N/A	3
1993	236	59	295	55	18	73	6
1992	256	45	301	50	10	60	2
1991	253	64	317	41	13	54	4
1990	248	N/A	N/A	N/A	N/A	N/A	N/A

* N/A = Not Available

Source: Bureau of Statistics, Nauru

Appendix Table 5: Estimated Age-Specific Fertility Rates (ASFR) and Total Fertility Rates (TFR) of the Nauruan population, 1992–1995

Age of women	Year				Average 1992–1995
	1992	1993	1994	1995	
Number of registered Nauruan births					
15–19	22	21	25	28	24
20–24	78	61	74	63	69
25–29	80	67	60	59	67
30–34	44	49	52	48	48
35–39	25	31	35	29	30
40–44	6	7	2	3	5
45–49	1	0	0	0	0
Total	256	236	248	230	243
Estimated mid-year female population					
15–19	354	371	386	402	378
20–24	274	281	296	314	291
25–29	280	279	274	271	276
30–34	253	259	267	273	263
35–39	226	236	240	243	236
40–44	135	153	173	193	164
45–49	52	62	78	95	72
Total	1,574	1,641	1,714	1,791	1,680
ASFRs and TFRs, Nauruan women					
15–19	0.0621	0.0566	0.0648	0.0697	0.0633
20–24	0.2847	0.2171	0.2500	0.2006	0.2381
25–29	0.2857	0.2401	0.2190	0.2177	0.2406
30–34	0.1739	0.1892	0.1948	0.1758	0.1834
35–39	0.1106	0.1314	0.1458	0.1193	0.1268
40–44	0.0444	0.0458	0.0116	0.0155	0.0293
45–49	0.0192	0.0000	0.0000	0.0000	0.0048
TFR	4.90	4.40	4.43	3.99	4.4

Appendix Table 6: Smoothed abridged Life Table based on number of Nauruan deaths by age and sex, 1992 Nauruan Census population, both sexes combined, 1991–1993 using United Nations' software package MORTPAK 3.0

Age(x)	nMx	nqx	lx	ndx	nLx	5Px	Tx	Ex
0	0.01257	0.01245	100,000	1,245	99,075	0.98592	5,758,973	57.59
1	0.00121	0.00483	98,755	477	393,886	0.99532	5,659,898	57.31
5	0.00060	0.00300	98,278	295	490,653	0.99453	5,266,012	53.58
10	0.00160	0.00795	97,983	779	487,968	0.99215	4,775,359	48.74
15	0.00156	0.00775	97,204	754	484,136	0.99111	4,287,391	44.11
20	0.00202	0.01004	96,450	968	479,832	0.99027	3,803,255	39.43
25	0.00189	0.00941	95,483	899	475,166	0.98224	3,323,423	34.81
30	0.00531	0.02618	94,584	2,476	466,728	0.96428	2,848,257	30.11
35	0.00931	0.04551	92,108	4,192	450,058	0.93078	2,381,528	25.86
40	0.01974	0.09405	87,916	8,269	418,907	0.89607	1,931,470	21.97
45	0.02437	0.11484	79,647	9,147	375,369	0.86936	1,512,563	18.99
50	0.03208	0.14848	70,500	10,468	326,331	0.83565	1,137,194	16.13
55	0.04028	0.18299	60,032	10,985	272,698	0.77884	810,863	13.51
60	0.06186	0.26788	49,047	13,139	212,389	0.69017	538,165	10.97
65	0.08994	0.36714	35,908	13,183	146,584	0.58300	325,776	9.07
70	0.13184	0.49578	22,725	11,267	85,459	0.52309	179,192	7.89
75	0.12225	1.00000	11,459	11,459	93,733		93,733	8.18

- nMx = Age-specific central death rate. Note: nMx values were smoothed for ages 15+ based on a moving average of the logs: smoothed 5Mx = 1/3 [5Mx-5 + 5Mx + 5Mx + 5]
- nqx = Probability of dying between exact ages x and x + n (age-specific mortality rate).
- lx = Number of survivors at age x.
- ndx = Number of deaths occurring between ages x and x + n.
- nLx = Number of person-years lived between ages x and x + n.
- 5Px = Survival ratio for persons aged x to x + 5 surviving 5 years to ages x + 5 to x + 10 = 5Lx + 5/5Lx (first 5Px = 5L0/5L0, second 5Px = 5L5/5L0, last 5Px = Tx + 5/Tx).
- Tx = Number of person-years lived after age x.
- Ex = Life expectancy at age x.

Appendix Table 7: Proportion of fathers and mothers still alive, 1992

Age-group of respondent	Fathers	Mothers
0–4	94.2	97.9
5–9	90.4	97.2
10–14	84.4	94.5
15–19	77.1	87.9
20–24	64.7	83.7
25–29	48.7	75.4
30–34	37.7	64.4
35–39	29.7	57.5
40–44	19.8	48.1
45–49	20.2	41.3
50–54	10.4	19.8
55–59	4.5	11.4
60–64	0.0	1.3
65–69	1.9	3.7
70–74	3.3	3.3
75+	0.0	4.3
Not Stated	33.6	38.8
Total	66.3	79.6

Source: 1992 Nauru Census

Appendix Table 8: Indigenous Nauruan mid-year population, 1992

Age-group	Males	Females	Persons
0-4	653	591	1,244
5-9	554	575	1,129
10-14	485	444	929
15-19	378	354	732
20-24	312	275	587
25-29	291	281	572
30-34	223	253	476
35-39	207	228	435
40-44	136	133	269
45-49	56	55	111
50-54	51	57	108
55-59	44	46	90
60-64	40	39	79
65-69	20	36	56
70-74	10	21	31
75+	11	12	23
Total	3,471	3,400	6,871

Source: Based on 1992 Census data, prorated to mid-1992.

GLOSSARY

Term

Age–sex composition

Age-Specific Fertility Rates (ASFRs)

Average household size

Balancing equation

Birth cohorts

Child mortality

Child mortality rate

Child-bearing age (for women)

Children

Crude Birth Rate (CBR)

Crude Death Rate (CDR)

Dependency ratio

Definition/description

Distribution of population by age and sex

Relates the number of births to women of a particular age-group, in a specific calendar year, to the mid-year population of women in that same age-group

Total population living in private households divided by total number of private households

Population growth = births – deaths + net migration

A group of people born in the same reference period

Mortality of children between 1 and 5 years of age

Total number of deaths of children aged 1–4 during a year x , divided by the mid-year population of children aged 1–4

Ages 15–49 (the reproductive age-span of women)

Population under 15 years

The total number of live births per 1,000 population in a given year

The total number of deaths in a given year per 1,000 population

The ratio of 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 (65+), to the population in the working ages (15–64)

Term	Definition/description
Direction of migration	Destination of migrants
Economically active population	Persons 15 years and older who were employed or looking for work; also referred to as the 'labour force'
Educational attainment	Proportion of the population 15 or 25 years and over by age-groups and level of education
Elderly persons	Persons aged 60 years and over
Emigrants	Persons who move out of a country for the purpose of establishing a new residence
Extended-family household	Household consisting of couples living with their children and others related by blood or through marriage
Family	A group of two or more persons related by birth, marriage or adoption and living together
Fecundity	The biological/physiological ability to reproduce
Fertility	Actual reproductive performance of a population; the number of live births occurring in a population
Government Settlement area	This area is commonly known as the Meneng Terrace. It is where the Nauruan Government houses all its expatriate office workers. The airline (Air Nauru) also uses this area to accommodate their pilots and flight attendants. The area comprises houses and flats that are more spacious than the block units at The Location. Also situated in this area is the old presidential estate.
Household	A single person living alone or a group voluntarily living together, having common housekeeping arrangements for supplying basic living needs, such as principal meals; the group may consist of related or unrelated persons
Immigrants	Persons who move into a country for the purpose of establishing a new residence

Term**Definition/description**

Infant mortality

Mortality of children under one year

Infant Mortality Rate (IMR)

Total number of deaths of children under one year per 1,000 live births in a year

In-migrants

Persons who move into a different area of a country for the purpose of establishing a new residence

Internal migration

The movement of people within a country for the purpose of establishing a new residence

International migration

The movement of people between countries for the purpose of establishing a new residence

Labour force

Persons employed and unemployed; excludes those not seeking employment, housewives and students

Labour force participation rate

The number of persons in the labour force divided by the corresponding total number of persons

Life expectancy at birth
(E(o))

The average number of additional years a new-born child would live if current mortality trends were to continue

Location Settlement (The Location)

The area where the Nauru Phosphate Corporation (NPC) and the Nauru Government house their expatriate workers, such as tradesmen, plant operators and manual labourers. This area consists of blocks containing units where workers and their families live. Expatriate office workers do not live in The Location. All water and electricity is supplied by the NPC at no charge to the occupants. Also supplied is a monthly ration for each household.

Marital status

Married status of a person: includes not-married (single), currently married, divorced/separated, de facto, widowed

Term**Definition/description**

Median age

The age that divides a population into two numerically equal groups; that is, half the people are younger than this age, and half are older

Migrant

A person who moves for the purpose of establishing a new residence

Migration

Movement of people across a specified boundary for the purpose of establishing a new residence

Mortality

Deaths as a component of population change

Natural increase

Population increase that is the result of births and deaths; growth occurs when the number of births in a given time period (e.g. a calendar year) exceeds the number of deaths; a negative growth, or population decline, occurs when the number of deaths exceeds the number of births

Net migration rate

The net effect of immigration and emigration on a country's population, expressed as increase/decrease per 1,000 population in a given year

Nuclear family

A couple and their unmarried children residing together

Out-migrants

Persons who move out of an area within a country for the purpose of establishing a new residence in a different area of the country

Population census

The total count of a population. Usually taken at 5- or 10-year intervals

Population density

Number of persons per square mile or square kilometre of land area

Population dynamics

Development of population through time

Population momentum

Continued population growth even after birth rates have fallen; due to an increasing number of women of child-bearing age because of past high fertility

Population policies

Measures devised by governments to influence population size, growth or distribution

Term	Definition/description
Population processes	Vital events or migratory movements: refer to fertility, mortality and migration (including urbanisation)
Population projections	Scenarios of what future populations may look like under given assumptions
Population structure	Refers to population size; geographic distribution; and age–sex structure
Rate of natural increase	Rate at which population grows (increase/decrease) during a given year, as the result of a surplus/deficit of births over deaths; expressed as a percentage of the base population
Rate of population growth	Rate at which population grows (increase/decrease) during a given year, as the result of natural increase plus net migration; expressed as a percentage of the base population
School-age population	Depends on the education systems of various countries, but usually ages 5–15
School enrolment	Proportion of population, by age-groups or single years of age, currently enrolled in school
Sex ratio	Number of men per 100 women. Sex ratios over 100 indicate that there are more males than females, and sex ratios under 100 indicate more females than males
Socio-economic characteristics of population	Ethnicity, marital status, religious denomination, economic activity and educational attainment of population
Total Fertility Rate (TFR)	The average number of children a woman would give birth to, during her lifetime, if she were to pass through her childbearing years conforming to the Age-Specific Fertility Rates of a given year
Vital events	Births, deaths, marriages and divorces
Vital statistics	Information on vital events
Volume of migration	Number of migrants
Working-age population	Normally defined as population aged 15–59 (or 15–64)

