



Jean-Louis RALLU*

The Demography of Oceania from the 1950s to the 2000s A Summary of Changes and a Statistical Assessment

Stretching from Australia in the west to Pitcairn Island in the east, Oceania is the largest of the world regions (Map 1). But it is also the region in which land area and human population are smallest. A geographical region of such an extent presents a great diversity of situations. It encompasses the immense landmasses of Australia and New Guinea, along with diminutive islands like Niue and Tokelau covering a few square kilometres, and includes the industrialized countries of Australia and New Zealand, along with developing countries like Papua New Guinea and Kiribati. The end of colonization created further diversity in the region, through the establishment of independent countries, the French and American territories, and the Associated States of New Zealand. And while some countries have a population of overwhelmingly European origin, others are inhabited chiefly by the indigenous peoples of Oceania.

Given the diversity of the region, we shall study it by sub-regions. Because of their similar level of development, Australia and New Zealand are usually analysed separately. The other landmasses of Oceania are the Pacific Islands, which are split into three sub-regions: Melanesia, Micronesia, and Polynesia. Due to the differences in political status and level of development, a distinction will be made within these sub-groups between independent states and dependent territories (Box 1). In addition to the usual comparisons with the main world regions that feature in all *Population Chronicles*, Oceania will also be compared with the world's two other great insular regions, the Caribbean and the Indian Ocean.

In common with previous *Chronicles*, this one adopts a basically descriptive approach, taking the 1950s as its starting point. The fifteen appendix tables contain statistical series for the period 1950-2005, based mainly on United

* Institut national d'études démographiques.

Correspondence: Jean-Louis Rallu, Institut national d'études démographiques, 133 boulevard Davout, 75980 Paris Cedex 20, tel.: 33 (0)1 56 06 21 57, e-mail: rallu@ined.fr

Nations data. The statistical analysis presents the levels and trends of the principal demographic phenomena (fertility, mortality, migration), the main aspects of mother and infant health by various socioeconomic background characteristics (education, urban or rural residence), and some of the indicators for the United Nations Millennium Development Goals (MDGs). Migration is particularly important in the region and its economic role is analysed separately.

I. The region and its place in the world today

With 34.9 million inhabitants at mid-2008, Oceania is the least populated region of the planet. The Pacific Islands, which do not include Australia and New Zealand, have only 9.6 million inhabitants, making them also the least populated insular region: the Caribbean counts 41.6 million inhabitants, and the Indian Ocean has 22.4 million when Madagascar is included though only 3.3 million when it is not.⁽¹⁾ Comparing Oceania with the other main world regions is difficult because of the region's diversity and the random variations caused by the very low population numbers of the smallest countries.

Box 1. Oceania and its sub-regions

Oceania consists of four sub-regions: Australia and New Zealand, and the three Pacific Island sub-regions of Melanesia, Micronesia, and Polynesia.

The region contains twenty-three political entities: seventeen independent countries and six dependent territories.

Alongside Australia and New Zealand, the independent countries are Fiji, Papua New Guinea, the Solomon Islands and Vanuatu in Melanesia; Kiribati, the Federated States of Micronesia, the Marshall Islands, Nauru and Palau in Micronesia; the Cook Islands, Niue, Samoa, Tokelau, Tonga and Tuvalu in Polynesia.

Of the territories, three are French: New Caledonia, French Polynesia, and Wallis and Futuna; and three are American: Guam, the Northern Mariana Islands, and American Samoa. New Caledonia is in Melanesia; Guam and the Northern Mariana Islands are in Micronesia; and French Polynesia, American Samoa, and Wallis and Futuna are in Melanesia. New Caledonia represents only 3% of the population in Melanesia, whereas the territories account for 46% of the population in Micronesia and 52% in Polynesia.

In demographic terms, the territories differ markedly from the independent island countries. In order to work on more homogenous groupings and to facilitate analysis, we have grouped the territories under a separate heading, with the result that the insular sub-regions contain only independent countries. This grouping improves the comparability of the sub-regions both with each other and with the other world regions, including the other insular regions composed mainly of independent countries.

While the term "independent" is not used systematically throughout the article, it is used in the tables and figures. The statistical appendices present averages by sub-region that include the territories attached to them on geographical criteria.

(1) In this Chronicle, the independent Indian Ocean comprises 2.2 million inhabitants in 2005 (excluding Madagascar) and the independent Caribbean 35.3 million inhabitants in 2005.

Map. Geographical location of the countries in the region and of the four sub-regions

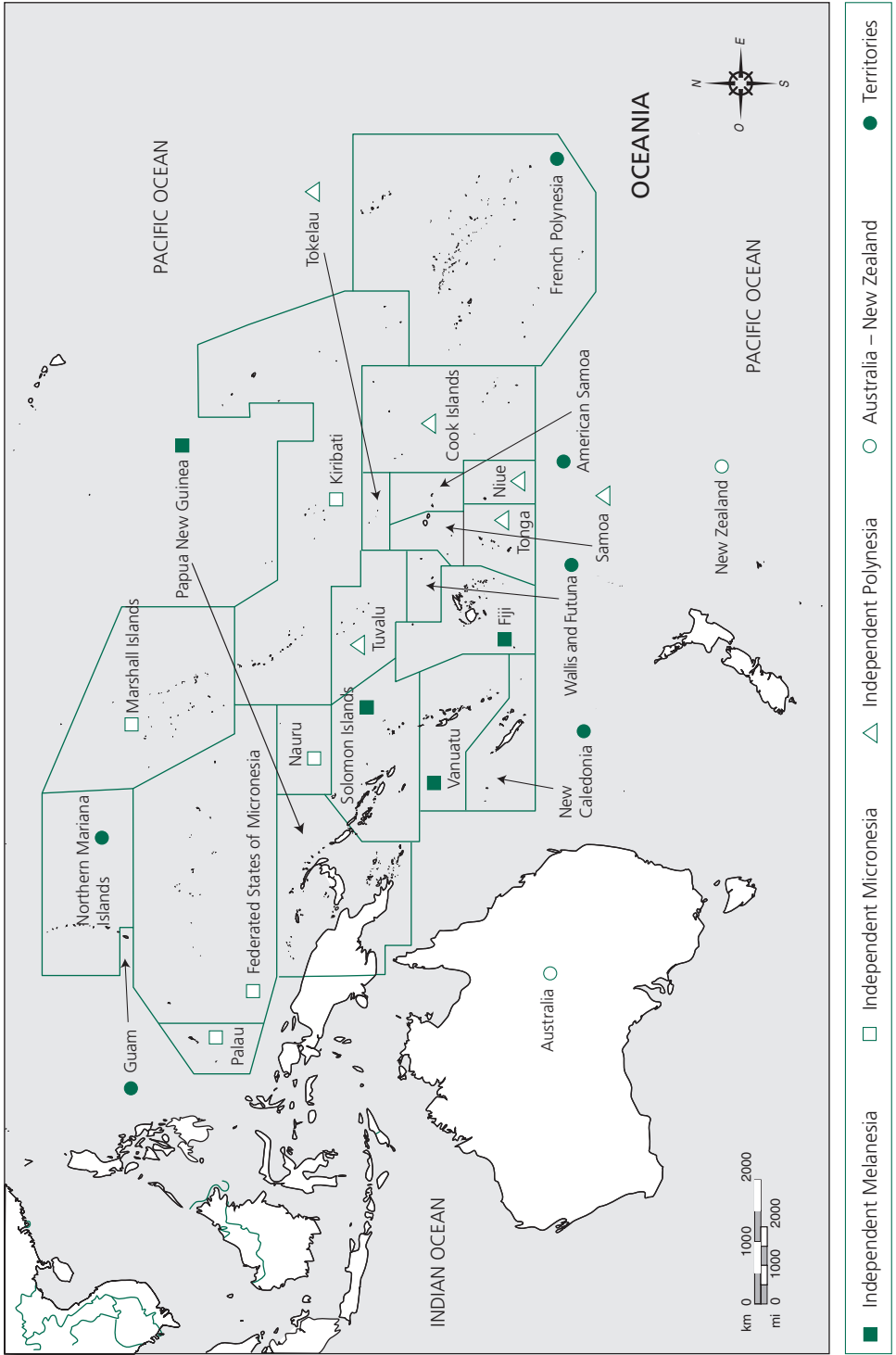


Table 1. Demographic, economic and social characteristics of Oceania compared with other world regions, circa 2005

Region	Population (millions)		Total fertility rate 2000-2005 (children per woman)	Life expectancy at birth 2000-2005 (years)	Annual population growth 1975-2005 (%)	Human development index ^(a) in 2008	Per capita GNI in 2005 (USD PPP) ^(b)	Adult illiteracy rate in 2008 (%)
	1975	2005						
World	4,074	6,512	2.7	67.3	1.6	0.741	8,833	-
OECD countries	926	1,217	1.8	77.8	0.8	0.923	27,571	-
North Africa and Middle East (Arab countries)	145	317	3.7	67.3	2.6	0.680	5,680	30
Sub-Saharan Africa	313	707	5.5	46.1	2.7	0.472	1,946	37
<i>o/w indep. Indian Ocean</i>	1.3	2.2	2.7	68.8	1.6	0.726	8,628	-
Latin America and the Caribbean	318	557	2.6	72.2	1.9	0.795	7,964	10
<i>o/w indep. Caribbean</i>	24	35	2.7	70.1	1.3	0.728	5,666	-
South Asia	839	1,568	3.2	63.7	2.1	0.599	3,072	39
Eastern Asia and Pacific	1,310	2,075	1.9	70.8	1.4	0.760	5,872	9
Oceania	21	34	2.4	75.2	1.5	-	-	-
Australia – New Zealand	17	25	1.8	80.2	1.3	0.959	30,652	-
Independent Melanesia	3.73	7.64	4.2	60.7	2.4	0.622	2,560	22
Independent Micronesia	0.17	0.29	3.9	67.6	2.2	-	-	-
Independent Polynesia	0.32	0.29	4.2	70.4	0.4	0.797	6,874	1
Territories	0.41	0.82	2.4	74.1	2.4	-	-	-

^(a) Composite index measuring human development, including life expectancy, adult literacy rates, school enrolment ratios and per capita GDP. The closer it is to 1, the better the situation. In Oceania, these data are only available for Australia, New Zealand, Melanesia, Tonga and Samoa.

^(b) Per capita gross national income in US dollars calculated in terms of purchasing power parity (PPP).

–: Data not available for the region because missing in certain countries.

Sources: World Population Prospects 2008; UNDP (2008).

Australia and New Zealand represent the largest share of the population, thus bringing the regional indices for Oceania close to those of North America and Europe, where development is at a comparable level. At the other extreme, the independent island states are developing countries and present sharp demographic and economic disparities, depending on the sub-region studied. Making general statements about the Pacific Islands is difficult because of the differences that exist not only between sub-regions, but also between independent countries and territories (Box 1).

Thanks to the relative weight of its population, Melanesia is the most representative of the independent Pacific Islands group as a whole. Fertility in the independent countries of Melanesia (4.2 children per woman) is close to that in Africa (4.8 on average), but the situation in terms of mortality is better (life expectancy at birth of 61 years against 55 years). The independent countries of Micronesia and Polynesia are slightly more advanced in the demographic transition, however: fertility is higher than in Southeast Asia (with 3.9 and 4.2 children per woman, respectively, versus 2.5) although life expectancy is comparable (68 years and 70 years, respectively, versus 68 years).

Of all the Pacific Islands, the French and American territories are those where conditions are most favourable, with intermediate levels of development approaching those of western industrialized countries (Bar et al., 2004). Fertility stands at 2.4 children per woman and life expectancy is 74 years.

A comparison of the Pacific with the Caribbean and Indian Ocean insular regions is more meaningful,⁽²⁾ though it must be based on homogeneous sub-groups, since these latter regions are also marked by great diversity. Both the Caribbean and the Indian Ocean groups include politically dependent entities. In the Caribbean, these are the French overseas *départements*, and the territories and associated states of the United States, the United Kingdom, and the Netherlands. In terms of total population, these entities are far less important in the Caribbean (13%) than in Micronesia or Polynesia, but they have a considerable weight in the Indian Ocean, where Reunion and Mayotte account for 30% of the region's population (Madagascar excluded). Fertility is higher in the Pacific Islands and in each of its sub-regions of independent entities than in the Caribbean and Indian Ocean regions (from 3.9 to 4.2 children per woman, respectively, versus 2.7 and 2.6). Life expectancy is lower in Melanesia and Micronesia (61 years and 68 years, against 70 years in the Caribbean and 69 years in the Indian Ocean), though the situation is similar in Polynesia (70 years). High variability is also observed within the Caribbean, however: between Haiti and Cuba the total fertility rate (TFR) ranges from 3.55 to 1.50 births per woman, respectively, and life expectancy from 61.2 years to 78.6 years. The same pattern is observed in the Indian Ocean between the Comoros and Mauritius, with TFRs of 4.2 and 1.9 children per woman,

(2) The indicators for the Caribbean and the Indian Ocean appear in the tables. The Caribbean alone appears in the figures, since the Indian Ocean tends to overlap with Polynesia.

respectively, and life expectancies of 63 and 72 years. Owing to strong out-migration, annual population growth in Polynesia over the period 1975-2005 was much lower (0.4%) than in the Caribbean (1.3%) or the Indian Ocean (1.6%) (Table 1), while it was higher in Micronesia (2.2%).

II. Broad geographical and institutional diversity

With the exception of Australia, which is usually considered as a continent in its own right, Oceania is composed of volcanic high islands and of atolls, some of which are uplifted coral reefs. Four countries – Kiribati and the Marshall Islands in Micronesia, Tuvalu and Tokelau in Polynesia – consist entirely of atolls.⁽³⁾ The other countries are composed mainly of volcanic high islands. Melanesia contains the largest islands, with low population densities, while Micronesia and Polynesia are made up of small islands and atolls, some with extremely high densities (above 300 inhabitants per sq. km).

Oceania encompasses a myriad of islands with widely varying land areas, ranging from Australia (7,686,850 sq. km) and Papua New Guinea (462,000 sq. km) down to Tokelau (12 sq. km). The islands are grouped into archipelagos, in some cases separated by large distances. Only Guam, Nauru, and Niue are single islands. Population size varies considerably (from 21.1 million inhabitants in Australia at mid-2008, to 1,400 in Tokelau⁽⁴⁾), making it difficult to represent all the countries together (Figure 1).

There are geographical reasons for the region's high degree of diversity but also historical ones related to colonization. The populations of Australia and New Zealand are mainly the descendents of British colonial emigrants. A mere 0.6% of Australians reports an Aboriginal origin, and 14% of New Zealanders a Maori origin. The populations of the French and American territories contain varying proportions of Europeans (from 7% in Guam to nearly 40% in New Caledonia) and are highly intermixed. The territories have varying degrees of political autonomy (see Box 2), and relatively high levels of development, although their economies are heavily dependent on the metropolitan countries. The island countries are former colonies or protectorates of Great Britain (Tonga), New Zealand, Australia,⁽⁵⁾ or the United States.⁽⁶⁾ Colonization, followed by the migration of indentured labourers from Asia, India and from other islands elsewhere in the region, have brought a certain diversity to the populations of Melanesia, Micronesia, and Polynesia. Except in Fiji, however, the indigenous peoples of Oceania make up more than 90% of the population in the independent island countries.

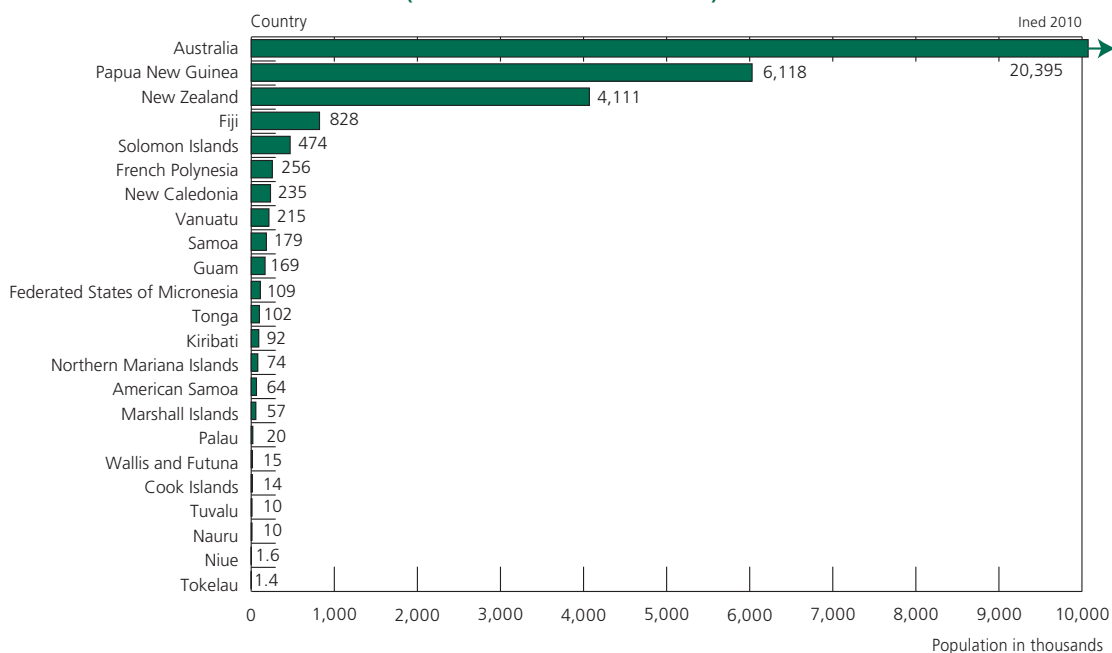
(3) Rising sea levels are a matter of concern for some atoll populations (Kiribati, Marshall Islands, Tokelau, Tuvalu, the Tuamotus in French Polynesia, and some of the Cook Islands) corresponding to around 250,000 inhabitants, a figure that does not include the coastal populations of the high islands.

(4) Pitcairn Island (5 sq. km and fewer than 50 inhabitants) is not included here.

(5) The former German colonies of Samoa and Papua New Guinea were handed over to New Zealand and Australia at the start of the First World War.

(6) Under United Nations mandates following the Second World War.

Figure 1. The 23 Pacific countries by population in 2005
(thousands of inhabitants)



Source: United Nations, Department of Economic and Social Affairs (UNDESA),
World Population Prospects 2008.

Box 2. Political status of the Pacific island countries and territories

The first of the island countries to accede to independence was Samoa in 1962, and most others obtained it in the 1970s (Appendix Table A.1). The last was Vanuatu (an Anglo-French colony in the New Hebrides condominium) in 1980.

The smallest countries among the former colonies of New Zealand (the Cook Islands, Niue and Tokelau) retain links with the former colonial power as Associated States, although they are members of the United Nations.

A recent change in the political status of the French territories, the former *Territoires d'outre-mer* (TOM), has resulted in greater autonomy: New Caledonia and French Polynesia have become *Pays d'outre-mer* (POM, overseas countries), while Wallis and Futuna has become a French *Collectivité d'outre-mer* (COM, overseas collectivity).

The US territories are Guam, American Samoa, and the Northern Mariana Islands (Commonwealth of the Northern Mariana Islands).

Several islands of Micronesia saw their status change after the Second World War and the end of Japanese colonization. The Trust Territories of the Pacific Islands (TTPI) – administered by the United States under the terms of a United Nations trusteeship – comprised Palau, the Marshall Islands, the Federated States of Micronesia (FSM) that included four states (Chuuk, Kosrae, Pohnpei, and Yap), and the Northern Mariana Islands. Only the last-mentioned are still administered by the United States. The others became independent countries in 1986, under the terms of a Compact of Free Association, with the exception of Palau, which gained its independence in 1994. They are members of the United Nations.

With European colonization came the introduction of Christianity, mainly the Protestant churches (Methodists, Presbyterians, Adventists), though also Roman Catholicism. A more recent change has been the development of minority Christian movements including the Mormons. There is considerable variety of religious affiliation, with each country, even each island, counting several religions. The Indian population of Fiji (37%) comprises a majority of Hindus and a small proportion of Muslims.

Australia and New Zealand represented 72.4% of the region's population in 2009, while Melanesia, Micronesia, and Polynesia, including the territories, accounted for 24.1%, 1.6% and 1.9%, respectively. Among the Pacific Island population (including the territories), Melanesia represents 87% of the total, Micronesia 6% and Polynesia 7%, with some countries having fewer than 10,000 inhabitants. Because of this uneven population distribution, the average figures for the region as a whole primarily reflect the situation in Australia and New Zealand. The weighted averages for the island countries correspond closely to those for Melanesia, given its large share of the total population.⁽⁷⁾ The figures for Melanesia reflect principally those for Papua New Guinea, though the Solomon Islands and Vanuatu are in broadly similar situations. Fiji is much closer to the situation of the Central Pacific group (Tonga and Samoa) than that of Melanesia, with which it is classified on account of the ethnic origin of its population. Its inhabitants include 37% Indians, the result of late-nineteenth century migration by indentured labourers. Micronesia and Polynesia, excluding the territories, are more homogeneous in this respect.

The extreme diversity of the countries' demographic situations is also mirrored in their economic and social development. In the more developed countries and in the territories, large inequalities exist between the pre-colonial populations and those of European origin (Baudchon and Rallu, 1999).

With a long tradition of European immigration, Australia and New Zealand have more recently received migrants from Asia, the Pacific and, to a lesser extent, Africa. Migrant numbers in the island countries are small, though more Asians are settling in the American territories. Most migrants to the French territories, notably to New Caledonia, are Europeans or Polynesians.

III. Information: frequently incomplete statistical systems

The colonial powers organized censuses in the nineteenth century on several of the small islands, notably in Polynesia (French Polynesia, the Cook Islands) and Micronesia (Guam, Northern Mariana Islands), and in Melanesia in the twentieth century (after the Second World War in many cases).⁽⁸⁾

(7) For this reason we do not give the figures for all the island countries in the tables or figures.

(8) Readers interested in the historical demography of the Pacific Islands since the late eighteenth century may consult Kirch and Rallu (2007), Rallu (1990, 1991), Rice (1983), and Underwood (1975).

Nineteenth-century censuses frequently took the form of simple population headcounts that supplied information on sex of inhabitants and, in some instances, an approximate indication of age (child or adult). More detailed censuses were held in the first half of the twentieth century, particularly in the territories. The first post-independence censuses (from the 1960s and 1970s) used more detailed questionnaires that remained practically unchanged for many years. Only recently has the scope of censuses been broadened to include information on such topics as health (disability) and alcohol and tobacco consumption. Since the 1990s, the Demographic and Health Surveys (DHS) and surveys of household budgets and consumption have supplied indicators on demographic behaviour and poverty.

Australia and New Zealand have held regular censuses since the early twentieth century and also carry out numerous surveys. In the territories, censuses are conducted by the statistical services of the metropolitan countries and are of higher quality than in the independent island states. With the exception of the Labour Force Surveys, however, few specialized surveys are conducted (Appendix Table A.1).⁽⁹⁾

The main source of demographic information in the island countries remains the census. Population monitoring in these countries since the Second World War has at times been difficult due to changes in political status following independence (Box 2).

Censuses were conducted in most of Micronesia (excluding Guam, Kiribati and Nauru) under TTPI status until the 1980s (with census-taking sometimes limited to particular islands or archipelagos), or until 1978 for the Gilbert and Ellice Islands (Kiribati and Tuvalu⁽¹⁰⁾). The populations of these countries have to be reconstructed from the data for the individual islands. Polynesia possesses a reasonably complete series of five-yearly censuses since 1946 for New Zealand's former colonies (Cook Islands, Niue, Samoa and Tokelau). Tonga has conducted ten-yearly censuses since 1956.

The census is conducted in the US territories (Guam and American Samoa) at the same time as in the United States (ten-yearly censuses in years ending in zero), with occasional supplementary censuses in American Samoa, although the Northern Mariana Islands were included in the TTPI until the 1980s. In the former French overseas territories (TOMs), censuses were held at various dates but have been five-yearly since the 2000s. Note that the native populations of New Caledonia were not enumerated in the censuses of 1946 and 1951.

(9) Use of the same demographic and economic categories as in the mainland country is problematic, however, given the territories' disparities in this respect.

(10) Tuvalu has a population of Polynesian origin and has been included with Polynesia since independence.

Because few household-level surveys are conducted, data on fertility, like those on poverty, are commonly not available. Fertility surveys were held in the 1990s in Samoa, and “Knowledge-Attitudes-Practices” (KAP) surveys on contraception in the former French TOMs, but no full-scale World Fertility Survey (WFS) has ever been carried out in the Pacific. Only two DHS surveys were held prior to 2007 (Papua New Guinea in 1996 and 2006), and four in 2007 (Solomon Islands, Marshall Islands, Tuvalu and Nauru). The recent DHS surveys have not used all the available questionnaire modules, since several countries refused some or all of the questions relating to abortion, sexual behaviour, and AIDS. A small number of surveys on nutrition, along with health surveys, were conducted in several countries from the 1980s. The early household income and consumption surveys are of limited utility, and only those conducted since 2000 (and in 1991-1992 in Fiji) can be used to estimate poverty under international criteria.⁽¹¹⁾

Civil registration remains patchy in Melanesia, except in Fiji where virtually all births have been recorded since the mid-1990s, contrary to the situation for deaths. Civil registration systems or exhaustive health registers have existed in the US and French territories for several decades. In New Caledonia, however, coverage of the Melanesian population has been complete only since the mid-1970s. In the small countries (Marshall Islands, Palau, Cook Islands, Tuvalu, Tokelau and Niue), recording of births by the health services is near exhaustive although that of deaths remains problematic. Data for the other countries of Polynesia and Micronesia are incomplete to varying degrees. In western Melanesia (excluding Fiji), civil registration coverage is so low, notably in non-urban localities, and that of the health services so inadequate that statistics are drawn from census-based indirect estimates and from DHS and other recent surveys, of extremely uneven quality.

Given the lack of censuses or their poor quality in the 1950s and 1960s, notably in Melanesia (excepting Fiji), together with the very limited quantity of detailed data obtained by reconstituting the populations of the TTPI countries, the United Nations estimates for these periods come with a margin of error, as is the case for the smallest countries.

IV. Populations and growth from 1950 to 2050

Not surprisingly, average annual population growth in Oceania (1.5% per year in 1975-2005, Table 1) is close to that for Australia and New Zealand, which represent the largest share of the region’s population. It is also similar to that of North America (1.1% per year), although growth rates in Australia

(11) Prior to the recent series of household budget-consumption surveys, the Asian Development Bank conducted participatory surveys to define the notion of “poverty of opportunity” or “hardship”, since there was resistance in the Pacific region to recognizing the existence of extreme poverty and hunger, which are rare in the region.

and New Zealand are slightly higher due to higher relative levels of immigration. They are well above the rates observed in Europe (0.3% per year).

Population growth in Oceania since 1950

Large differences in population growth rates are apparent at the sub-regional level, notably after 1965-1970 and for reasons chiefly related to migration. In the post-war period, the population of Melanesia grew more slowly than those of the other sub-regions, remaining below 2.5%. Since 1990, however, it has recorded the highest growth rate of all the sub-regional populations (Figure 2b). Indeed, demographic growth in Melanesia now slightly exceeds that in Africa and is higher than in Central and South Asia, to which it remained close until the 1980s (Figures 2a and 2b).

Population growth in Micronesia was very high, frequently around 3%, before 1985 (the sharp dip in 1970-1975 was caused by a temporary fertility decline in Kiribati and by a wave of emigration from the Federated States of Micronesia).⁽¹²⁾ Since 1985, growth has slowed markedly, dropping to 1.2% per year in 2000-2005, as a result of increased emigration from the Federated States of Micronesia, the Marshall Islands, Nauru, and Palau.

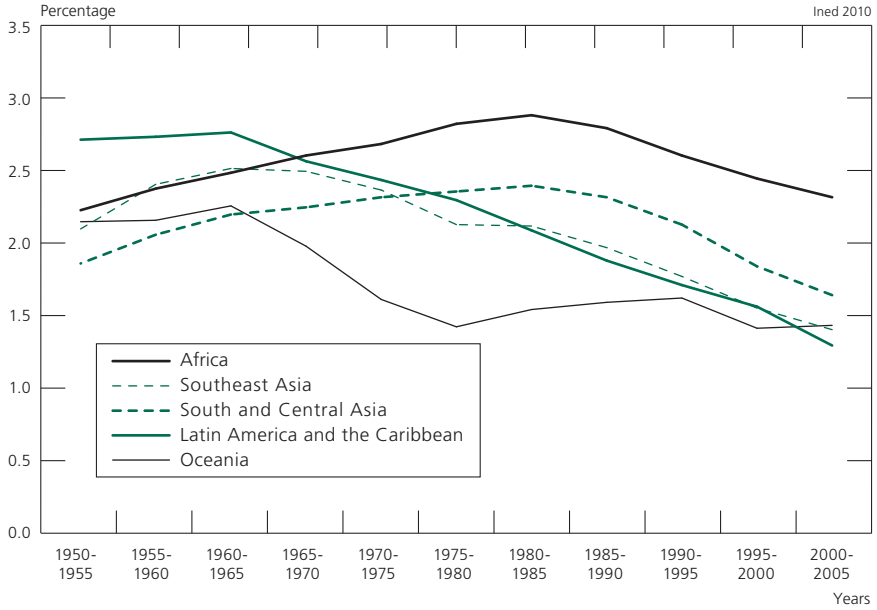
The population of Polynesia grew rapidly in the post-war period, with rates of around 3% up to the early 1960s, as a result of very high fertility. Massive out-migration combined with moderate fertility decline led to almost zero growth in the 1970s and even slightly negative growth in 1980-1985. From the mid-1980s, more stringent immigration policies and adverse economic conditions in Australia and New Zealand brought only a slight reduction in emigration from Polynesia, but this was enough to produce a slight recovery in growth (currently standing at around 0.5% per year).

Population growth in the world's other insular regions, the Caribbean and the Indian Ocean, has never been negative, but slowed down from the 1960s in response to the combined effects of fertility decline and emigration. In 2000-2005, the populations of these regions were still growing by 1.3% and 1.6%, respectively.

Polynesia is thus the world region (joined by Micronesia since the 1980s) where emigration is highest.

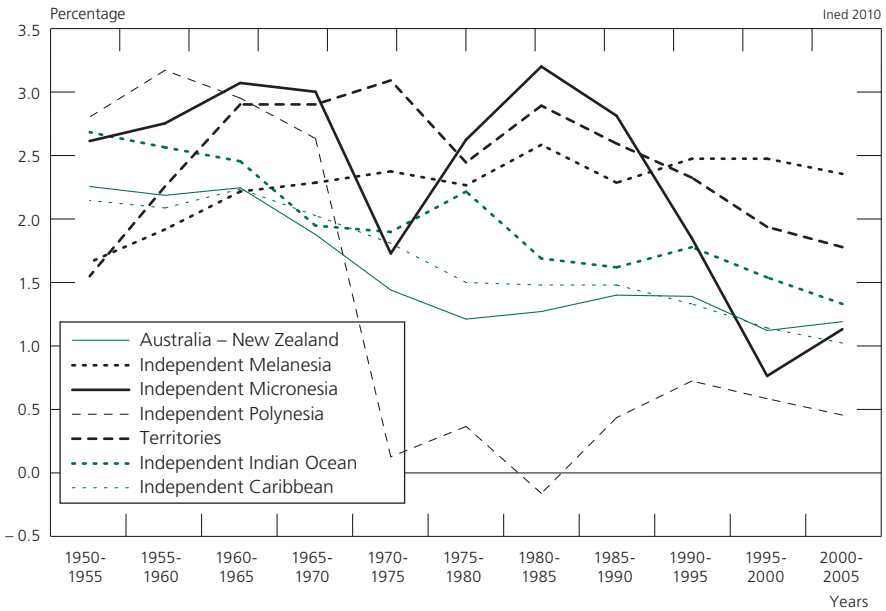
(12) The role of international migration will be analysed in more detail in part XIII (see Appendix Table 13).

Figure 2A. Trends in mean annual population growth rates (%) between 1950 and 2005 in five major world regions



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects (2008).

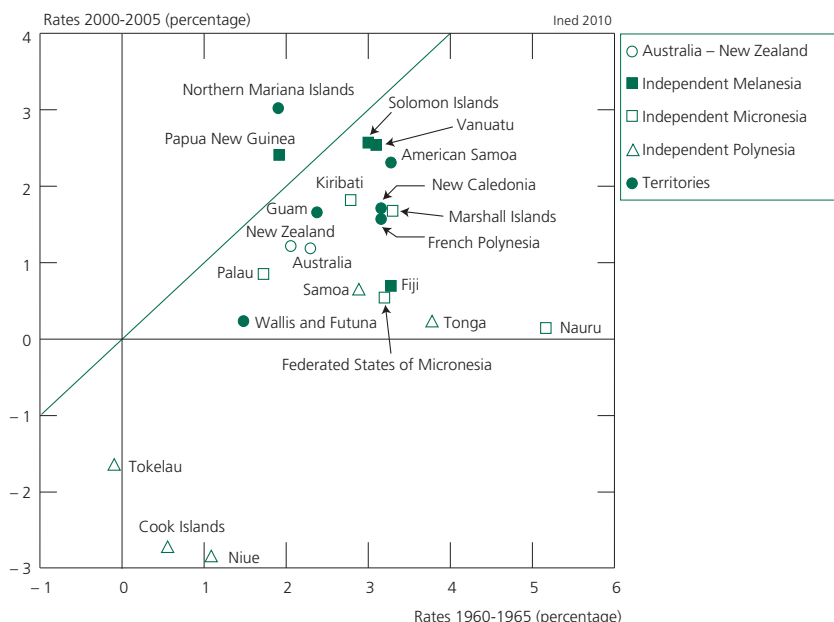
Figure 2B. Trends in mean annual population growth rates (%) between 1950 and 2005 in the Pacific Island sub-regions, the Caribbean and the Indian Ocean



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects (2008).

The departure of the military from Guam after the Second World War and emigration, albeit at low levels, from New Caledonia were the factors behind a moderate population growth in the territories (1.5%) in the early 1950s. From the 1960s, however, the territories experienced several waves of immigration: troops stationed on Guam during the Vietnam war, contract workers in New Caledonia during the nickel boom (1969-1971), migrants from Samoa to American Samoa. The sharp slowdown in growth since the 1980s is the consequence of the demographic transition in the French territories and of a slowing of immigration to the American territories. Despite this, population growth remained at 1.7% in the 2000s, with little difference observed between individual entities. The Wallis and Futuna archipelago, by contrast, is affected by large-scale emigration similar to that from the small countries of Polynesia. In the Northern Mariana Islands, very high population growth in the 1990s, relative to the size of the local population, was the result of temporary immigration by large numbers of female workers under contract to the textile industry. Since 2005, the number of departures has started to rise.

Figure 3. Trends in annual average total population growth rates between 1960-1965 and 2000-2005 in the main countries of the region (%)



Source: United Nations. Department of Economic and Social Affairs (UNDESA), World Population Prospects (2008).

Figure 3 compares pre-transitional population growth in 1960-1965 with that in 2000-2005 for the main countries. A majority of the countries, together with the French territories, had annual growth of around 3% in the 1960s. The small countries of Polynesia (Cook Islands, Niue and Tokelau), plus Wallis and Futuna, were the only ones already affected by emigration (with growth of around 1% and already negative on Tokelau), while Nauru was experiencing strong growth thanks to immigration by mine workers (see Appendix Table A.3 for natural growth).

Since then, population growth has slowed in all but two of the countries. The recent increase in growth in the Northern Mariana Islands is due to immigration of female textile workers, as mentioned above. The rise in the growth rate for Papua New Guinea since 1970 reflects the specific context of low fertility and high mortality prior to that date. Population growth has declined little in the Solomon Islands and Vanuatu. For the other countries, a high degree of consistency is apparent at the sub-regional level. As a consequence of massive emigration, the small countries of Polynesia (Cook Islands, Niue, and Tokelau)⁽¹³⁾ are set to experience negative population growth. Annual growth is currently below 1% in the larger Polynesian countries (Samoa and Tonga), and also in Fiji. The picture for Micronesia is more heterogeneous. The low growth in the Federated States of Micronesia and in Nauru⁽¹⁴⁾ is a result of emigration, while that in Palau marks the end of the fertility transition. By contrast, growth in Kiribati and the Marshall Islands has fallen from 3% per year in the early 1960s to around 1.8% because of declining fertility and, in the case of the Marshall Islands, emigration.

To sum up, population growth in Australia and New Zealand has slowed substantially due to fertility decline since the end of the baby boom. Despite continued strong immigration, growth fell from over 2% in 1960-1965 to 1.2% in 2000-2005. In the countries comprising Melanesia, with the exception of Fiji, growth has fallen only slightly and has even increased in Papua New Guinea. In the other countries, the reduction in growth, punctuated by large and abrupt variations (Figure 2b), has been greatest in the countries affected by migration, particularly those where fertility is also declining. Migration in the territories fluctuates unpredictably in response to changes in the economic and military situation. The slowdown in growth is faster in the French territories due to the fertility transition.

(13) While growth has been consistently negative in Niue and Tokelau since the 1970s, the Cook Islands have experienced alternating periods of rapid decrease and moderate increase. Provisional results from the 2006 census showed slight growth since 2001.

(14) The high growth in Nauru in the 1960s was due to immigration of workers for the phosphate mines. Mine closures in 2003 caused many migrants to leave. New deposits have since been discovered.

Table 2. Total population growth and population multiplier coefficients in Oceania, 1965-2005

Sub-region and country	Multiplier coefficient	Growth rate between 1965 and 2005 (%)
Oceania	1.9	88
Australia – New Zealand	1.7	72
Australia	1.8	76
New Zealand	1.6	56
Melanesia	2.6	156
Fiji	1.8	78
New Caledonia	2.6	156
Papua New Guinea	2.7	165
Solomon Islands	3.4	244
Vanuatu	2.9	189
Micronesia	2.6	155
Federated States of Micronesia	2.1	111
Guam	2.2	122
Kiribati	2.4	143
Marshall Islands	3.3	228
Nauru	1.8	76
Northern Mariana Islands	7.3	630
Palau	1.9	91
Polynesia	1.8	75
American Samoa	2.7	171
Cook Islands	0.7	–26
French Polynesia	2.8	175
Niue	0.3	–68
Samoa	1.4	45
Tokelau	0.8	–24
Tonga	1.2	20
Tuvalu	1.5	53
Wallis and Futuna	1.6	64
<i>Source:</i> Author's calculations based on United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.		

Although population growth has slowed down, it remains strong in many countries. Between 1965 and 2005, while the population of the region as a whole increased by 88% (and that of Australia and New Zealand by 72%), it practically tripled in some countries (coefficient of 3.4 in the Solomon Islands, 2.9 on Vanuatu, and 2.7 in Papua New Guinea) (Table 2). This was also the case for the Marshall Islands (coefficient of 3.3), thanks to the persistence of very high fertility into the 1980s. With the exception of the Marshall Islands and the Northern Mariana Islands (7.3),⁽¹⁵⁾ the coefficients are around 2 in Micronesia

(15) As a result of high immigration.

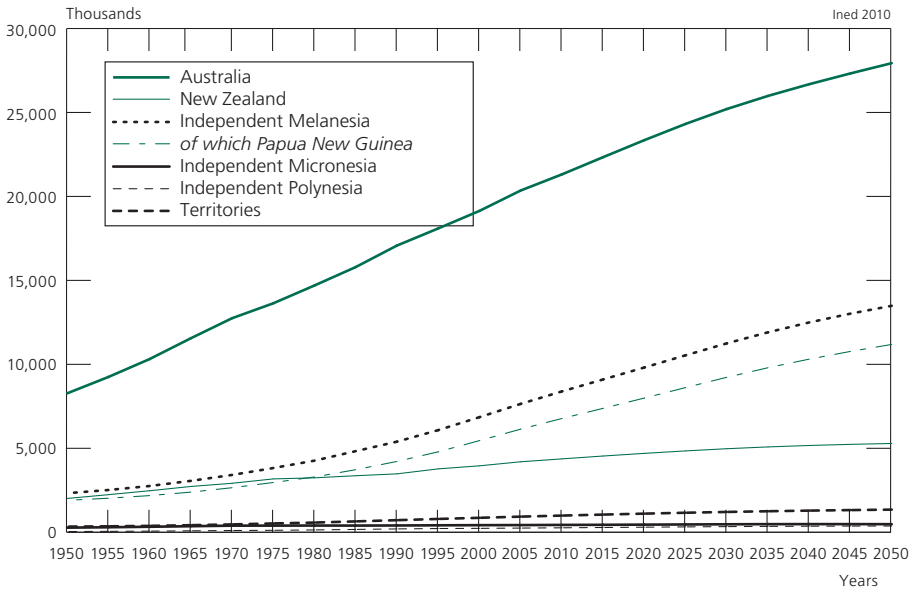
and substantially higher in Kiribati (2.4). In Polynesia, however, the coefficients are below 1.5, and the population grew by only 20% on Tonga and 45% on Samoa, while negative growth is observed in the Cook Islands, Tokelau and Niue (where the population currently represents only 30% of its 1960 total).

While Polynesia and Micronesia have certainly limited the rapid demographic growth of the 1960s – population size is now practically stable in Polynesia – growth rates remain high in Melanesia, with negative implications for development and for efforts to improve essential services in the areas of health, education and water supply.

Prospects to 2050

The population projections for the period from 2005 up to 2050 throw up sharp differences between sub-regions and between countries. The population of Oceania as a whole is forecast to increase by nearly 53% between now and 2050, representing an annual average of 0.9% (Table 3 and Figure 4). Australia and New Zealand are situated slightly below this average with a total growth of 39% (0.7% per year). Among the insular sub-regions, the largest projected population growth will be in Melanesia (99%; 1.5% per year), followed by Micronesia (49%; 0.9% per year). The population of Polynesia will see a small increase (29%; 0.6% per year), which could be even smaller, depending on future migration trends.

Figure 4. Population trends since 1950 and projections to 2050 for the Pacific region and its sub-regions (in thousands)



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

Table 3. Population (in thousands) in 1990 and 2005, projections for 2025 and 2050, and growth rate (%) of Oceania and sub-regions, 2005-2050

Sub-region and country	Population (thousands)				Growth 2005-2050 (%)	
	1990	2005	2025	2050	Overall	Mean annual
Oceania	26,733	33,559	42,507	51,338	53.0	0.9
Australia – New Zealand	20,284	24,505	29,534	34,073	39.0	0.7
Melanesia ^(a) of which:	5,489	7,871	11,538	15,632	98.6	1.5
<i>Fiji</i>	724	828	905	910	9.9	0.2
<i>Papua New Guinea</i>	4,131	6,118	9,265	12,871	110.4	1.7
<i>Solomon Islands</i>	314	474	725	1,007	112.4	1.7
Micronesia ^(a)	417	537	681	802	49.3	0.9
Polynesia ^(a)	543	646	754	831	28.6	0.6
Independent Melanesia ^(b)	5,318	7,636	11,234	15,270	100.0	1.6
Independent Micronesia ^(b)	240	288	358	409	42.0	0.8
Independent Polynesia ^(b)	287	313	334	353	12.8	0.3
Territories	605	818	1,047	1,233	50.7	0.9
Distribution by sub-region (%)						
Australia – New Zealand	75.9	73.0	69.5	66.4		
Melanesia ^(a)	20.5	23.5	27.1	30.4		
Micronesia ^(a)	1.6	1.6	1.6	1.6		
Polynesia ^(a)	2.0	1.9	1.8	1.6		
Total	100.0	100.0	100.0	100.0		
<i>of which territories (%)</i>	2.3	2.4	2.5	2.4		
^(a) Including the territories; ^(b) without the territories.						
Source: United Nations, World Population Prospects 2008.						

Among the independent sub-regions, projected growth rates in Melanesia will be virtually unchanged, while those for Micronesia and Polynesia will be much lower because the independent countries are affected by emigration while the territories are immigrant destinations. Melanesia, the Solomon Islands and Papua New Guinea are projected to experience above-average growth (112% and 110%), with at least a doubling of their populations. Note also that the United Nations projections are based on under-estimated fertility. This is notably the case for the Solomon Islands, for which the 2007 DHS survey puts fertility at 4.6 children per woman in 2003-2007 (fractionally lower than the 1997-1999 figure of 4.8), whereas the United Nations “medium” variant sets fertility at 3.9 for 2005-2010.

Conversely, very low growth can be expected in Fiji if migration continues and if the fertility decline among the ethnic Indian population, already below replacement level, continues. Among Melanesian Fijians, by contrast, fertility is falling only slowly, though they are now emigrating in increasing numbers.

In Micronesia, the populations of Kiribati and the Marshall Islands are forecast to grow by around 65%, or 1.1% per year. This projection could be revised down for the Marshall Islands if migration to the United States increases. Growth in the territories will exceed 50% (0.9% per year), although the projections depend heavily on the trend in migration.

Between 2005 and 2050, under the United Nations projections, Australia and New Zealand will see their share of the regional population fall by seven percentage points while that of Melanesia will increase by a similar amount. Taken together, the other regions and the territories will continue to represent slightly more than 5% of the total population.

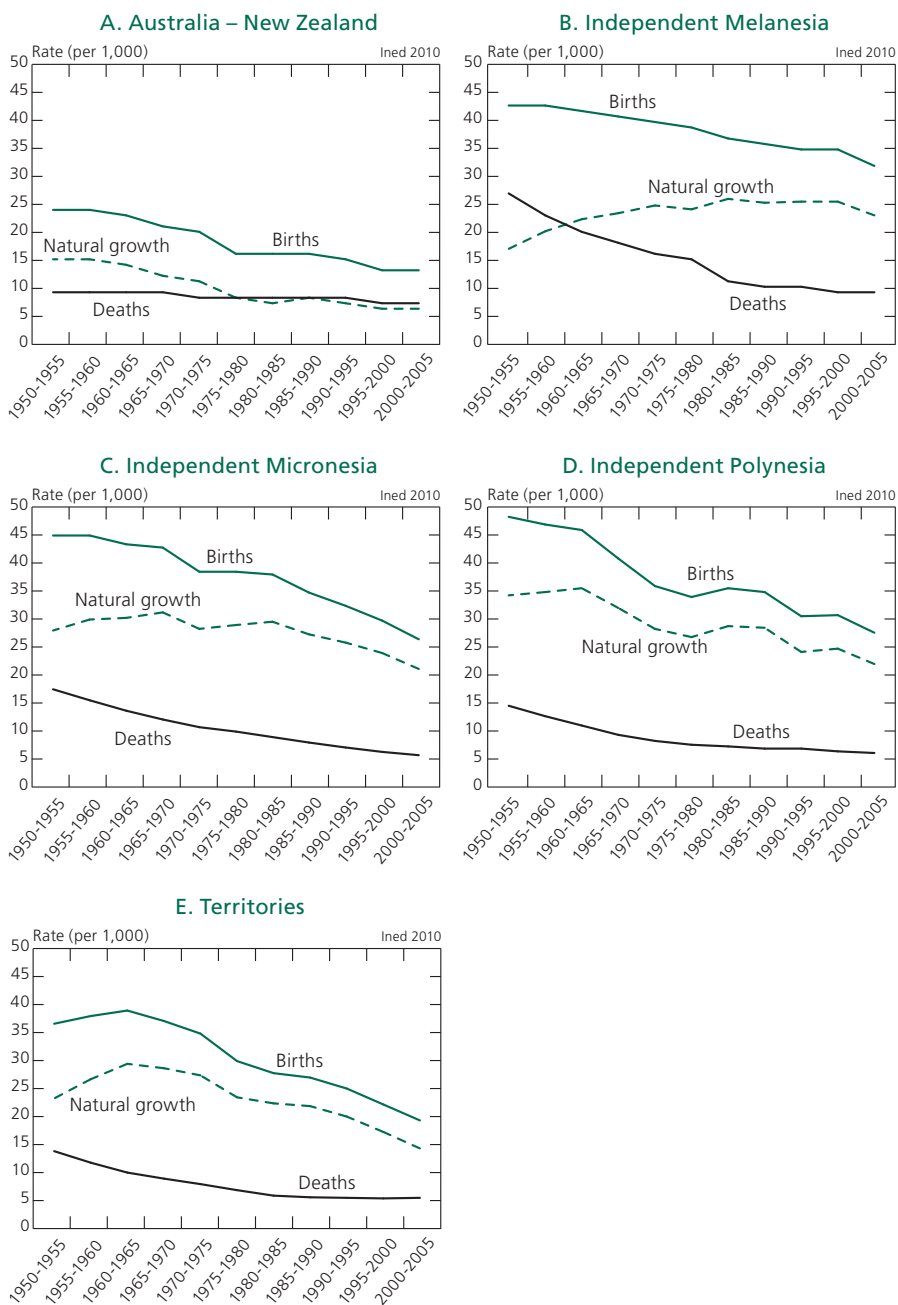
Even discounting probable under-estimation, these projections show clearly that population pressure in Melanesia is set to increase rapidly, making it difficult to narrow the development gap. The projected growth is also a major problem in the atoll states of Kiribati and the Marshall Islands. Although demographic pressure in Melanesia is not a problem of population density, rapid growth will nonetheless adversely affect provision of public services, which are still not available to all sections of the population.

V. Different models of demographic transition

The health situation in the Pacific before the Second World War was poor, with a high incidence of sexually transmitted and infectious diseases, including tuberculosis, and an inadequate health care system. In French Polynesia and among the Maoris of New Zealand, excess female mortality at childbearing ages was observed until the late 1950s – until the 1970s on Vanuatu – and conditions were doubtless similar in other countries of Melanesia. The great majority of the population in western Melanesia still lived in rural areas, remote from the small colonial capitals and with practically no access to modern medical facilities. Improvements in the health care system during and after the Second World War, thanks in part to the presence of American military bases on several islands, brought a decline in mortality and a rise in fertility.

Australia and New Zealand were the only countries where the mortality rate was already below 10 per 1,000 by the end of the nineteenth century, a consequence of their early demographic transition. Elsewhere in the region, the demographic transition began in the 1950s, with a rapid decline in mortality in all the sub-regions. Mortality levels in 1950 nonetheless presented considerable disparities (Figure 5): above 25 per 1,000 in Melanesia, around 15 per 1,000 in Micronesia and Polynesia, and slightly below 15 per 1,000 in the territories as a whole, though above 15 per 1,000 in the former French TOMs (Appendix Table A. 3). With the exception of the discontinuity for Melanesia attributable to variations in data quality, mortality declined steadily in all the sub-regions.

Figure 5. The demographic transition in the independent Pacific sub-regions and territories between 1950 and 2005 (rate per 1,000)



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

With the end of the baby boom, the birth rate fell rapidly in Australia and New Zealand in the 1960s and 1970s, from 24 per 1,000 in the 1950s to 16 per 1,000 in 1975-1990 and 12 per 1,000 around 2000. Throughout this period, however, the decline in the birth rate was to some extent slowed down by the immigration of young adults. The fertility transition was late coming to the Pacific Islands. In 1950, the birth rate was very high, standing at 43 per 1,000 in Melanesia and over 45 per 1,000 in Micronesia and Polynesia, and even at around 50 per 1,000 in Vanuatu and Samoa (Appendix Table A.3). Because of their large European populations, the birth rate in the territories was between 30 per 1,000 and 45 per 1,000, rising slightly until the 1960s due to immigration. The birth rate fell slowly in Melanesia, still standing at 35 per 1,000 by the end of the twentieth century and at 32 per 1,000 in 2005. The fastest decline occurred in Polynesia, where emigration reduced the number of adults of childbearing age and, by physically separating couples, disrupted nuptiality. After falling to 35 per 1,000 in the 1970s, the birth rate remained above 30 per 1,000 up to the end of the twentieth century, although since 2000 it has moved closer to 25 per 1,000. In Micronesia, the birth rate started falling in the early 1970s, though only slowly until the mid 1980s (40 per 1,000). Thereafter the fall was more pronounced, reflecting a transition process that started later but followed a more regular course than in Polynesia. The birth rate has fallen more steadily in the territories, accelerating somewhat in the mid 1970s to stand at below 20 per 1,000 at the start of the present century.

In Australia and New Zealand, the annual natural growth rate declined from 1.5% in the 1950s to less than 1% by 1975 and stood at 0.6% at the start of the twenty-first century (Figure 5). In the Pacific Islands, the natural growth rate rose after 1950 following the decline in mortality. Starting from 1.7% in 1950-1955, it stayed above 2.5% in Melanesia until the end of the twentieth century. The recent decline mainly reflects under-enumeration in the censuses and under-estimation of fertility. In the Solomon Islands, the 1999 census held during the political crisis is probably under-estimated by about 5%. The fastest natural growth was observed in Polynesia up to the mid 1960s (3.5% on average), whereupon it began an early and rapid fall, from 3.0% in 1965 to 2.5% in 1990, before dropping below 2.5%. In the territories, the rate of natural growth declined from close to 3% in 1960-1965 to below 1.5% at the start of the present century.

Lastly, compared with the mortality transition, the birth rate transition is relatively late, and that of fertility later still, since the birth rate in Polynesia and Micronesia is affected by emigration. With the exception of Fiji, Melanesia conforms to the slow transition model. Micronesia illustrates the lagged transitions of mortality and the birth rate, notably for the Marshall Islands, where fertility was still close to 8 children per woman in the early 1980s (Appendix Table A.6). In a number of countries, however, like Kiribati, fertility fell earlier though with some trend reversals, whereas the Federated States of Micronesia clearly followed a slow transition model (Appendix Table A.3).

In Polynesia the transition was faster, though the full extent of this emerges only from an examination of fertility, given the impact of migration on crude birth rates. The pattern is the same for the territories as a whole. The different types of transition are reflected in a broad range of natural growth rates that currently extend from over 2.5% in some countries of Melanesia and over 2% in Micronesia and Polynesia, to 1.5% in the territories and 0.6% in Australia and New Zealand.

VI. Nuptiality and divorce

The Pacific is well-known for its permissive sexual norms and for its traditional form of (cohabitational) union described at length in the scientific literature and in travel writing, notably in western Polynesia (Tahiti, Cook Islands, and Hawaii). Polygyny used to be practised in the Pacific and persists today as a marginal phenomenon in Melanesia (except in Fiji). Unions have been “normalized” by civil or religious marriage, but pre-marital and permanent cohabitation remains widespread in eastern Polynesia. The legacy of this cultural context is visible in present-day Pacific societies as a pattern of early and near-universal “marriage” or, more accurately, of unions.⁽¹⁶⁾

The main source of data on marriages and unions is the census, though more detailed data are available for those countries where DHS surveys have been held. Censuses in the island countries record the marriage situation as “legally married” (which includes religious marriage) or “cohabiting” with no further qualification.⁽¹⁷⁾ In the United States territories, cohabiting couples are allowed to report “the marital status they judge appropriate”, while in the French territories only legal marriage at the time of the census is recorded. Australia – as of recently – and New Zealand record *de facto* unions. These definitional differences mean that the census-based figures presented here (Appendix Tables A.4 and A.5.) are comparable between the independent countries but not with the figures for the territories.

Age at first marriage

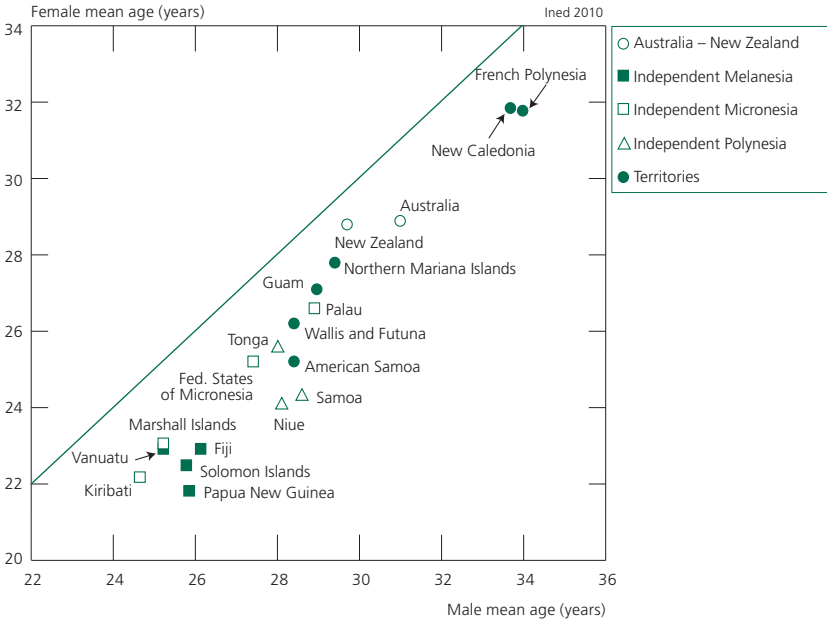
Mean age at first (legal) marriage of women in Australia and New Zealand is close to 29 years (Appendix Table A.4). This late age is the consequence of widespread extra-marital cohabitation : in New Zealand in 2001, mean age at “marriage” including *de facto* unions was 25.5 years while that of legal marriage was 30.0 years. Legal marriage is even later in the former French TOMs (32 years in New Caledonia and French Polynesia), where the European populations of the former TOMs have adopted traditional Polynesian cohabitation.

(16) The custom in Melanesia, notably in Vanuatu, was for the future wife to go to live with her husband’s family well before puberty.

(17) In the 2005 census in Kiribati, the two forms of union were treated separately.

In the island countries, in Melanesia, Kiribati and the Marshall Islands, female mean age at first “marriage”⁽¹⁸⁾ is still young, at between 22 and 23 years. It is higher in Tonga and Samoa (between 24 and 26 years) and in the Federated States of Micronesia. In Palau and the American territories of Guam and the Northern Mariana Islands, it exceeds 26 years. The situation in the territories owes much to the composition of the population, which includes large proportions of Europeans, and of soldiers and migrant workers not living with spouses.

Figure 6. Male and female mean age at first marriage, circa 2000



Source: Appendix Table A.4, population censuses.

The difference between male and female mean ages at legal marriage is around 2 years in Australia and New Zealand and in the former French TOMs. The gender gap in mean age at marriage is slightly larger in the insular subregions: it exceeds 3 years in Melanesia (except on Vanuatu) and is often between 2 and 2.5 years in Polynesia and Micronesia, except in Samoa and in Niue where it reaches 4.3 years (Appendix Table A.4 and Figure 6).

Census data for the island countries show that mean age at marriage (or cohabitation) has changed little, or has remained stable, as in Kiribati between 2000 and 2005 and in Tonga between 1996 and 2006. In Vanuatu, however, mean age at first marriage of women increased slightly (from 22.0 years in 1979 to 22.9 years in 1999) while that of men fell (from 25.8 years to 25.2 years). As well as practicing polygyny, men tended to marry late in traditional

(18) Calculated by the Hajnal method.

Melanesian society, because it took time to amass the necessary “bride price”. The modernization of lifestyles has brought a movement to earlier marriage for men and later marriage for women and the age difference between spouses has narrowed from 3.8 to 2.3 years.

Proportions of never-married women

In Australia and New Zealand, the census data relate only to married persons and cannot be used to study changes in the forms of union (marriage or cohabitation). The two developed countries of the region have seen a steep decline in nuptiality. At ages 30-34, the proportion of never-married women in Australia rose from 23% in 1996 to 29% in 2001 (Appendix Table A.5), and the movement was even more pronounced in New Zealand: 26.1% in 1996, 33.5% in 2001, and 37.4% in 2006. According to data for 2001, however, only 20% of women reported not being in a union at ages 30-34. The proportion in the cohorts reaching ages 40-49 in 2006 is close to 12%.

In the independent countries, the proportion of “never-married” women at ages 45-49⁽¹⁹⁾ is generally less than 5%, except in Niue, Tonga, and Samoa (up to 12%) where the unexpectedly high values may be due to measurement error and an imbalance in the marriage market resulting from predominantly male emigration (Appendix Table A.5). The proportions never married at ages 45-49 are higher in the US territories (at around 8%) and at Palau (10%), and they reach 18% in the Northern Mariana Islands, due to immigration by female contract workers. In the former French TOMs (except for Wallis and Futuna), the proportion exceeds 25%, a figure that reflects the absence of legal marriages rather than the absence of unions.

At young ages, a marked trend to later union formation is observed in Fiji, where it is probably related to the modernization of lifestyles. The proportion “never married” at ages 15-19 rose from 83.4% in 1976 to 86.7% in 1986 and 89.6% in 1996. It showed a linear increase between 1976 and 1996 at ages 20-24 (from 36% to 46%) and at ages 25-29 (from 13% to 18%). Permanent celibacy remains rare, however, and only 5% of women aged 45-49 are “never-married”. In Fiji, women of Indian descent are even less likely to remain “never married” (3%) than indigenous Fijian women (6%), formal marriage having earlier predominated in the Indian population whereas the Fijians had high levels of cohabitation.

The proportions of native Fijian women still “never-married” at ages 25-29 (25%) and at ages 30-34 (14%) appear excessive and are evidence that cohabiting unions are not reported in the census. According to the 1996 census, the differences between urban and rural populations in Fiji are smaller than those between ethnic groups: at ages 15-19, 12% of women in rural areas are no longer single, against 8% in urban areas, at ages 20-24 the proportions are 61%

(19) i.e. the proportion of women who never been in a union by the end of their reproductive life.

and 49% respectively, while at ages 30-34 some 12% of women in urban areas are still “never-married” against 9% of those in rural areas.

Similar changes according to urban or rural residence have probably occurred in other countries of Melanesia, though the data to explore this are not available, and any estimates would be influenced by the heavy migration to Melanesia’s urban centres.⁽²⁰⁾ In the countries in question, nuptiality changes measured by the census are biased (Booth, 2001), due notably to the change in differential migration by marital status and a recent increase in migration by women who are not, or no longer, in a union.

Sub-national disparities in marriage behaviour

The Demographic and Health Surveys (DHS) supply some indications on social differences in nuptiality timing. The median age at first “marriage” is below 20 years in the Solomon Islands and Marshall Islands (Table 4) and has varied little across cohorts. For women aged 40-49 and 25-29, respectively, it stands at 19.6 years and 20.6 years in the Solomon Islands, and 19.2 years and 20.2 years in the Marshall Islands. For men in the Marshall Islands, almost no change is observed: 21.7 years at ages 40-49 and 22.0 years at ages 25-29.⁽²¹⁾ Among these island populations, the weakness of the trend to later marriage limits the potential for fertility decline in a traditional and religious context where procreation remains the object of marriage.

Table 4. Median age at first marriage of women aged 25-49 by place of residence and level of education in countries of the region where a DHS survey was conducted in 2007

Country	Place of residence		Level of education			Overall
	Urban	Rural	No education	Primary	Secondary or above	
Marshall Islands	19.9	18.7	18.5	19.5	21.8	19.6
Solomon Islands	21.3	19.8	19.2	19.6	21.3	19.9

Sources: DHS surveys; the median age is calculated by age group, for ages where 50% or more of women are “married”.

Median age at “marriage” varies little (by 1-1.5 years) between women living in urban and rural areas. The difference by level of education is larger, however. Between uneducated women and those with at least secondary education, the difference is 2 years in the Solomon Islands and 3 years in the Marshall Islands (where there are very few uneducated women). Between women with primary education and those with at least secondary education,

(20) Some census publications (including that for Vanuatu, 1989) give marital status for the 15+ age group only.

(21) The data relating to men in the Solomon Islands appear to be of poor quality.

the disparity is only 2.3 years. Compared with differences by educational level, the differences by income are smaller: 18.6 years in the two lower quintiles and 20.1 years in the upper quintile in the Marshall Islands, and 20.1 years and 20.6 years, respectively, in the Solomon Islands.

Polygyny

The 2007 DHS survey for the Solomon Islands counted 2% of men in polygynous unions, principally at ages 35-49, where the proportion was 3.2%, against 0.9% for the under-35s. Polygyny is more frequent in rural areas (2.3%) than in urban areas (1.0%), among men educated only to primary level (2.8%) than those educated to secondary level or above (1.2%), and in the two upper income quintiles (3.0%) than in the two lower quintiles (1.2%). These findings are broadly consistent with those for women, 4.8% of whom reported having a co-wife. Such women are primarily young urban-dwellers. Having one wife in the city and another in the village appears to be a common practice in a context of large-scale internal migration with many characteristics of dual residence (Chapman, 1991).

Polygyny is also observed in Papua New Guinea and, to a much lesser extent, in Vanuatu. According to the DHS data for Papua New Guinea, 18.3% of women had polygynous partners in 2006, against 14.2% in 1996.

Divorce and separation

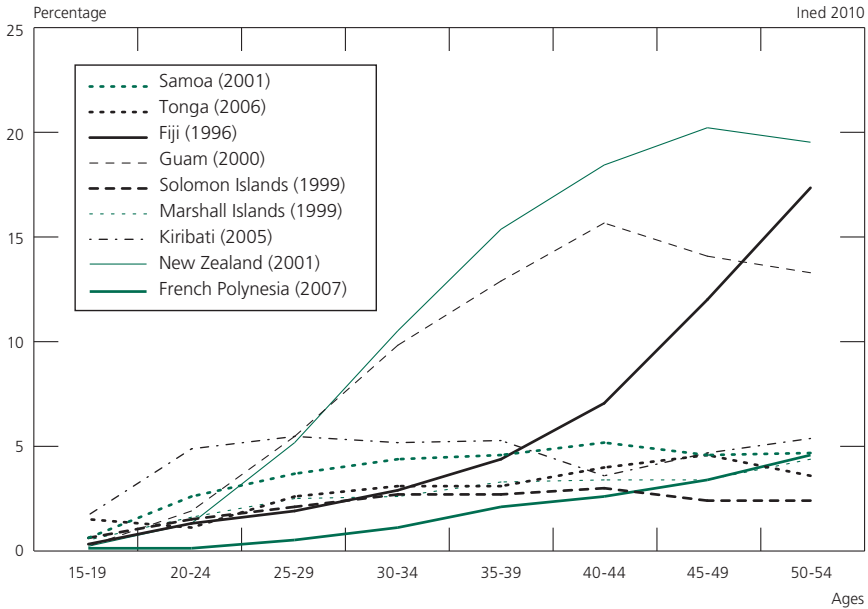
The powerful influence of religion renders divorce socially unacceptable, including among Fiji's population of Indian descent. In those countries where the census distinguishes the categories, separated women commonly outnumber divorced women several times over. This pattern could originate in high levels of cohabitation, but it is also observed at older ages where the proportion of cohabitants is smaller, attesting to a form of rejection of divorce. A detailed study of unions is needed, but surveys that capture the diversity of forms of union, including "visiting partners", are lacking.

The proportions of divorced or separated women at ages 45-49 reported in censuses are much higher in Australia and New Zealand (20%) than in the island countries (5%) (Figure 7). In Samoa and the Solomon Islands, however, higher proportions of divorced or separated women at ages 40-44 than at ages 45-54 reflect a slight increase in divorce among the younger cohorts. The sharp increase in the proportion of divorced or separated women in Fiji after age 40 comes mainly from separated women, since the proportion divorced at age 45-49 is below 2% for Fijians of both indigenous and Indian descent. Separation seems to become more frequent once the children have left the family home, and more so among Fijian women of Indian descent (15%) than among those of indigenous origin (9%).

In Micronesia, Polynesia and in Fiji, the common practice of cohabitation makes it relatively easy to form a new union shortly after separation, and for this

reason the low proportions of divorced or separated women probably reflects a widespread practice of repartnering to form a new cohabiting union.

Figure 7. Proportions of divorced or separated women who have not remarried, by age, circa 2000 (as a percentage of the age groups studied)



Sources: National censuses.

VII. Fertility: a transition in stages

Australia and New Zealand experienced a substantial baby boom after the Second World War. In 1955-1965, fertility exceeded 4 children per woman in New Zealand, and reached 3.5 in Australia. Thereafter, the decline characteristic of western countries was observed, taking fertility down to below replacement level by 1975 in Australia and by 1980 in New Zealand. The total fertility rate (TFR) is currently around 1.8 in Australia and slightly below 2 in New Zealand (Figure 8).

Fertility was traditionally lower in Melanesia than in the other two sub-regions. In the early 1960s, fertility in Polynesia and Micronesia was extremely high, favoured, as in other developing regions, by the improvements in health care of the post-war period. According to United Nations data (Appendix Table A.6), fertility here was generally around 7 children per woman, though when the own-children method⁽²²⁾ is applied to the censuses of 1961-1971 for

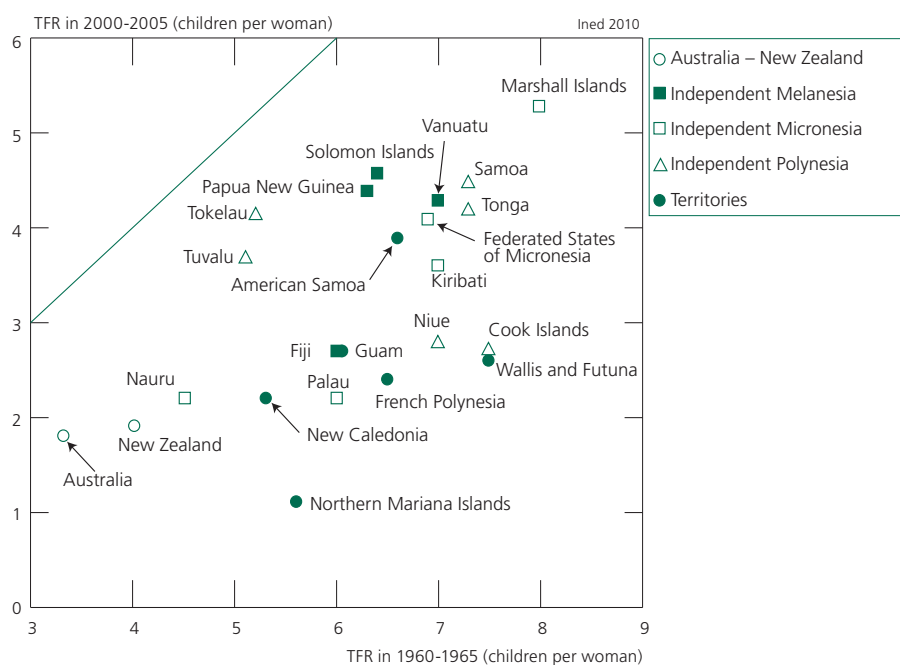
(22) The own-children method (OCM) matches the children living in the household to the women in the household from the information contained on the household record card, and makes an overall correction for the unmatched children.

Samoa and those of 1973 for the Marshall Islands and for Palau, the TFRs are frequently above 8 children per woman in the 1950s and 1960s (Levin and Retherford, 1986).

Fertility trends

Between 1960-1965 and 2000-2005, the fertility decline was general across the region (Figure 8). However, in six countries (Papua New Guinea, Solomon Islands, Vanuatu, Marshall Islands, Samoa and Tonga), fertility remained above 4 children per woman and fell less in relative terms than in the other countries. Fertility levels were similar across the countries of Melanesia (except for Fiji) in 2000-2005, but large differences remained in Polynesia (3.5-4.4 children per woman) and especially in Micronesia (where TFR varied from 1.9 to 4.5).

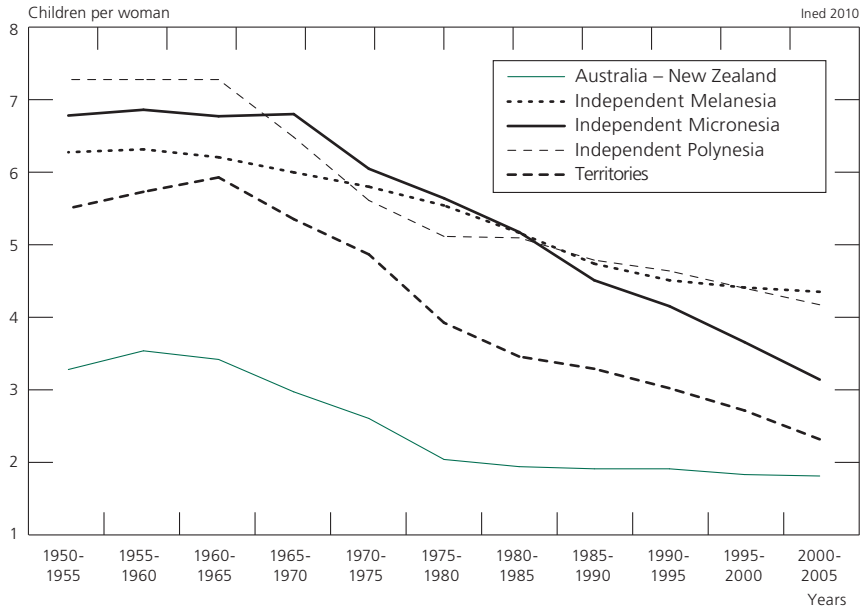
Figure 8. Total fertility rates from 1960-1965 to 2000-2005 in the countries and sub-regions of Oceania



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

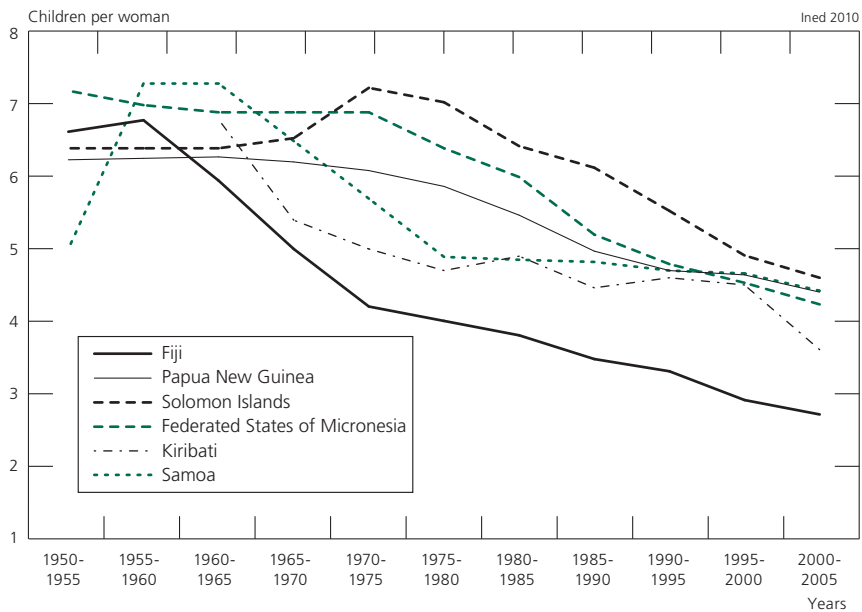
The specificity of the region is more apparent when fertility trends are examined (Figures 9a and 9b). The moderate levels of fertility in Melanesia appear clearly, as does the late onset of fertility decline, notably in the Solomon Islands where fertility in the 1970s was very high (7.3), well above the earlier estimates, whereas in Papua New Guinea, fertility was at a moderate and virtually stable level until the early 1970s. The same stability was observed in Micronesia, and persisted until 1975 in the Federated States of Micronesia though it was followed by a sharp fall.

Figure 9a. Total fertility rates in the sub-regions between 1950 and 2005



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

Figure 9b. Total fertility rates in selected countries between 1950 and 2005



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

In the Marshall Islands, fertility levels were even higher (with estimates of 7.6 children per woman in the first half of the 1980s) and took even longer to decline, though the subsequent rapid fall, combined with accelerating outmigration, took the TFR to 4.0 in 1992-1993, since when it has stabilized at around 4.5 (DHS, 2007). The atolls of Kiribati and Tuvalu, at that time part of the Gilbert and Ellice Islands colony, were the only countries with experience of a family planning programme in the late 1960s, which reduced fertility there to 4.5 by 1974-1978 (Levin and Retherford, 1986). But the Catholic Church used its influence to halt the programme after Kiribati gained its independence, and by 1980-1985 fertility had climbed back to 5.0, then hovered around 4.5 up to the end of the century (Booth, 1994). In 2000-2005, the TFR was down to 3.6 children per woman.

Fertility declined earlier and faster in Polynesia than in the other sub-regions. Towards the end of the 1960s, the population pressure resulting from a natural increase of over 3% per year was threatening the demographic equilibrium of the tiny islands with their limited natural resources. Initiatives by the former colonial powers to encourage contraceptive use brought a rapid decline in fertility, coinciding with the increase in emigration. From the 1970s, however, fertility stabilized at 4.5-5.5 children per woman before starting to fall again, more slowly, from the mid 1980s. It currently stands at 4.0-4.5. Only on the Cook Islands did fertility decline more, though it has since stabilized and a slight recovery has been observed in recent years, an outcome encouraged by the government in response to the spectre of depopulation associated with emigration. Like Kiribati, Tuvalu, a country composed of atolls and populated by Polynesians, also saw a relatively early fall in fertility, with a TFR of 3.7 children per woman in 1998-2002 and 3.9 in 2003-2007, according to the 2007 DHS survey.

For the territories as a group, relatively early and regular fertility decline took hold from the 1960s. The fertility transition is complete in the French territories, most recently in Wallis and Futuna, and in the North Province of New Caledonia where the population is predominantly Melanesian (TFR 2.2 in the mid 2000s), with only the Loyalty Islands Province maintaining a fertility of 2.65 children per woman. In the American territories, fertility is higher under the impact of migration by Samoans to American Samoa (TFR 3.9) and of Asians and Micronesians to Guam (2.7), and lower in the Northern Mariana Islands (1.1) due to large-scale immigration by female Asian contract workers.

The demographic transition is not complete in any of the sub-regions, and for Polynesia and some countries of Micronesia (where fertility is around 4 children per woman) it is more accurate to speak of an interrupted transition or transition by stages. Besides those of the French territories, two other populations have completed the transition. The first is Palau, where the TFR was 2.03 in 1995-2000 and today stands at 1.9. Second, fertility among the

Indians in Fiji has been below replacement levels since 1998 (1.9 in 2004), and their TFR dropped to 1.7 in 2002 in the aftermath of the 2000 coup. The fertility decline has been later and slower for indigenous Fijian women than for those of Indian descent, since the former's TFR was still 3.5 in 1995-1999 and around 3.3 in 2000-2004. The model of a slow or even interrupted transition also seems to apply to Fiji's Melanesian population. Traditionalist and religious groups have used their influence to encourage a high level of population growth, originally to provide a counterweight to the Indian population, latterly to compensate for the effects of emigration and to ensure future flows of migrants and remittances, as seen in the Polynesian countries of the Central Pacific.

In comparison with the fertility decline in the world's other insular regions, the Pacific appears to be lagging behind in terms of both average and extreme levels of fertility. The highest fertility in the Caribbean is observed in Haiti (3.55 children per woman) and in Jamaica (2.67), and of the sixteen Caribbean countries for which United Nations data are available, nine have completed their fertility transition. Fertility in Cuba and Barbados is 1.5 children per woman, and in Trinidad and Tobago it is 1.6 (Guzman et al. 2006). In the Indian Ocean, the highest fertility is in the Comoros (4.2) and the lowest in Mauritius (1.9).

Among the Pacific Island countries, fertility is below replacement level only on Palau and among the Indian population of Fiji, while in ten of the fifteen countries (excluding territories) fertility exceeds 3.5 children per woman.

Age-specific fertility

The age-specific fertility rates in the island countries are estimated using indirect methods and must be treated with caution. The best estimates are probably those obtained with the own-children method (OCM, see footnote 22) based on census data. In the case of adolescent girls, however, measuring fertility is complicated by the large numbers of children who are fostered – 'adopted' in the traditional sense – or simply raised by their grandmother, because their mother has gone to live in a town or city. If the mother then omits to report her children in the census, this has a direct effect on estimation by the Arriaga method⁽²³⁾, as it does on the own-children method.

The increase in migration from rural to urban locations increases bias, and the fertility decline for adolescent girls, notably in urban areas, is almost certainly overstated. In other countries, adolescent fertility has often been observed to rise in a context of urban migration and greater freedom in personal behaviour. The same phenomenon is probably also present in the Pacific region, since although there is a strong tradition of permissiveness, certain families with strong religious

(23) The Arriaga method is based on the number of children born to each woman, as reported in the census, whether or not they are living with her. It therefore suffers from omission and non-response bias.

beliefs have more conservative attitudes. Differences are also observed between eastern Polynesia, where norms are highly permissive, and central Polynesia, where they are much less so, though this does not preclude high fertility among teenage girls within the setting of traditional early marriage.

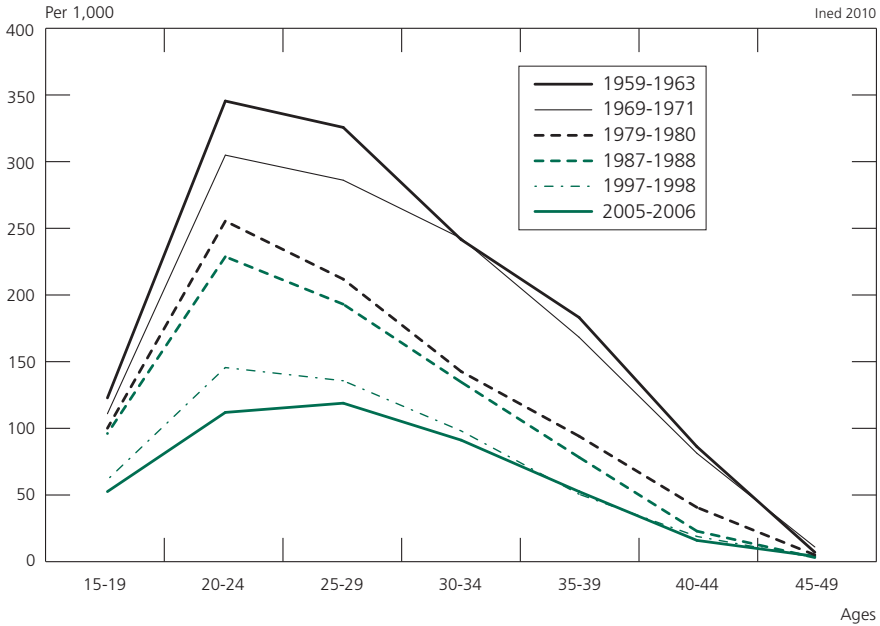
In Tonga, childbearing before age 20 has been in retreat since the 1950s and the rates are 30-40% lower than in Samoa. Adolescent fertility in the Marshall Islands is higher on the 2007 DHS survey data (age-specific fertility rate at ages 15-19 of 138 per 1,000) than in the 1999 census (94 per 1,000), though since many adolescent girls refused to reply to the survey, the DHS result may be biased. On Tuvalu, the survey data and those from the census are consistent. In the Solomon Islands, the DHS puts fertility of adolescent girls at 67 per 1,000 in 2003-2007, against a figure of 72 per 1,000 in the 1999 census. In all three countries, according to DHS data, adolescent fertility in rural areas is 75-100% higher than in urban areas, a difference probably over-estimated due to non-reporting of children by adolescent girls who migrate to towns and cities.

The trend in age-specific fertility rates can be followed closely by using the civil registration data for French Polynesia, where over 85% of the population is Polynesian. The fertility transition appears to follow the classic model. Until the mid-1970s, the fall in rates is mainly at higher ages, reflecting a reduction in family size, whereas the fall is slight at ages below 25, conspicuously so for ages 15-19 (Figure 10a). Thereafter, the rates decrease in parallel; from the late 1980s the fall is greater at ages 20-29 and 15-19, while rates at higher ages stabilize due to postponement of childbearing to later ages.

In Fiji, fertility rates at ages 15-19 and 20-24 are slightly higher for Fijian women than for those of Indian descent (Figure 10b). But while the latter's fertility drops rapidly after age 25, for the indigenous Fijians births are most numerous at ages 25-29. At ages 30-34, their fertility rates are almost three times that of Indian women. While the decline in fertility between 1996-1998 and 2003-2004 is practically identical at all ages for Indian women, it occurs chiefly around ages 20-24 for Fijian women. Adolescent fertility has declined much faster among Indian than Fijian women, under the effect of the trend towards later marriage for the former and the persistence of high extra-marital fertility for the latter.

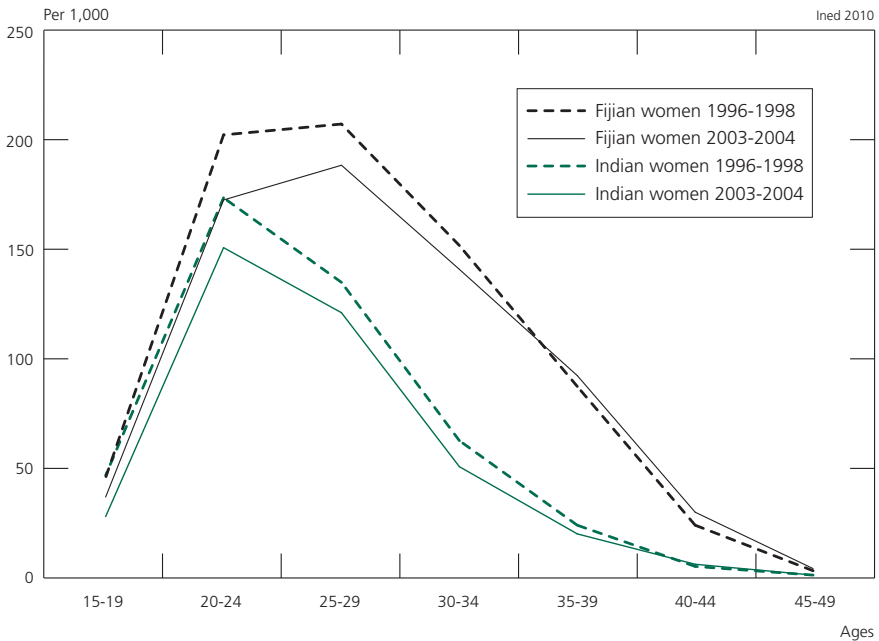
In Kiribati, fertility before age 25 fell between 1991-1995 and 1996-2000 and the decline accelerated in 2001-2005 (Figure 10c). The rise in the rates after age 25 between 1991-1995 and 1996-2000 is probably related to changes in contraceptive use and to church influence, notably that of the Catholic Church, as was the case in the 1970s. The fertility decline resumed in the 2000s, further to implementation of reproductive health programmes associated with the Millennium Development Goals (MDG). This would explain the fall in fertility for women below age 25 even though the mean age at first marriage is unchanged.

Figure 10a. Age-specific fertility rates in French Polynesia, 1959-2006 (per 1,000)



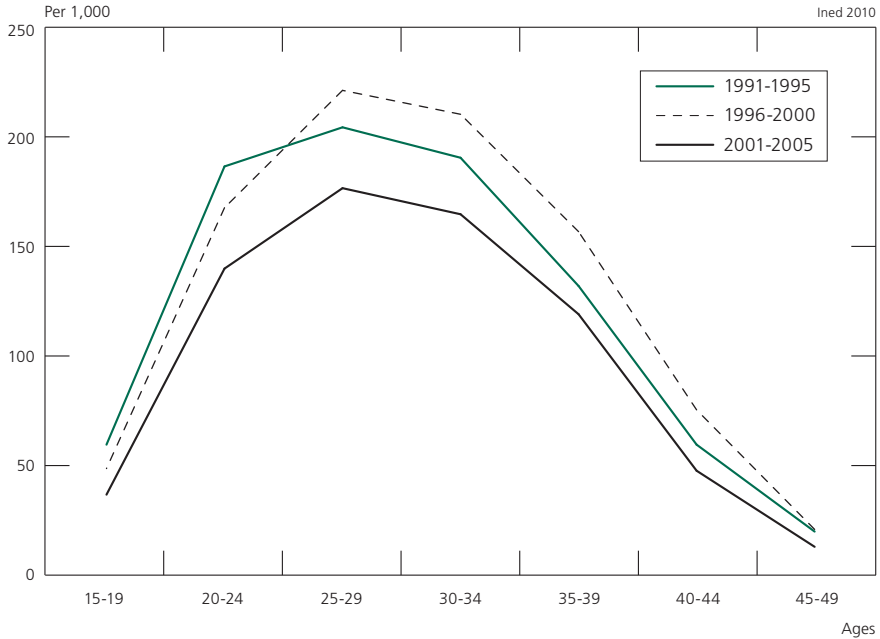
Sources: Rallu, 1980; Baudchon and Rallu, 1993; Institut de statistiques de Polynésie française (ISPF).

Figure 10b. Age-specific fertility rates in Fiji between 1996-1998 and 2003-2004 (per 1,000)



Sources: author's calculations based on recorded births and on estimated intercensal populations (Fiji Island Bureau of Statistics, FIBOS, personal communication).

Figure 10c. Age-specific fertility rates in Kiribati in 1991-1995, 1996-2000 and 2001-2005 (per 1,000)



Sources: Kiribati censuses 1995, 2000, and 2005; own-children method, personal communication from M. Levin.

Table 5. Fertility by place of residence (urban/rural) and educational level of mothers in selected countries of the region (children per woman)

	Source	Overall	Place of residence		Mothers' level of education		
			Urban	Rural	No education/primary	Secondary	Higher education
Kiribati	2003-2005 Census 2005*	3.5	3.8	3.0	-	-	-
Marshall Islands	2004-2007 DHS 2007	4.5	4.1	5.2	4.4	4.7	3.2
Solomon Islands	2004-2007 DHS 2007	4.6	3.4	4.8	4.9	3.8	-
Tuvalu	2004-2007 DHS 2007	3.9	4.2	3.7	3.5	4.3	2.8

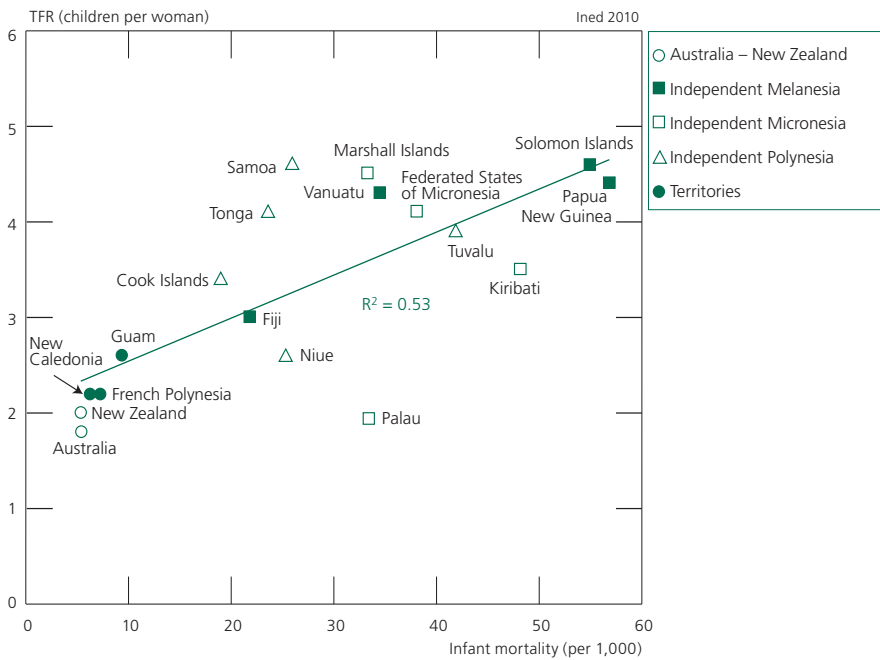
* Own-children method.
Source: M. Levin, personal communication.

Data on fertility by urban or rural area and by educational level are available only in the DHS surveys (although the own-children method was applied to the entire population for the census in Kiribati in 2005). The urban-rural fertility differential is large: close to 1 child in the Marshall Islands and in Kiribati, 1.4 in the Solomon Islands (Table 5). This difference is reversed in Tuvalu, but under an expansive definition the entire atoll of Funafuti (where the capital is located) is treated as an urban area. In addition, fertility in rural areas is distorted by the absence of men who are working as sailors on merchant ships.

Social and spatial diversification of fertility

The fertility differentials by educational level follow the familiar pattern of decreasing fertility with increasing education, while the lower fertility observed in the Marshall Islands and in Tuvalu for women with no education or with no more than primary education is probably not significant given the very small proportions they represent in the two countries. Between the secondary and higher educational levels, the fertility differential exceeds 1 child per woman, the same as that observed in the Solomon Islands between the primary and secondary levels (Table 5).

Figure 11. Relation between total fertility rate and infant mortality rate in 2005



Source: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

Human development, fertility, and infant mortality

The Human Development Index (HDI) is available for only six island countries: Papua New Guinea, Fiji, Solomon Islands, Vanuatu, Samoa, and Tonga. We have not calculated the correlations for such a small number of countries, and for the countries with data no clear relationship is discernible between the index and fertility. Fertility in the Polynesian countries with a high HDI in 2005 (Tonga and Samoa) remains fairly high, and close to that of the Melanesian countries with a low HDI (Papua New Guinea, Solomon Islands, Vanuatu). Fiji alone combines a high HDI and low fertility (Appendix Tables A.6 and A.14).

For the region as a whole, the correlation between infant mortality and fertility is high, but for the independent island countries it is weak ($R = 0.37$) and not statistically significant (Figure 11). The reasons for this are the same as above, namely that in the most developed countries of Polynesia and Micronesia, where infant mortality is relatively low, fertility is still relatively high and only slightly lower than in the less developed countries of Melanesia where infant mortality is persistently high.

VIII. The proximate determinants of fertility: still poorly understood

In the 2007 DHS surveys, the median age of women at first intercourse is between 17 and 18 years in the Solomon Islands and the Marshall Islands (Appendix Table A.7), and median age at first childbirth is around 21. The median interval between the last two births is over 30 months, reflecting the fact that these births include high-order births and hence a higher proportion of women using contraception than for women of reproductive age as a whole. The intervals between the first two births are much shorter, as are those between marriage and first birth, since conception and, in some cases, birth may occur before marriage. The proportion of women in the Marshall Islands aged 15-19 who have a child or are pregnant is especially high (26%).

Contraceptive prevalence is under-estimated in the island countries. The data are derived from health service statistics that do not take into account the distribution of contraceptives by non-governmental organizations (NGOs). The data in Appendix Table A.8 must therefore be treated with caution. The main methods of contraception are female sterilization, contraceptive injections and implants. The pill, the intra-uterine device (IUD), and condom are seldom used, with rarely more than 2% of female users. Note also that funding for contraceptives does not feature in most health budgets, due to pressure from religious groups. Contraceptives are supplied by the United Nations Fund for Population (UNFPA) and the NGOs.

Redistribution of contraceptives (including condoms) from central hospitals to health centres on outlying islands and in the rural areas of the large islands is erratic, with the result that stocks run out, thus making contraceptive practice

less effective. The paradoxical situation arises in which a substantial proportion of the contraceptives supplied reach their expiry date before they can be used. Because measurement of contraception is incomplete, no correlation is observed between fertility and contraception ($R = 0.10$).

The other reproductive health indicators are not usually available for the island countries or for the territories. The DHS surveys are the only source for the “unmet contraceptive demand” indicator.⁽²⁴⁾ Widely used as a proxy for this indicator are the fertility rates of adolescent girls, and these rates, despite being under-estimated, are high in most countries of the region due to low contraceptive prevalence. Teenage girls are reluctant to attend the health centres where they often face a hostile reception, since pre-marital sexual activity is frowned upon. The UNFPA has had to campaign for youth-friendly reproductive health services in most countries of the region.

Abortion

The influence of religious groups in political life is such that the Pacific Islands and territories have always refused to consider liberalizing abortion, and this remains the case today, except in the territories. The abortion law that came into effect in France in 1975 (Veil Act) was finally applied in the three former overseas territories in 2001. Similar difficulties were experienced in the United States territories, which until recently witnessed attempts, including by parliamentarians and governors, to restrict legal abortion to cases where there is a threat to the woman’s life or health.

Abortion remains illegal in the island countries. Fiji alone considered legalizing it, in 2006, as a result of pressure from international organizations. However, in most of the countries, though subject to restrictions in four of them, abortion may be legally performed when the woman’s life or, in some instances, her physical or mental health is at risk (Table 6). For many years, pressure from religious groups ensured that abortion on any grounds remained prohibited. It is only recently that this position has begun to evolve, with a move towards a degree of tolerance intended to protect the woman’s life and in some instances her health, rather than towards a legally sanctioned right. Abortion on other grounds remains illegal, including in cases of foetal impairment or rape. The latter, moreover, is inadequately recognized by the legal systems of the island countries. Illegal abortion is widely practised in Fiji and doubtless in other islands too, and often involves the use of traditional methods that seriously endanger the health or life of the woman. Few of those concerned have the resources to travel to another Pacific country for an abortion, with the exception of the most well-off, who may go as far as New Zealand.

Abortion law in Australia varies from one state to another. Abortion to preserve the woman’s health is sanctioned everywhere, though the maximum

(24) The UNICEF Multi Indicators Cluster Surveys (MICS) sometimes include a measure of unsatisfied contraceptive demand.

gestational age ranges from 14 to 24 weeks, while in some states the woman's economic situation is also taken into account. The most liberal law is that of the Australian Capital Territory (ACT) where abortion is fully legalized.

New Zealand authorizes abortion to preserve the woman's physical or mental health, and in cases of foetal impairment or incest. Other situations can be taken into consideration (rape, woman's age) but they are not mentioned in the provisions for legal abortion. Except in cases where the woman's life is at risk, abortion is not authorized beyond 20 weeks of gestation.

Table 6. Situations where abortion is legally authorized in each country, circa 2007

Country	1	2	3	4	5	6	7	8	9
Australia ^(a)	X	X	X	X		X	X		X
New Zealand	X	X	X	(X)		(X)	(X)		X
American territories	X	X	X	(X)		(X)	(X)		(X)
French territories	X	X	X	X	X	X	X		X
Independent Melanesia									
Fiji	X	X	X	X					
Papua New Guinea	(X)	(X)	(X)						
Solomon Islands	(X)								
Vanuatu	X	X	X						
Independent Micronesia									
Federated States of Micronesia	X								
Kiribati	X								
Marshall Islands	(X)								
Nauru	(X)	(X)	(X)						
Palau	X								
Independent Polynesia									
Cook Islands	X	X	X						
Niue	X								
Samoa	X	X	X						
Tonga	X								
Tuvalu	X								
1. To save the pregnant woman's life. 2. To preserve the woman's physical health. 3. To preserve the woman's mental health. 4. For economic or social reasons. 5. On request. 6. In case of rape. 7. In case of incest. 8. Spousal authorization required. 9. In case of foetal impairment. (X) with restrictions. (a) The law varies between the different states. In practice, abortion is tolerated. Sources: United Nations Population Division (2007); World Abortion Policies, 2007; Wikipedia consulted 25.06.2009 (http://en.wikipedia.org/wiki/Abortion_law), for countries not covered in the previous source.									

IX. Overall mortality: generally slow progress

Mortality is the variable for which data are the least reliable and where most caution is needed when interpreting estimates. With the possible exception of the Cook Islands, Niue and Tokelau, civil registration of deaths is rarely complete in the independent countries. Recording of infant deaths is of better quality, however, since it is frequently based on health centre registers, while in Polynesia the majority of births take place in hospital. Estimates of overall mortality and life expectancy in the island countries are usually based on indirect estimates derived from censuses which are heavily biased in emigration countries. Life expectancy is estimated from data on survival of parents, yet for many inhabitants of emigration countries, these parents are living in other Pacific Rim countries. In Melanesia, recorded ages are very inaccurate and affect the results obtained. In fact, reliable mortality data exist only for the territories⁽²⁵⁾ and for Australia and New Zealand. For western Melanesia, the data for earlier periods are simple estimates, as no information is available for periods before the 1960s, or even the 1970s. Maternal mortality can be estimated only from the 1990s onwards. Data concerning AIDS are very incomplete since few countries perform tests or keep accurate records of AIDS-related deaths.

Large disparities within the region

In Australia and New Zealand, life expectancy stagnated at slightly over 70 years between 1955 and 1970, improving more slowly than in the countries of western and northern Europe though at a similar pace to the United States. Thereafter, the positive movement accelerated, taking life expectancy to 80 years in the 2000s.

Life expectancy in Melanesia, with the exception of Fiji, was still low in 2000–2005 (Table 7 and Appendix Table A.9). According to the 1999 census, it was only a little over 60 years in the Solomon Islands and around 65 years in Vanuatu. It was 59 years in Papua New Guinea, and was expected to decrease as a result of the AIDS epidemic.

The 2005 census found that life expectancy in Micronesia, specifically in Kiribati, was only 61 years, and had remained at a standstill for over a decade, mainly as a consequence of infectious diseases and the emergence of non-communicable diseases. Life expectancy in the Federated States of Micronesia and in the Marshall Islands remains well below 70 years.

Life expectancy is slightly above 70 years in the countries of Polynesia – except in Tuvalu and in the territories, where it is about 75 years – and slightly lower in French Polynesia and in American Samoa.

(25) Civil registration for the Melanesian population of New Caledonia was still incomplete in the early 1970s.

Table 7. Change in life expectancy since 1950, maternal mortality and HIV prevalence in 2008, by sub-region

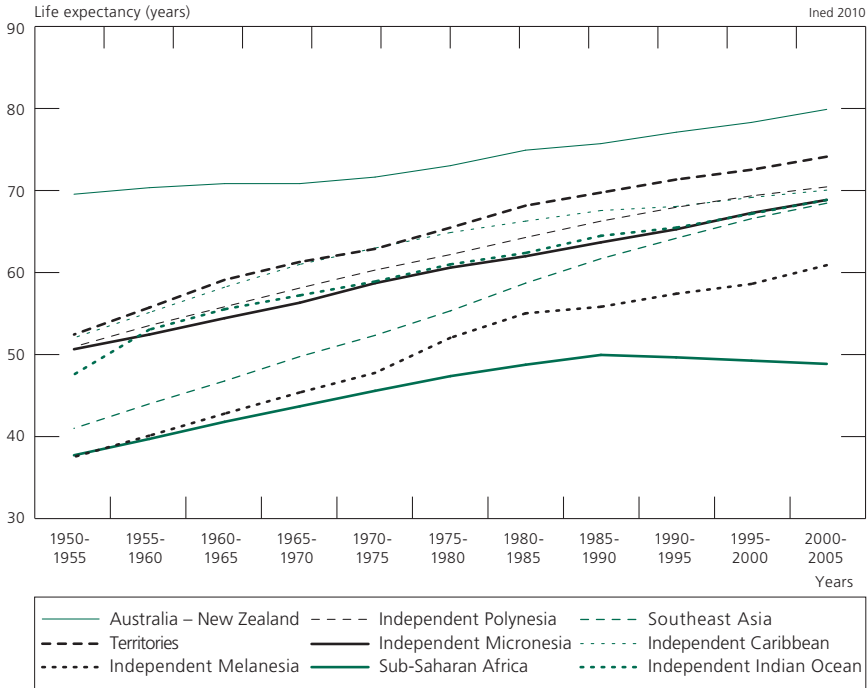
Sub-region	Life expectancy (years)				Maternal mortality rate 2000-2005 ^(a)	HIV prevalence (%) end 2008 ^(b)
	1950-1955	1970-1975	1990-1995	2000-2005		
OCEANIA	60.4	65.8	72.3	74.4	–	0.40
Australia – New Zealand	69.6	71.7	77.4	80.2	–	0.18
Independent Melanesia	37.8	47.7	57.1	60.7	610	1.50
Independent Micronesia	50.6	58.2	64.5	67.6	206	0.04
Independent Polynesia	50.3	59.5	67.5	70.4	56	0.01
Territories	52.4	62.9	71.4	74.1	–	0.09
Sub-Saharan Africa ^(c)	37.5	45.4	48.8	47.6	870	5.0
<i>o/w independent Indian Ocean</i>	47.5	58.9	65.5	68.8	139	–
Latin America and the Caribbean ^(c)	51.4	60.9	68.6	72.0	170	0.5
<i>o/w independent Caribbean</i>	52.0	63.0	68.1	70.1	78	1.2
South Asia ^(c)	38.4	50.5	60.0	62.7	490	0.3
Southeast Asia	40.9	52.3	64.2	68.5	300	0.4
Arab World and Middle East ^(c)	43.4	54.6	65.7	69.5	102	0.3

^(a) Number of maternal deaths per 100,000 live births.
^(b) Men and women aged 15-49. The HIV prevalence rate measures the proportion of HIV-infected persons, whether or not they have AIDS.
^(c) Regions as defined in Guzman et al., 2006; Tabutin and Schoumaker, 2004 and 2005; Véron, 2008.
 –: Data not available.
Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008; WHO 2008 and UNAIDS/WHO, http://data.unaids.org/pub/GlobalReport/2008/jc1510_2008_global_report_pp211_234_en.pdf consulted 6 April 2010; ^(a) WHO 2007; ESCAP 2009.

Compared with the other sub-regions of Oceania and the other world regions, the improvement in life expectancy has been smallest in Melanesia. Life expectancy at birth was level with that in South Asia and sub-Saharan Africa in the 1950s but began to lag behind in the 1970s, although the improvement was still faster there than in sub-Saharan Africa (Table 7 and Figure 12). While no AIDS-induced reversal in the life expectancy trend – like that in Southern and Eastern Africa – has been observed, this reversal is expected to occur in Papua New Guinea. In the 1950s, life expectancy in Micronesia was similar to that of Polynesia but subsequent improvement was slower, notably in Kiribati and in the Federated States of Micronesia (Appendix Table A.9). Life expectancies in Micronesia and Polynesia were slightly below those of the Caribbean and the Indian Ocean, but they closed the gap with these regions in the 1990s (Figure 12).

The most marked improvement is observed in the French territories, where life expectancy progressed from 50 years in 1950-1955 to almost 75 in the 2000s, and moved into line with Guam. In the 1950s, life expectancy in Fiji was similar to that in the former French overseas territories but the pace of improvement was slower.

Figure 12. Life expectancy between 1950-1955 and 2000-2005, by sub-region



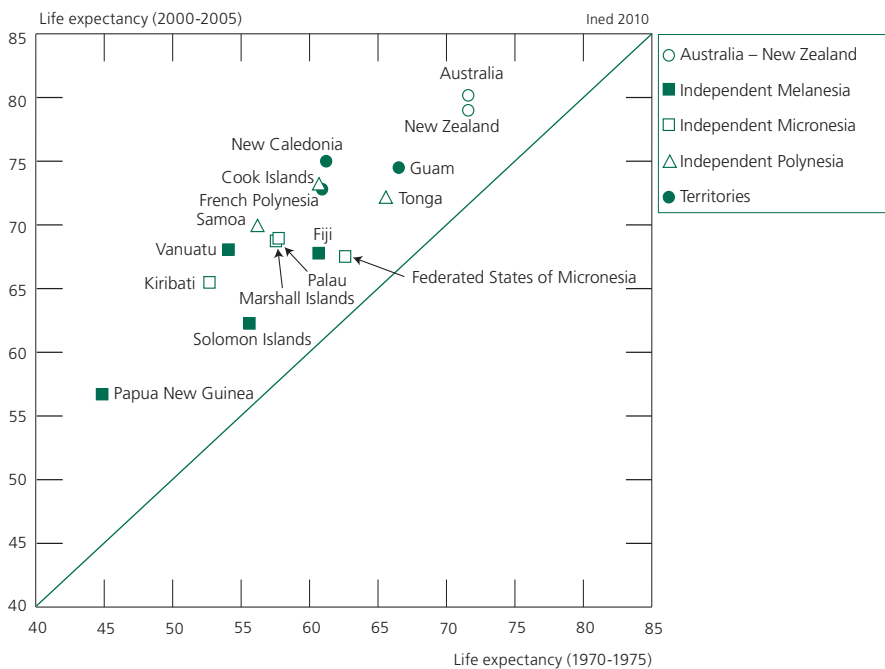
Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

Between 1970-1975 and 2000-2005, the life expectancy gain was 14 years in Papua New Guinea, Vanuatu, Samoa, and in New Caledonia and French Polynesia. The improvement was 7 years in Fiji, 8 years in the Solomon Islands and Guam, and only 5 years in the Federated States of Micronesia and in Tonga (Figure 13). Over the last ten years, life expectancy has stagnated in several countries, notably Kiribati, Fiji, Palau, and the Marshall Islands, to mention only those with the most reliable data.

Contrasting progress in the epidemiological transition

The wide variation in life expectancy levels in Oceania reflects the different stages reached in the epidemiological transition. Cause-of-death data are a recent innovation (dating from fifteen years ago in the former French territories), especially in Fiji, where incomplete registration means that they are not available for all deaths. In the other countries, cause-of-death records are being introduced at the central hospitals, but these data are too few to be nationally representative. Western Melanesia (Papua New Guinea, Solomon Islands, and Vanuatu) is the only sub-region affected by malaria, but tuberculosis

Figure 13. Life expectancy between 1970-1975 and 2000-2005 in the main countries and sub-regions



Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

is endemic throughout the Pacific Islands. In the highest mortality countries (Western Melanesia, Kiribati, Federated States of Micronesia, Marshall Islands), infectious diseases still account for a large proportion of deaths, though a growing number are caused by non-communicable diseases, notably cardiovascular disease, cancer, and diabetes. In Melanesia, these latter causes of death tend to be confined to the social elites and urban populations, but they are already very widespread in the Marshall Islands, the Federated States of Micronesia, and, to a lesser extent, in Kiribati. In Polynesia, despite a continued high prevalence of infectious diseases, obesity has emerged as the number-one health concern: a majority of the population aged 15 or over has a body mass index (BMI) in excess of 30, which is associated with a sharp rise in the incidence of diabetes, high blood pressure, cardiovascular disease, and cancer. Information and prevention campaigns have recently been set up, since the cost of these diseases could soon outstrip total health budgets. These costs are already making deep inroads into the funding intended for primary health care and reproductive health, a worrying development given the very slow pace of decline in maternal and infant mortality and in infectious disease mortality.

Sex differentials in mortality

The data for French Polynesia reveal an excess female mortality at the childbearing ages in the Pacific up to the late 1950s. A similar situation was observed for the Maori population of New Zealand (Rallu, 1980), persisting until recently in Vanuatu (Booth, 1985) and doubtless in other countries of Melanesia too. These are also the countries where the sex differentials in life expectancy are small: the mortality advantage for women is only one year in Papua New Guinea, the Solomon Islands, and the Federated States of Micronesia, where maternal mortality remains high. In most countries, the difference in favour of women is between 2 and 4 years. The territories, the Cook Islands, Tonga, Nauru and Palau are characterized by a larger excess male mortality, with life expectancy differences of 5 years or more. These countries are also among those with the highest incidences of non-communicable diseases and of male mortality from external causes (accidents). Suicide rates among young people are high in Samoa, the Federated States of Micronesia, among the Indian population of Fiji and, more recently, in Guam. They are higher at these ages for women than for men in Samoa and among the Indians in Fiji (Booth, 1999; 2010). Note that female suicide is often linked to the practice of arranged marriage.

Maternal mortality

In such small populations, maternal mortality is subject to large random fluctuations. Data have existed only since the 1990s and in some instances the indicators have been calculated on a single year. In the absence of long series it is not possible to calculate more robust quinquennial averages. Data quality is uneven, especially as the mother's situation must be observed for 42 days after the birth in order to determine maternal mortality. Even in the countries where a high proportion of deliveries are performed in a hospital environment, the connection between a mother's death and the birth of her child is not always recorded. Surveys are the only source of data in the large rural countries of western Melanesia.

Maternal mortality is highest in Melanesia (600 per 100,000 births), intermediate between the levels in South Asia and in sub-Saharan Africa (Table 7 and Appendix Table A.10). Maternal mortality is also high in Micronesia but much less so in Polynesia where levels appear to be below those recorded in the Caribbean. However, the variability of the results gives some idea of the degree of uncertainty: according to the 1996 DHS survey in Papua New Guinea, the maternal mortality rate stood at 370 deaths per 100,000 births, yet the 2006 DHS survey gave a rate of 733 per 100,000 births, a disparity probably due to the improved quality of the survey and a change in the question wording. In the Solomon Islands, where less than half of all births are recorded by the health services, the estimate was 550 per 100,000 in 1992 and 295 per 100,000 in 2003. Rates of above 300 per 100,000 are also found in the Federated States

of Micronesia, and between 150 and 200 per 100,000 in Kiribati. It is therefore difficult to assess actual trends and the real prospects for achieving the MDG target of a fourfold reduction in maternal mortality. Waiting houses, where women with high-risk pregnancies can stay during the weeks leading up to birth have been established by international organizations. Not all high-risk pregnancies can be identified in advance, however, and the isolation of the rural populations makes it difficult and costly to organize competent and effective emergency services.

AIDS: a worrying and poorly understood situation

The only sub-region of Oceania with a high prevalence of HIV/AIDS infection is Melanesia, and only in Papua New Guinea has HIV testing begun on a large scale. The level of prevalence is similar to that in the Caribbean sub-region, higher than in South and Southeast Asia, but considerably lower than in Africa. In Papua New Guinea, however, the rates are still rising.⁽²⁶⁾

Until recently, the indicators of sexual behaviour that are useful in the fight against AIDS were lacking in the island countries. However, the indicators relating to knowledge of modes of transmission and protection against HIV are becoming available thanks to the DHS surveys and awareness surveys among young people in a number of countries. The HIV prevalence rates are considerably under-estimated due to the small number of tests performed, and the proportion of infected people with access to retroviral treatments is unknown. The indicator based on “condom use for high-risk sexual intercourse” is available in the recent DHS surveys when the relevant module of the questionnaire has been included, a point that has to be negotiated with the national authorities for each survey.

The threat of HIV infection is a very real one given the traditionally liberal approach to sexual behaviour among the populations in urban areas and in parts of Polynesia and Micronesia. Yet despite the campaigns by regional and international organizations, condom use remains limited due to the strong pressure exerted by the churches. A refusal to acknowledge HIV infection has long been the norm in these countries and HIV screening tests are still not widely practised. This was the case in Papua New Guinea, which has recently recognized HIV as a major health problem and organized testing campaigns. Prevalence rates observed in the tested populations are between 1.2% and 1.8% (Table 8 and Appendix Table A.10), indicative of an epidemic that is no longer confined to high-risk groups but affects the population as a whole, in which the virus is transmitted mainly through sexual contact, outside the context of prostitution, and against a background of frequent sexual violence.

For the other countries, the specialists consider that the true figures are much higher than the official ones (Rallu and Ahlburg, 1999; Rallu and

(26) UNAIDS, AIDS Epidemic Update 2009, http://data.unaids.org/pub/FactSheet/2009/20091124_FS_oceania_en.pdf

Ahlburg, forthcoming). The position is different in the territories, where health services test more frequently. As a result, the territories have the highest rates (between 0.1% and 0.2%) after Papua New Guinea. The other most affected countries are Tuvalu and Kiribati. Many of the large numbers of men who migrate from these countries as contract labour on merchant shipping become infected as a result of poor information and non-use of condoms. The prevalence rate among sailors and their spouses is even higher and is starting to be recognized as a public health problem. In these countries and territories the sex ratio of infected persons is unequal (200-600 men for 100 women), which in a context of low overall prevalence indicates that the epidemic remains confined primarily to high-risk groups (that include sailors). In the other countries, the sex ratio of infected persons, albeit calculated on seriously under-estimated numbers, is more balanced, consistent with transmission occurring primarily through sexual contact with multiple partners.

Population projections (Hayes, 2007) suggest that AIDS mortality will reduce life expectancy in Papua New Guinea by 2.0 years for men and 2.3 years for women in 2010, and by 5.0 and 5.8 years in 2015, assuming an increase in the prevalence rate from 1.6% in 2007 to 5% in 2012⁽²⁷⁾ (compared with a projection with no AIDS). The rate of natural increase in this case would be 1.9% (instead of 2.0%) in 2010 and 1.6% (instead of 1.8%) in 2015.

Table 8. Sexual practices among the 15-24 age group in the Solomon Islands and the Marshall Islands

	Solomon Islands		Marshall Islands	
	Males	Females	Males	Females
Age 15-19				
Number of partners	6.1	3.1	–	–
High-risk sexual practices* (%)	99	68	96	60
Condom use (%)	30	13	21	10
Age 20-24				
Number of partners	9.3	4.3	–	–
High-risk sexual practices* (%)	69	30	53	26
Condom use (%)	22	22	23	8
* “with a person other than a spouse or cohabiting partner” under the DHS definition. Source: DHS 2007.				

(27) This projection appears to overstate the rise in the prevalence rate; it is based on the recent very rapid rise resulting from the higher number of tests performed since 2007.

Given the sparsity of data, it is almost impossible to assess the MDG target of reversing the trend in the AIDS epidemic and, in view of the reluctance to implement international recommendations, there is every reason to fear that the epidemic will spread. A first “Pacific Regional Strategy on HIV 2004-2008” yielded negligible practical results and has been followed by a second “Pacific Regional Strategy on HIV and other STIs 2009-2013”. There is an urgent need for action, however, to judge from the observed sexual habits of young people aged 15-24. The DHS survey for the Solomon Islands indicates that sexually active young women had on average between 3.1 and 4.3 partners in the previous 12 months (Table 8). In addition, a majority of adolescent girls engage in high-risk sexual intercourse,⁽²⁸⁾ in which condom use is low. The situation is even more worrying as regards men at these ages, even though condom use seems more common. High-risk intercourse among young people is slightly less frequent in the Marshall Islands, but condom use is lower than in the Solomon Islands.

X. Child mortality and health

Except in the Solomon Islands and Marshall Islands where DHS surveys were recently conducted, complete data from civil registration and health ministry sources are not available, so infant mortality is estimated by indirect methods based on census data. The data from recent DHS surveys are more precise, though in some instances seriously under-estimated. The neonatal mortality rates come from the DHS surveys or from the estimates of the Institute for Health Metrics and Evaluation (IHME).

Uneven progress in infant mortality

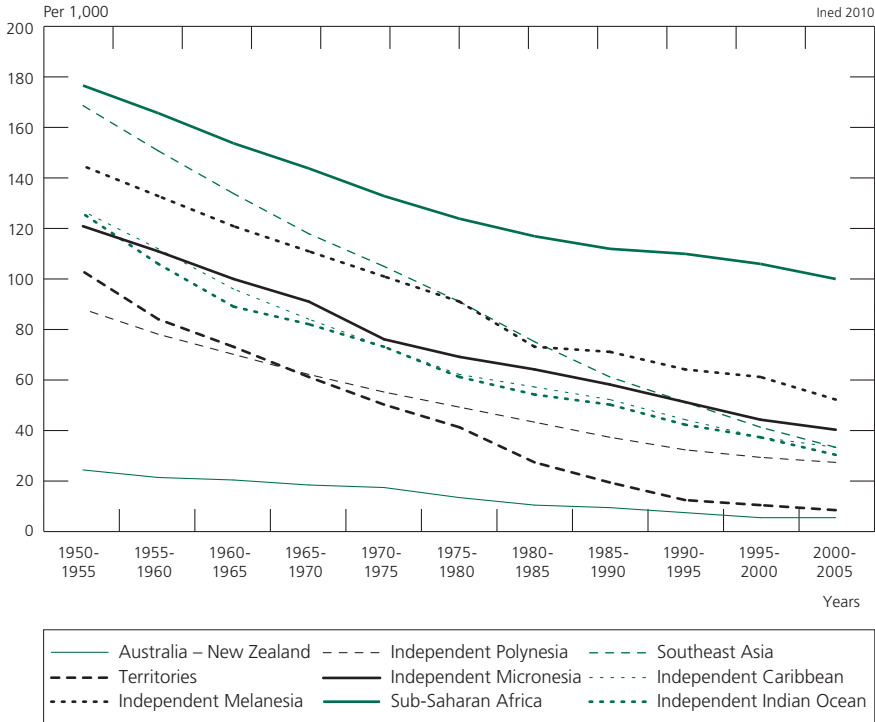
Comparison with the other world regions is distorted because of the outdated and unreliable estimates for the Pacific Islands (Figure 14).

Infant mortality in Australia and New Zealand has followed a trend similar to that of the other industrialized countries (slightly over 20 per 1,000 in the 1950s; 5 per 1,000 in 2006). The decline was slower than in northern Europe, however, and since 1970 the rates have been similar to those of France.

In Melanesia, infant mortality in the 1950s was high, in excess of 140 per 1,000, and since the 1970s it has not declined as fast as in Southeast Asia. Rates in Micronesia are higher than in the Caribbean, while in Polynesia they are lower (Table 9). In the 1960s, the level of infant mortality in Polynesia was close to that in the territories, though its subsequent decline was slower. Since 1990, infant mortality in the territories has declined in parallel with that of Australia and New Zealand, although the rate itself is higher (8 per 1,000 against 5 per 1,000 in 2000-2005).

(28) Defined in the DHS as “not with a spouse or cohabiting partner”.

Figure 14. Infant mortality by sub-region, between 1950-1955 and 2000-2005



Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

The variations in infant mortality across the Pacific closely mirror those in life expectancy, i.e. high infant mortality in the countries and sub-regions where life expectancy is low, and vice versa (Table 9 and Appendix Table A.9). Additional detail is needed to complete the picture, however. Infant mortality in Vanuatu (30 per 1,000) is only just over half the level in Papua New Guinea and the Solomon Islands (above 55 per 1,000), though both are archipelagos comprising large islands with similar proportions of rural population and the same levels of malaria. The rural population of Vanuatu, however, lives closer to health centres than that of the Solomon Islands. In Micronesia, infant mortality remains high, at between 10 and 55 per 1,000, while rates in Polynesia are below 33 per 1,000, and in many cases below 20 per 1,000 (according to statistics from the health services).

Infant mortality trends by country between 1970-1975 and 2000-2005 show a substantial decline, usually in excess of 50% (Figure 15). This is the case notably in the territories, and in Fiji, Samoa, Vanuatu, Australia and New Zealand. The decline is around 30% in Tonga, the Federated States of Micronesia, Papua New Guinea, and the Solomon Islands, though initial mortality levels

**Table 9. Infant mortality since the 1950s
by sub-region of Oceania and by region of the world**

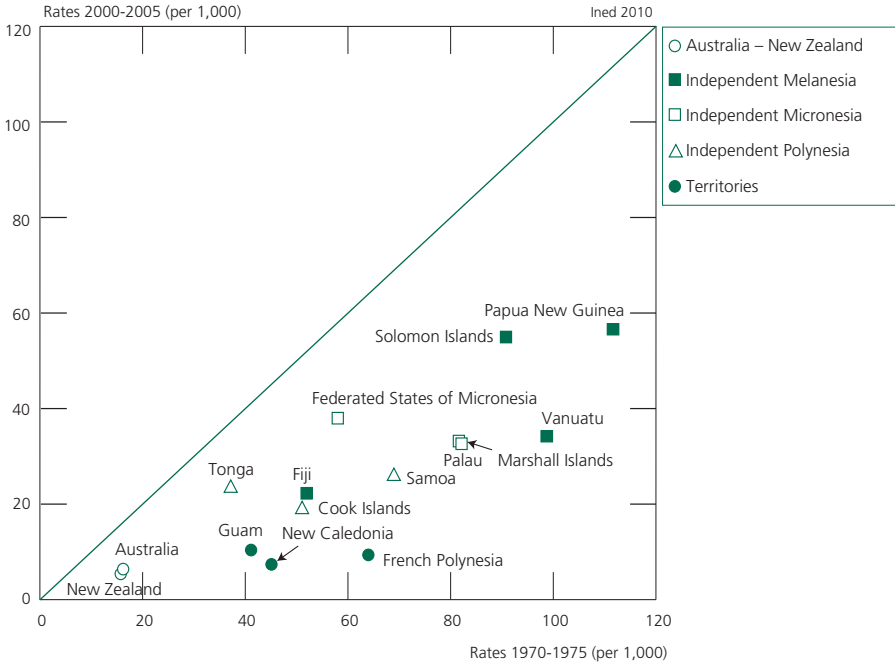
Sub-region	Infant mortality rate (‰)				Change (%)		
	1950-1955	1970-1975	1990-1995	2000-2005	1950-55 to 1970-75	1970-75 to 1990-95	1990-95 to 2000-05
OCEANIA	61	44	29	26	-28	-33	-13
Australia – New Zealand	24	17	7	5	-32	-59	-27
Independent Melanesia	145	102	64	52	-30	-37	-19
Independent Micronesia	120	76	52	40	-37	-32	-23
Independent Polynesia	91	58	32	25	-36	-45	-22
Territories	105	51	14	9	-51	-73	-32
Sub-Saharan Africa ^(a)	177	133	114	106	-25	-15	-7
<i>o/w independent Indian Ocean</i>	126	77	42	30	-39	-46	-29
Latin America and the Caribbean ^(a)	126	81	38	25	-36	-53	-33
<i>o/w independent Caribbean</i>	127	73	44	33	-43	-40	-24
South Asia ^(a)	170	122	79	65	-29	-35	-18
Southeast Asia	169	105	51	33	-38	-52	-35
Arab World and Middle East ^(a)	195	123	54	37	-37	-56	-31

^(a) Regions as defined in Guzman et al., 2006; Tabutin and Schoumaker, 2004 and 2005; Véron, 2008.
Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

were sharply contrasted. In the large rural countries of Melanesia, with the exception of Vanuatu, infant mortality has fallen more slowly. In Vanuatu, the rate fell from around 100 per 1,000 in 1970-1975 to 35 per 1,000 in 2000-2005 but remained at around 65 per 1,000 in Papua New Guinea and the Solomon Islands. Although infant mortality has declined sharply, it remains higher than in Southeast Asia, and the figures in Melanesia and Micronesia are closer to those for South Asia (Attané and Barbieri, 2009).

A more detailed examination of this period shows that since the second half of the 1990s or early 2000s infant mortality has remained virtually unchanged in several countries for which health service data are available, principally the emigration countries of Polynesia plus Fiji. The rates supplied by the health services of individual countries, though still slightly underestimating infant mortality, are 16 per 1,000 in the Cook Islands, 12 per 1,000 in Tonga, 10 per 1,000 in Palau, and around 16 per 1,000 in Fiji. The Marshall Islands continue to present higher levels, of around 33 per 1,000. To bring down infant mortality rates to below 15 or 20 per 1,000 requires levels of infrastructure and skilled personnel that are difficult for these countries to achieve. The technical constraints of infrastructure are compounded by large losses of qualified medical staff through emigration. By contrast, it is thanks to modern equipment and trained personnel, some foreign-recruited, that rates of around 7-8 per 1,000 have successfully been reached in the territories.

Figure 15. Infant mortality rates between 1970-1975 and 2000-2005 in the main countries and sub-regions



Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

Marked changes in under-five mortality

Few data are available on the components of infant mortality and on under-five mortality. The Institute for Health Metrics and Evaluation (IHME) has published estimates for the 1970s and subsequent years for Australia, New Zealand, Fiji, Papua New Guinea, and Vanuatu. The DHS surveys are a source of recent data for the Solomon Islands, Marshall Islands, and Tuvalu, although the DHS results for the Solomon Islands are thought to be substantially underestimated.

Post-neonatal mortality (28 days to 12 months) and child mortality (ages 1-5) are often linked to infectious diseases and have both improved faster than neonatal mortality (age 0-1 month). As well as being more susceptible to infectious diseases, newborns are also affected by endogenous causes of death that are harder to eradicate and demand technically more advanced medical care. In 1970, post-neonatal mortality was still higher than neonatal mortality in Papua New Guinea and Vanuatu, but the situation was reversed from the 1980s onwards. Between 1970 and 2000, post-neonatal mortality, starting from similar initial levels, fell by 68% in Vanuatu and by only 43% in Papua New

Guinea,⁽²⁹⁾ while neonatal mortality fell by 46% and 21%, respectively, over the same period. The gap has thus widened considerably: post-neonatal mortality remains at very high levels in Papua New Guinea (28 per 1,000), almost double that in Vanuatu (15 per 1,000), which is itself three times higher than in Fiji (5 per 1,000).⁽³⁰⁾ The same relative differences are observed for mortality at ages 1-4, which ranges from 25 per 1,000 in Papua New Guinea to 11 per 1,000 in Vanuatu and 4 per 1,000 in Fiji. Large differences are also observed for mortality in the neonatal period: 29 per 1,000 in Papua New Guinea, 20 per 1,000 in Vanuatu, and 8.5 per 1,000 in Fiji.

Small sex differentials

Given the lack of information on sex in the data used for indirect estimates of infant mortality, statistics on the mortality of boys and girls are not generally available, with the exception of a few countries or those where a DHS survey has recently been conducted. Although these results do not reveal any large differences between the sexes, the ratio between the male and female rates, for which the usual value is about 0.8 (Hill and Upchurch, 1995), is often around 0.9 or higher, pointing to an unusually small mortality advantage for girls. While boys are more highly valued than girls in societies where the strength and safety of the group in the pre-colonial past depended on how many warriors it had, and where polygyny is still practised today (notably in Melanesia), girls are also valued because it is they who guarantee the reproduction of the population.

Large variations between countries in levels of healthcare

Reproductive health is an area that accurately reflects a country's health situation and its level of development. Infant mortality is closely correlated with the quality of healthcare services as measured by several indicators used for the MDGs: antenatal care, attendance of skilled personnel at childbirth, and vaccination against measles. Growth retardation has a negative impact on children's school performance and therefore on the educational level of the population, which is also a factor in development, though data on this point are scarce for the Pacific region.

The DHS survey data must at times be used with caution. The 2007 DHS survey for the Solomon Islands gives the proportion of deliveries attended by skilled health personnel as 85%, while the Ministry of Health's statistics that cover only about half of births put the figure at 72%. Data on vaccination coverage also fluctuate widely. The proportion of children vaccinated goes up following a campaign, but it does so only temporarily, either because the campaign is not continued or because it does not lead to a stable practice of

(29) For Papua New Guinea, estimates stop in 1993 and are followed by IHME projections.

(30) The differences relative to Fiji may be smaller. This is because the IHME estimates give an under-five mortality lower than that observed in Fiji, with 17 per 1,000 against 22 per 1,000 in 2001 (and even 26 per 1,000 in 2006 according to health ministry data); the infant mortality rate oscillates between 16 and 18 per 1,000 over this period.

Table 10. Infant and child mortality, antenatal care, delivery conditions, measles vaccination and child malnutrition by sub-region in 2000-2005

Sub-region	Probability of dying (%) ⁽¹⁾		Percentage of births without antenatal care ⁽²⁾ (circa 2005)	Percentage of deliveries not attended by skilled health personnel ^(a) (circa 2005)	Percentage of children aged 0-2 vaccinated against measles ⁽²⁾ (circa 2005)	Percentage of children under-5 with severely stunted growth ⁽²⁾ (2004-2007)
	Age 0-1 (2006)	Age 0-5 (2006)				
Australia – New Zealand	5	6	0	1	92	–
Independent Melanesia	51	68	23 ^(a)	40	65	12 ^(c)
Independent Micronesia	40	51	5 ^(b)	11	77	13 ^(b)
Independent Polynesia Territories	22	27	–	3	71	–
	9	11	–	–	–	–
Whole region	25	32	–	–	–	–

Sources: ⁽¹⁾ UNESCAP <http://www.unescap.org/stat/data/syb2008/4.1-Child-health.xls> consulted 01/07/2009; ⁽²⁾ MDG Database <http://www.unescap.org/stat/data/syb2008/index.asp> consulted 01/07/2009; national MDG Reports when data missing in the MDG database. ^(a) Papua New Guinea: DHS 2006; ^(b) Marshall Islands: DHS 2007; ^(c) Solomon Islands: DHS 2007, weight for age below the critical threshold defined as “the mean minus two standard deviations”.

vaccination. Such situations have been observed in the Marshall Islands and in Fiji over the last decade.

Access to antenatal and postnatal health care is near universal in Australia, New Zealand, and in the territories, though the latter are not included in the MDG database. The contrasts in under-five mortality between the three sub-regions are also found in the reproductive health indicators. The proportion of births with no antenatal care is four times higher in Melanesia than in Micronesia (Table 10 and Appendix Table A.11). In Papua New Guinea, nearly half of deliveries are not attended by skilled health personnel, and the same is true for at least 28% of deliveries in the Solomon Islands. However, the situation is more favourable in Vanuatu (12%). Access to healthcare is also problematic in Micronesia, notably Kiribati and the Federated States of Micronesia, where over 10% of deliveries are not attended by skilled personnel. In Polynesia, both antenatal care and attended births, though not universal, are at very high levels: births without antenatal care or not attended by skilled personnel account for 2-5% of the total, depending on the country.

The variations in measles vaccination coverage are less marked, though Melanesia is clearly lagging behind the other sub-regions in this respect (Table 10).

Data on child health are available for a few countries and most frequently report 10-15% of children suffering from stunted growth. Food shortages are not commonly a problem in the Pacific, and the large islands of Melanesia have adequate resources to feed their populations. But malnutrition is common in the most disadvantaged urban populations, where it also affects children. The total proportion of children with growth retardation in the three Pacific sub-regions is less than half that observed in Southeast Asia, however. Lastly, it is disturbing to observe that the two largest countries of Melanesia are those where the medical indicators are lowest.

XI. Age structures and the “demographic window”

Past fertility, mortality and migration trends combine to determine the age-sex structure of populations indicated by median age, sex ratios and dependency ratios.

Because of the specific structure of their post-transition population, Australia and New Zealand have a median age of 36. The territories have a median age of 28, while the island countries of the three sub-regions have a very low and almost identical median age (between 20 and 21). The only region with a lower median age is sub-Saharan Africa.

Sex ratios

With a sex ratio close to 100, Oceania has an approximately equal number of men and women, like Southeast Asia (see Table 11). The Australia-New

Zealand zone is the only sub-region to have marginally more women than men, with a ratio of 98.5 men for every 100 women, significantly higher than the ratio commonly observed in developed countries (94.3/100). This is because immigration (predominantly male) partially offsets the effects of greater female longevity. Sex ratios are high in the island countries and territories because of immigration (particularly military immigration in Guam), but lower than in East Asia and South Asia. Until recently, emigration in Micronesia and Polynesia was chiefly male (sex ratios above 100). In Melanesia, there is an undercount of older women in censuses (sex ratios are above 150 from 50 onwards), which partly accounts for the sex ratio above 100.

Old-age and youth dependency ratios

Australia and New Zealand have already completed their demographic transition and have entered a period of population ageing, with the number of people aged 60 and above (approximately 17%) almost matching the number of people aged 0-14 (approximately 20%). This brings the dependency ratio to

Table 11. Indicators of age-sex structures by sub-region in 2005

Sub-region	Median age of the population (years)	Percentage aged under 15	Percentage aged 60+	Dependency ratio (%) ^(a)	Sex ratio (%) ^(b)
Oceania	32.2	25.0	14.0	63.9	99.9
Australia – New Zealand	36.4	20.0	17.4	59.7	98.5
Independent Melanesia	20.0	39.7	4.4	78.9	103.5
Independent Micronesia	21.3	36.7	5.5	73.0	102.1
Independent Polynesia	20.3	39.1	7.5	87.3	105.1
Territories	27.6	27.9	8.3	56.7	103.1
Sub-Saharan Africa	18.0	43.5	4.8	93.4	98.9
<i>o/w indep. Indian Ocean</i>	26.5	29.7	7.9	60.2	99.7
Latin America and the Caribbean	26.0	29.8	9.0	63.4	97.5
<i>o/w indep. Caribbean</i>	27.0	29.3	10.1	65.1	99.2
East Asia	33.4	20.9	12.4	49.9	105.4
South Asia	23.2	33.9	7.0	69.2	106.7
Southeast Asia	26.0	29.3	8.0	59.5	99.5
Arab World and Middle East				65.3	
East	23.5	32.9	6.6		104.0
World	28.0	28.3	10.3	62.9	101.6
Developed countries	38.6	17.0	20.1	59.0	94.3

^(a) The sum of 0-14 year-olds and over 60 year-olds divided by the number of people aged between 15 and 59.
^(b) Ratio of males to females expressed as a percentage.

Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects 2008.

around 60% (see Table 11 and Appendix Table A.12). Dependency ratios are similar to those observed in developed countries, although the proportion of young people remains above that of older people. Dependency ratios in the territories are similar to those observed in Australia and New Zealand. In terms of the proportion of young people (28%) and older people (9%), they are currently in an intermediate stage between Australia and New Zealand, on the one hand, and the island countries on the other.

In the island countries, the proportion of children aged 0-14 is close to 40%, while the proportion of older people is around 5% and the dependency ratios are the highest in the world after sub-Saharan Africa – i.e. above 80% in Melanesia and up to 95% in Polynesia (mainly because of emigration). Dependency ratios in Polynesia have remained almost stable over the last two or three decades because of relatively constant migration and fertility. They are above those of Melanesia, where fertility remains higher.

Compared with other insular regions, the proportions of young people in the Pacific and each of its sub-regions are higher than in the Caribbean and the Indian Ocean (approximately 10 percentage points), though the region also has a lower proportion of older people. The dependency ratios are still well above those of the Caribbean or the Indian Ocean (80% versus less than 65% and 60%), however, because of the high proportion of young people.

Population pyramids reflecting contrasting histories

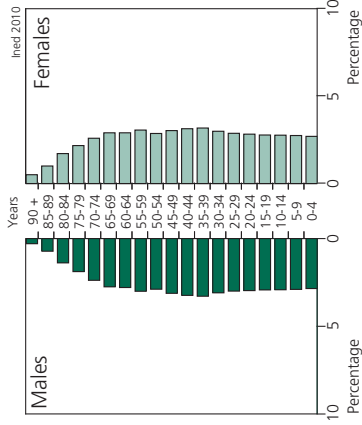
In 1950, the population pyramid of Australia and New Zealand was characterized by the depleted cohorts of the 1930s depression, immigration (particularly young adults) and a relatively wide base caused by the baby boom (Figure 16). The population pyramids of the Pacific Island countries are typical of young populations undergoing rapid demographic growth. The pyramids of Micronesia and Polynesia have a wider base than that of Melanesia because of higher fertility rates and that of the territories is also young. The significant distortion for young male adults is due to the military presence in Guam.

The base of the Australia-New Zealand population pyramid was narrower in 2005 because of a decline in fertility. The baby-boom generations created a characteristic bulge among adult generations, further swollen by immigration. While Melanesia's pyramid has remained relatively unchanged since 1950, the numbers at the base have tended to stabilize in Micronesia and Polynesia, where emigration (which began in the 1960s) caused a narrowing at around age 20 – a characteristic trend of emigration countries (bottle-neck shape). The base of the pyramid tends to narrow in the territories and slight net emigration is observed among adults aged 20-34. The numbers at older ages are higher due to immigration of middle-aged adults.

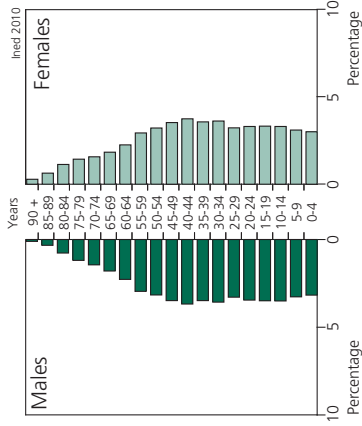
By 2030, the trend towards ageing indicated by the Australia-New Zealand pyramid will not be accompanied by a significantly narrower base since fertility rates should remain close to replacement level and immigration levels are

Figure 16. Population pyramids of independent sub-regions and territories in 1950, 2005 and 2030

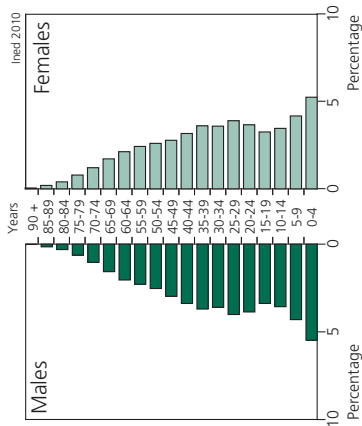
A. Australia-New Zealand 2030



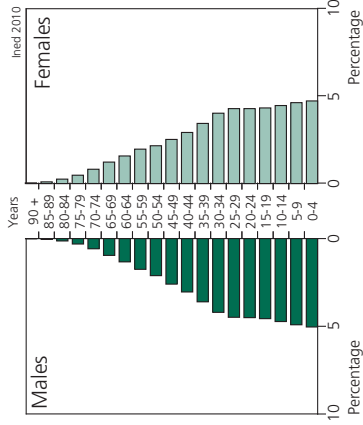
A. Australia-New Zealand 2005



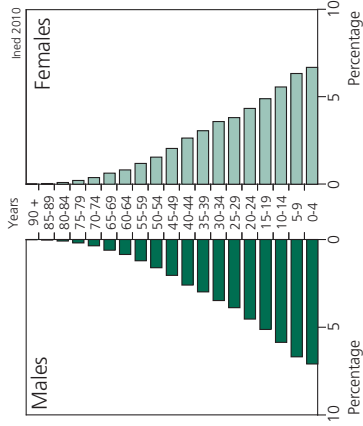
A. Australia-New Zealand 1950



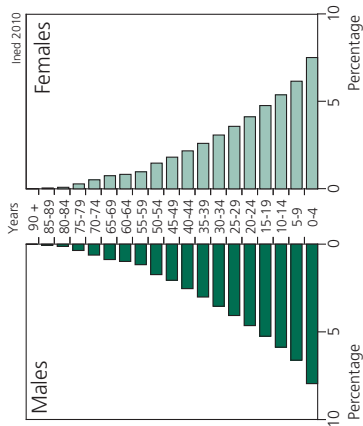
B. Melanesia 2030



B. Melanesia 2005

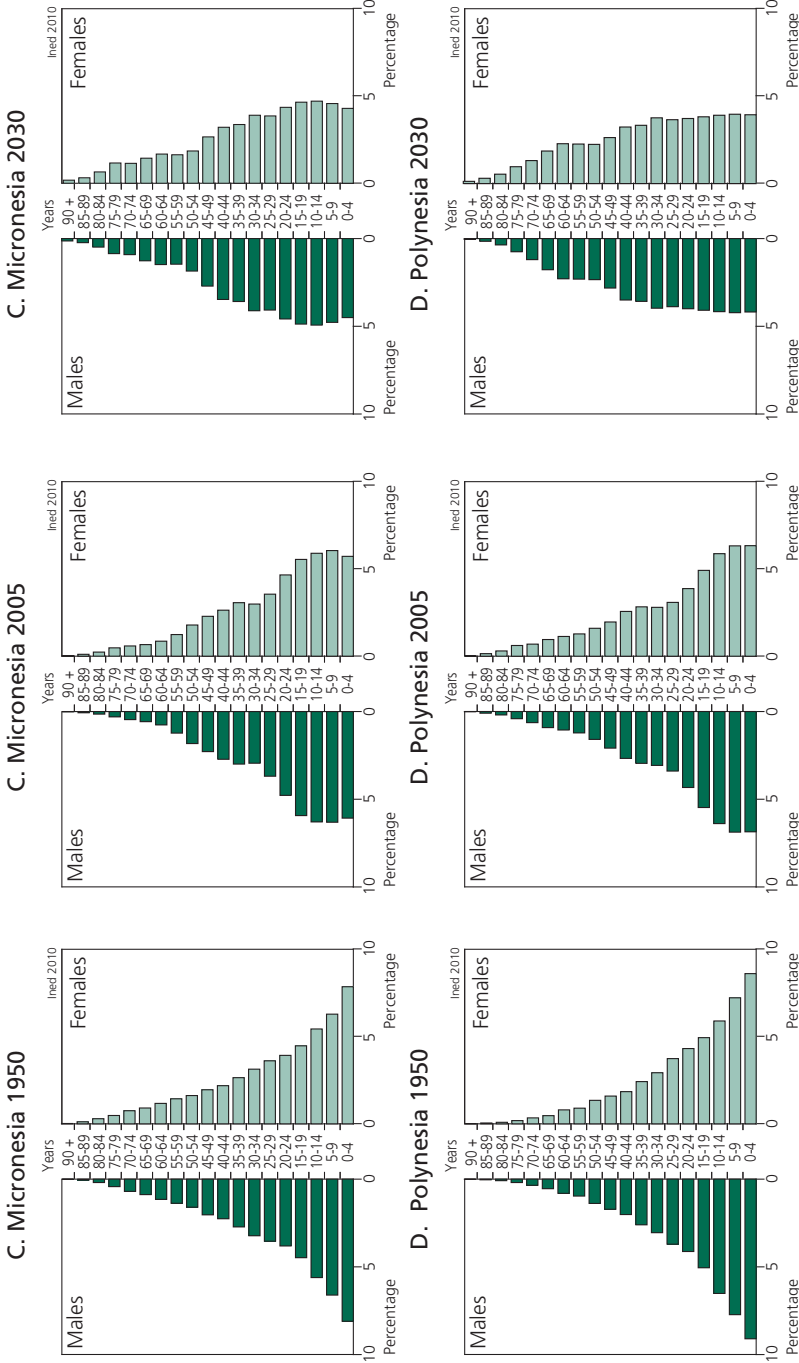


B. Melanesia 1950



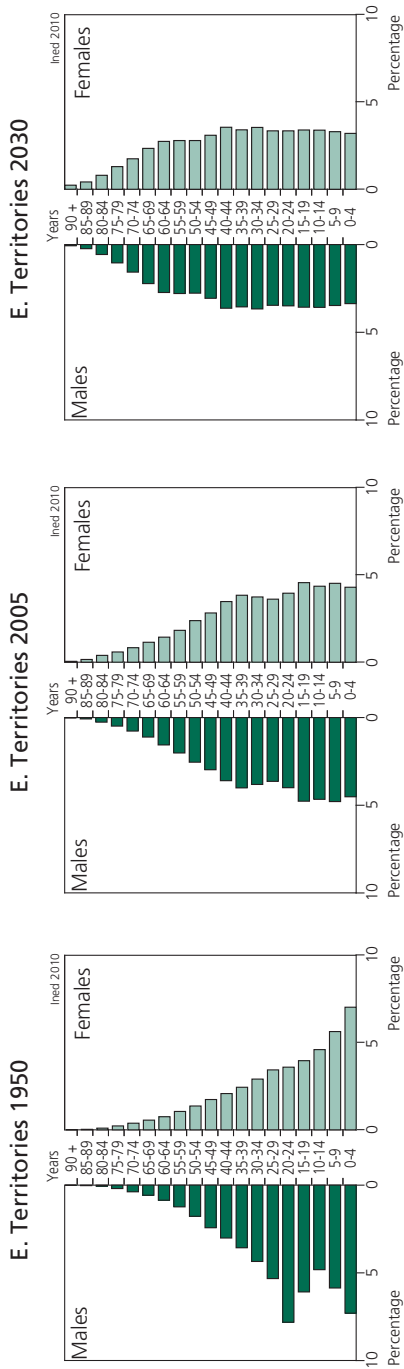
Sources: United Nations, Department of economic and social affairs (UNDESA), World Population Prospects 2008.

Figure 16 (cont'd). Population pyramids of independent sub-regions and territories in 1950, 2005 and 2030



Sources: United Nations, Department of economic and social affairs (UNDESA), World Population Prospects 2008.

Figure 16 (cont'd). Population pyramids of independent sub-regions and territories in 1950, 2005 and 2030



Sources: United Nations, Department of economic and social affairs (UNDESA), World Population Prospects 2008.

expected to remain high. The territories have a similar profile, though projections remain unreliable because of frequent changes in the intensity and direction of migration.

In the other sub-regions, projections need to be interpreted with caution in view of the assumptions upon which they are based. In Melanesia, the hypothesis of a levelling-off of fertility close to the replacement rate is based on UN projected fertility rates of between 3.9 and 4.1 children per woman in different countries for the 2005-2009 period, while recent DHS surveys point to fertility levels in the sub-region of 4.5 children per woman. The projected speed of fertility decline also needs to be viewed with a degree of caution in chiefly rural countries where the influence of the church and chieftainships remains strong. Projecting future trends is also difficult in the case of small populations affected by high migration levels, such as Polynesia and Micronesia. Recent history indicates that the demographic structure of Polynesia has undergone very little change over the last two or three decades. The shift of the bottle-neck towards older adult ages by 2030 and its near disappearance in the 20-29 age group appears to be linked to projected migration rates that do not reflect the concentration of departures in the 18-24 age group over the last few decades. It is these departures which have maintained the characteristic structure of the population pyramids of Polynesia and Micronesia up to the present. The current migration model is expected to continue, resulting in a continued narrowing at around ages 20-25 in Polynesia, and in all likelihood in Micronesia, although flows there are less regular.

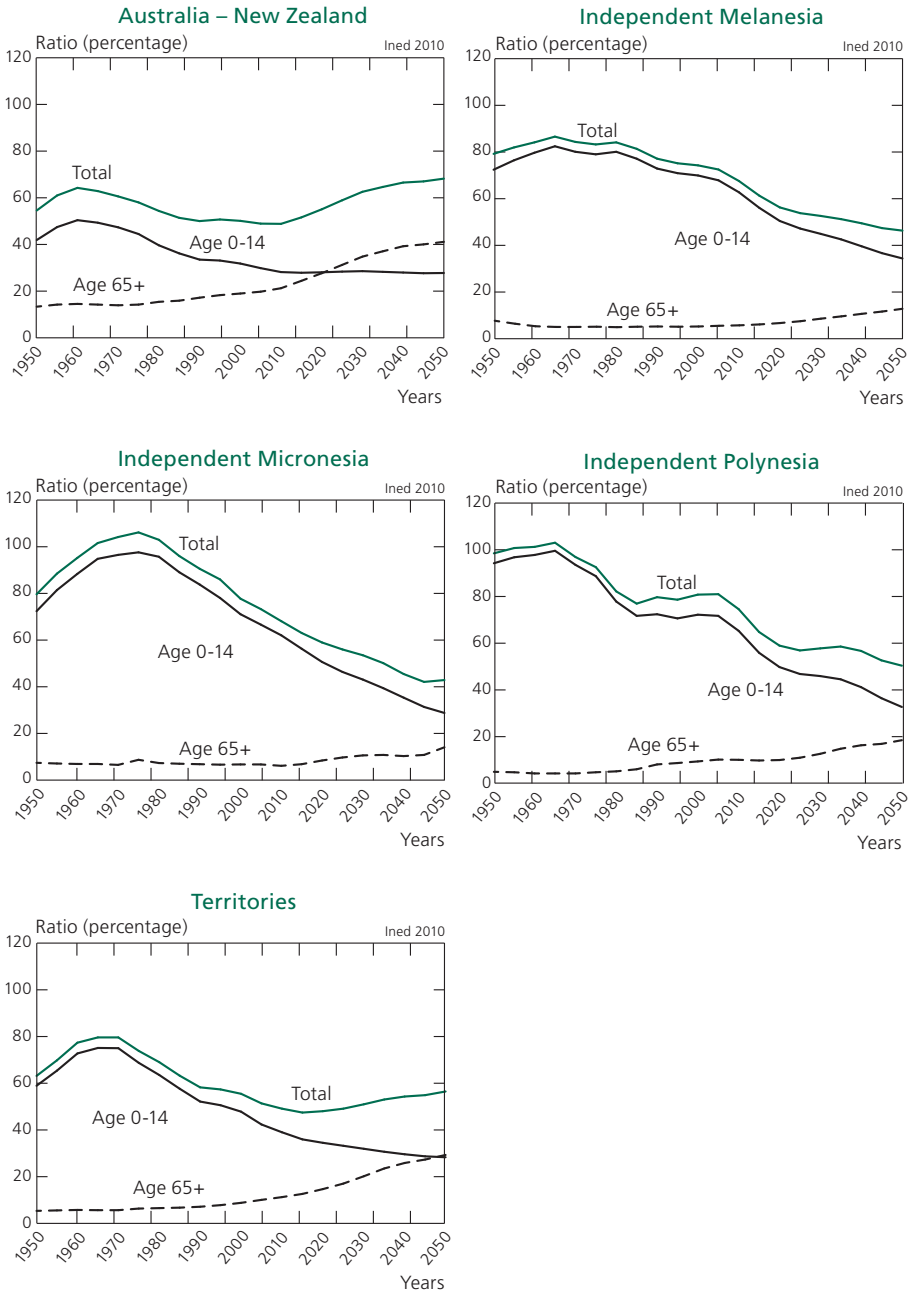
The still distant prospect of a “demographic window” in the island countries

Figure 17 shows the dependency ratios (see note (a) in Box 3) in the five sub-regions since 1950 and projected trends up to 2050. After peaking in the 1960s, dependency ratios declined sharply thereafter in Australia and New Zealand. Current dependency ratios in Australia and New Zealand are below 50%, although they are expected to increase. After 2020, older people (aged 65) will be more numerous than people aged 0-14 and the dependency ratio could rise to 70% by 2050.

Analysis of projected dependency ratios in the island countries shows that the demographic window remains a distant prospect (Box 3).

In Melanesia, dependency ratios reached almost 90% in the 1960s, and still stood at 70% in 2005. Based on these projections, it is possible that the 50% threshold will not be reached before 2040. Dependency ratios in Polynesia and Micronesia rose above 100% in the 1960s (i.e. more than one dependent person for every working-age adult) before fertility began to decline. It was not until the 1970s in Polynesia and the 1980s in Micronesia that they dropped below 100%. While dependency ratios declined steadily in Melanesia, they remained constant in Polynesia at around 80% between 1980 and 2005 (last

Figure 17. Youth dependency ratios (0-14/15-64), old-age dependency ratios (65+/15-64) and total dependency ratios (0-14 and 65+/15-64) in the independent sub-regions and the territories, 1950-2050.



Sources: United Nations, Department of Economic and Social Affairs (UNDESA), World Population Prospects, 2008.

Box 3. The “demographic window”

The main challenges of the demographic transition relate to changes in age structure, particularly dependency ratios,^(a) which may have a significant impact on economic development, as in East and Southeast Asia (Bloom and Canning, 2001; Mason, 2001). The case of emerging countries has produced the so-called “demographic window” theory,^(b) referring to a phase of the demographic transition during which dependency ratios decline before increasing again as a result of population ageing.

Falling dependency ratios have an impact at both macro- and microeconomic levels. The public burden to invest in primary education or pre- and postnatal healthcare is reduced since the number of births remains stable then starts to decline. Couples can direct their spending to areas other than primary needs. The population continues to increase, nevertheless, because of the effect of population momentum.^(c) When the last large birth cohorts reach adult age, dependency ratios decrease (i.e. the number of people in employment for every one dependent person increases). This favours economic growth and is the first effect of the demographic window. When these cohorts reach their 40s and their children have left home, they can begin to save. Saving is conducive to investment, which is considered as the second effect of the demographic window (Mason, 2007).

Beneficial economic effects are determined by the employment rate of the last large cohorts, however, and the result is not automatically positive (Seniloli, 2006; McMurray, 2002). Hence the phrase “demographic window of opportunity”, often shortened to “demographic window”. While there is no established threshold for characterizing the demographic window – any decrease may have positive effects – the most substantial impact is considered to occur when dependency ratios fall below 55% or 50% and decrease to levels close to 40%, as in China and Singapore in 2006 (Attané and Barbieri, 2009).

^(a) The dependency ratio is defined as the ratio of the economically dependent section of the population (children and persons aged 65+) to the working-age population (aged 15-64).

^(b) The complete expression is “demographic window of opportunity”.

^(c) Population momentum refers to fact that population growth continues (i.e. births outnumber deaths) even though fertility levels and the number of births are decreasing. This is due to a structural effect – i.e. an increasing number of people of childbearing age.

observed data). The resumption of the decline is expected to be irregular, with ratios predicted to reach around 50% in 2050 in Polynesia and in 2035 in Micronesia. The proportion of young people aged 0-14 will be predominant in the dependency ratios throughout this period.

In the 1970s, dependency ratios in the territories rose to 80%. Projections indicate that they will decline to below 50% by approximately 2015, before rising again to 60% by 2050, at which point the proportions of young people and older people are expected to balance out. The same remarks as those given above apply to projections for Micronesia, Polynesia and the territories, because of migration hypotheses.

XII. Urbanization

Contrasting situations

All of the cities with more than one million inhabitants are located in Australia (five cities) and New Zealand (Auckland). Sydney’s population was

4.3 million in 2005 and that of Melbourne 3.6 million (Table 12). The growth of large Australian cities and of Auckland in New Zealand slowed down considerably between 1950-1975 and 1975-2005, with rates decreasing by almost half between the two periods (except in Brisbane). The average annual growth rate was highest in Auckland and Brisbane in the 2000-2005 period (2.1% and 2.2%), followed by Perth (1.6%), while the population of Sydney increased by just 0.9% per year. In 2005, Sydney and Melbourne each accounted for approximately 20% of Australia's urban population, while Auckland represented 33% of New Zealand's urban dwellers.

With limited land area and small population sizes, the island countries have no large cities. The current capitals were still small colonial administrative centres in the 1950s and 1960s. In Polynesia, population growth has been strongly affected by emigration, though with the development of an urban fabric funded by emigrant remittances, the capitals have become small modern towns. The rate of urban growth in Melanesia (very high in the 1980s) has tended to produce shantytowns, with surrounding villages being engulfed by large agglomerations. The villages affected by these developments have not been provided with the most basic urban infrastructures (refuse collection, water provision and drainage, electricity). The process of urbanization in these micro-states may entail significant social and environmental challenges because of the sustained level of urban growth observed in some countries and high population densities in the atolls.

Urbanization is difficult to measure

Analysis of urbanization in the Pacific is difficult because the areas defined as urban have rarely been revised. With the exception of Fiji (which has redefined the delimitation of urban areas at every census since 1986), all the other countries have used the same definitions for decades despite the fact that urban areas are now surrounded by large peri-urban zones. Tonga and Samoa continue to define Nuku'alofa and Apia as the only urban areas, and their populations have remained constant. Yet the population of greater Nuku'alofa in Tonga is nearly 50% greater than the population of Nuku'alofa.

Many island countries have just one urban centre. Vanuatu, the Marshall Islands and Palau have two, and only Fiji, Papua New Guinea and the Solomon Islands have more than two. Urban centres in the smallest islands and secondary urban centres in the Solomon Islands, with fewer than 5,000 inhabitants (excepting Gizo), are not towns so much as rural centres providing administrative and healthcare services. For Pacific migrants, the towns and cities are situated in the surrounding countries, in Australia and New Zealand, with Auckland being the world's largest Polynesian town. The largest territories (Guam, French Polynesia and New Caledonia) have a more modern urban centre because of higher levels of development.

Table 12. Population trends in the largest towns and cities in the Oceania region between 1950 and 2005 and projections for 2015 (towns and cities ordered by decreasing population size in 2005)

City	Country	Population (thousands)			Mean annual growth rate (%)		Percentage of country's total population in 2005	Percentage of country's urban population in 2005
		1950	2005	2015	1950-1975	1975-2005		
Sydney	Australia	1,690	4,260	4,582	2.3	1.2	21.0	23.8
Melbourne	Australia	1,332	3,641	4,013	2.6	1.2	17.9	20.3
Brisbane	Australia	442	1,780	2,092	3.0	2.2	8.8	9.9
Perth	Australia	311	1,484	1,683	3.7	2.2	7.3	8.3
Auckland	New Zealand	319	1,189	1,398	3.4	1.6	29.0	33.7
Adelaide	Australia	429	1,133	1,212	2.9	0.8	5.6	6.3
Port Moresby (2000)	Papua New Guinea	–	254.2	–	–	–	5	39
Suva (greater) (2007)	Fiji	–	117.8	–	–	1.2	21	41
Nouméa (agglomeration) (2004)	New Caledonia	–	70.9	–	–	2.6	53	100
Papeete (agglomeration) (2007)	French Polynesia	–	73.0	–	–	2.1	55	95
Honiara (1999)	Solomon Islands	–	14.9	–	–	4.1	12	77
South Tarawa (2005)	Kiribati	–	16.4	–	–	3.0	44	100
Apia (2006)	Samoa	–	–	–	–	–	21	100
Nuku'alofa (2006)	Tonga	–	21.3	–	–	1.6	34	100
Port-Vila (1999)	Vanuatu	–	13.4	–	–	2.7	16	73
Mejuro (1999)	Marshall Islands	–	–	–	–	–	47	72
Koror (2005)	Palau	–	8.1	–	–	1.6	64	83
Hagatna (2000)	Guam	–	–	–	–	–	93	–

Source: United Nations (2007) and national censuses 2000-2005.

^(a) The population of Guam is divided into districts. The island is characterized by American-style extensive urban sprawl. The population of Hagatna was 1,100 in 2000, while the neighbouring town of Agana Heights counted 3,940 inhabitants.

**Table 13. Percentage urban by sub-region
in 1950, 1975, 2005 and projections for 2025**

Sub-region	1950	1975	2005	2025
OCEANIA	62.0	71.5	70.5	71.9
Australia and New Zealand	72.5	82.8	86.2	88.8
Independent Melanesia	5.4	17.0	18.7	22.5
Independent Micronesia	23.5	38.5	43.3	52.1
Independent Polynesia	15.4	23.2	28.0	33.6
Territories	36.3	64.9	70.9	75.6
Sub-Saharan Africa	11.0	20.0	32.5	46.6
<i>o/w independent Indian Ocean</i>	22.6	36.2	37.6	45.7
Latin America and the Caribbean	41.9	61.2	75.5	83.5
<i>o/w independent Caribbean</i>	35.1	45.9	56.6	72.2
East Asia	16.5	23.3	40.4	59.2
Southeast Asia	15.4	23.2	39.7	58.7
Southern and central Asia	16.6	22.2	29.5	40.2
Arab World and Middle East	26.5	45.4	59.8	69.2

Source: United Nations (2007).

The percentage urban is above 80% in Australia and New Zealand. The populations of the territories (with the exception of Wallis and Futuna) are mostly urban, while the levels of urbanization in the other sub-regions of the Pacific are lower than in the Caribbean and the Indian Ocean, with the exception of Micronesia (Table 13). In the island countries, the proportion of urban dwellers exceeds 50% only in Fiji and the Marshall Islands and in some countries with fewer than 20,000 inhabitants, including Palau, the Cook Islands and Nauru⁽³¹⁾ (Appendix Table A.14). In the atoll countries (Kiribati and Tuvalu), almost half the population is concentrated in one specific area of one atoll. In the Marshall Islands, for example, 65% of the population lives on two partially urbanized atolls (Majuro and Ebeye). If Greater Nuku'alofa and certain centres in Samoa were redefined as urban, one third of the population of Tonga and Samoa would be urban dwellers. The percentage urban remains particularly low in Melanesia (with the exception of Fiji), where only Vanuatu exceeds 20% and where Papua New Guinea, the largest country in the sub-region, is below 15%. Western Melanesia (Papua New Guinea, Solomon Islands and Vanuatu) is made up of essentially rural countries. For many inhabitants of the extended atolls and archipelagos (Cook Islands, Tonga, French Polynesia), distances to urban centres are large.

(31) The entire population of Nauru is defined as urban.

Urban growth is rapid in countries with low emigration and a steadily increasing population. Rural exodus is considerable in Melanesia because of three main factors: the attraction of paid employment for young rural workers, a more monetized economy, and a less traditional way of life. Based on available population censuses, annual rates of urban growth are above 4% in Vanuatu and the Solomon Islands, and as high as 2.8% in Papua New Guinea. The growth rate in Fiji was 2.6% in 1986-1996, and declined to just 1.5% in 1996-2007, primarily due to the increasing number of Indian minority emigrants who left the country after the 2000 coups. The rate of urban growth among Fijians is still 2.5%. In Kiribati, it reached 5.1% in South Tarawa in 1995-2000, and declined officially to just 1.9% in 2000-2005 (excluding peri-urban growth). If peri-urban growth is included, the annual rate is still 2.1%, and even above 5% for some peri-urban villages. That said, urban growth is slowing down rapidly, owing mainly to organized migration towards the high remote islands of Kiribati (following the Indonesian model).

The near constant level of the population in emigration countries is also reflected by a near stability of urban centres. The urban population has even declined in the Cook Islands and the Federated States of Micronesia in the most intense periods of emigration. Notwithstanding the biases affecting definitions of urban areas, urban growth is limited because these small countries have not experienced a process of migration in stages, i.e. from rural to urban, followed by international migration. In Tonga, Samoa and the Cook Islands, where the inhabitants of the main island can easily go into town, emigration from the external islands is often directly towards the countries of the surrounding Pacific area. Continued demographic decline in the external islands raises the cost of maintaining healthcare and educational services there. This is the case in Fiji.

Urban densities are particularly high in Micronesia. In South Tarawa, population density is 2,560 inhabitants per sq.km, and approaches 7,500 per sq.km in Betio, an islet that includes the historic urban centre. In the Marshall Islands, population densities are 10,000 inhabitants per sq.km in Majuro and 30,000 per sq.km in Ebeye. They are also particularly high in the shantytowns of Port Vila (Vanuatu) and Port Moresby (Papua New Guinea), generating significant environmental and sanitary concerns.

The urban drift of young rural migrants (a social consequence of urbanization) is raising the average household size, which tends to be larger in urban than in rural areas in most of the Pacific countries, although fertility rates are lower. This is the case in the Solomon Islands (on average 6.7 people per household in urban areas as opposed to 6.1 in rural areas), Kiribati (7.5 as opposed to 5.6) and Fiji, where the average household size is 6.2 people in the peri-urban areas of Suva versus 5.7 in Suva and 5.4 in rural areas. Urban households often include young rural inhabitants living a long way from their biological parents. Such groups constitute a vulnerable population particularly prone to high-risk behaviours (Rallu, 2009).

XIII. International migration

International migration play a significant role in Oceania, both in Australia and New Zealand and in the Pacific Islands (Connell, 1991; Appendix Tables A.13 and A.14) through the diverse migration networks (in the geographical sense of the term), the large insular diasporas and the economic effects of migration.

Migration networks

Up until the 1980s, the migrants settling in the two developed countries of the Pacific region originated for the most part from Europe and, to a lesser extent, from the island countries of the region (Bedford, 2008). Since then, immigrants to these countries have tended primarily to originate from Asia and the rest of the world, while insular migration flows to Australia are increasing.

Migrants from island countries chiefly head for the developed countries of the Pacific region, and intra-Pacific flows are limited, with the exception of the territories and Fiji. Migration in the territories is divided into French-speaking and American networks. There is some migration between the former French overseas territories, where a small number of French speakers from Vanuatu also tend to settle. New Caledonia received a large number of immigrants from Vietnam after its reunification. Emigrants from the current American territories and the former TTPI tend to settle in the United States (Ahlburg and Levin, 1990). These territories also receive Asian immigrants, particularly Guam, Palau, the Northern Mariana Islands and American Samoa, although the latter are located further from Asia.

Migration networks in the other island countries have been shaped to a great extent by colonial history. Inhabitants of former New Zealand colonies (Cook Islands, Niue and Tokelau) have privileged access rights to New Zealand, of which they are citizens, while Samoans also benefit from a special quota. A number of other countries of the Pacific region have also been granted privileged access.⁽³²⁾ The Trans-Tasman Agreement between Australia and New Zealand ensures freedom of movement to permanent residents of both countries, whatever their origin. Since the 1980s, the trans-Tasman movement of insular migrants has increased. American Samoa became a key transit area for Samoans immigrating to the United States, and migrants from Polynesia (New Zealand citizens) have also headed increasingly to the United States since the late 1980s. Tonga, a former British protectorate, became an emigration country at a later stage. It has strong links with the United States (partly through the Mormons⁽³³⁾), so this again is the preferred destination. In Fiji (a former British colony),

(32) Tongans, Tuvaluans, Kiribadians and Vanuatuans also have access to New Zealand under the Pacific Access Category (PAC) (Bedford et al., 2007; Bedford, 2005).

(33) There have been a larger number of Mormon conversions in Polynesia and Micronesia.

emigration increased mainly after the 1987 coup, causing many Indians to leave the country and producing a decline of the Indian population there.⁽³⁴⁾ These populations have tended to emigrate to the developed countries of the Pacific region, including Canada, with migration numbers increasing again after the 2000 and 2006 coups. Melanesian Fijians began to emigrate in the 1990s, primarily to Australia and New Zealand and, to a lesser extent, the United States. These flows have recently increased.

Of the former British colonies, Kiribati, Tuvalu, the Solomon Islands and Vanuatu, like Papua New Guinea (a former Australian colony), have limited access to New Zealand under the Pacific Access Category (PAC), though levels of migration have remained low. Migrants from these countries are often former colonists or members of Chinese minorities from the colonial era. There are also increasing numbers of migrating students and young executives, though the total number of migrants (a few hundred) represents only a tiny fraction of the total populations. There has also been a small recent wave of European and Asian immigration.

Intra-Pacific migration was initially towards Fiji because of the draw of regional institutions and the University of the South Pacific. While limited in scale, labour migration has developed more recently. Such migrants include Fijians working in the tourism industry in the Cook Islands, Micronesians employed in the tourism and construction industries in Palau, Kiribatian and Tuvaluan workers in the mines of Nauru, and sailors from Kiribati, Tuvalu and Fiji working on merchant ships owned by international companies. Migration of Asian contract workers, chiefly to Fiji and Palau, should also be mentioned. In recent years, a brain drain of nurses, teachers and accountants from Fiji has resulted in the creation of temporary contracts to hire Filipino nurses and administrative staff in the tourism industry.

Immigrant populations

Australia and New Zealand have traditionally been immigration countries, like Canada and the United States, with points-based immigration systems⁽³⁵⁾ that apply to both permanent and temporary migration. According to the 2006 censuses, the proportion of immigrants was 22.2% in Australia and 21.8% in New Zealand (Appendix Table A.13).

With its Maori population, New Zealand is sometimes viewed as a Pacific Island nation, a status further reinforced by the Polynesian migration flows and the special conditions of access it offers to countries in the region (Callister and Didham, 2008); 21% of New Zealand immigrants originate from island

(34) The colonial migration of Indians to Fiji as a result of work contracts in the nineteenth and early twentieth centuries accounts for the original Indian component of the Fijian population. It was followed in the 1930s by a wave of freely migrating traders.

(35) Based on level of qualification, age, income, assets, etc.

countries and 31% from Oceania (including Australia). Immigration from the island countries accounts for just 2.6% of the Australian immigrant population and just 12% of Oceanian immigrants, including those born in New Zealand. Immigrants of European origin (United Kingdom, other European countries, United States, Canada) no longer represent the majority of recent immigrants in Australia and New Zealand. Most are now Asian, with China topping the list, followed by India, the Philippines, Vietnam and Korea. Australia, and to a lesser extent New Zealand, also receive migrants from Africa and the Middle East (Table 14).

Table 14. The top ten countries of origin (place of birth) of immigrants living in Australia and New Zealand

Australia			New Zealand		
Country of origin	Number (thousands)	As a percentage of immigrant population	Country of origin	Number (thousands)	As a percentage of immigrant population
United Kingdom	1,065.2	24.1	United Kingdom	245.1	27.9
New Zealand	389.5	8.8	China	86.0	9.8
China	280.4	6.4	Australia	62.6	7.1
Italy	199.1	4.5	Samoa	50.6	5.8
Vietnam	159.8	3.6	India	43.3	4.9
India	147.1	3.3	South Africa	41.7	4.7
Philippines	120.5	2.7	Fiji	37.7	4.3
Greece	110.0	2.5	Korea	28.8	3.3
Germany	106.5	2.4	Netherlands	22.1	2.5
South Africa	104.1	2.4	Tonga	20.5	2.3
Other	1,725.5	39.2	Other	241.4	27.4
Total	4,405.6	100.0	Total	879.8	100.0
Percentage of migrants in total population		22.2	Percentage of migrants in total population		21.8
<i>Sources:</i> 2006 censuses.					

Because migration flows are mainly directed towards the developed countries of the region, the proportions of immigrants (ratio of foreign-born people to total population) in the island countries are very low: less than 1% in Melanesia, with the exception of Fiji (2%), and less than 5% in certain countries of Micronesia and Polynesia in 2005 (Appendix Table A.13). In the two latter regions, a high proportion of persons born abroad are children of return migrants.

The territories are characterized by high levels of immigration. The population of New Caledonia includes 18% of immigrants, born mainly in

metropolitan France, the French overseas *départements* and territories (Wallis and Futuna, French Polynesia) and Asia. The immigrant population of French Polynesia represents 13% of the total, originating for the most part from metropolitan France and the former TOMs, but also including children of return migrants from New Caledonia along with Asian, European and American foreigners. The proportion of migrants in the American territories is significantly higher: 66% in Guam and 43% in American Samoa. They include, for the most part, Asians (57%, including 44% of Filipinos), Americans from the continent (26%) and Micronesians (14%) in Guam; Samoans from Samoa (71%), Americans (14%), Asians and Tongans in American Samoa. The Northern Mariana Islands had a significant proportion of immigrants in 2000 (58%, mostly female Asian contract workers, though a large proportion of these contracts have not been renewed).

With the exception of Papua New Guinea, which receives refugees from the neighbouring Indonesian province of Irian Jaya, there are no refugees in any of the island countries. Populations may, on occasion, be displaced as a result of volcanic eruptions, earthquakes or tsunamis, and more rarely as a result of floods and cyclones.

Pacific diasporas

The most significant characteristic of migration trends in the island countries, particularly from Polynesia and Micronesia, is the sheer number of migrants. A process of mass migration began in the 1960s in Polynesia and later in Micronesia, particularly in the Marshall Islands. Diasporas include not only insular migrants in the countries of the Pacific rim, but also their descendants born and enumerated in these countries and who report themselves as ethnic Pacific Islanders (referred to here as “of island origin”).

This chronicle considers the number of people born in or originating from the island countries and enumerated in the Pacific Rim countries.⁽³⁶⁾ The impact of migration on demographic growth, age structures and dependency ratios has already been analysed. We will now examine the scale of migration trends based on the ratio of Pacific Island emigrants living in the Pacific rim countries and of members of their ethnic communities (including second and subsequent generations) to the populations still living in the island countries.

Although there are no data for the smallest immigrant populations in the United States, and the only available information dates back to 2000, it would appear that the Cook Islands, Niue and Tokelau have larger native populations in the Pacific Rim countries than on the islands themselves. Consequently, the ratios of “island-origin” populations (including people born in the immigration

(36) In most of the available data published by countries of the Pacific Rim countries, small immigrant populations are grouped together. This complicates the process of reconstruction and generates substantially underestimated figures.

Table 15. Pacific Island immigrant populations in three Western countries by receiving country and country of origin, and size of diasporas (thousands)

Country of origin	Receiving country								Diaspora ^(a)		
	Resident population (c. 2005)	New Zealand (2006)		Australia (2006)		United States (2000)		Born in the islands ^(b)	Of island origin ^(c)	Born in the islands ^(b)	Of island origin ^(c)
		Born in the islands ^(b)	Of island origin ^(c)	Born in the islands ^(b)	Of island origin ^(c)	Born in the islands ^(b)	Of island origin ^(c)				
Cook Islands	19.6	14.7	58.0	5.0	11.4	–	–	–	1.01	–	3.55
Federated States of Micronesia (2000)	107.0	–	–	–	–	7.1	6.7	–	0.13 ^(d)	–	0.14 ^(d)
Fiji ^(e)	837.3	37.7	–	48.1	–	30.9	–	–	0.14	–	–
<i>of which Melanesian Fijians</i>	475.7	–	9.9	–	19.2	–	10.3	–	–	–	0.08
Kiribati	92.0	0.8	1.1	0.4	0.5	–	–	–	0.01	–	0.02
Marshall Islands	52.4	–	–	–	–	6.3	5.8	–	0.12	–	0.11
Niue	1.6	4.9	22.5	0.6	2.2	–	–	–	3.34	–	15.17
Palau (2000)	19.1	–	–	–	–	2.1	2.1	–	0.18 ^(d)	–	0.22 ^(d)
Samoa	179.2	50.6	131.1	15.2	40.0	16.4	85.2	–	0.46	–	1.43
Tokelau	1.5	1.6	6.8	0.4	1.1	–	–	–	1.33	–	5.42
Tonga	101.1	20.5	50.5	7.6	18.4	17.3	27.7	–	0.45	–	0.96
Tuvalu	10.4	1.2	2.6	0.1	0.3	–	–	–	0.13	–	0.29

–: Data not available.

^(a) Ratio of emigrant population to sending country population.

^(b) Immigrant population born in the islands.

^(c) Immigrant population born in the islands or self-reporting as ethnic Pacific Islanders.

^(d) For the Federated States of Micronesia and for Palau, the figures include persons enumerated in Guam in 2000.

^(e) Population born in Fiji (includes Indians born in Fiji).

Sources: National censuses.

countries) are even higher⁽³⁷⁾ (Table 15). These are small populations whose migration was facilitated by their New Zealand citizenship. The number of emigrants of Samoan origin is higher than the population on the islands themselves. Samoans born in American Samoa are not considered to be “born abroad” in the United States, and include the children of parents born in Samoa. The number of Tongans on the island and living abroad is roughly equal. For Tuvalu, where migration is a recent phenomenon and directed for the most part towards New Zealand, the ratio of migrants to total residents on the islands is just 0.13, although it increases to 0.29 if the second generation is included. Emigration in the Marshall Islands and the Federated States of Micronesia appears to be more small-scale, although 8,500 people emigrated from the Marshall Islands in the 2000-2007 period, increasing the ratio of emigrants to total population of the country to 0.24. Migration from Palau is more long-standing and more extensive, and continued after 2000. In the case of Fiji, the ratio of migrants to natives (including Indians) living in Fiji, is 0.14, though just 0.08 for Melanesian Fijians. Given these large diasporas, the intensity of mass migration from Polynesia is higher than in the Caribbean and Indian Ocean regions.

The economic impact of migration

The impact of international migration on development has attracted increasing interest from international organizations (Brown, 2008; Rallu, 2008). Remittances amount to three times the total amount of international development assistance (IDA) in Fiji, Samoa and Tonga, compared with just 26% in Kiribati and less than 10% in the Solomon Islands and Vanuatu, where emigration levels are relatively low (see Table 16). They also represent almost four times the total amount of foreign direct investments in Tonga, as opposed to just 60% in Fiji, 45% in Solomon Islands and approximately 15% in Papua New Guinea and Vanuatu.

The official figures tend to be underestimated since they do not include the money brought in by migrants during visits, frequent during the Christmas period, or the clothes and convenience goods which are sent home and sold on small local markets. In 2007, recorded private transfers represented nearly 40% of the GDP in Tonga and 23% in Samoa, i.e. respectively USD 971 and USD 670 per capita, much larger amounts than those observed in Asia. In the Philippines – the most dynamic Asian country in this respect – private transfers represent 11.3% of GDP and USD 184 dollars per capita, as opposed to just 8.0% of GDP and USD 64 per capita in Vietnam and 1.4% of GDP and USD 27 per capita in Indonesia (World Bank, 2009).⁽³⁸⁾

(37) The same applies to Wallis and Futuna: Wallisians and Futunians in New Caledonia represent 49% of the total native population of Wallis and Futuna, and 133% of people originating from Wallis and Futuna who live in the islands.

(38) <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/> consulted on September 11, 2009.

Table 16. Remittances (in US dollars) from Pacific island emigrants and their share of national GDP in 2007

Country	Cash transfers		Percentage of GDP	Public development aid (USD millions)	Direct foreign investments (USD millions)
	USD millions	USD per capita			
Fiji	165	197	4.8	57	269
Kiribati	7	74	9.0	27	–
Papua New Guinea	13	2	0.2	317	96
Samoa	120	670	22.8	37	3
Solomon Islands	20	40	5.3	248	42
Tonga	100	971	39.4	30	27
Vanuatu	6	26	1.2	57	34

Source: World Bank, 2009.

These high levels of transfers have led to the emergence in Polynesia of an economic model known as MIRAB⁽³⁹⁾ (Bertram and Waters, 1985), where money from migration and international aid funds an excessive bureaucracy and ensures a relatively high standard of living. However, remittances are used primarily for consumption purposes (Ahlburg, 1996; Brown, 2006). After being employed to modernize homes in the 1960s and 1970s, their use was subsequently diversified, and remittances now provide funding in a wide range of sectors. However, they are still used primarily for family consumption (household equipment, mobile phones, education fees, healthcare for children and elderly relatives who have remained on the islands). A proportion of the money is used to fund community actions (purchase of generators, solar panels, medicine, books for health centres and schools, cyclone aid, funding for associations, etc.). Money transfers are seldom used for productive investments, with the exception of construction (a job-creating sector). Small village shops have mostly gone bankrupt, but have been replaced by markets for clothes and convenience goods, often second-hand.

Limited development opportunities, small island markets and high production costs are not conducive to investment. In addition, remittances have considerable negative effects. The shortage of agricultural workers caused by migration and the decline of agriculture, a sector where incomes are low, has increased the consumption of imported food products. Despite the large amounts involved, remittances (used primarily for consumption purposes) probably contribute less to economic and social development than international aid (which serves to develop access to healthcare and education services) or foreign investments (which create jobs directly).

(39) Migration, Remittances, Aid, Bureaucracy.

Though they have built houses with a view to returning to their islands of origin, very few migrants settle there on a permanent basis, visiting only at Christmas and for family events. Social remittances, i.e. the new ideas brought back by migrants, are having little visible effect (Chandra, 2004). Finally, migrants and the children of migrants tend to develop torn loyalties between their home and host cultures (McPherson, 1997).

XIV. Male and female access to education

Illiteracy rates among adults aged 15 and over in the Pacific Island countries are not available in international databases. Data from the MDG database for adults aged 15-24 will therefore be used, although information on sex and figures for 1980 (i.e. the reference year used for other chronicles published in *Population*) is not always included. The data are drawn from censuses which do not specify the duration of education. It is also difficult to establish whether individuals have completed their primary education or the three (or four) years of schooling deemed necessary to learn to read and write. However, it is quite uncommon for young people not to complete primary education, except in Melanesia.

Illiteracy among young people

The data available for 1990, the MDG reference year, show high levels of literacy in most countries. Illiteracy is uncommon in the 15-24 age group, with less than 1% of people aged 15-24 considered to be illiterate in most of the insular countries (Appendix Tables A.14 and A.15). In Melanesia, however, 14% of young people in Vanuatu, 16% in the Solomon Islands and 33% in Papua New Guinea are illiterate. In Micronesia, 29% of young people in the Federated States of Micronesia, 15% in the Marshall Islands and 4% in Kiribati were illiterate in 2005. Missionary schools in Polynesia (established in the nineteenth century) ensured a rapid rise in literacy rates; likewise in Micronesia, where they increased rapidly towards the middle of the last century, though somewhat unequally.

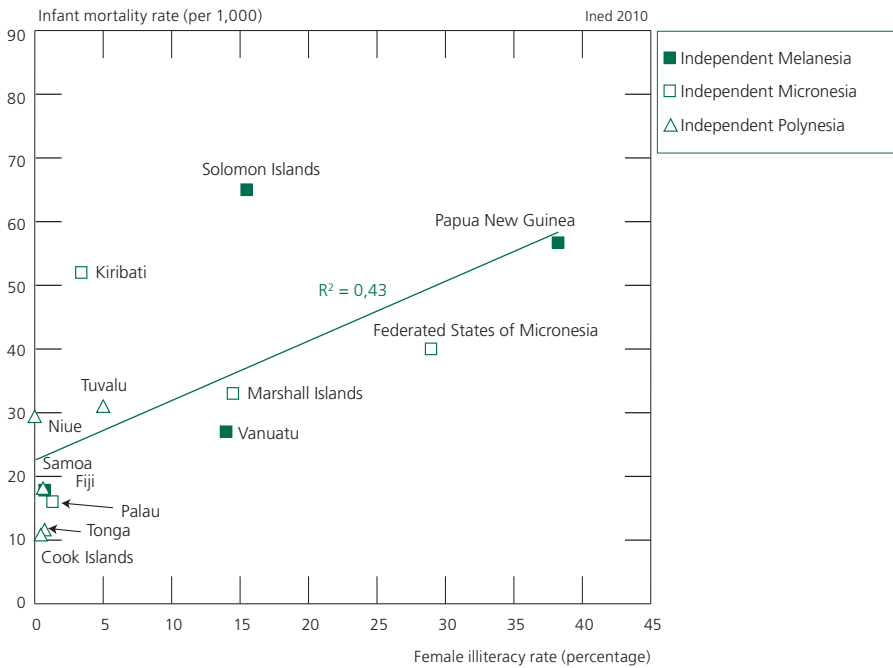
The data by sex available for some countries (Appendix Table A.15) show very few differences, except for occasional limited advantages for women, with the exception of Papua New Guinea and the Solomon Islands.

Relation between illiteracy, fertility and infant mortality

The traditional relations between illiteracy and fertility observed in other regions of the world do not apply in the Pacific region, where the correlation is only 0.526 (not significant at 5% level). This is due to the fact that fertility in Polynesia (where illiteracy is almost non-existent) ranges between 2.7 and 4.5 children per woman in different countries, while in Micronesian and Melanesian countries with higher illiteracy rates, fertility levels are very similar

(between 2.2 and 4.6 children per woman). The correlation between illiteracy and infant mortality (Figure 18) is stronger, with a correlation coefficient of 0.657 (significant at 5% level), thus confirming the impact of education on child survival.

Figure 18. Correlation between female illiteracy and infant mortality in 2005



Sources: National MDG Reports; MDG Database; UNDP Human Development Report (2007/8) http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf

The situation of women

In the Pacific, inequalities affecting women have less to do with the level of education than with access to paid employment, political decision-making and parliamentary representation. The MDG indicator “females in non-agricultural wage employment”⁽⁴⁰⁾ (Appendix Table A.15) shows that women are under-represented in all Pacific Island countries, with a larger gap than

(40) Proportion of women in the total number of paid jobs outside agriculture. This indicator is often inaccurate insofar as countries sometimes consider all types of formal employment, including the self-employed, who include many women working on market stalls. For instance, the official figure for the Solomon Islands is 30% and not 26% (i.e. the figure shown in Appendix Table A.15). Likewise for Samoa, where the correct indicator is 38% and not 43%. For several countries, the indicator cannot be corroborated by published census data.

the differences in educational levels in the countries where the latter are highest. The proportion of women employed in the formal sector is often below 40%, except in the Cook Islands, Tuvalu, Kiribati, Palau and Vanuatu.⁽⁴¹⁾ In Fiji, the most developed economy of the island countries, it is just 31%, but this low level is due mainly to the Indian community, among whom women represent only 25.2% of persons in non-agricultural wage employment, as opposed to 36.4% among Fijians. Several countries have a level of between 35% and 40%, although women account for less than a third of formal employment in Tonga (30%), the Solomon Islands (26%) and Papua New Guinea (5%).

The proportions of female national parliamentary representatives are the lowest of all the regions of the world. None of the Pacific Island countries except the smallest (Niue and Tokelau) have more than 10% of women in parliament (11.3% in Fiji in 2000, but just 7% in 2004⁽⁴²⁾). Several countries no longer have any women in parliament, although they did so in the past (Solomon Islands, Tonga and Tuvalu). Most have between 3% and 8% of female representatives in parliament, while the biggest country, Papua New Guinea, has just 0.9% (Appendix Table A.15).

Conclusion. The Pacific, a vast and multi-faceted region

Oceania includes Australia and New Zealand, i.e. Pacific Rim countries classified as developed Western nations. They are the chief destinations of migrants from the Pacific Island countries. The Pacific Islands still include six French and American territories, a heritage from the periods of colonization and war, which are home to a share of the native populations (Melanesian, Micronesian or Polynesian). In the 1950s and 1960s, their demographic transition lagged behind that of the developed countries, though the gap has since been bridged: the fertility transition is complete in the French territories, while fertility levels in the American territories are still fairly high because of immigration. Life expectancy and infant mortality are relatively close to the levels observed in developed countries.

The insular countries of the region present significant differences at a sub-regional level. Polynesia has the highest level of development, mainly as a result of mass emigration. The economic system (MIRAB; see note 39), based on preferential access to New Zealand (and in stages to Australia and the United States), requires continued high fertility to avoid population decline on the islands while ensuring a regular flow of migrants and remittances.

(41) However, a study conducted in 2003 in Vanuatu showed that women accounted for just 35% of employees in the public sector and 32% of employees in the private sector; 18% of decision-making positions in government (minister, head of department) were held by women (Vanuatu, MDGR).

(42) Fiji has not held a general election since the coup in December 2006.

Levels of overall and infant mortality remain quite high, with a life expectancy barely above 70 years and infant mortality rates frequently above 20 per 1,000 and only declining slowly. The age structures show the effects of migration, and dependency ratios are particularly high. Fiji, a Melanesian archipelago situated in the central Pacific, has a similar profile in terms of its demographic indicators, though migration is both more recent and smaller in scale. The level of demographic growth in these countries is limited by migration, to the point of being negligible or even negative in several Polynesian countries (Appendix Table A.2).

Micronesia is the most diversified sub-region. Of all the territories under former UN mandate administered by the United States, only Palau has a level of socioeconomic development comparable to Polynesia. Palau is the first island country where the fertility transition has been completed and where mortality (already low) is now declining very slowly. It is affected both by emigration and by labour immigration. The Federated States of Micronesia and the Marshall Islands are also characterized by high levels of emigration to the United States. Fertility in these countries declined at a much later stage than in Polynesia and is currently stagnating at around 3 or 4 children per woman. Mortality levels remain high and are declining slowly, partly because of poor sanitary conditions on the atolls or geographical remoteness (in the Federated States of Micronesia). Kiribati shares the same characteristics, although the fertility decline began earlier. This was largely the result of a family planning programme developed in the 1970s (at the end of the colonial period), which was subsequently abandoned under the pressure of religious groups. The fertility decline in Kiribati only resumed in the 1990s. Infant mortality remains high and shows no notable progress. Migration substantially reduces demographic growth in Micronesia, although it remains high as a result of continuing high fertility (Marshall Islands) or low levels of emigration (Kiribati), while age structures are generally very favourable to population growth (except in Palau).

In Melanesia (excepting Fiji), the demographic transition occurred relatively late, and fertility and mortality remain high. The relevant data are less reliable, however, and the situation may actually be worse. Fertility is estimated at around 4.5 children per woman and life expectancy below 65 years (perhaps slightly higher in Vanuatu) and just 59 years in Papua New Guinea, the largest Pacific Island country and the one most severely affected by AIDS. Population growth is very rapid (above 2.5% per year) because of a very young age structure and a near total absence of emigration. Rural populations are extremely dispersed and have limited access to healthcare in the extended archipelagos composed of large mountainous islands. There has been much talk of the “Africanization” of the region because of the high level of political instability and the extreme diversity of languages and cultures. The majority of the Pacific Island population lives in these countries.

Though “ahead” of developing countries in the 1970s (including developing countries in Southeast Asia), Polynesia is currently lagging behind. Its demographic indicators are progressing very slowly, and are in some cases stagnating. In a context of limited change and development, migration has tended to provide the main route to a different way of life. Change in Melanesia is also very limited. While population densities remain low, the development of services and employment in the formal sector cannot keep pace with population growth. The independent countries of the Pacific appear to lag significantly behind other insular regions of the world, in terms of both the fertility decline and the prospect of a potential “demographic window”. The situation is highly precarious for parts of Melanesia.



STATISTICAL APPENDIX

Table A.1. Censuses, national household demographic and socioeconomic surveys, national fertility and health surveys from 1945 to 2009

Sub-region and country	Censuses	DHS and MICS surveys and other national surveys on fertility or maternal and child health	National household socioeconomic surveys	Other national surveys	Former colonial power	Year of independence
Melanesia						
Fiji	Decennial from 1946 to 1996, 2007		1977 ^(f) , 1991-1992 ^(f) , 2002-2003 ^(f) , 2008 ^(f)	1993 ^(m) , 1999 ⁽ⁿ⁾ , 2006 ^(v)	United Kingdom	1970
New Caledonia	1946, 1956, 1963, 1969, 1976, 1983, 1989, 1996, 2004, 2009		1969 ^(f) , 1980-1981 ^(f) , 1991 ^(f) , 2007-2008 ^(f)	2001 ^(s)	France (overseas country) ⁽⁸⁾	None
Papua New Guinea	1966, 1971, 1980, 1990, 2000	1996 ^(c) , 2006 ^(c)	2005-2006 ^(f)	1991 ^(p) , 2006 ^(v)	Australia	1975
Solomon Islands	1959, 1970, 1976, 1986, 1999, 2009	2007 ^(c)			United Kingdom	1976
Vanuatu	1967, 1979, 1986 (urban), 1989, 1999, 2009	2008 ^(d)	1998 ^(f) , 2006 ^(f)	1983 ^(m) , 1996 ⁽ⁿ⁾ , 2006 ^(v)	France and United Kingdom	1980
Micronesia						
Federated States of Micronesia	1950 ⁽¹⁾ , 1958 ⁽¹⁾ , 1967 ⁽¹⁾ , 1970 ⁽¹⁾ , 1973 ⁽¹⁾ , 1980 ⁽¹⁾ , 1986 ⁽²⁾ , 1994, 2000	1970 ^(b)	1997 ^(e) , 1998 ^(f) , 2000 ^(f) , 2005 ^(f)		Compact of Free Association with the United States ⁽⁶⁾	1986
Guam	Decennial since 1940		Annual since 1980 ^(e) , 1995 ^(f) , 2000 ^(f) , 2005 ^(f)		Unincorporated territory of the United States ⁽⁴⁾	None
Kiribati	1947 ⁽³⁾ , 1963 ⁽³⁾ , 1968 ⁽³⁾ , 1973 ⁽³⁾ , 1978, 1985, 1995, 2000, 2005	2005 ^(w)	1996 ^(f) , 2006 ^(f)	2001 Community South Tarawa Survey, 2006 ^(v) , 2007 ^(m)	United Kingdom	1979
Marshall Islands	1950 ⁽¹⁾ , 1958 ⁽¹⁾ , 1967 ⁽¹⁾ , 1970 ⁽¹⁾ , 1973 ⁽¹⁾ , 1980 ⁽¹⁾ , 1988, 1999, 2009	1970 ^(b) , 2007 ^(c)	2002 ^(f)	1994 and 2006 Community Survey, 2002 ^(m)	Compact of Free Association with the United States ⁽⁶⁾	1986
Nauru	1947, 1952, 1967, 1977, 1983, 1992, 2002, micro census 2007	2004 ^(g) , 2007 ^(c)	2006 ^(f)		Australia under UN trusteeship	1968

Table A.1 (cont'd). Censuses, national household demographic and socioeconomic surveys, national fertility and health surveys from 1945 to 2009

Sub-region and country	Censuses	DHS and MICS surveys and other national surveys on fertility or maternal and child health	National household socioeconomic surveys	Other national surveys	Former colonial power	Year of independence
Micronesia (cont'd)						
Northern Mariana Islands	1950 ⁽¹⁾ , 1958 ⁽¹⁾ , 1967 ⁽¹⁾ , 1970 ⁽¹⁾ , 1973 ⁽¹⁾ , 1980 ⁽¹⁾ , 1990, 1995, 2000		1992 ^(e) , 1996 ^(e) , 1998 ^(e) , 1999 ^(e) , 2000 ^(e) , 2003 ^(e) , 2005 ^(f)		Unincorporated territory of the United States ⁽⁴⁾ , Commonwealth of NMI ⁽⁵⁾	None
Palau	1946 ⁽¹⁾ , 1950 ⁽¹⁾ , 1958 ⁽¹⁾ , 1967 ⁽¹⁾ , 1970 ⁽¹⁾ , 1973, 1980, 1986, 1990, 1995, 2000, 2005	1970 ^(b) , 2003 ^(g)	1991 ^(f) , 1993 ^(e) , 1997 ^(e) , 2006 ^(f)	2008 ^(f)	Under UN trusteeship and administered by the United States from 1947 to 1994	1994
Polynesia						
American Samoa	Decennial since 1940, 1974, 1977 ^(a)	2005 ^(g)	1988 ^(e) , 1988 ^(f) , 1995 ^(f) , 2005 ^(f)	1999 ⁽ⁱ⁾ , 2004 ⁽ⁱ⁾	Unincorporated territory of the United States ⁽⁴⁾	None
Cook Islands	1945, quinquennial since 1951		2005-2006 ^(f)		Self-government in free association with New Zealand ⁽⁷⁾	None
French Polynesia	1946, 1951, 1956, 1962, 1971, 1977, 1983, 1988, 1996, 2002, 2007	1993 ^(b)	1979 ^(f) , 1986-1987 ^(f) , 1994 ^(e) , 2000-2001 ^(f)	1995 ^(j) , quinquennial from 1989 to 2009 ⁽ⁱ⁾ , 2002 ^(k)	France (overseas country) ⁽⁸⁾	None
Niue	1945, quinquennial since 1951				Self-government in free association with New Zealand ⁽⁷⁾	None
Samoa	1945, quinquennial since 1951, except 1996	1999 ^(h) , 2000 ^(c) , Disability 2002, 2009 ^(d)	1997 ^(f) , 2002 ^(f) , 2003 ^(e)	1999 ^(v) , 2006 ^(v)	New Zealand	1962
Tokelau	1945, quinquennial since 1951 (1971 census held in 1972)				Self-government in free association with New Zealand ⁽⁷⁾	None

Sub-region and country	Censuses	DHS and MICS surveys and other national surveys on fertility or maternal and child health	National household socioeconomic surveys	Other national surveys	Former colonial power	Year of independence
Polynesia (cont'd)						
Tonga	Decennial since 1956	1992 ^(g) , 1998 ^(g)	2000-2001 ^(f) , 2003 ^(e)	1986 ⁽ⁿ⁾ , 2001 ⁽ⁱ⁾ , 2006 ^(v)	British protectorate	1970
Tuvalu	1947 ^(b) , 1963 ^(b) , 1968 ^(b) , 1973 ^(b) , 1979, 1985, 1991, 2002	2007 ^(c)	2004-2005 ^(f)		United Kingdom	1978
Wallis and Futuna	1969, 1976, 1983, 1990, 1996, 2003, 2008		1982-1983 ^(f) , 2005-2006 ^(f)	2001 ⁽ⁱ⁾	France (overseas collectivity) ^(g)	None
Australia	1947, 1954, quinquennial since 1961				United Kingdom Statute of Westminster from 1942 to 1986	1942-1986
New Zealand	1945, quinquennial since 1951				United Kingdom	1947
<p>Notes on acronyms: KAP = "Knowledge, Attitudes and Practices" survey; DHS: Demographic and Health Survey (since 1985); MICS: Multiple Indicator Cluster Survey (since 1995).</p> <p>^(a) Sample survey; ^(b) KAP; ^(c) DHS; ^(d) MICS; ^(e) Labour Force Survey; ^(f) Household budget/spending survey; ^(g) Questionnaire based on the World Health Survey questionnaire devised by the World Health Organization; ^(h) Reproductive Health Survey; ⁽ⁱ⁾ Agricultural census; ^(j) Nutrition; ^(k) Literacy survey; ^(l) National survey on violence against women; ^(m) Drug use survey; ⁽ⁿ⁾ HIV/STI Surveillance Survey; ^(o) STI prevalence in pregnant women aged 15-49.</p> <p>⁽¹⁾ Trust Territories of the Pacific Islands from 1950 to 1986.</p> <p>⁽²⁾ The Federated States of Micronesia include four states, of which three held a census on different dates: 1986 (Kosrae), 1987 (Yap) and 1989 (Chuuk).</p> <p>⁽³⁾ Forming part of the Gilbert and Ellice Islands (British colony) until 1972.</p> <p>⁽⁴⁾ The unincorporated organized territories of the United States apply a part of the US constitution and the local governments are totally independent.</p> <p>⁽⁵⁾ In 1978, the Northern Mariana Islands chose to remain in political union with the United States as the Commonwealth of the Northern Mariana Islands and their status is internationally recognized.</p> <p>⁽⁶⁾ Pacific territories which have entered a Compact of Free Association with the United States (Federated States of Micronesia, Palau and Marshall Islands). Under this compact the US authorities are responsible for defence, foreign policy and security.</p> <p>⁽⁷⁾ Self-governed state in free association with New Zealand: an independent territory, but without international sovereignty (no UN representative, New Zealand responsible for foreign policy).</p> <p>⁽⁸⁾ Overseas country: under French administration; New Caledonia also has its own specific institutions.</p> <p>⁽⁹⁾ Each overseas collectivity has a different degree of autonomy under the French constitution.</p>						

Table A.2. Land area and densities in 2000-2005, and population from 1950 to 2050

Sub-region and country	Land area (sq. km)		Density (inhab. per sq. km)		Population (thousands)					
	Total	Arable (2000)	Crude (2005)	Arable (2000)	1950	1970	1990	2005	2025	2050
	OCEANIA									
	8,502,296	-	4	-	12,806	19,639	26,733	33,560	42,507	51,338
Melanesia	540,178	4,490	15	1,561	2,289	3,426	5,489	7,871	11,538	15,632
Fiji	18,272	2,000	46	401	289	520	724	828	905	910
New Caledonia	19,103	60	12	3,587	65	105	171	235	304	362
Papua New Guinea	462,243	2,050	13	2,628	1,798	2,554	4,131	6,118	9,265	12,871
Solomon Islands	28,370	180	17	2,309	90	161	314	474	725	1,007
Vanuatu	12,190	200	18	949	48	86	149	216	338	482
Micronesia	3,156	-	170	-	148	242	417	537	681	802
Federated States of Micronesia	701	-	156	-	32	61	96	109	122	128
Guam	541	-	312	-	60	86	134	169	211	242
Kiribati	811	-	113	-	26	44	72	92	123	151
Marshall Islands	181	-	315	-	13	20	47	57	79	92
Nauru	21	-	476	-	3	6	9	10	11	11
Northern Mariana Islands	457	-	175	-	7	13	44	80	74	79
Palau	444	-	45	-	7	11	15	20	23	26

Sub-region and country	Land area (sq. km)		Density (inhab. per sq. km)		Population (thousands)					
	Total	Arable (2000)	Crude (2005)	Arable (2000)	1950	1970	1990	2005	2025	2050
	Polynesia	7,982		81		242	423	543	646	754
American Samoa	200	20	320	2,885	19	27	47	64	89	112
Cook Islands	237	–	59	–	15	21	18	14	11	12
French Polynesia	3,521	30	73	7,865	61	111	195	256	318	354
Niue	259	–	6	–	5	5	2.3	1.6	1.3	1.4
Samoa	2,935	590	61	299	82	142	161	179	188	192
Tokelau	12	–	117	–	1.6	1.6	1.6	1.4	1.4	1.4
Tonga	650	150	157	657	47	98	95	102	112	123
Tuvalu	26	–	385	–	5	7	9	10	11	12
Wallis and Futuna	142	–	106	–	7	9	14	15	17	17
Australia	7,682,300	503,040	3	38	8,219	12,728	16,873	20,395	24,703	28,724
New Zealand	268,680	15,000	15	258	1,908	2,820	3,411	4,111	4,831	5,349

Sources: Populations: United Nations, *World Population Prospects 2008*; Land area and arable land: *FAO Statistical Yearbook* at www.fao.org/docrep/009/a0490m/a0490m00.htm, consulted 30 June 2009; Crude population density and density per sq.km of arable land: author's calculations based on data for 2000.
 –: data not available.

Table A.3. Crude birth and death rates and rate of natural increase, 1950 to 2005

Sub-region ^(a) and country	Crude birth rate (‰)					Crude death rate (‰)					Mean annual rate of natural increase ^(b) (%)							
	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005
OCEANIA	27.7	26.7	24.0	20.4	19.9	17.8	12.6	10.7	9.8	8.0	7.6	7.1	1.5	1.6	1.4	1.2	1.2	1.1
Melanesia	43.4	42.3	40.4	36.6	35.3	32.4	26.6	20.0	15.5	10.5	9.8	8.2	1.7	2.2	2.5	2.6	2.6	2.4
Fiji	46.3	42.0	32.5	31.9	27.5	23.1	13.3	9.7	7.2	6.0	6.3	6.4	3.3	3.2	2.5	2.6	2.1	1.7
New Caledonia	35.1	36.7	36.3	25.6	23.8	18.4	15.3	11.0	9.1	6.1	5.5	5.2	2.0	2.6	2.7	2.0	1.8	1.3
Papua New Guinea	43.1	42.3	41.6	37.6	36.7	34.1	29.7	22.8	18.0	12.0	10.6	9.9	1.3	2.0	2.4	2.6	2.6	2.5
Solomon Islands	42.6	43.7	47.2	40.4	38.7	33.5	19.3	14.2	9.2	5.9	10.2	7.9	2.3	2.9	3.8	3.5	2.9	2.6
Vanuatu	50.4	47.3	42.5	38.8	36.5	32.1	22.3	16.8	12.6	9.3	7.1	5.7	2.8	3.0	3.0	3.0	2.9	2.6
Micronesia Federated States of Micronesia	40.0	40.9	36.2	34.3	30.4	24.3	14.0	10.9	8.3	7.0	6.1	5.3	2.6	3.0	2.8	2.7	2.4	1.9
Guam	47.9	42.7	39.9	39.3	32.2	28.5	14.2	10.9	8.8	7.2	6.4	6.3	3.4	3.2	3.1	3.2	2.6	2.2
Kiribati	31.8	36.0	31.5	26.9	26.0	20.7	8.9	6.4	4.6	3.8	4.7	5.1	2.3	3.0	2.7	2.3	2.1	1.6
Marshall Islands	43.7	46.4	33.3	38.1	34.8	26.8	23.1	18.6	13.4	11.3	8.8	6.7	2.1	2.8	2.0	2.7	2.6	2.0
Nauru	46.8	43.6	47.4	50.9	44.1	39.2	16.4	14.3	12.3	10.5	7.3	5.0	3.0	2.9	3.5	4.1	3.7	3.4
Northern Mariana Islands	36.0	35.2	29.9	22.6	19.8	17.8	13.6	7.6	5.4	4.3	4.1	4.4	2.2	2.8	2.5	1.8	1.6	1.3
Palau	44.2	47.0	43.8	30.0	23.7	15.4	13.4	8.8	6.4	4.1	3.2	2.2	3.1	3.8	3.8	2.6	2.1	1.3
	41.9	40.4	35.6	21.9	22.6	16.0	17.4	13.0	11.1	10.7	9.7	7.4	2.5	2.7	2.5	1.1	1.3	0.9

Sub-region ^(a) and country	Crude birth rate (‰)					Crude death rate (‰)					Mean annual rate of natural increase ^(b) (%)							
	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005
Polynesia	46.3	45.5	36.0	33.5	28.8	24.5	14.6	10.7	8.0	6.7	5.9	5.5	3.2	3.5	2.8	2.7	2.3	1.9
American Samoa	43.5	43.2	37.1	35.4	34.1	28.0	7.5	6.4	5.2	4.8	4.4	4.4	3.6	3.7	3.2	3.1	3.0	2.4
Cook Islands	42.3	47.5	34.2	27.9	28.2	20.3	16.0	11.3	8.5	7.2	6.9	6.4	2.6	3.6	2.6	2.1	2.1	1.4
French Polynesia	43.3	44.3	36.2	30.5	25.4	19.2	16.3	11.2	8.4	6.1	5.0	4.9	2.7	3.3	2.8	2.4	2.0	1.4
Niue	39.2	44.3	38.3	31.4	21.5	16.8	11.7	9.9	8.8	9.6	9.1	9.3	2.7	3.4	2.9	2.2	1.2	0.8
Samoa	50.9	47.2	37.7	36.9	31.1	29.2	17.7	13.1	9.4	7.6	6.8	5.7	3.3	3.4	2.8	2.9	2.4	2.4
Tokelau	38.1	39.6	30.1	28.8	36.7	26.1	11.7	9.6	7.7	7.1	5.8	5.1	2.6	3.0	2.2	2.2	3.1	2.1
Tonga	45.1	45.0	33.8	33.7	29.9	28.6	8.7	6.9	5.5	5.8	6.1	6.1	3.7	3.8	2.8	2.8	2.4	2.3
Tuvalu	36.9	39.5	23.2	25.9	28.3	24.7	22.1	17.3	12.8	11.5	10.2	9.7	1.5	2.2	1.0	1.4	1.8	1.5
Wallis and Futuna	52.6	52.9	45.4	37.4	30.3	20.5	17.2	14.1	11.7	10.0	7.8	7.2	3.5	3.9	3.4	2.7	2.3	1.3
Australia	23.0	21.9	19.6	15.6	14.7	12.7	9.4	8.7	8.5	7.3	7.0	6.8	1.4	1.3	1.1	0.8	0.8	0.6
New Zealand	25.7	25.9	20.8	16.0	17.1	14.1	9.3	8.9	8.4	8.1	7.6	7.1	1.6	1.7	1.2	0.8	0.9	0.7

^(a) The regional averages are weighted by the population size of each country.

^(b) The mean annual rates of natural increase were calculated from the crude birth and death rates and rounded to one decimal place.

Sources: United Nations (2008); for countries not included in *World Population Prospects 2008*, data communicated personally by the United Nations Statistics Division; data for the smallest states have a high level of uncertainty.

Table A.4. Male and female mean age at first marriage

Sub-region and country	Source and date	Total		
		Males	Females	Difference M-F
Melanesia				
Fiji	1996 census	26.1	22.9	3.2
New Caledonia	2004 census	33.7	31.9	1.8
Papua New Guinea	2000 census	25.8	21.8	4.0
Solomon Islands	1999 census	26.0	22.6	3.4
Vanuatu	1999 census	25.2	22.9	2.3
Micronesia				
Federated States of Micronesia	2000 census	27.4	25.2	2.2
Guam	2000 census	29.0	27.1	1.9
Kiribati	2005 census	24.6	22.2	2.4
Marshall Islands	1999 census	25.2	23.0	2.2
Northern Mariana Islands	2000 census	29.4	27.8	1.6
Palau	2005 census	28.9	26.6	2.3
Polynesia				
American Samoa	2000 census	28.4	25.2	3.2
French Polynesia	2007 census	34.0	31.8	2.2
Niue	2001 census	28.1	24.1	4.0
Samoa	2001 census	28.6	24.3	4.3
Tonga	2006 census	28.0	25.6	2.4
Wallis and Futuna	2003 census	28.4	26.2	2.2
Australia	2001 census	31.0	28.9	2.1
New Zealand (legal marriage)	2006 census	29.7	28.8	0.9
New Zealand (legal marriage and cohabitation)	2001 census	26.9	25.5	1.4
<i>Note:</i> For the censuses that do not indicate the method for calculating age at first marriage, the Hajnal method is probably also used.				

Table A.5. Percentages of never-married women at different ages

Sub-region and country	Source and date	Percentage of never-married women						
		Age 15-19	Age 20-24	Age 25-29	Age 30-34	Age 35-39	Age 40-44	Age 45-49
Melanesia								
Fiji	1996 census	89.6	45.8	18.4	10.5	7.6	5.6	4.6
New Caledonia	2004 census	99.5	91.4	73.9	56.8	44.5	34.9	29.1
Solomon Islands	1999 census	85.8	44.5	19.3	9.3	6.2	4.9	4.2
Vanuatu	1999 census	89.7	43.6	19.7	10.4	8.0	4.5	4.0
Micronesia								
Guam	2000 census	96.5	71.8	42.5	26.9	17.1	12.0	7.8
Kiribati	2005 census	85.3	41.0	16.0	8.3	6.2	5.4	4.2
Marshall Islands	1999 census	85.8	42.3	20.4	12.9	8.0	6.4	3.9
Northern Mariana Islands	2000 census	95.7	86.1	44.8	29.3	26.5	20.9	16.4
Palau	2005 census	96.4	68.8	44.0	24.2	17.0	13.4	10.3
Polynesia								
American Samoa	2000 census	94.7	60.0	33.2	19.5	14.4	10.9	7.9
French Polynesia	2007 census	99.1	90.3	73.2	55.4	40.2	32.7	25.0
Niue	2001 census	91.9	56.6	37.3	11.5	11.8	3.9	11.8
Samoa	2001 census	92.8	53.9	26.9	14.8	10.9	8.4	6.7
Tonga	2006 census	95.6	68.2	36.0	19.2	13.2	10.3	9.3
Wallis and Futuna	2003 census	98.0	74.4	44.9	26.6	21.4	14.1	15.6
Australia	2001 census	99.0	86.9	53.7	29.4	17.7	11.9	8.1
New Zealand (legal marriage)	2006 census	86.7	80.9	58.8	37.4	24.7	17.1	11.8
New Zealand (legal marriage and cohabitation)	2001 census	86.9	63.2	35.3	20.5	13.1	8.9	5.9

Table A.6. Total fertility rate and net reproduction rate, 1950 to 2010

Sub-region ^(a) and country	Total fertility rate ^(b)						Net reproduction rate ^(c)							
	1950- 1955	1960- 1965	1970- 1975	1980- 1985	1990- 1995	2000- 2005	2005- 2010 ⁽¹⁾	1950- 1955	1960- 1965	1970- 1975	1980- 1985	1990- 1995	2000- 2005	2005- 2010 ⁽¹⁾
OCEANIA	3.8	4.0	3.3	2.6	2.5	2.4	2.4	1.6	1.7	1.4	1.2	1.1	1.1	1.1
Melanesia	6.3	6.3	5.8	5.1	4.5	4.1	3.9	1.9	2.1	2.1	2.1	1.9	1.8	1.7
Fiji	6.6	6.0	4.2	3.8	3.4	2.7	2.8	2.8	2.6	1.9	1.7	1.5	1.4	1.3
New Caledonia	5.0	5.3	5.2	3.3	2.9	2.2	2.1	1.9	2.2	2.2	1.5	1.4	1.1	1.0
Papua New Guinea	6.2	6.3	6.1	5.5	4.7	4.4	4.1	1.7	1.9	2.1	2.1	1.9	1.8	1.8
Solomon Islands	6.4	6.4	7.2	6.4	5.5	4.6	3.9	2.1	2.4	3.1	2.9	2.2	1.8	1.7
Vanuatu	7.6	7.0	6.1	5.4	4.8	4.3	4.0	2.4	2.4	2.3	2.3	2.2	2.0	1.8
Micronesia	6.2	6.3	5.3	4.4	3.7	2.8	2.5	2.5	2.7	2.3	1.9	1.7	1.4	1.2
Federated States of Micronesia	7.2	6.9	6.9	6.0	4.8	4.1	3.6	2.7	2.8	2.9	2.6	2.1	1.8	1.6
Guam	5.5	6.0	4.1	3.1	3.1	2.7	2.5	2.4	2.7	1.9	1.5	1.5	1.3	1.2
Kiribati	6.1	7.0	5.0	5.0	4.6	3.6	3.2	2.1	2.5	1.9	2.0	1.9	1.6	1.4
Marshall Islands	8.0	8.0	8.2	7.6	6.7	5.3	4.7	3.0	3.1	3.2	3.1	2.9	2.4	2.2
Nauru	5.0	4.5	3.5	2.5	2.2	2.2	2.2	2.2	2.1	1.6	1.2	1.1	1.1	1.1
Northern Mariana Islands	5.7	5.6	5.4	3.3	2.0	1.1	1.0	2.4	2.5	2.5	1.6	0.9	0.5	0.5
Palau	6.2	6.0	5.5	2.9	2.8	2.2	2.3	2.4	2.3	2.2	1.2	1.2	1.0	1.1

Sub-region ^(a) and country	Total fertility rate ^(b)					Net reproduction rate ^(c)								
	1950- 1955	1960- 1965	1970- 1975	1980- 1985	1990- 1995	2000- 2005	2005- 2010 ⁽¹⁾	1950- 1955	1960- 1965	1970- 1975	1980- 1985	1990- 1995	2000- 2005	2005- 2010 ⁽¹⁾
Polynesia	6.7	7.0	5.5	4.6	3.9	3.3	3.0	2.5	2.9	2.3	2.0	1.8	1.6	1.5
American Samoa	6.0	6.6	5.4	4.4	4.3	3.9	3.6	2.6	2.9	2.5	2.1	2.0	1.9	1.7
Cook Islands	6.2	7.5	5.5	4.0	3.5	2.7	2.4	2.3	3.1	2.4	1.8	1.6	1.3	1.1
French Polynesia	6.0	6.5	5.2	3.8	3.1	2.4	2.2	2.2	2.7	2.2	1.7	1.4	1.1	1.1
Niue	5.8	7.0	6.8	5.4	3.6	2.8	2.6	2.4	3.1	3.1	2.5	1.7	1.4	1.2
Samoa	5.0	7.3	5.7	4.9	4.7	4.5	4.0	2.7	2.9	2.4	2.1	2.1	2.1	1.8
Tokelau	5.0	5.2	4.4	4.1	5.5	4.2	3.6	2.2	2.4	2.1	2.0	2.6	2.0	1.7
Tonga	7.3	7.3	5.5	5.5	4.5	4.2	4.0	3.0	3.1	2.4	2.5	2.1	2.0	1.9
Tuvalu	4.2	5.1	3.2	3.0	3.4	3.7	3.5	1.4	1.9	1.3	1.2	1.5	1.6	1.6
Wallis and Futuna	7.2	7.5	6.6	5.7	4.2	2.6	2.5	2.7	3.0	2.8	2.5	1.9	1.2	1.1
Australia	3.2	3.3	2.5	1.9	1.9	1.8	1.8	1.5	1.5	1.2	0.9	0.9	0.8	0.8
New Zealand	3.7	4.0	2.8	2.0	2.1	1.9	2.0	1.6	1.8	1.3	0.9	1.0	0.9	1.0

^(a) The regional averages are weighted by the population size of each country.

^(b) Sum of age-specific fertility rates observed over a given period. The TFR can be interpreted as the average number of children that a woman would bear throughout her reproductive life if she were to experience the fertility rates of the period at each age. It does not take mortality into account.

^(c) Average number of daughters that a woman would bear throughout her reproductive life if she were to experience the fertility and mortality rates of the period at each age.

Sources: United Nations (2008); for countries not included in *World Population Prospects 2008*, data communicated personally by the United Nations Statistics Division; data for the smallest states have high levels of uncertainty.

⁽¹⁾ United Nations estimates (2008).

Table A.7. Most recent indices of level, timing and characteristics of fertility in countries where a DHS survey has been conducted

Country and source		Median age of women at first birth	Median age of women at first sexual intercourse	Mean duration of breastfeeding (months)	Median duration of postpartum amenorrhoea (months)	Median duration of postpartum abstinence (months)	Median interval between last two births (months)	Percentage of women aged 15-19 who are pregnant or have one or more children
Marshall Islands	DHS 2007	20.2	17.3	18.1	6.6	5.0	30.2	26.3
Nauru	DHS 2007	21.9	17.6	19.3	5.2	2.1	28.5	15.0
Solomon Islands	DHS 2007	21.1	18.3	21.7	5.1	4.2	33.6	11.9
Tuvalu	DHS 2007	23.1	21.7	11.3	8.6	4.6	30.6	8.0

Table A.8. – Contraceptive prevalence by method (percentage of women of reproductive age)

Country and source		Modern methods						Traditional methods				All methods		
		Pill	IUD	Female sterilization	Male sterilization	Condom	Other	All modern methods	Periodic abstinence	Withdrawal	Other		All traditional methods	
Melanesia														
Fiji	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	-	35.5
Papua New Guinea	2006 DHS	-	-	-	-	-	-	24.3	-	-	-	-	8.1	32.4
Solomon Islands	2007 DHS	1.3	2.1	13.3	0.3	1.5	8.8	27.3	4.7	2.2	0.3	7.3	34.6	
Vanuatu	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	28.0	
Micronesia														
Federated States of Micronesia	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	-	49.0
Kiribati	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	-	22.2
Marshall Islands	2007 DHS	2.6	0.0	19.5	0.2	1.4	11.6 ^(a)	35.3	1.1	0.5	0.2	1.8	37.1	
Nauru	2007 DHS	0.6	3.8	13.3	0.2	2.8	4.4 ^(b)	25.1	4.7	4.5	1.2	10.5	35.6	
Palau	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	17.2	
Polynesia														
Cook Islands	2005 ⁽¹⁾	-	-	-	-	-	-	37.0	-	-	-	-	6.8	43.8
Samoa	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	-	31.0
Tonga	2005 ⁽¹⁾	-	-	-	-	-	-	-	-	-	-	-	-	19.7
Tuvalu	2007 DHS	2.2	1.3	8.5	-	0.5	9.9 ^(c)	22.4	5.9	1.2	1.0	8.1	30.5	
Australia	2002	-	-	-	-	-	-	64.0	-	-	-	-	-	71.0
New Zealand	1995	-	-	-	-	-	-	71.0	-	-	-	-	-	74.0

(a) Injectables (8.4%) and implants (3.2%).
(b) Injectables (2.3%) and implants (2.1%).
(c) Injectables (8.4%) and implants (1.5%).
-: Data not available.

Sources: ⁽¹⁾ Robertson, 2007; <http://unstats.un.org/unsd/demographic/products/socind/contraceptive.htm> for Australia and New Zealand.

Table A.9. – Life expectancy and infant mortality, 1950 to 2005

Sub-region ^(a) and country	Life expectancy (years)					Infant mortality rate (%)						
	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	2000-2005
OCEANIA	60.4	63.7	65.8	69.9	72.3	75.2	61.4	50.5	44.0	33.9	29.5	25.8
Melanesia	37.4	42.7	47.7	55.0	57.4	60.9	145.3	121.3	100.9	72.6	64.1	52.1
Fiji	52.5	56.5	60.6	64.7	66.6	67.8	80.3	65.8	52.4	40.1	34.8	21.6
New Caledonia	51.4	58.2	61.2	68.4	71.5	75.1	93.0	73.0	45.0	21.0	11.0	6.6
Papua New Guinea	34.7	39.7	44.7	52.5	55.3	59.0	157.7	133.6	111.5	79.4	69.1	56.4
Solomon Islands	45.4	50.4	55.5	58.7	58.3	63.5	146.0	118.0	91.0	76.0	77.9	54.8
Vanuatu	42.0	48.0	54.0	60.0	65.1	68.4	169.0	132.0	99.0	70.0	38.2	34.3
Micronesia	53.2	57.3	61.5	64.6	67.6	69.5	105.5	84.6	64.1	52.3	38.7	28.7
Federated States of Micronesia	54.6	58.6	62.7	65.3	66.5	67.6	96.5	76.9	58.3	47.1	42.3	37.9
Guam	57.0	62.1	66.6	69.9	72.5	74.6	82.9	59.8	41.3	28.5	12.8	10.1
Kiribati	43.5	48.1	52.6	57.1	61.5	65.5	159.6	132.4	107.8	85.2	64.6	47.4
Marshall Islands	54.6	55.7	57.5	59.8	63.6	68.8	96.5	90.7	82.3	71.4	54.3	33.1
Nauru	59.1	64.6	68.8	72.3	75.9	78.7	57.5	40.8	29.3	21.1	13.8	9.5
Northern Mariana Islands	55.6	60.6	65.6	70.6	71.8	75.2	130.0	90.0	50.0	26.3	22.5	13.9
Palau	54.6	55.8	57.5	59.8	63.7	68.7	96.5	90.7	82.3	71.4	54.3	33.2

Sub-region ^(a) and country	Life expectancy (years)					Infant mortality rate (%)						
	1950- 1955	1960- 1965	1970- 1975	1980- 1985	1990- 1995	2000- 2005	1950- 1955	1960- 1965	1970- 1975	1980- 1985	1990- 1995	2000- 2005
Polynesia	50.4	56.1	60.5	64.9	68.8	71.5	98.7	73.7	57.7	38.7	24.7	19.7
American Samoa	63.4	65.7	68.0	70.4	72.1	72.4	55.5	45.8	36.3	27.6	22.4	21.4
Cook Islands	48.9	57.0	60.9	66.2	70.1	72.9	94.2	64.4	51.4	35.5	25.3	18.8
French Polynesia	48.9	57.0	60.9	66.2	70.2	73.1	132.0	85.0	64.0	30.0	11.3	8.7
Niue	58.9	63.5	65.2	66.9	69.0	71.1	76.0	55.5	48.7	41.5	33.2	25.1
Samoa	45.9	51.1	56.1	61.2	66.1	70.0	107.1	87.1	68.5	51.6	36.1	25.7
Tokelau	59.3	64.7	68.9	72.0	75.9	78.1	57.5	40.8	29.3	21.1	13.8	9.7
Tonga	58.7	62.3	65.7	68.1	69.8	71.1	58.9	47.2	37.3	30.6	26.4	23.4
Tuvalu	43.5	48.0	52.5	57.1	62.4	64.5	117.8	99.0	81.5	65.2	48.0	41.7
Wallis and Futuna	46.1	51.1	56.2	61.0	66.2	70.2	107.1	87.1	68.5	51.6	36.1	25.7
Australia	69.6	70.9	71.7	75.1	77.7	80.5	23.6	19.6	16.6	9.9	6.6	5.4
New Zealand	69.6	71.0	71.7	73.7	76.1	79.3	26.3	20.6	16.1	11.7	7.6	4.9

^(a) The sub-regional averages are weighted by the population size of each territory.

Sources: United Nations (2008); for countries not included in *World Population Prospects 2008*, data communicated personally by the United Nations Statistics Division; data for the smallest states have high levels of uncertainty.

Table A.10. Maternal mortality and HIV prevalence at ages 15 and over

Sub-region and country	Maternal mortality rate in 2005 ^(a)	HIV prevalence rate ^(b) in 2006 (%)	Male / female prevalence ratio ^(c)
Melanesia	610	0.38	0.99
Fiji	47	0.10	1.34
New Caledonia	–	0.17	2.86
Papua New Guinea	733	1.80	0.97
Solomon Islands	245	< 0.01	0.60
Vanuatu	105	< 0.01	0.50
Micronesia	206	0.08	3.27
Federated States of Micronesia	317	0.05	2.20
Guam	–	0.14	6.12
Kiribati	155	0.08	1.88
Marshall Islands	74	0.04	1.00
Nauru	–	0.03	–
Northern Mariana Islands	–	0.05	1.23
Palau	–	0.05	1.67
Polynesia	56	0.07	2.41
American Samoa	–	0.01	2.00
Cook Islands	–	0.02	1.00
French Polynesia	30	0.14	2.53
Niue	–	0.01	–
Samoa	29	< 0.01	2.00
Tokelau	–	0.01	–
Tonga	113	0.02	1.00
Tuvalu	30	0.14	8.00
Wallis and Futuna	–	0.02	1.00
Australia	4	0.10	–
New Zealand	15	0.10	–

^(a) Defined as the number of maternal deaths for 100,000 live births; these data refer to the period 2000-2005.

^(b) Males and females aged 15+. The HIV prevalence rate measures the proportion of HIV-infected persons, whether or not they have AIDS.

^(c) Ratio of male HIV prevalence to female HIV prevalence.

–: Data not available.

Sources: WHO (2007); UNAIDS/WHO:
http://data.unaids.org/pub/GlobalReport/2008/jc1510_2008_global_report_pp211_234_en.pdf;
 South Pacific Community:
http://www.spc.int/hiv/index2.php?option=com_docman&task=doc_view&gid=249&Itemid=148

Table A.11: Conditions of delivery, mortality and health of children

Sub-region and country	Mortality rates (‰) ^(a)			Percentage of births with no antenatal care ^(b) (2000-2006)	Percentage of deliveries not attended by skilled health personnel ^(a) (2000-2006)	Percentage of children vaccinated against measles ^(a) (2000-2006)	Percentage of under-5s with severely stunted growth ^(a) (2000-2006)
	Age 0-5 (2006)		Infant (2006)				
	Neonatal (2000)	Age 0-5 (2006)					
Melanesia	-	-	-	-	-	-	-
Fiji	9	18	16	-	1	99	-
New Caledonia	-	8	7	-	-	-	-
Papua New Guinea	29	73	54	22	47	65	-
Solomon Islands	12	73	55	5	28	81	12
Vanuatu	19	36	30	-	12	99	-
Micronesia	-	-	29	-	-	-	-
Federated States of Micronesia	12	41	33	-	12	83	15
Guam	-	-	10	-	-	-	-
Kiribati	27	69	52	12	15	61	13
Marshall Islands	26	56	50	5	6	96	13
Nauru	14	30	25	-	-	99	-
Northern Mariana Islands	-	-	7	-	-	-	-
Palau	-	12	10	0	0	98	-
Polynesia	-	-	20	-	-	-	-
American Samoa	-	-	15	-	-	-	-
Cook Islands	12	19	16	-	2	98	10
French Polynesia	4	8	7	-	3	71	-
Niue	-	-	29	-	0	99	-
Samoa	13	28	23	-	0	54	-
Tokelau	-	-	33	-	0	-	-
Tonga	10	24	20	-	5	96	-
Tuvalu	22	38	31	3	2	84	2
Wallis and Futuna	-	-	6	-	-	-	-
Australia	3	6	5	0	0	94	-
New Zealand	4	6	5	0	5	82	-

-: Data not available.

Source: ^(a) UNICEF 2008, *The State of the World's Children 2008*, Statistical tables; Tuvalu: DHS 2007; Papua New Guinea: DHS 2006 communicated by the National Statistical Office of PNG, National Health Conference, 2008, July 9-11 (results not yet published).^(b) UNICEF/World Health Organization, *Antenatal Care in Developing Countries: Promises, Achievements and Missed Opportunities*, 2003.

Table A.12. Proportions of the population aged under 15 and over 60, and median age from 1950 to 2030; dependency ratio and sex ratio in 2005

Sub-region ^(a) and country	Percentage under 15			Percentage aged 60+			Median age (in years)			Dependency ratio in 2005 (%) ^(b)	Sex ratio in 2005 (%) ^(c)
	1950	2005	2030	1950	2005	2030	1950	2005	2030		
OCEANIA	29.9	25.0	20.5	11.1	14.0	24.2	28.0	32.2	36.1	64.1	99.8
Melanesia	40.4	39.5	30.3	5.7	4.5	8.7	19.7	20.2	24.6	78.4	103.7
Fiji	46.7	32.9	23.8	4.5	6.9	14.7	16.6	23.7	30.2	66.0	103.0
New Caledonia	36.5	27.3	19.3	6.1	9.9	21.4	22.5	28.8	36.7	59.3	101.6
Papua New Guinea	39.3	40.7	31.3	6.0	3.9	7.8	20.3	19.5	23.7	80.6	103.5
Solomon Islands	42.5	40.5	29.7	3.2	4.7	7.9	18.3	19.4	25.0	82.7	107.3
Vanuatu	46.3	40.1	30.0	4.3	5.0	9.3	16.8	19.4	24.9	82.2	104.4
Micronesia	35.4	32.0	23.9	5.4	6.3	14.9	21.1	24.8	30.3	62.0	98.5
Federated States of Micronesia	40.4	38.2	27.9	6.3	5.4	9.8	19.8	19.8	26.9	77.4	103.2
Guam	27.1	29.4	22.2	2.2	9.5	18.7	22.8	28.4	33.9	63.5	104.0
Kiribati	38.5	37.3	27.4	8.1	5.4	10.9	21.3	20.8	28.8	74.5	97.2
Marshall Islands	45.5	39.7	27.7	8.8	3.6	11.0	18.3	19.4	26.7	76.6	104.2
Nauru	44.0	24.5	18.5	10.4	11.0	23.4	18.6	31.3	38.8	55.3	85.9
Northern Mariana Islands	40.6	20.1	19.0	4.5	2.8	12.5	19.6	29.7	33.2	29.7	104.9
Palau	44.0	24.6	22.8	10.4	7.8	16.0	18.6	32.1	34.9	48.0	116.2

Sub-region ^(a) and country	Percentage under 15		Percentage aged 60+		Median age (in years)			Dependency ratio in 2005 (%) ^(b)	Sex ratio in 2005 (%) ^(c)		
	1950	2005	2030	1950	2005	2030					
Polynesia	46.1	34.1	25.0	4.1	7.7	15.8	16.9	23.2	29.5	71.8	105.2
American Samoa	46.3	37.7	27.5	3.7	6.1	12.4	16.6	21.2	28.1	77.7	101.8
Cook Islands	45.8	31.6	22.5	5.0	10.1	16.3	17.0	25.7	34.4	71.6	106.7
French Polynesia	44.6	27.4	20.6	4.4	8.1	17.9	17.8	27.1	35.6	55.0	105.1
Niue	38.7	26.4	19.7	7.4	15.1	25.0	19.9	31.1	36.9	71.1	96.7
Samoa	46.9	41.1	30.7	4.0	6.6	11.2	16.6	19.0	26.0	91.3	108.6
Tokelau	42.4	37.9	25.9	7.1	11.0	19.0	19.3	22.3	34.0	95.6	100.8
Tonga	48.8	37.6	29.2	3.1	8.3	11.1	15.5	21.2	25.2	84.9	102.8
Tuvalu	31.4	35.5	30.4	7.4	8.6	13.2	24.0	22.2	25.9	79.0	97.9
Wallis and Futuna	48.8	30.0	23.0	3.1	9.8	15.7	15.5	24.9	33.3	66.4	98.4
Australia	26.5	19.7	16.5	12.5	17.6	30.7	30.4	36.6	42.5	59.5	98.7
New Zealand	29.1	21.5	17.0	13.1	16.5	30.0	29.4	35.6	41.2	61.3	97.3

^(a) The sub-regional averages are weighted by the population size of each country.

^(b) Ratio of the population aged under 15 and over 60 to the population aged 15-59.

^(c) Number of males per 100 females.

Sources: United Nations (2008); for countries not included in *World Population Prospects 2008*, data communicated personally by the United Nations Statistics Division; data for the smallest states have high levels of uncertainty.

Table A.13. International migration, refugees and displaced populations

Sub-region and country	Migrant stock in 2005 ^(a)		Net migration rate (%) in 2000-2005 ^(b)	Number of refugees in 2005 ^(c) (thousands)	Population under UNHCR mandate in 2005 ^(d) (thousands)
	Number (thousands)	Percentage of total population			
Melanesia	90.1	1.2	- 1.0	-	-
Fiji	17.2	2.1	- 8.3	-	-
New Caledonia	43.2	18.2	4.5	-	-
Papua New Guinea	25.4	0.4	-	7.7	10.0
Solomon Islands	3.3	0.7	-	-	-
Vanuatu	1.0	0.5	-	-	-
Micronesia	168.9	24.2	- 3.4	-	-
Federated States of Micronesia	2.9	2.6	- 15.3	-	-
Guam	113.4	67.3	1.0	-	-
Kiribati	2.5	2.8	-	-	-
Marshall Islands	2.0	2.9	- 19.0	-	-
Nauru	5.0	48.7	- 21.0	-	-
Northern Mariana Islands (2000)	40.1	57.9	7.0	-	-
Palau	3.0	15.1	1.0	-	-

Sub-region and country	Migrant stock in 2005 ^(a)		Net migration rate (%) in 2000-2005 ^(b)	Number of refugees in 2005 ^(c) (thousands)	Population under UNHCR mandate in 2005 ^(d) (thousands)
	Number (thousands)	Percentage of total population			
Polynesia	67.1	10.7	-8.3	-	-
American Samoa (2000)	20.0	31.8	-2.0	-	-
Cook Islands	2.8	14.6	1.0	-	-
French Polynesia	33.6	13.1	1.5	-	-
Niue	-	-	-41.0	-	-
Samoa	9.2	5.0	-16.6	-	-
Tokelau	-	-	-33.0	-	-
Tonga	1.2	1.1	-16.1	-	-
Tuvalu	0.3	3.1	-11.0	-	-
Wallis and Futuna	-	-	-6.0	-	-
Australia	4,405.6	22.2	6.0	64.9	66.8
New Zealand	879.5	21.8	5.1	4.9	5.7

^(a) Number of persons born abroad; ^(b) Annual number of immigrants minus annual number of emigrants between 2000 and 2005 divided by the average total population of the country or region; ^(c) Person with refugee status under the various international conventions currently in force (United Nations, 2006b); ^(d) Total number of foreign refugees, asylum seekers, return refugees and internally displaced individuals under UNHCR protection.
 -: Data not available.
Sources: 2006 census for Australia and New Zealand; ESCAP *Statistical Yearbook for Asia and the Pacific 2008*, for migrant stock; United Nations (2008) for migration rates; UNHCR (2008) for population under UNHCR mandate, <http://www.unhcr.org/4981c3dc2.html>

Table A.14. Development indicators (economy, human development and poverty)

Sub-region and country	Urban population 2000-2005 (%)	Per capita GNI in USD (PPP) in 2007 ^(a)	Percentage of illiterates aged 15-24 circa 2005	Net rate of primary school enrolment circa 2005 (%)	Human development index ^(b)			Human poverty index (HPI-1) ^(c)	Gender-related development index ^(d)
					1980	2005	World ranking 2005		
Melanesia									
Fiji	51	2,229	1	95.2	0.688	0.762	92	21.2	0.757
New Caledonia	63	12,784	-	-	-	-	-	-	-
Papua New Guinea	15	972	33	77.4	0.462	0.530	145	40.3	0.529
Solomon Islands	18	567	16	63.0	-	0.602	129	22.4	-
Vanuatu	24	1,140	14	94.0	-	0.674	120	24.6	-
Micronesia									
Federated States of Micronesia	21	1,511	29	92.3	-	-	-	-	-
Guam	93	-	-	-	-	-	-	-	-
Kiribati (2005)	44	484	4	93.5	-	-	-	-	-
Marshal Islands (1999)	66	1,194	15	91.7	-	-	-	-	-
Nauru (2002)	100	1,670	-	-	-	-	-	-	-
Northern Mariana Islands (2000)	90	-	-	-	-	-	-	-	-
Palau (2005)	77	6,803	1	-	-	-	-	-	-

Sub-region and country	Urban population 2000-2005 (%)	Per capita GNI in USD (PPP) in 2007 ^(a)	Percentage of illiterates aged 15-24 circa 2005	Net rate of primary school enrolment circa 2005 (%)	Human development index ^(b)			Human poverty index (HPI-1) ^(c)	Gender-related development index ^(d)
					1980	2005	World ranking 2005		
Polynesia									
American Samoa	50	-	-	-	-	-	-	-	-
Cook Islands (2001)	68	7,203	1	92.3	-	-	-	-	-
French Polynesia	57	16,971	1	99.2	-	-	-	-	-
Niue (2006)	34	-	0	-	-	-	-	-	-
Samoa	22	1,023	1	90.0	0.709	0.785	77	0.776	
Tokelau (2001)	-	-	14	-	-	-	-	-	-
Tonga	34	1,866	1	95.0	-	0.819	55	0.814	
Tuvalu (2002)	49	1,656	5	99.6	-	-	-	-	-
Wallis and Futuna (2008)	-	-	-	-	-	-	-	-	-
Australia	88	27,663	-	97.0	0.868	0.962	3	0.960	
New Zealand	86	17,612	-	99.0	0.860	0.943	19	0.935	

^(a) Per capita gross national income in USD calculated in terms of purchasing power parity (PPP); ^(b) Composite index measuring human development, including life expectancy, adult literacy rates, school enrolment ratios and per capita GDP. The closer it is to 1, the better the situation; ^(c) Composite index measuring deprivations in health (mortality from age 0 to 40), education (adult illiteracy) and standard of living (access to an improved water source and malnutrition under age 5). The closer it is to 0, the better the situation. ^(d) Index based on the same criteria as the HDI, but reflecting inequalities between men and women.

-: Data not available.

Sources: PNUD Human Development Report (2007/8) http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf; PIB/hab: Economic and Social Commission for Asia and the Pacific <http://www.unescap.org/stat/data/syb2008/15.2-Gross-domestic-product-per-capita.xls>; national MDG Reports; MDG Database, <http://www.unescap.org/stat/data/syb2008/index.asp> consulted 1 June 2009.

Table A.15. Indicators of young adult literacy (ages 15-24) and women's status, recent data

Sub-region and country	Percentage of literate young adults			F/M ratio	Female non-agricultural wage employment ^(a)	Proportion of women in representative functions ^(b)
	Males	Females	Overall			
Melanesia						
Fiji (2000)	99.1	99.4	99.3	1.00	31	7 (2004)
Papua New Guinea (1990 census)	-	-	60.6	-	6	0
Papua New Guinea (2000 census)	-	-	61.7	0.90	5	1
Solomon Islands (1999 census)	-	-	84.5	0.90	26	0
Vanuatu	-	-	86.0	-	40	4
Micronesia						
Federated States of Micronesia	-	-	71.0 ⁽¹⁾	0.97	34	0
Kiribati	95.3	96.6	96.0	1.01	40	7
Marshall Islands	-	-	85.5 ⁽²⁾	-	36	3
Nauru	-	-	-	-	-	0
Palau	98.3	99.3	98.7	1.01	40	0

Sub-region and country	Percentage of literate young adults			Female non-agricultural wage employment ^(a)	Proportion of women in representative functions ^(b)
	Males	Females	Overall		
Polynesia					
Cook Islands	–	–	99.5 ⁽¹⁾	45	8
French Polynesia	99.0	99.3	99.2	31	34 ⁽³⁾
Niue	–	–	100.0 ⁽¹⁾	37	10
Samoa	99.5	99.4	99.5	38	6
Tokelau	–	–	86.5 ⁽¹⁾	33	14
Tonga	99.3	99.4	99.3	30	3
Tuvalu	–	–	95.0 ⁽¹⁾	44	0
Australia	–	–	–	–	24.7 ⁽⁴⁾
New Zealand	–	–	–	–	32.2 ⁽⁴⁾

^(a) Share of women in wage employment in the non-agricultural sector, indicator 3.2 of the Millennium Development Goals (MDG).
^(b) Proportion of seats held by women in national parliament, indicator 3.3 of the MDG.
⁽¹⁾ Aged 15+; ⁽²⁾ left school before completing grade 8; ⁽³⁾ municipal level, ministries and assembly; ⁽⁴⁾ lower house.
 –: Data not available.

Note: Some countries give the F/M ratio but not sex-specific data. The international databases sometimes give projections.
Sources: National MDG Reports; MDG Database; PNUD Human Development Report (2007/8) http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf

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**Jean-Louis RALLU • THE DEMOGRAPHY OF OCEANIA FROM THE 1950S TO THE 2000S.
A SUMMARY OF CHANGES AND A STATISTICAL ASSESSMENT**

Oceania is made up of 17 independent countries and 6 territories totalling 35 million inhabitants, of which 73% live in Australia and New Zealand. This chronicle describes the major socio-demographic and health trends since the 1950s in the region as a whole, in its four sub-regions (Melanesia, Micronesia, Polynesia and Australia – New Zealand) and, where possible, in each country. The most reliable recent data are given in a statistical appendix. An introductory presentation of the region's geographical, institutional and economic diversity is followed by a description of demographic growth rates, population size and structure, nuptiality, fertility and its determinants, mortality (overall, infant, maternal), child health, migration, urbanization and access to education. As in the other regions of the world, the demographic regimes in Oceania have diversified over the last two decades. Natural growth is slowing down, but still ranges between 0.6% and more than 2% per year in the different countries. Fertility is declining everywhere, but levels are highly contrasting (around 2 children per woman in six countries, above 4 in seven others). Life expectancy is also increasing, but varies between 61 years in the sub-region of Melanesia and 80 years in Australia – New Zealand. Likewise, infant mortality ranges from 5 to 50 per 1,000. The proportion of urban dwellers is quite small in most of the island countries. Migration has played a major role in the population dynamics of Oceania, and continues to do so, notably through the emigration of young adults. Access to education is practically universal in the vast majority of countries.

**Jean-Louis RALLU • LA DÉMOGRAPHIE DE L'OCÉANIE DES ANNÉES 1950 AUX ANNÉES 2000.
SYNTHÈSE DES CHANGEMENTS ET BILAN STATISTIQUE**

L'Océanie est composée de 17 pays indépendants et 6 territoires, comptant 35 millions d'habitants dont 73 % sont en Australie et Nouvelle-Zélande. Cette chronique retrace les grands changements sociodémographiques et sanitaires survenus depuis les années 1950 dans l'ensemble de la région, les 4 sous-régions qui la composent (Mélanésie, Micronésie, Polynésie et Australie – Nouvelle-Zélande) et, dans la mesure du possible, chaque pays. Une annexe statistique présente, pour chacun, les données récentes les plus fiables. Après une présentation de la diversité géographique, institutionnelle et économique de la région, y sont notamment décrits les croissances, effectifs et structures de la population, la nuptialité, la fécondité et ses déterminants, la mortalité (générale, infantile, maternelle), la santé des enfants, les migrations, l'urbanisation et l'accès à l'éducation. Comme dans les autres régions du monde, les régimes démographiques se diversifient depuis 20 ans. Les croissances naturelles ralentissent, mais varient encore de plus de 20 ‰ à 6 ‰ par an selon les pays. La baisse de la fécondité est générale mais les niveaux sont contrastés (autour de 2 enfants par femme dans six pays, plus de 4 dans sept autres). Les espérances de vie augmentent partout, mais varient actuellement de 61 ans dans la sous-région de Mélanésie à 80 ans en Australie – Nouvelle-Zélande ; la mortalité infantile de 5 ‰ à 50 ‰. L'urbanisation demeure assez faible dans la plupart des pays insulaires. Les migrations ont joué et jouent toujours un grand rôle dans la région, notamment par l'émigration des jeunes adultes. L'accès à l'éducation se généralise dans une grande majorité des pays.

**Jean-Louis RALLU • LA DEMOGRAFÍA DE OCEANÍA DE LOS AÑOS 1950 A LOS AÑOS 2000.
SÍNTESIS DE LOS CAMBIOS Y BALANCE ESTADÍSTICO**

Oceania está compuesta de 17 países y 6 territorios, que cuentan con 35 millones de habitantes de los que 73% residen en Australia o en Nueva Zelanda. Este artículo examina los grandes cambios sociodemográficos y sanitarios sucedidos desde los años 1950 en la región, en las cuatro subregiones que la constituyen (Melanesia, Micronesia, Polinesia y Australia-Nueva Zelanda) y, en la medida de lo posible, en cada país. Un apéndice estadístico ofrece los datos recientes más fiables. Después de una presentación de la diversidad geográfica, institucional y económica de la región, se examinan en particular el crecimiento, los efectivos y la estructura de la población, la nupcialidad, la fecundidad y sus determinantes, la mortalidad (general, infantil, materna), la salud de los niños, las migraciones, la urbanización y el acceso a la educación. Como en otras regiones del mundo, los regímenes demográficos se diversifican desde hace 20 años. El crecimiento natural va reduciéndose pero varía todavía de más de 20 ‰ a 6 ‰ por año, según el país. La caída de la fecundidad es general pero los niveles contrastan (2 hijos por mujer en seis países y más de 4 en siete de ellos). La esperanza de vida aumenta en todas partes, pero varía actualmente de 61 años en Melanesia a 80 años en Australia-Nueva Zelanda; la mortalidad infantil va de 5 ‰ a 50 ‰. La urbanización es aún bastante modesta en la mayor parte de los países insulares. Las migraciones han desempeñado y desempeñan todavía un papel muy importante en la región, especialmente la emigración de los jóvenes adultos.

Translated by Godfrey Rogers and Robert Reay-Jones.

