Solomon Islands Government

2009 POPULATION & HOUSING CENSUS

NATIONAL REPORT

(*Volume 2*)

ANALYSIS

PREFACE

This report provides the basic analysis of the 2009 Population and Housing Census at the national level. The report complements the *Report of the 2009 Population and Housing Census - Basic Tables and Census Description (Volume 1)* and thus forms the aggregate level analysis for the country. The set of tables presented are consistent with United Nations Principles and Recommendations for Population and Housing Censuses and thus ensures a standard of comparability with the previous censuses.

In the census history of the Solomon Islands, the 2009 Census of Population and Housing is the fourth full national census completed in the country following from the 1976 Census. Further information on the history of the censuses is discussed in the *Volume 1* report.

This report basically provides an analysis about the population of the country and its social, demographic and housing characteristics. There are 6 chapters focusing on various topics such as: population profile and change, demographic components, social characteristics, household and housing, population projections, and implications of demographic trends. The data is referenced to the midnight of 22nd of November 2009, the census date.

The report is a timely initiative for the National Statistical Office (NSO) within the Ministry of Finance and Treasury (MOFT) to continue to meet its mandate as the official government agency responsible for implementing key national statistical projects (e.g., census), collecting relevant data from such projects, analysing and disseminating the results for policy and planning, decision making and public consumption. The information and indicators from this analysis also responds to the growing demand for data and statistics. The information herein is highly relevant for the monitoring and evaluation of the country's National Development Strategy (NDS) 2011-2020, the Millennium Development Goals (MDGs) and other sector policies and programs as well as in assessing the current and future socio-economic conditions of the country.

The contributions of many people and organizations in Solomon Islands towards the successful accomplishment of the 2009 Population and Housing Census ought to be acknowledged. These includes the Government of Solomon Islands through the former and current Ministers of Finance and Treasury (MOFT), and the Permanent Secretary for MOFT, Mr. Shadrach Fanega, under whose ministerial authority the 2009 Population and Housing Census for the Solomon Islands was undertaken; Mr. Martin Butterfield for his initial contribution on the strategic census planning and management; the Chairperson of the Steering Committee, and the former Acting Government Statistician (late) Mr. Nick Gagahe for his leadership and coordination of the Committee; the Chairperson of the Census Population Management Committee (CPMC), the Under Secretary for Finance and Treasury Ms. Elizabeth Kausimae for her leadership and coordination of the Committee; and to all the members of the Committee, for their valuable contributions in ensuring the final conclusion of the census operations.

Sincere thanks go to our donor partners namely the Australian Government through the Australian Agency for International Development (AusAID); the European Union (EU); the United Nations through the United Nations Fund for Population Activities (UNFPA) and United Nations Development Program (UNDP), Republic of China (ROC, Taiwan) for their financial assistance in the various operational activities of the census project; to the Census Technical Advisor, Mr. Allan Harbrow for his advice in planning and management of the

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Total population	**515,870**	102,030	413,840	26,372	76,649	26,158	26,051	3,041	93,613	137,596	40,419	21,362	64,609
Males	**264,455**	53,596	210,859	13,532	39,926	13,328	13,261	1,549	48,283	69,232	20,789	10,466	34,089
Females	**251,415**	48,434	202,981	12,840	36,723	12,830	12,790	1,492	45,330	68,364	19,630	10,896	30,520
Average annual population growth rate,1999-2009 (%)	**2.3**	4.7	1.8	2.8	2.0	2.5	1.9	2.5	4.4	1.2	2.6	1.2	2.7
Population density (number of people/Km)	**17**	-	-	7	10	6	42	5	18	33	13	25	2,953
Urbanisation													
Urban population	**102,030**	-	-	810	9,755	971	1,251	-	15,473	5,105	2,074	1,982	64,609
Per cent urban (%)	**19.8**	-	-	3.1	12.7	3.7	4.8	-	16.5	3.7	5.1	9.3	100.0
Average annual Urban growth rate,1999-2009 (%)	**4.7**	-	-	6.1	4.1	7.7	-0.6	-	16.3	11.6	7.5	17.0	2.7
Households													
Number of private households	**91,251**	15,382	75,869	4,712	13,762	5,143	4,905	688	17,163	24,421	7,173	4,303	8,981
Average household size (number of people per househo	**5.5**	6.5	5.3	5.5	5.3	4.9	5.3	4.4	5.4	5.6	5.5	4.9	7.0
Number of institutions[1]	**990**	261	729	28	236	69	19	21	216	135	138	28	100
Households characteristics													
Wages/Salaries is main household income(%)	**24**	72	14	19	27	18	14	21	23	12	14	14	78
Receiving remittances(%)	**22**	17	23	40	30	31	14	44	17	23	19	14	13
With insecticide treated bednets(%)	**75**	65	77	87	84	91	87	25	76	67	77	80	59
With improved drinking water sources(%)	**69**	89	65	72	82	87	77	94	52	61	63	75	91
With improved sanitation facilities (%)	**43**	89	33	15	31	42	10	98	44	53	14	9	97
Connected to electricity grid (%)	**12**	52	4	4	12	6	4	0	8	3	4	3	64
With radio(%)	**44**	57	41	43	40	56	42	38	44	44	34	18	61
With mobile phone (%)	**21**	68	11	6	22	17	8	19	19	11	8	14	77

SUMMARY OF MAIN INDICATORS (continued)

Indicator	Solomon Islands	Urban	Rural	Choiseul	Western	Isabel	Central	Rennell-Bellona	Guadalcanal	Malaita	Makira-Ulawa	Temotu	Honiara
Population structure													
Number of children(<15 years)	**209,284**	34,182	175,102	11,139	30,669	10,441	10,748	1,219	38,994	59,356	17,463	8,585	20,670
Youth population (15-24 years)	**96,631**	23,339	73,292	4,499	13,971	4,348	4,241	476	17,972	25,034	6,889	3,573	15,628
Population aged 25-59 years	**182,894**	41,478	141,416	9,261	27,791	9,584	9,526	1,044	32,608	45,037	13,962	7,555	26,526
Older population (60 years and older)	**27,061**	3,031	24,030	1,473	4,218	1,785	1,536	302	4,039	8,169	2,105	1,649	1,785
Median age	**19.8**	22.4	19.0	19.1	19.9	20.6	19.9	21.0	19.2	18.4	18.9	20.2	22.7
Dependency ratio (15-59)	**84.6**	57	93	92	84	88	89	100	85	96	94	92	53
Sex ratio	**105**	111	104	105	109	104	104	104	107	101	106	96	112
Marriage													
Mean age at first marriage (SMAM)	**25.2**	26.5	24.8	24.4	25.7	24.7	24.6	26.1	24.7	24.6	24.9	25.8	26.8
Males	**27.1**	28.1	26.8	26.5	27.9	26.8	26.7	29.0	26.9	26.4	26.8	27.7	28.3
Females	**23.3**	24.7	22.9	22.1	23.6	22.8	22.6	23.2	22.6	23.0	23.0	24.1	25.3
Labour force													
Employee (Gov. and Priv).													
Total	**42,082**	21,258	20,824	1,724	7,382	1,669	1,091	232	7,401	6,261	1,857	978	13,487
Male	**30,189**	14,313	15,876	1,311	5,433	1,335	782	183	5,360	4,633	1,417	705	9,030
Female	**11,893**	6,945	4,948	413	1,949	334	309	49	2,041	1,628	440	273	4,457
Employer													
Total	**1,510**	677	833	27	292	77	12	5	207	228	130	10	522
Male	**1,184**	489	695	23	233	60	12	5	165	194	106	8	378
Female	**326**	188	138	4	59	17	0	0	42	34	24	2	144
Self employed													
Total	**11,909**	3,475	8,434	681	2,597	650	924	35	2,016	2,058	624	152	2,172
Male	**8,777**	2,408	6,369	576	1,946	451	694	22	1,448	1,474	504	127	1,535
Female	**3,132**	1,067	2,065	105	651	199	230	13	568	584	120	25	637
Voluntary work													
Total	**5,550**	1,162	4,388	413	1,039	478	178	23	1,122	875	610	297	515
Male	**3,684**	557	3,127	339	747	319	131	14	691	619	412	179	233
Female	**1,866**	605	1,261	74	292	159	47	9	431	256	198	118	282
Unpaid family work													
Total	**35,654**	5,508	30,146	733	4,639	1,055	1,490	186	6,642	9,742	4,662	4,005	2,500
Male	**14,182**	1,287	12,895	482	1,742	593	619	25	2,673	4,178	2,190	1,209	471
Female	**21,472**	4,221	17,251	251	2,897	462	871	161	3,969	5,564	2,472	2,796	2,029
Producing goods for sale													
Total	**25,739**	2,366	23,373	971	6,760	838	2,093	144	6,055	5,574	1,070	961	1,273
Male	**14,421**	768	13,653	672	3,584	533	1,257	40	3,339	3,374	665	591	366
Female	**11,318**	1,598	9,720	299	3,176	305	836	104	2,716	2,200	405	370	907
Producing goods for own consumption													
Total	**87,941**	1,719	86,222	6,080	10,597	7,203	5,041	660	14,647	33,781	6,373	3,222	337
Male	**35,255**	597	34,658	2,159	4,325	2,808	1,952	385	5,936	13,439	2,613	1,531	107
Female	**52,686**	1,122	51,564	3,921	6,272	4,395	3,089	275	8,711	20,342	3,760	1,691	230
Unemployed													
Total	**4,884**	2,812	2,072	152	505	203	108	13	696	545	444	62	2,156
Male	**2,786**	1,601	1,185	92	327	92	55	7	425	338	212	40	1,198
Female	**2,098**	1,211	887	60	178	111	53	6	271	207	232	22	958
Economically active population (labor force)													
Total	**215,269**	38,977	176,292	10,781	33,811	12,173	10,937	1,298	38,786	59,064	15,770	9,687	22,962
Male	**110,478**	22,020	88,458	5,654	18,337	6,191	5,502	681	20,037	28,249	8,119	4,390	13,318
Female	**104,791**	16,957	87,834	5,127	15,474	5,982	5,435	617	18,749	30,815	7,651	5,297	9,644
Inactive													
Total	**127,155**	34,910	92,245	6,363	17,590	5,345	6,217	768	22,347	29,379	9,887	4,573	24,686
Male	**63,553**	16,907	46,646	3,027	8,399	2,656	3,100	372	11,311	15,458	4,922	2,350	11,958
Female	**63,602**	18,003	45,599	3,336	9,191	2,689	3,117	396	11,036	13,921	4,965	2,223	12,728

SUMMARY OF MAIN INDICATORS (continued)

Indicator	Solomon Islands	Urban	Rural	Choisuel	Western	Isabel	Central	RenneIl-Bellona	Guadalcanal	Malaita	Makira-Ulawa	Temotu	Honiara
Labor force participation rate													
Total	**62.9**	52.8	65.6	62.9	65.8	69.5	63.8	62.8	63.4	66.8	61.5	67.9	48.2
Male	**63.5**	56.6	65.5	65.1	68.6	70.0	64.0	64.7	63.9	64.6	62.3	65.1	52.7
Female	**62.2**	48.5	65.8	60.6	62.7	69.0	63.6	60.9	62.9	68.9	60.6	70.4	43.1
Unemployment rate													
Total	**2.3**	7.2	1.2	1.4	1.5	1.7	1.0	1.0	1.8	0.9	2.8	0.6	9.4
Male	**2.5**	7.3	1.3	1.6	1.8	1.5	1.0	1.0	2.1	1.2	2.6	0.9	9.0
Female	**2.0**	7.1	1.0	1.2	1.2	1.9	1.0	1.0	1.4	0.7	3.0	0.4	9.9
Education													
School enrolment rates,6-12 years olds(%)	**83.3**	86.9	82.6	92.0	90.6	88.5	86.5	97.3	80.5	75.3	87.2	87.8	86.4
Males	**82.8**	86.4	82.0	90.9	89.5	87.2	85.9	95.9	80.5	74.9	86.2	87.5	86.1
Females	**83.9**	87.5	83.3	93.1	91.7	89.9	87.2	98.9	80.5	75.8	88.4	88.2	86.7
School enrolment rates,6-15 years olds(%)	**83.5**	86.6	82.9	91.3	90.2	87.0	86.2	96.3	80.6	76.8	86.6	88.0	86.3
Males	**83.2**	86.6	82.6	90.0	88.7	85.9	86.6	93.9	80.6	77.1	85.7	88.1	86.6
Females	**83.9**	86.5	83.3	92.7	91.9	88.3	85.7	98.9	80.5	76.4	87.6	88.0	86.0
School enrolment rates,15-19 years olds(%)													
Males	**62.6**	65.6	61.7	63.6	62.0	52.6	66.8	83.1	60.6	61.4	59.4	69.3	68.5
Females	**65.2**	69.6	64.0	62.1	60.5	53.2	72.7	78.7	63.6	65.7	61.8	74.8	72.6
Percentage of pop aged 12 and older with	**59.8**	61.6	59.4	65.2	63.6	52.0	60.8	88.2	57.5	56.9	56.8	64.1	64.3
no school completed													
primary education	**56.7**	44.6	60.1	73.4	69.9	50.8	60.3	68.2	55.1	55.0	60.2	56.2	40.4
secondary education	**18.9**	32.4	15.2	16.6	18.8	25.0	16.3	16.6	17.9	12.2	17.3	14.3	34.7
tertiary education	**4.4**	10.8	2.6	2.9	4.2	3.0	2.3	7.6	3.6	2.2	3.1	2.7	12.8
vocational/professional qualification	**0.9**	1.1	0.9	1.3	1.6	0.7	0.5	1.7	0.8	0.5	1.6	0.6	1.1

Indicator	Solomon Islands	Urban	Rural	Choisuel	Western	Isabel	Central	RenneIl-Bellona	Guadalcanal	Malaita	Makira-Ulawa	Temotu	Honiara
Literacy rate,15+(%)[3]	**84.1**	93.7	81.4	95.9	96.3	84.0	80.6	99.1	82.9	70.4	90.1	71.3	94.5
Males	**88.9**	96.3	86.7	95.7	96.3	88.9	87.5	99.1	87.4	78.8	93.1	82.8	96.9
Females	**79.2**	90.7	76.2	96.2	96.4	79.1	73.7	99.0	78.1	62.4	87.1	61.1	91.8
Literacy rate,15-24 (%)[4]	**89.5**	95.6	87.6	95.8	96.2	89.3	87.7	98.3	88.8	79.9	93.9	89.8	96.2
Males	**90.6**	96.3	88.7	94.1	95.3	89.3	89.9	98.0	90.5	82.3	93.6	91.4	96.9
Females	**88.4**	94.8	86.4	97.5	97.2	89.2	85.6	98.7	87.2	77.5	94.1	88.4	95.4
Language ability,5+ (%)[5]													
English	**69.0**	84.2	65.1	74.7	79.5	68.8	58.7	81.7	66.7	56.0	74.7	66.2	85.6
Males	**72.9**	86.8	69.2	75.1	80.0	73.1	65.7	82.5	70.6	61.7	77.4	73.5	88.3
Females	**64.9**	81.3	60.9	74.3	78.9	64.4	51.5	80.8	62.5	50.3	71.8	59.3	82.5
Pidgin	**66.6**	81.1	62.9	73.8	78.5	66.5	60.7	77.4	66.0	51.8	72.0	53.8	83.9
Males	**70.0**	83.5	66.5	73.7	78.8	70.2	66.3	76.4	69.4	56.9	74.4	60.2	86.4
Females	**63.0**	78.4	59.2	73.8	78.1	62.8	54.8	78.5	62.3	46.7	69.5	47.8	81.2
Local language	**66.1**	75.3	63.7	80.0	80.0	67.0	61.6	91.9	66.2	52.4	73.8	36.0	78.0
Males	**68.8**	77.5	66.5	78.3	79.4	69.4	65.7	91.5	69.1	57.1	75.1	41.2	80.2
Females	**63.3**	73.0	60.9	81.7	80.7	64.5	57.4	92.4	63.2	47.7	72.4	31.1	75.6
Other language	**26.7**	32.4	25.3	21.3	26.8	37.7	16.1	43.5	33.7	14.9	50.9	12.7	32.6
Males	**28.1**	33.5	26.7	21.2	26.9	41.3	17.2	43.5	35.1	16.5	52.7	14.4	33.7
Females	**25.2**	31.2	23.8	21.5	26.7	34.0	14.8	43.4	32.2	13.2	49.1	11.2	31.3
Number of people with a disability													
Blindness	**907**	63	844	57	159	75	62	5	139	248	60	71	31
Males	**411**	39	372	22	77	36	27	4	52	110	26	36	21
Females	**496**	24	472	35	82	39	35	1	87	138	34	35	10
Deafness	**1,398**	131	1,267	94	220	105	111	11	226	397	84	79	71
Males	**729**	72	657	54	115	53	55	9	102	217	48	39	37
Females	**669**	59	610	40	105	52	56	2	124	180	36	40	34
Lameness	**2,975**	353	2,622	204	509	174	208	22	460	826	206	160	206
Males	**1,491**	200	1,291	97	254	83	128	11	223	406	103	76	110
Females	**1,484**	153	1,331	107	255	91	80	11	237	420	103	84	96
Senile and /or amnesic	**3,293**	425	2,868	228	586	217	160	13	571	872	242	151	253
Males	**1,635**	241	1,394	108	293	97	67	7	286	439	129	71	138
Females	**1,658**	184	1,474	120	293	120	93	6	285	433	113	80	115

SUMMARY OF MAIN INDICATORS (continued)

Indicator	Solomon Islands	Urban	Rural	Choisuel	Western	Isabel	Central	Rennell-Bellona	Guadalcanal	Malaita	Makira-Ulawa	Temotu	Honiara
Fertility													
Total Fertility Rate (TFR)	**4.7**	3.3	5.2	4.6	4.7	4.8	5.4	4.5	4.8	5.6	5.1	4.2	3.3
Teenage Fertility Rate (ASFR, 15-19)	62	44	68	60	61	62	71	59	63	73	67	56	51
Children ever born,CEB (45-49)[6]	5.1	4.4	5.3	5.2	4.9	5.6	4.9	4.1	5.3	5.5	5.5	4.7	4.2
General Fertilty Rate (GFR)	149	111	162	139	142	150	171	132	155	175	167	130	131
Child-Woman Ratio (CWR)	605	435	656	662	610	607	619	624	642	651	723	551	407
Mean age at childbearing of mothers (in years)	24.9	29.9	29.2	28.5	28.8	28.7	29.4	28.5	29.6	29.6	29.0	29.3	30.2
Mean age at childbearing of fathers (in years)	33.2	33.2	33.2	32.9	33.1	32.7	33.5	34.2	33.9	33.0	32.8	32.8	33.3
Annual number of births,2009	18,802	3,191	15,706	849	2,577	928	1080	81	3,549	5,680	1,581	689	2,434
Crude Birth Rate	36.4	31.3	38.0	32.2	33.6	35.5	41.4	26.7	37.9	41.1	39.1	32.1	37.7
Mortality													
Infant mortality rate (IMR) (per 1,000)	22	20	24	33	23	23	32	26	22	26	20	22	19
Males	24	21	25	37	22	22	40	31	23	26	22	18	22
Females	20	19	22	28	24	24	23	20	20	25	18	27	16
Child Mortality (per 1,000)	6	5	7	9	6	6	12	8	5	8	5	6	4
Males	7	5	8	16	6	6	18	12	6	8	6	3	5
Females	4	4	5	1	7	7	6	4	4	7	3	9	3
Under-five mortality (per 1,000)	28	25	30	46	29	16	43	34	27	33	25	28	23
Males	31	26	33	53	28	28	57	43	29	34	28	21	27
Females	25	24	27	38	31	3	28	25	24	32	21	36	19
Maternal mortality [7]													
Maternal mortality ratio	143												
Maternal mortality rate	0.21												
LTP,lifetime risk of a maternal death	7.5												
Life expectancy at age 20(e20)	53.3	54.1	52	50.8	52.3	52.3	49.7	49.8	52.8	51.1	53.6	52.8	54.1
Males	50.2	51.4	49.5	48.4	49.8	49.8	47.4	46.8	50.2	48.7	51.0	50.2	51.4
Females	56.5	56.9	54.6	53.3	55.0	55.0	52.1	52.9	55.5	53.7	56.4	55.5	56.9
Life expectancy at birth	69.6	71.3	68.4	66.7	69	69	65.2	65.2	69.6	67.3	70.7	69.6	71.3
Males	66.2	67.9	65.1	63.5	65.7	65.7	62.0	61.0	66.2	64.0	67.3	66.2	67.9
Females	73.1	74.9	71.9	70.1	72.5	72.5	68.5	69.6	73.1	70.7	74.3	73.1	74.9
Estimated annual number of deaths,2009	2,832	375	2,572	173	441	172	181	32	472	903	208	160	225
Crude death rate	5.5	3.7	6.2	6.6	5.8	6.6	6.9	10.5	5.0	6.6	5.1	7.5	3.5

Notes:

[1] Institution include boarding schools,prison,hospitals,hotels/hostels/guesthouses, some boats:

[2] Number of children under age 5 per 1000 women aged 15-49:

[3] Proportion of population 15 years and older who are able to read and write a simple sentences in any language

[4] Proportion of population aged 15 to 24 years who are able to read and write a simple sentence in any language

[5] Proportion of population 5 years and older who are able to read and write a simple sentence in any one language

[6] Average number of children per woman aged 45-49

[7] Adjusted for underreporting

EXECUTIVE SUMMARY

The aim of this section is to provide an overview of the main findings of the 2009 Solomon Islands census data.

The 2009 census determined that the total population was **515,870**. This compares with 409,042 people in 1999, and represents an increase of 26.3% or 106,828 people. This population increase represents an average annual growth rate of 2.3%, or an increase of 10,661 people per year.

> However, as is shown in the report, the census enumeration suffered approximately from a **8.3% undercount**, and the population size stood more likely at **552 thousand** at the time of the census. Therefore the intercensal population growth rate of the period 1999-2009 was **3.0%** instead of 2.3%.
>
> Nevertheless, all statistical indicators presented in this report are based on the interviewed population of 515,870 people.

The 2009 census enumerated 264,455 males and 251,415 females, representing a **sex ratio of 105 males per 100 females**.

The **urban** population was **102,030** people (**19.8%** of the total population), and includes the entire population of the **Honiara town council (64,609)** as well as the Guadalcanal wards of Tandai and Malango as well as the settlements/towns of Gizo, Noro, Munda, Nusa Roviana, Auki, Batava/Taro, Buala, Tulagi, Kirakira/Bauro Central, and Lata/Luva Station.

The national average annual **urban growth** between 1999 and 2009 was **4.7%**, though the data show very different urban growth rates of the different urban areas: while the growth rate of Honiara urban area was with only 2.7% less than the national urban growth rate, the growth of the other provincial urban areas was higher. Of particular interest is the high growth rate of the Honiara urban surrounding, namely the two wards in Guadalcanal of Tandai and Malango with 16.4% annually. Other high urban growth areas are Auki in Malaita with 11.6%, and Lata/Luva Station in Temotu with 17% per annum.

This means that the **process of urbanisation is increasing** and at the same time is tending towards a balance across the country. The emergence of new urban areas like

Munda, Nusa Roviana, and Malango, and the expanding urbanised areas around Honiara in Guadalcanal account for this development.

The average **population density for Solomon Islands was 17 people/km²**. Although the population density was low across all provinces, it was with **2,953 people/km²** considerable higher in **Honiara**.

The census counted **91,251 private households** with 504,985 household members, which means that there were **5.5 people per household** on average.

Solomon Islands has a young population with a **median age of 19.8** years. About 41% of the population was younger than 15 years of age, and only 5% were 60 years and older.

The **age dependency ratio** was calculated using the 15–59 year-old age group as the "working age population". For every 100 people of working age, **85** were in the **age dependent** category.

The **number of births** was estimated at **18,858** in 2009. This accounts for a **crude birth rate (CBR)** of **36.4** per 1000.

The total fertility rate (TFR) — the average number of births per woman — declined from about 5.0 in 1999 to about **4.7 in 2009.**

Based on census data for the number of children ever born and still alive, the **infant mortality rate (IMR)** was estimated at **22**; 24 for males and 20 for females. This estimate is lower than the 1999 levels when the IMR was 29 and 26 for males and females – and is thus an improvement in infant mortality rates.

Based on the 2009 census data, **life expectancies at birth** were estimated to be **66.2** and **73.1** years for males and females, respectively, compared to 1999 when it was 67.0 and 70.2 years for males and females, which unfortunately represents a slight decrease of male life expectancy.

Based on the derived life tables, a **crude death rate (CDR)** of **5.5** per 1,000 was calculated, which were approximately 2,800 deaths in 2009.

The **maternal mortality ratio** was estimated at **143**.

The estimated mortality indicators show more positive mortality indicators for females than for males, with females expected to live, on average, about 6.9 years longer than males.

Net international migration is estimated be negligible during the intercensal period 1999–2009.

Women marry at a younger age than men. The average **age at marriage was 27.1 and 23.3 years for males and females,** respectively.

The **Church of Melanesia** is with 32% of the total population, the most dominant in Solomon Islands. The Roman Catholic Church is the second largest, with 20%, followed by the South Sea Evangelical Church (17%), the Seventh Day Adventists with a share of 12%, and the United Church (10%).

Data on **disabilities** indicate that about **14% of the total population** reported a **disability**. The proportion of the population with a disability increases with age, and there is very little difference in the proportion of males and females with a disability. While about 10% of children younger than 5 years of age had a disability, it was more than half of the population at aged 55-59 years.

Of those who reported disabilities, almost 3,000 people could not walk at all, 3,300 people could not remember or concentrate, another 1,400 were deaf, and 900 people were blind.

School enrolment data show that **84%** of children in the age group 6–15 years were enrolled in schools with female school enrollment rates slightly higher (83.9%) than male (83.2%) enrollment rates. However, school enrollment rates declined rapidly after the age of 13, and about 20% of 15 year-olds were not attending school. From the age of 14, male school enrollment rates were higher than female enrollment rates. In general, enrollment rates were higher in the urban than the rural areas.

Since 1986 school enrolment rates have increased very significantly in the Solomon Islands. Primary school enrollment rates of the population 5-14 years increased from just below 60% in 1999 to about 80% in 2009, and secondary school enrollment rates of the population 15-19 years increased from about 50% to over 60%. Enrollment rates were below 40% in 1986.

Furthermore, **the gap between male and female school enrollment rates** that existed in favor of males in previous censuses **has decreased**, and for primary education it is now even slightly higher for females than males.

Data on **educational level completed** indicate that in 2009, about 56% of the population 15 years and older had only a primary level education, and 21% of males and 16% of females had secondary education. Only 6% of males and 3% of females had aged 15 and older had a tertiary level education. **Eleven per cent of males and 21% of females had never been to school or only attended preschool**. Educational levels were significantly higher of the population in the urban area than in rural areas, and educational levels of males were higher than females.

Language proficiency in English was with 69% of the population 5 years and older the highest followed by **Pidgin** (67%), and **Local languages** (66%). Literacy was measured by a respondent's ability to read and write a simple sentence in any language.

In terms of **literacy** almost everyone (94%) older than 15 years of age living in the urban areas was literate. This compares to only 81% in the rural areas. Literacy rates were considerably higher for males (89%) than females (79%) for the population 15 years and older. However, this gap in literacy was much smaller for the young population aged 15-24 years, where literacy rates were 91% and 88% for males and females respectively.

Ninety percent for the population aged 10-34 were literate. From the age of 35 literacy rates gradually decline with increasing age of the population. While only 80% of the population aged 45-49 were literate, it was less than 60% of the population 70 years and older.

Although a high percentage (63%) of Solomon Islands population aged 12 and older was **economically active (in the labor force)**, only a relatively small proportion (20%) received a regular **paid income**; this was 30% of males and 10% of females 12 years and older.

Subsistence work — such as growing or gathering produce or fishing to feed families/household members — was the **main activity of 20% of males and 31% females** aged 12 and older. About 32% of the population 12 years and older in rural areas was subsistence workers compared with 2% in the urban centre.

Only about 4,884 people were categorised as being unemployed, resulting in an **unemployment rate of 2.3%**; 2.5% for males and 2.0% for females. The unemployment rates are 7.2% and 1.2% in the urban and rural areas respectively. Poor weather

conditions or being unable to afford the transportation costs to work, were reasons that157 people don't work/look for work. In addition, 1,880 people did not work and did not look for work, because they believed that no work was available. Using the international definition of unemployment, these people were not classified as unemployed because they did not look for work and did not indicate that they were available for work. However, if all of these people were included in the unemployed category, the unemployment rate would increase to **2.9%.**

The **main source of household income** was with 44% of all households the **sale of fish, crops, or handicrafts**. However, this was 52% of all rural households compared to only 9% of urban households, where 72% of all households' main income was wages and/or salary. Only 14% of rural household's main source of income came from wages and/or salary.

One quarter of all households received **remittances** at least once during the year before the census, and most received less than SI$500. While a sizeable proportion of remittances came from within the same province of a household's residence, a large proportion of the remittances were sent from Honiara to households elsewhere in the country. About 8% of remittances came from overseas, mainly originating from Australia.

Sixty-one percent of all household were involved in **fishing activities**; this was 22% of urban and 69% of rural households. Three-quarter of the fish consumed was reef fish, 40% was tuna, 11% shellfish, and 9% freshwater fish.

While 96% of all rural households were involved **in growing crops**, only 57% of urban households grow crops. The most popular crop was vegetables and food crops (71%), followed by betel nut (44%), and coconut/copra (32%).

Overall 56% of all Solomon Islands households raised **livestock**; 16% of urban households, and 64% of rural households. Thirty-eight percent and 37% of households raised pigs (121 thousand) and poultry (350 thousand). A very small proportion of households raised cows (30 thousand), goats (20 thousand), or horses (2.4 thousand).

Regarding the availability of **household items,** a higher proportion of households in urban areas (compared to rural households) used items such as motor vehicles, fridge or freezer, TV, mobile phones and landline telephones, computers, and internet. However, there are some items more commonly used in rural than in urban areas such as generators, canoes, boats and outboard motors. While 68% of urban households had at least one

mobile phone, it was only 11% in rural areas. The availability of a **radio** was 57% and 41% in urban and rural areas.

Information on **tenure** reveals that **74%** of all households **owned their dwelling** outright, while 6% rented their dwelling, and another 11% resided in their dwelling rent-free. More than 90% of households in the rural areas owned their dwelling; this was only 38% in urban areas.

Sixty-nine per cent of all households obtained their **drinking water from improved drinking water sources** such as a household connection, public standpipe, protected dug well or rainwater. However, this percentage was with 89% much higher in the urban than the rural areas (65%).

Forty-three per cent of all households used **improved sanitation facilities as toilet** such as a public sewer connection, a flush or pour-flush toilet; a water sealed toilet, or pit latrine. However, this percentage was with 89% much higher in the urban than the rural areas (33%). One in three households reported to have no toilet facility available.

The main source of **lighting** in Solomon Islands was a **kerosene lamp,** used by an average of **75%** of all households, although this percentage was much lower in the urban than the rural areas. Only **12%** of all households were connected to the **electricity main grid**; 52% of urban and 4% of rural households.

The main energy source for **cooking** for **93%** of all households was **wood and/or coconut shells.** It was almost universally used by the rural households and by 53% of the urban households, where 37% use gas as the main energy source for cooking.

Sixty percent of all households **dispose of their waste in their backyard**, and an additional 19% dispose of it into the sea. In Honiara, the waste of 36% of households is collected by the Government waste collection.

With respect to the use of insecticide treated **bednets**, 75% of all households had at least one bednet available; this was 77% of rural households compared to only 65% of urban households.

According to **population projections** prepared for this report, Solomon Islands' population in 2030 will increase to about 930 thousand people, and to **1.3 million 2050**. The population will age, with a decreasing proportion of young people aged 15 and younger, and an increase in people aged 60 and older. The **working age population** (aged 15–59) will be about 83% higher in 2030 compared to 2009, and will further

increase to about 896 thousand people in 2050. The **school age population aged 6-15** years will increase from its current level of about 135 thousand to 216 thousand in 2030, will decline to 213 thousand in 2050.

Analysis of census data provides timely and accurate information about demographic trends, patterns and levels. Through census data analysis, governments acquire comprehensive and consistent information about their country's population structure, population processes and socio-economic characteristics. The population data provided in this report can be an effective tool for planning and policy-making. As policies are aimed at achieving goals in the future, knowledge about future population trends is required.

Understanding and anticipating population changes enables development planners to formulate effective programmes in areas as diverse as health, education, environment, poverty reduction, social progress, and economic growth.

1. INTRODUCTION

1.1 Report: purpose and structure

This report is based on data collected during the population census enumeration, with 22 November 2009 being census day. The main purposes of this report are to:

- provide a general overview of the vast amount of detailed information that is available from the 2009 census enumerations;
- generate interest, curiosity, and a desire for more detailed information, especially for Solomon Islands' decision-makers and the general public; and
- enhance the decision-making process of policy-makers.

This volume concentrates on making the enormous wealth of information incorporated in the Basic Tables accessible to users of the census data. This is done by providing summaries of complicated Basic Tables presenting them in relative figures or in the form of commonly used statistical indicators (see *Summary of main Indicators*), and by pointing out trends that emerge when comparing the 2009 data with that of previous censuses.

A number of sections providing definitions, descriptions, and classifications have been extracted from the 1999 census report. This initial analysis provides the basis for the final chapters on population projections, and policy implications.

This report will give data users an introduction to census information that will enable them to produce monographs according to their own specifications. Further help can be obtained from the Solomon Islands Statistics Office.

1.2 Country profile

The Solomon Islands lie in the southwest Pacific, to the east and south of Papua New Guinea. The Main Group Archipelago (MGA) is orientated northwest to southeast, stretching about 1,700 km between Bougainville, at the eastern tip of Papua New Guinea (PNG) to the northern-most islands of Vanuatu. The central archipelago of islands lies between latitudes 5° S and 12° S and longitudes 152° E and 163° E (Map 1). It comprises a double chain of six large islands (Choiseul, Santa Isabel, New Georgia, Guadalcanal, Malaita and Makira) as well as many smaller ones making a total of 997 islands. The country has a total land area of 30,407 km^2.. In addition there is an exclusive economic zone (EEZ) which covers 1,340,000km^2.

The Solomon Islands is the third largest archipelago in the South Pacific. The main islands vary in length from 140 to 200km, in width from 30 to 50km, and in types from high islands to raised atolls and low lying islands, sand cays and rock outcrops. Guadalcanal is the largest island (5,336km^2), while the others scale down from that to a size of less than 1 ha (www.fao.org/countryprofiles).

Two climate systems affect the country. These are the southeasterly trade winds that blow from May to October and the northeasterly trade monsoon winds that blow from December until March. Between April and November, the country experiences fine, sunny, calm weather. Being close to the equator, air temperature does not vary much. Mean daily temperatures throughout the year range from a minimum of 23 degrees Celsius to a maximum of 30 degrees Celsius. Rainfall ranges between 3000-5000 mm per year. There is generally a higher rainfall in the wet (monsoon) season (SICFCS 2002, Turner 2008).

The Solomon Islands attained self-government in 1976 and independence on the 7th July 1978. With independence, a parliamentary democracy system of government was adopted. The country has a constitutional monarchy represented by a Governor-General who is the Head of State. Legislative power is vested in the National Parliament elected every 4 years. Parliamentary democracy is based on the multi party system. Executive authority is held by the Cabinet, led by the Prime Minister. Emphasis is laid on the devolution of power to provincial governments, and traditional chiefs and leaders have a special role within this arrangement (Cox and Morison 2004, Turner 2008).

For local government, the country is divided into 10 administrative areas, of which nine are provinces administered by elected provincial assemblies, and the 10th is the town of Honiara, administered by the Honiara Town Council. The provinces are Central, Choiseul, Guadalcanal, Honiara Town, Isabel, Makira-Ulawa, Malaita, Rennell and Bellona, Temotu, and Western (www.wikipedia.org).

The bulk of the population depends on agriculture, fishing, and forestry for part of its livelihood. Most manufactured goods and petroleum products must be imported. Natural resources include fish, forests, gold, bauxite, phosphates, lead, zinc, and nickel. Agriculture products include cocoa beans, coconuts, palm kernels, rice, potatoes, vegetables, fruit; timber; cattle, pigs; and fish. The main industries are fish (tuna), mining, timber, palm oil, and tourism.

The Solomon Islands is part of the Melanesian cultural area, with close ties to countries like Vanuatu, Papua New Guinea and Fiji. However, there are also other influences

through people from Micronesia (mainly Kiribati) and Polynesia, and small European and Chinese populations.

Land ownership and land use are largely organised along tribal lines, and people maintain strong attachment with their islands of origin.

Christianity has a large influence on Solomon Islands society and is represented by a large variety of denominations.

The country is also characterised by a rich linguistic diversity. English is the official language of the country, but Pidgin is widely used as the *lingua franca*.

The majority of the people live along the coast, but there are substantial population pockets in the inland areas of Guadalcanal and Malaita.

Map 1: Solomon Islands
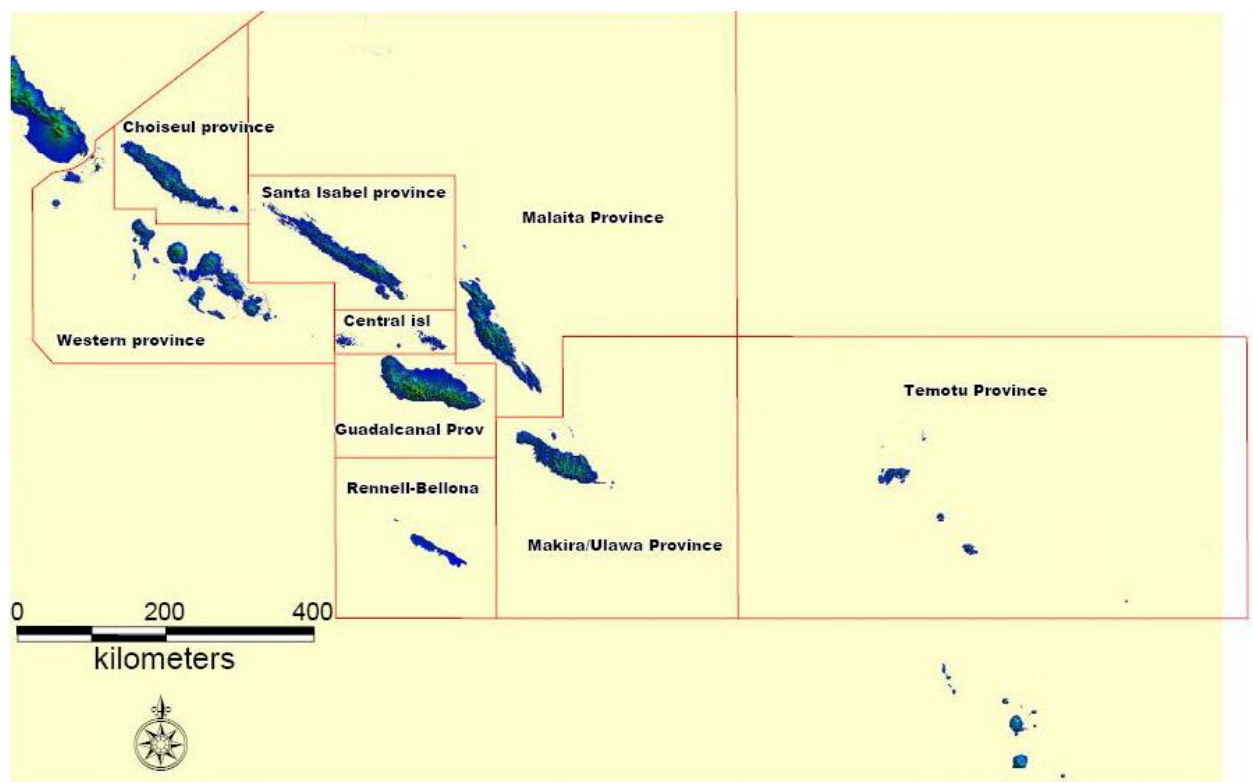
2. POPULATION PROFILE AND CHANGE

2.1 Introduction

This chapter discusses the basic demographic characteristics of the Solomon Islands population as reported in the 2009 census, and, in addition, addresses its change over time. In doing so, it focuses on the situation in November 2009 and on the 1986-1999 and 1999-2009 intercensal period, but extends its time frame when possible.

The present chapter starts with a brief description of the historical demographic development of the Solomon Islands as a general background to the present situation. In addition, the chapter focuses on the series of population counts and censuses that recorded population change over time, and describes the general population distribution across the country, including the distribution over provinces and urban and rural areas, as well as population density by province.

Apart from absolute numbers of people and their geographic distribution, information on age and sex is the most important result of a census. Such information constitutes a basic input element for successful development planning, which often targets specific groups as needs vary with sex or age. Planning in the areas of education, health services, housing, employment or food supply, all depend on reliable details on the age and sex composition of the population. For fertility and mortality analysis, programme impact assessment and population projections, such information is also essential. Therefore, an account and scrutiny of the age and sex structure reported in the 2009 census is important as a basis for development planning, but also as input for subsequent chapters in this report. Appendix 1 assesses the quality of the census information.

2.2 Historical background

General development

Settlement in the area that now constitutes the independent state of the Solomon Islands can be traced back to as early as 10,000 BC. Initial waves of immigrants came from New Guinea, while around 4000 BC Melanesian settlers arrived, following the development of agriculture in Southeast Asia. Around 1500 AD groups of Polynesian islanders began to arrive in the Solomon Islands, occupying the smaller outer islands that were relatively uninhabited. European exploration of the country started in the late 1560s, but until 1890 European presence was restricted to a few missionaries and traders. In 1893 the area was declared a British protectorate, which it remained until the transition period to independence in 1978. The intervening period was characterised by the capture of most

of the country by Japan in World War II and by the arrival of small numbers of Chinese traders and —in the 1950s and 1960s— a sizeable group of Gilbertese who were resettled from what is now Kiribati. In the 1990s Bougainville refugees entered the country, most of whom, however, were repatriated before the census in 1999. It is likely that the population of the Solomon Islands increased steadily from its earliest history, although this growth may have been reversed temporarily when epidemics introduced by European traders swept the country in the 19th century. In addition, head-hunting practices prevailed into the first half of the next century, suppressing further population growth. Historical estimates and a first census-type operation in 1931 suggest that the population fell from well above 100 thousand at the beginning of the twentieth century to 94 thousand in 1931. Data collection for the 1931 and 1959 censuses differed markedly from the subsequent ones and direct comparison of their results must be carried out with great caution. Nevertheless, the various population counts seem to indicate that the population recovered after 1931 at a rate of about 1 percent per year until 1959, probably because of a combination of declining mortality and increasing fertility. From then on, population growth further accelerated and probably peaked during the period -1976-1986 at around 3.4 percent annually. Figure 1 presents population sizes as reported in the censuses since 1931.

Internal population dynamics

The settlement of the various ethnic groups was not evenly spread across the country. While most areas are inhabited by Melanesians, population groups of Polynesian origin dominate some outlying islands, like Rennell and Bellona, Ontong Java (Malaita) and Tikopia, Anuta and the Reef and Duff islands in Temotu. The Gilbertese settled mostly in Southeast Choiseul, Gizo and Honiara, whereas European and Chinese communities originally concentrated in Tulagi, the capital until World War II. After the war, the country's administrative and commercial hub was transferred to Honiara, which in time triggered a large-scale influx into that part of Guadalcanal island, mainly from Malaita. The development of other commercial and administrative centres —in particular the Guadalcanal production areas and, more recently, Noro— led to smaller-scale internal migration flows. The displacement caused by the ethnic conflict prior to the 1999 census forced large numbers of people to move from Guadalcanal and Honiara, mainly to Malaita. A second wave of displacement occurred directly after the coup in June 2000. This mostly affected the population of Honiara and again saw Malaita as the main recipient province.

In April 2003, the then Prime Minister of Solomon Islands, Sir Allan Kemakeza, made an urgent request for assistance. After five years of ethnic tensions, and a coup in 2000, the problems facing his troubled nation were many and serious. Law and order had broken down, officials and private citizens were subject to intimidation and violence, and

corruption was unfettered. The Government and its institutions had ceased to function effectively. Corruption was widespread. Public finances were in ruin and many of the most basic services such as health and education were not being delivered to the people.

In response to Sir Allan's request, the countries of the Pacific region, through the Pacific Islands Forum, agreed to support the formation of a regional assistance mission (RAMSI) to be led and funded by Australia and New Zealand with membership from all Forum countries. In June 2003, Sir Allan flew to Canberra, Australia to formally receive this offer of assistance. Together with the Solomon Islands Government, the Forum countries then agreed on a mandate to address civil unrest and lawlessness, economic decline, corruption and a dramatic drop in service delivery and government administrative standards.

On 22 July 2003, the Solomon Islands National Parliament unanimously passed the Facilitation of International Assistance Act 2003, which provides authority under Solomon Islands domestic law for RAMSI's activities. The RAMSI programme has transited in June 2013. However some programmes continue to operate on a limited basis whilst others are part of the bilateral arrangement

2.3 Population size and trend

In 2009, the total enumerated population of the Solomon Islands stood at 515,870. This is an increase of 106,828 persons compared to the 1999 population census. Figure 1 shows the population trend from 1931-2009.

It can be seen that the population has continuously increased and it is now more than five times the size it was in 1931.

Between the inter-censual periods 1986-1999 the population growth rate was 2.8 percent. This declined to 2.3 percent for the period 1999-2009 (Table 1 and Fig.2).

However, as is shown in the report, the census enumeration suffered approximately from an 8.3% **undercount,** and the population size stood more likely at **558 thousand** at the time of the census. Therefore the intercensal population growth rate of the period 1999 – 2009 was 3.0% instead of 2.3%. Nevertheless, all statistical indicators presented in this report are based on the interviewed population of 515,870 people.

Despite a declining growth rate, the population size continues to increase faster (Figs.2 and 3). While the average annual population increase during the period 1986-1999 was

9,532 people with a 2.8% growth rate, it increased to 10,665 people annually during the period 1999-2009 with a lower growth rate of only 2.3%.

Figure 1: Total population size, Solomon Islands: 1931–2009
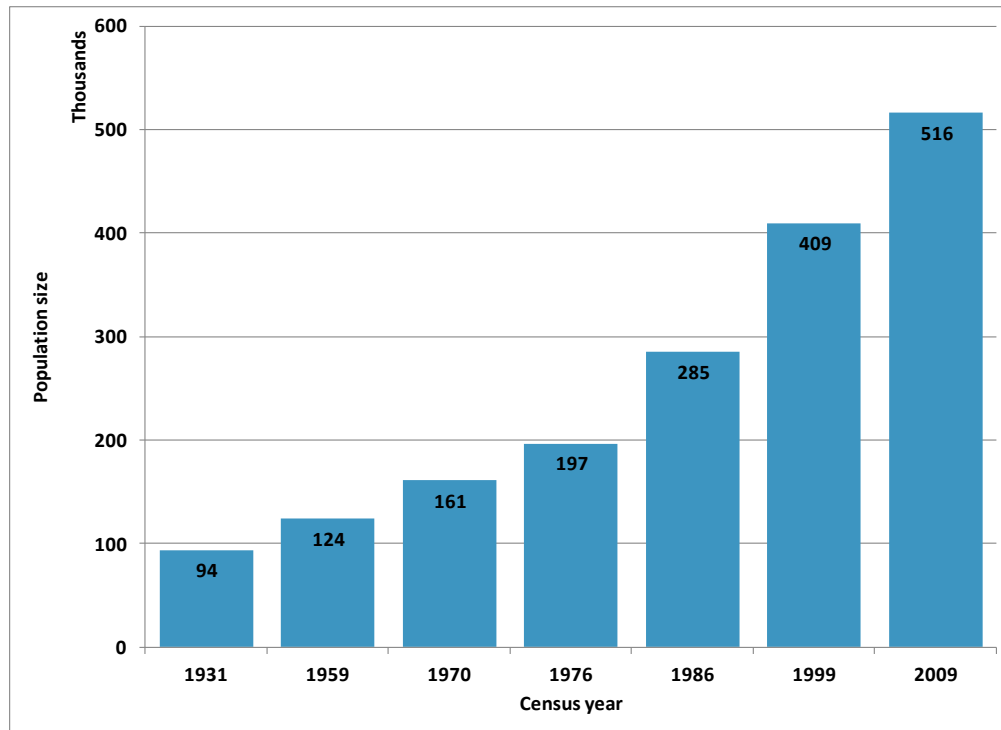
Table 1: Population size and growth rate by place of residence, Solomon Islands: 1986, 1999 and 2009

Region	Total population size			Population change					
				(in numbers)		(in %)		Annual growth rate	
	1986	1999	2009	1986-1999	1999-2009	1986-1999	1999-2009	1986-1999	1999-2009
Solomon Islands	**285,176**	**409,042**	**515,870**	**123,866**	**106,828**	**43.4**	**26.1**	**2.8**	**2.3**
Urban	36,919	63,732	102,030	26,813	38,298	72.6	60.1	4.2	4.7
Rural	248,257	345,310	413,840	97,053	68,530	39.1	19.8	2.5	1.8
Choiseul	13,569	20,008	26,372	6,439	6,364	47.5	31.8	3.0	2.8
Western	41,681	62,739	76,649	21,058	13,910	50.5	22.2	3.1	2.0
Isabel	14,616	20,421	26,158	5,805	5,737	39.7	28.1	2.6	2.5
Central	16,655	21,577	26,051	4,922	4,474	29.6	20.7	2.0	1.9
Rennell-Bellona	1,802	2,377	3,041	575	664	31.9	27.9	2.1	2.5
Guadalcanal	49,831	60,275	93,613	10,444	33,338	21.0	55.3	1.5	4.4
Malaita	80,032	122,620	137,596	42,588	14,976	53.2	12.2	3.3	1.2
Makira-Ulawa	21,796	31,006	40,419	9,210	9,413	42.3	30.4	2.7	2.6
Temotu	14,781	18,912	21,362	4,131	2,450	27.9	13.0	1.9	1.2
Honiara	30,413	49,107	64,609	18,694	15,502	61.5	31.6	3.7	2.7

Figure 2: Average annual population growth rate (%), Solomon Islands: 1931–2009
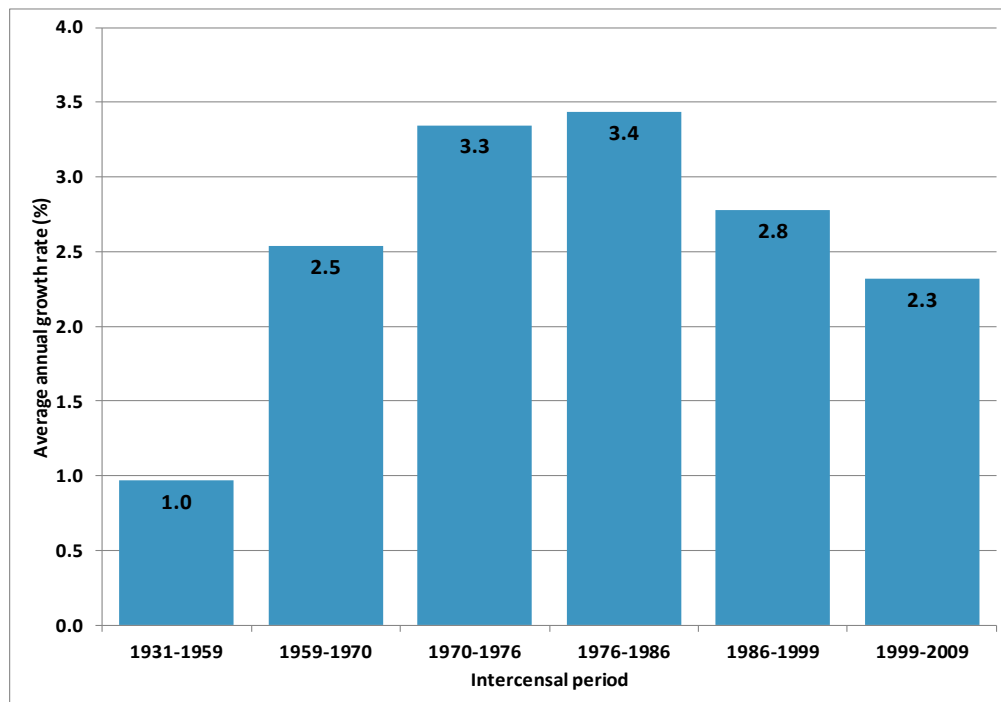
Figure 3: Population change, average annual increase in numbers, Solomon Islands: 1931–2009
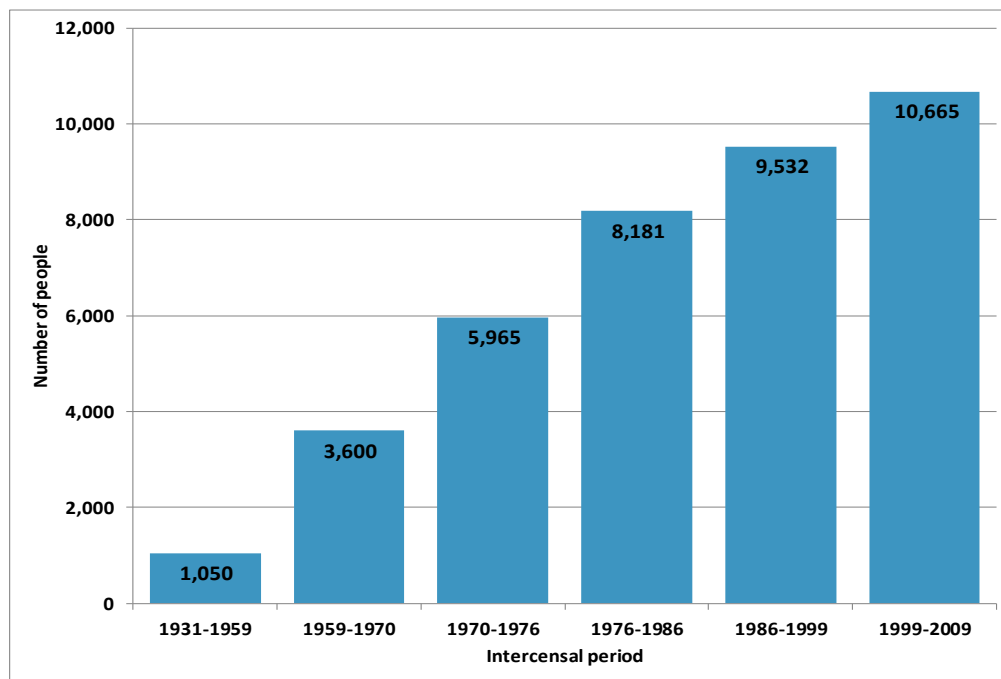
2.4 Population distribution

2.4.1 Population by province

The population size of the different provinces ranked by population size is displayed in Figure 4.

Malaita had the largest population size of 137,596 people, followed by Guadalcanal 93,613, and Rennell-Bellona with the smallest population size of just 3,041 people. Interestingly the three provinces of Choiseul, Isabel and Central had virtually equal population sizes of about 26,000 people.

Population change for the 10 provinces of the Solomon Islands all show an increase in population size since 1970 (Fig.5). In all provinces the population continues to grow although with various growth rates (Fig.6). Guadalcanal province had the fastest population increase with 4.4% annually, followed by Choiseul (2.8%), Honiara (2.7%), and Makira-Ulawa (2.6%). The lowest growth rates were recorded in Malaita and Temotu with only 1.2% annually.

There were lower growth rates in all provinces during the period 1999-2009 compared to the period 1986-1999, except for Rennell-Bellona and Guadalcanal (Table 1).

Figure 4: Population size by province, Solomon Islands: 2009

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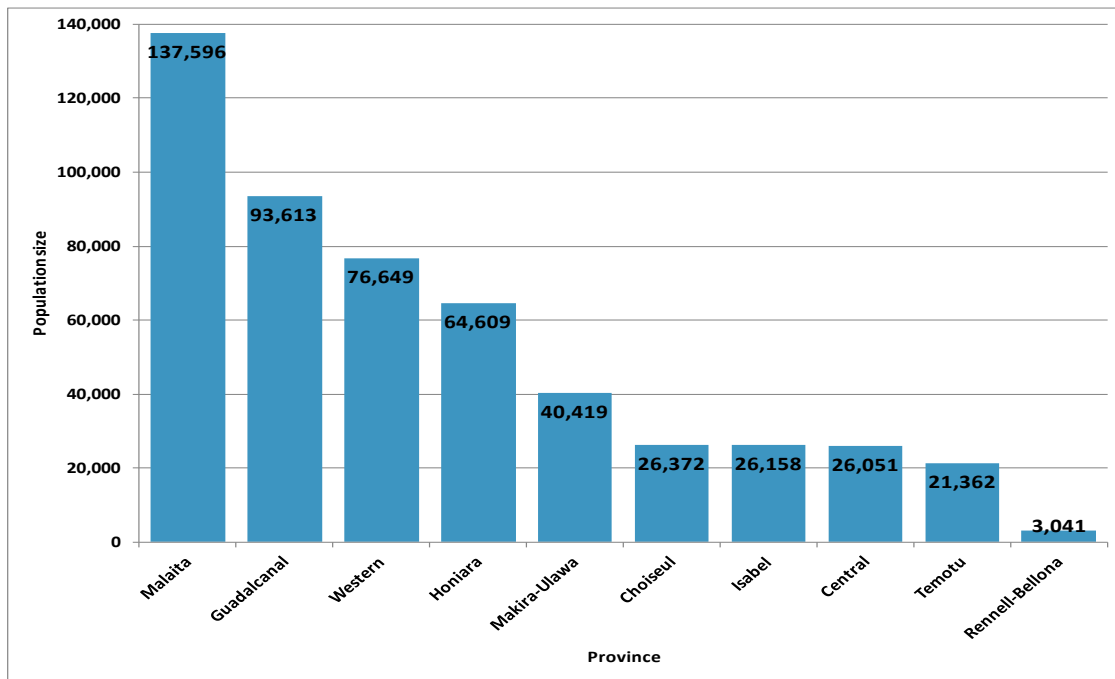
Figure 5: Population trend of provinces, Solomon Islands: 1970–2009
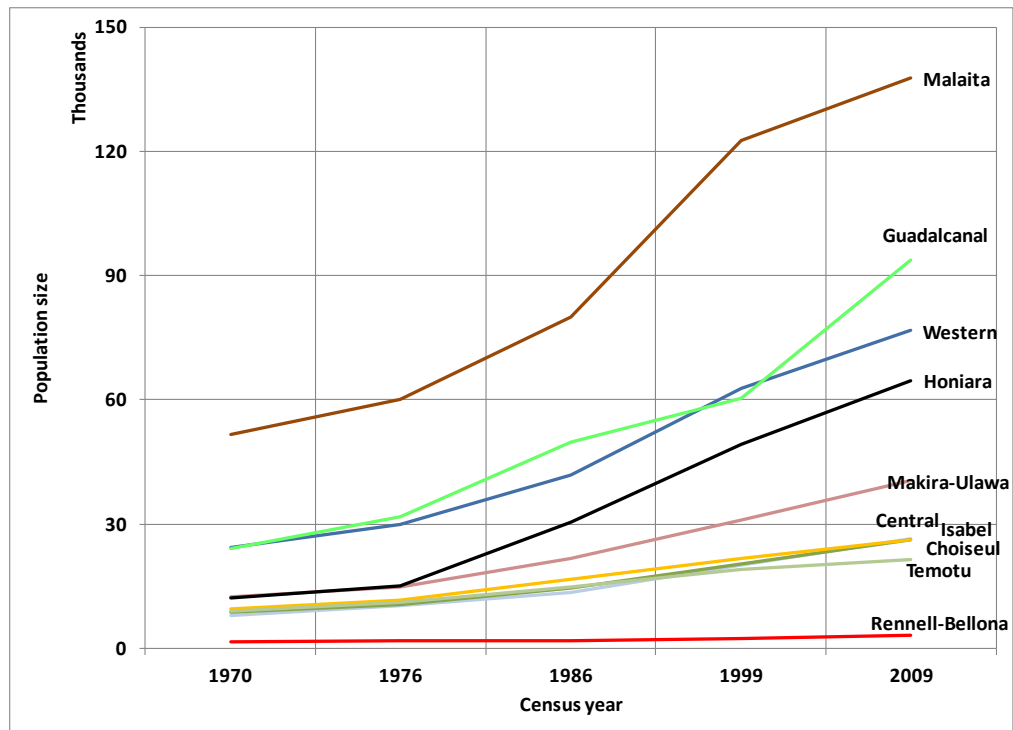
Figure 6: Average annual population growth rate (%) by province, Solomon Islands: 1999-2009
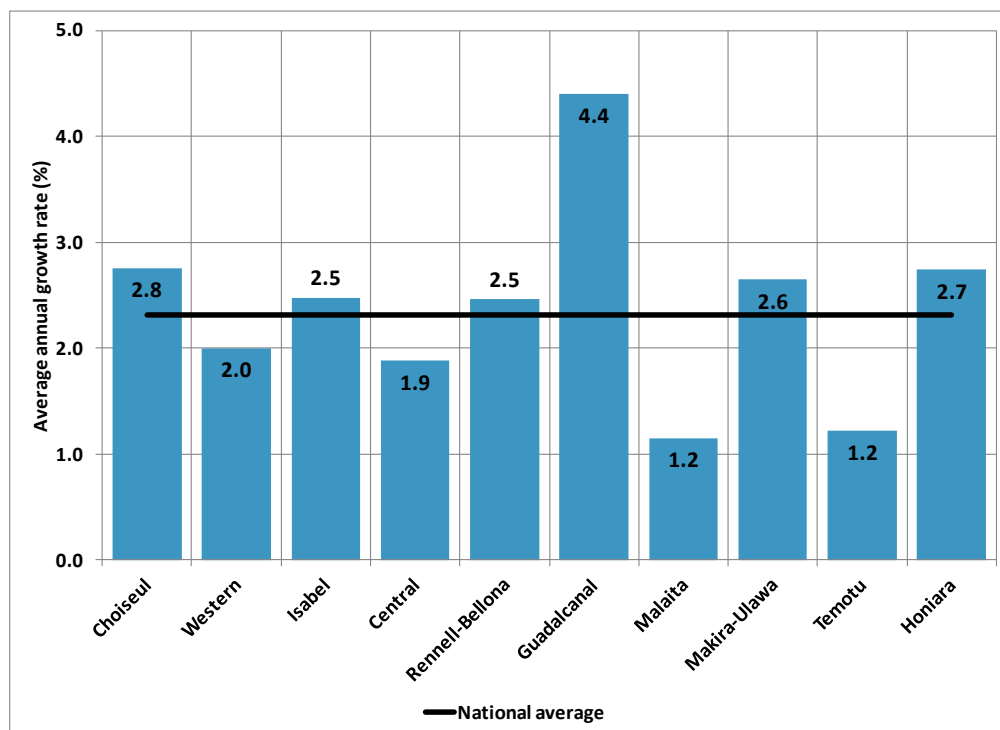
Figure 7: Population distribution by province (%), Solomon Islands: 2009
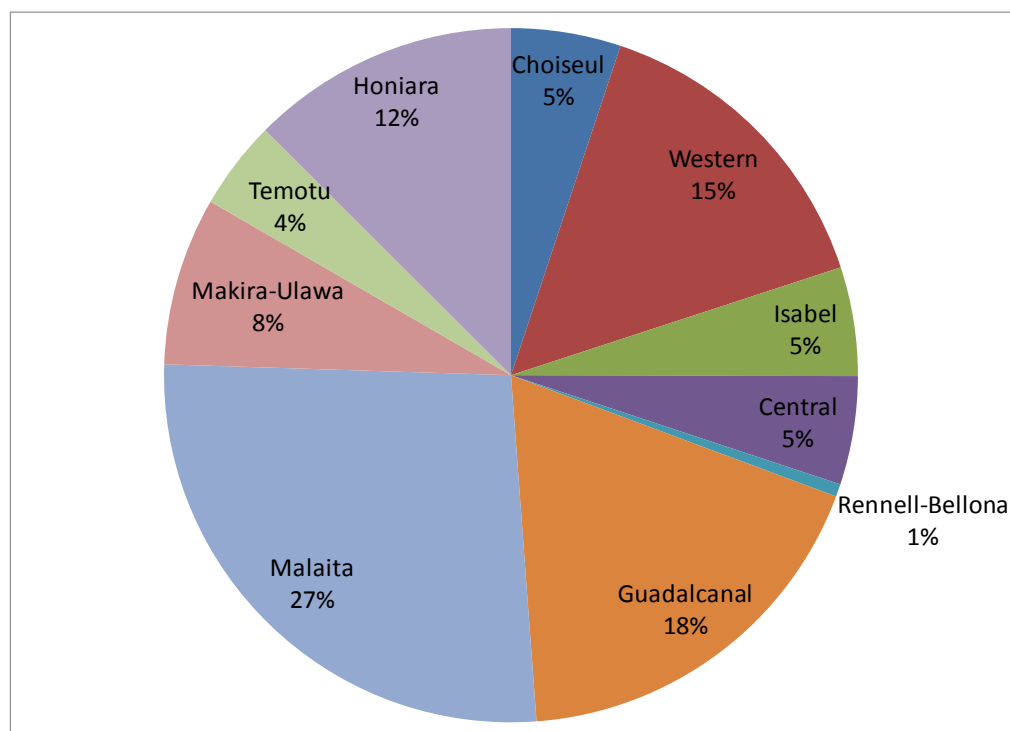
Information obtained on the place of enumeration was used to describe the distribution of population. Figure 7 displays the proportion of the Solomon Islands population by province.

In 2009 Malaita had the biggest share of the Solomon Islands population, comprising 27% of the total population. This was followed by Guadalcanal province with 18%, and the Western province with 15%. The provinces of Choiseul, Isabel and Central all comprised each of 5% of the total Solomon Islands population. Only1% of the population lived in Rennell-Bellona.

2.4.2 Population by urban-rural residence and urbanization

The speed and scale of urban population growth generates important challenges for planners and Governments. This is especially true in countries where urbanization has not been associated with sustained industrialization and development, as increasing urban poverty and the growth of slums are two of the most critical challenges in urban areas.

Despite this, the urban poor in the less developed regions often fare better than the average rural resident with respect to access to basic services, such as drinking water, sanitation, electricity or educational facilities.

Thus, it is simplistic to view urbanization in developing countries as a phenomenon with mainly negative consequences. In fact, the concentration of people in cities is generally a response to the concentration of the most dynamic economic activities in urban centers. Such a concentration often produces economies of scale and leads to social and economic benefits of various kinds, including the technological development that is crucial to maintain the development momentum. The health advantages of cities are another example of such benefits, with urban dwellers often enjoying higher quality and more accessible health services than rural dwellers. Cities are also at the forefront of political and cultural change. Given their concentrated political power, trade and cultural activity, cities are places where new ideas and products emerge and from which they spread. Often, the development of rural areas is inextricably tied to the dynamism of the urban centers to which they are linked. Cities are therefore engines of economic, social, political and cultural change. Urbanization can thus be viewed as an indicator of development, with higher urban levels generally associated with more industrialized and technologically advanced economies.

The challenge faced by developing countries today is to take advantage of the rapid urbanization that has resulted from unprecedented levels of natural increase in their urban populations coupled with the redistribution of population from rural to urban centers and the transformation of rural settlements into cities. This challenge is often related to issues of governance, as when cities expand beyond their administrative boundaries and thus lack the financial or jurisdictional capacity to provide the necessary services to all the city's inhabitants. Collaboration among local, regional and national authorities can go a long way in addressing these management problems. Since continued urbanization is expected in every country, a focus on improving the lives of city dwellers needs to be maintained. At the same time, one has to recognize that many countries still have large and growing rural populations whose well-being often depends on the viability and success of cities. Given that the world's future will be urban, development initiatives must address the challenges and make the best of the opportunities that growing urban centers bring[1].

Urban-rural distinction

Due to the very small size of the provincial Solomon Islands' urban centres/settlements, it is perhaps dubious to describe some of these centres as 'urban'. However, for analytical purposes a distinction is made between urban and rural settlements. Urban areas include Honiara town council and all provincial administrative centres except Rennell-Bellona (Map 2 and Table 2).

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[1] United Nations, DESA, Population Division, World Population Prospects: The 2005 Revision

In addition, a number of enumeration areas surrounding Honiara were classified as urban on the basis of their proximity and access to the town, population density, permanency of settlements and variety of economic activities. All other areas in the country were considered to be rural.

Map 2: Urban centres/settlements, Solomon Islands: 2009
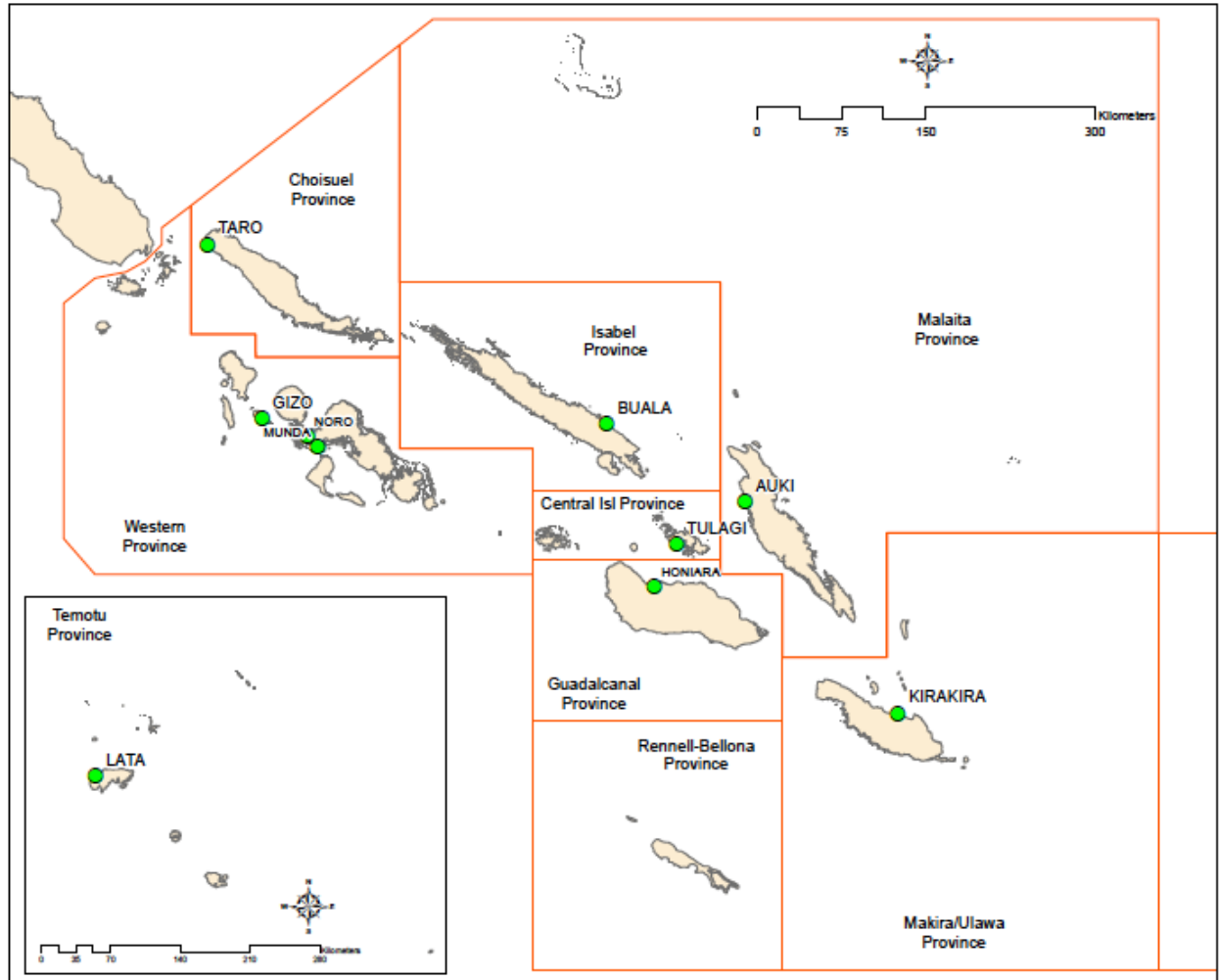
Urban-rural distribution

By international standards, the urban population in the Solomon Islands is small. Less than 20 percent of the population live in areas that were defined as urban. This urban sector of 102 thousand people is dominated by Honiara town council (64,609). The capital accommodates almost two-thirds of all urban residents, and if the adjoining urban areas of Guadalcanal are included, 'the Honiara urban area' or 'Greater Honiara' represents three-quarters of all urban population.

The other provincial centres are much smaller and deserve urban status on the basis of their administrative function only, rather than in terms of population size, economic differentiation or population density.

Solomon Islands urban population increased from less than 20,000 people in 1976 to more than 102,000 in 2009 (Fig.8). With an average annual growth rate of 4.7% the urban population grew more than twice as fast as the rural population (Fig.9). Accordingly the proportion of the population living in urban areas has continuously increased from 9% in 1976 to almost 20% in 2009 (Fig.10).

Figure 8: Total Population size by urban and rural residence, Solomon Islands: 1976–2009
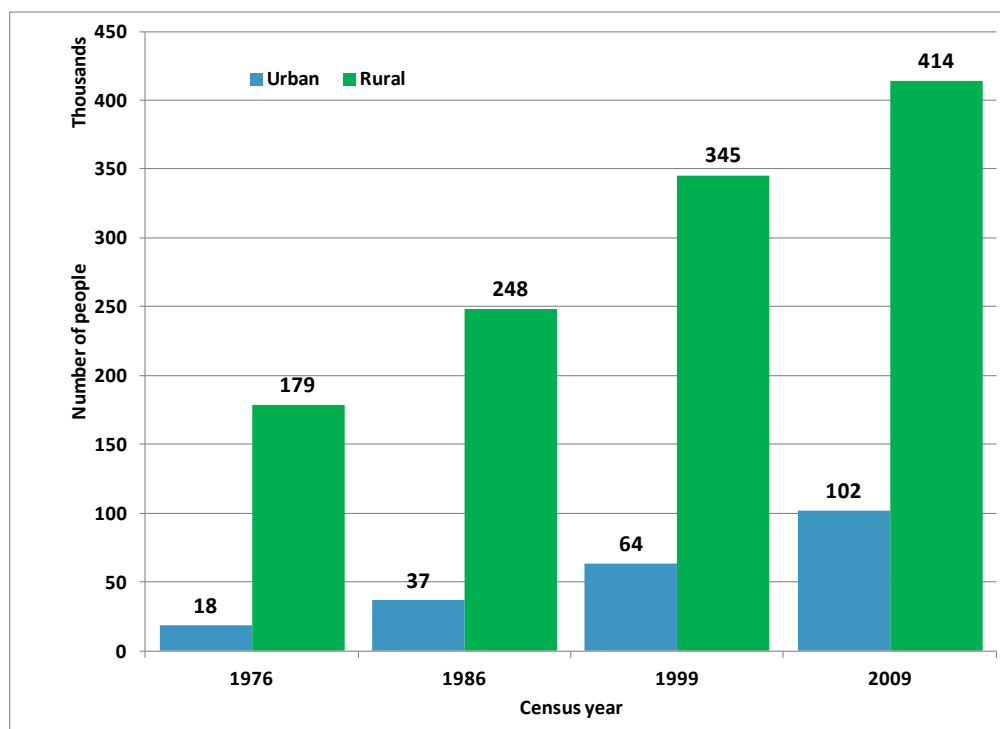
Figure 9: Average annual urban and rural population growth rate, Solomon Islands: 1976–2009
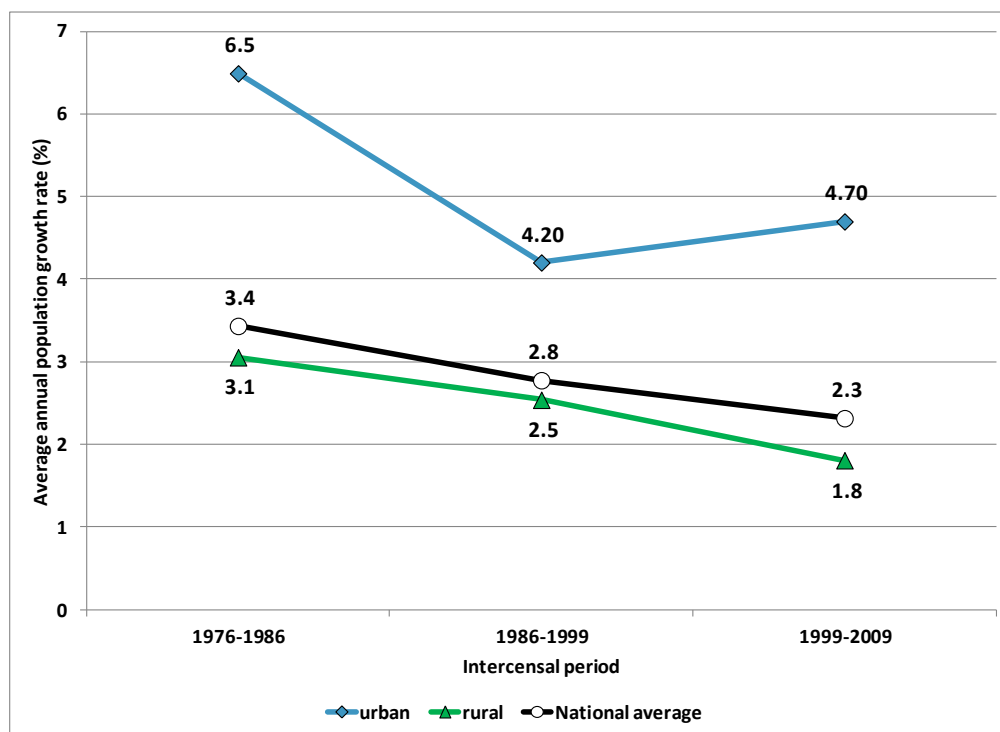
Figure 10: Population distribution (%) by urban and rural residence, Solomon Islands: 1976–2009
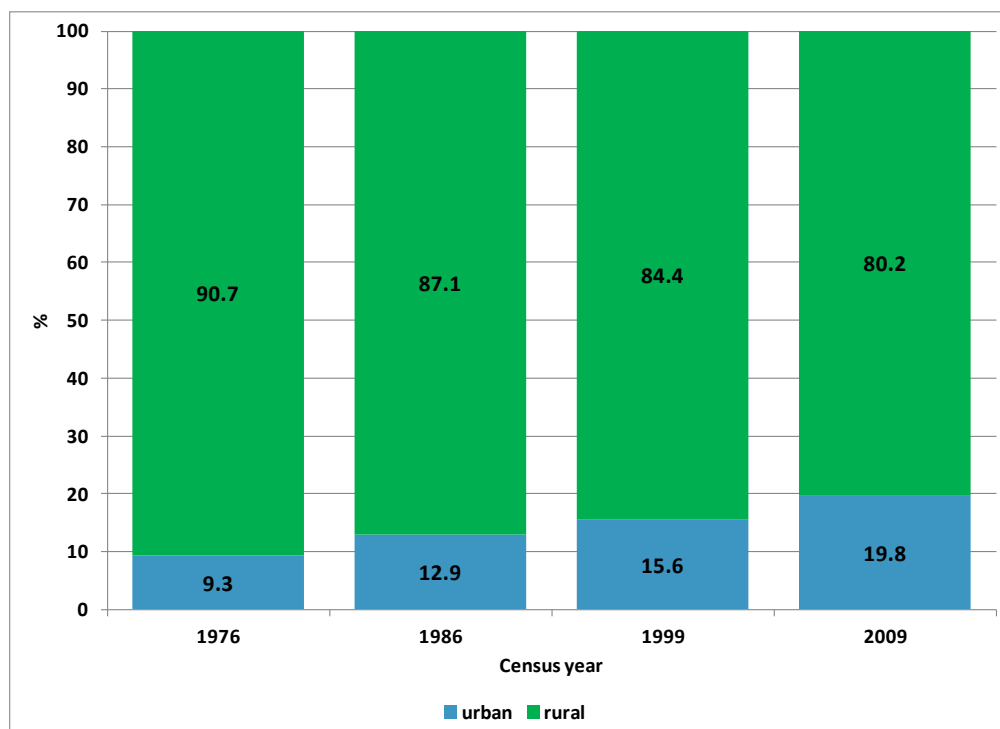
The urban localities (wards) that are classified as urban are listed in Table 2.

The largest urban area in the Solomon Islands is the Honiara urban area (80,082) which includes the entire population of the Honiara town council (64,609) as well as the Guadalcanal wards of Tandai (10,837) and Malango (4,636) that are bordering the Honiara town council area to the east. These two wards are the only areas classified as urban in the Guadalcanal province.

The Western province's urban population includes the four wards of Gizo (3,547), Noro (3,365), Munda (1,315), and Nusa Roviana (1,528). The latter two wards were not classified as urban in the 1999 census, and Noro was not defined as urban during the 1986 census.

All other provinces except Rennell-Bellona (that is classified entirely rural), have one urban center. After Honiara and Tandai, Auki (5,105 people) in Malaita is the third largest urban area in the Solomon Islands. The other urban areas are Batava/Taro (810) in Choiseul, Buala (971) in Isabel, Tulagi (1,251) in the Central province, Kirakira/Bauro Central (2,074) in Makira-Ulawa, and Lata/Luva Station (1,982) in Temotu.

While the overall urban growth was 4.7% annually, the growth rate of Honiara urban area was with only 3.7% less than the national urban growth rate, and the growth of the other provincial urban areas was higher. Of particular interest is the high growth rate of the Honiara urban surrounding, namely the two wards in Guadalcanal of Tandai and Malango with 16.4% annually.

Other high urban growth areas are Auki in Malaita with 11.6% and Lata/Luva Station in Temotu with 17% per annum. This means that the process of urbanisation is increasing and at the same time is tending towards a balance across the country. The emergence of new urban areas like Munda, Nusa Roviana, and Malango, and the expanding urbanised areas around Honiara in Guadalcanal account for this development (Fig.11).

Table 2: Population size by urban localities and province, Solomon Islands: 1986–2009

Urban localities	Total population			Annual growth rate	
(Province/Ward)	1986	1999	2009	1986-1999	1999-2009
Choiseul		440	810		6.1
Batava/Taro		440	810		
Western	2,331	6,442	9,755	7.8	4.1
Gizo	2,331	2,960	3,547	1.8	1.4
Noro		3,482	3,365		-0.3
Munda			1,315		
Nusa Roviana			1,528		
Isabel	618	451	971	-2.4	7.7
Buala	618	451	971		
Central	1,281	1,333	1,251	0.3	-0.6
Tulagi	1,281	1,333	1,251		
Rennell-Bellona	0	0	**0**		
Guadalcanal		3,013	15,473		16.4
Tandai		3,013	10,837		
Malango			4,636		
Malaita	948	1,606	5,105	4.1	11.6
Auki	948	1,606	5,105		
Makira-Ulawa	905	979	2,074	0.6	7.5
Kirakira/Bauro Central	905	979	2,074		
Temotu	423	361	1,982	-1.2	17.0
Lata/Luva Station	423	361	1,982		
Honiara town council	30,413	49,107	64,609	3.7	2.7
Honiara urban area [1]	30,413	52,120	80,082	4.1	4.3
TOTAL	36,919	63,732	102,030	4.2	4.7

*Honiara urban area incl. Honiara town council, and the Guadalcanal wards of Tandai and Malango that are classified as *Honiara urban surroundings*

Urban and rural population structure

The very different shape of the urban and rural population pyramids (Figs.12 and 13) clearly illustrate the rural to urban migration of the young Solomon Islands population. People aged 15-30 years cause the 'bulge' of the urban population pyramid, and the 'dent' of the rural population pyramid of these age groups. These pyramids therefore demonstrate that it is mainly these age groups who move from the rural areas to the urban centers in search of employment and/or education opportunities. A move may also be seen as a sign of progress and a means of bettering oneself in ways that vary from person to person.

Figure 11: Urban population distribution, Solomon Islands: 1986, 1999, and 2009

1986

Honiara town council 82%

Other urban centres 18%

Auki 3%
Tulagi 3%
Kirakira 2%
Buala 2%
Lata 1%
Gizo 6%

1999

Honiara town council 77%

Other urban centres 23%

Buala 1%
Tulagi 2%
Noro 5%
Auki 3%
Kirakira 2%
Gizo 5%
Lata 1%
Taro 1%
Honiara urban surroundings 5%

2009

Honiara town council 63%

Other urban centres 37%

Munda 1%
Nusa Roviana 2%
Gizo 4%
Noro 3%
Buala 1%
Batava/Taro 1%
Tulagi 1%
Honiara urban surrounding 15%
Auki 5%
Kirakira/Bauro Central 2%
Lata/Luva Station 2%

Figure 12: Population pyramid by single years, urban population: 2009
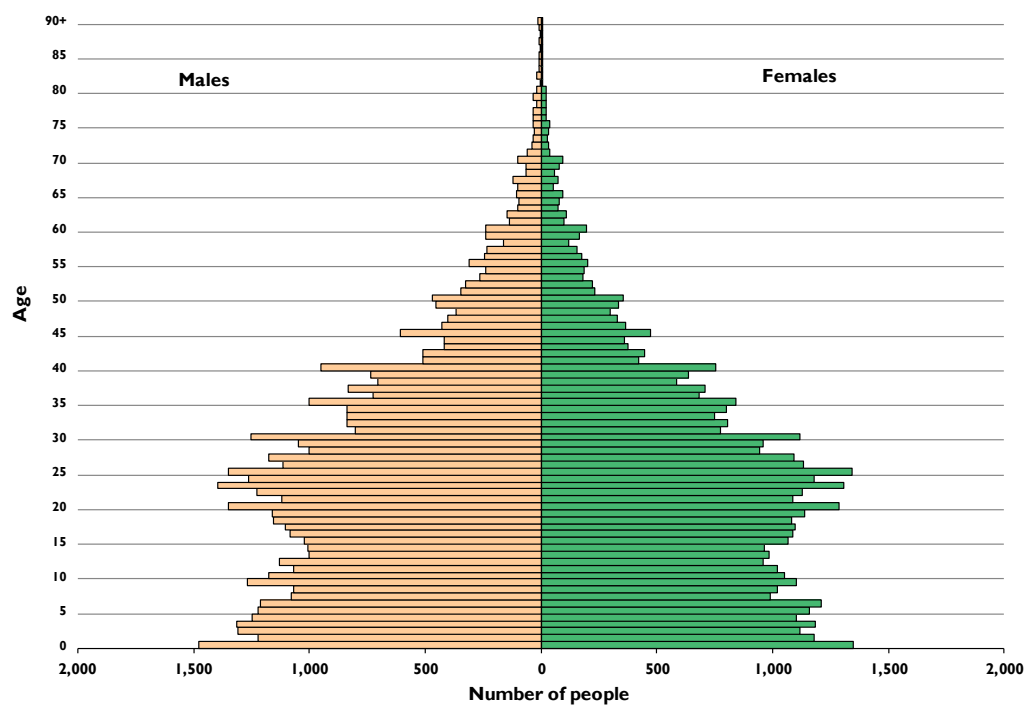
Figure 13: Population pyramid by single years, rural populations: 2009
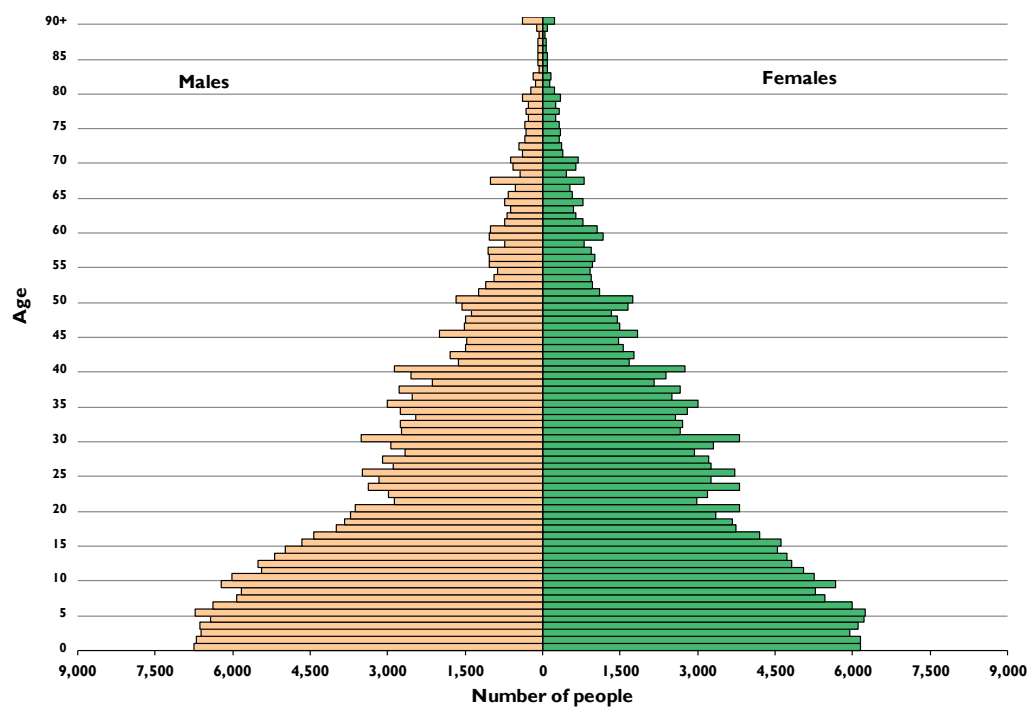
As mentioned in the introduction to this section, urban dwellers often fare better than their rural counterparts, which (partly) explains the rural-urban population drift. The urban and rural socio-economic and demographic indicators displayed in the *Summary of main indicators* and Table 3, show more favourable outcomes for the urban than the rural population.

Table 3: Selected demographic and socio-economic indicators by urban-rural residence, Solomon Islands: 2009

Indicator	URBAN	RURAL
Households with improved drinking water sources (%)	89	65
Households with improved sanitation facilities (%)	89	33
Households connected to electricity grid (%)	52	4
Households with mobile phone (%)	68	11
Employment-population ratio (%)	38	20
School enrolment rates of 6-15 year olds (%)	87	83
Proportion of population aged 12 and older with no school completed	7	19
Literacy rate of population aged 15+ (%)	94	81
Total Fertility Rate (TFR)	3.3	5.2
Teenage Fertility Rate (ASFR, 15-19)	40	69
Proportion of children ever born still alive (%)	97	95
Infant mortality rate (IMR)	19	24

2.5 Population density

The Solomon Islands has a total land area of 30,407 km^2. According to the 2009 census, the average population density for the Solomon Islands was 17 people/km^2 – an increase from 13 people/km^2 in 1999 (Table 4). This is a very low population density compared to most other countries in the Pacific region or even worldwide.

Population density varied widely throughout the provinces in the Solomon Islands. Honiara province is the most densely populated due to its urban characteristics. With almost 3,000 people/km^2 the density represents an increase from 1999 when it had 2,244 people per square km. The second most densely populated province was Central with 42 people per km^2. Rennell-Bellona, Isabel and Choiseul had the lowest densities with less than 10 people per km^2.

Table 4: Population density (number of people/km^2) by province, Solomon Islands: 1986, 1999 and 2009

Province	Land area (km^2)	Total population			Population density		
		1986	1999	2009	1986	1999	2009
Solomon Islands	**30,407**	**285,176**	**409,042**	**515,870**	**9**	**13**	**17**
Choiseul	3,837.3	13,569	20,008	26,379	4	5	7
Western	7,509.0	41,681	62,739	76,649	6	8	10
Isabel	4,136.2	14,616	20,421	26,158	4	5	6
Central	615.3	16,655	21,577	26,051	27	35	42
Rennell-Bellona	670.7	1,802	2,377	3,041	3	4	5
Guadalcanal	5,336.3	49,831	60,275	93,613	9	11	18
Malaita	4,224.7	80,032	122,620	137,596	19	29	33
Makira-Ulawa	3,187.7	21,796	31,006	40,419	7	10	13
Temotu	868.4	14,781	18,912	21,362	17	22	25
Honiara	21.9	30,413	49,107	64,602	1,390	2,244	2,953

2.6 Population structure

The enumerated 2009 resident population consisted of 264,452 males and 251,418 females. Males out-numbered females by 13,034 resulting in a sex ratio of 105, which means that there were 105 males per 100 females. However, sex ratios varied by province as can be seen in Figure 14 and Table 5.

Table 5: Population distribution by broad age group, dependency ratio, median age, and sex ratio, Solomon Islands: 1999 and 2009

Province	Year	Proportion of population by broad age group (in %)				Age dependency ratio (15–59)	Median age (years)	Sex ratio (males per 100 females)
		0–14	15–24	25–59	60+			
Solomon Islands	1999	42	21	32	5	87	18.8	107
	2009	41	19	35	5	85	19.8	105
Urban	1999	32	28	39	2	51	21.8	127
	2009	34	23	41	3	57	22.4	111
Rural	1999	43	20	31	6	96	18.1	104
	2009	42	18	34	6	93	19.0	104
Choiseul	1999	44	19	32	6	98	17.9	105
	2009	42	17	35	6	92	19.1	105
Western	1999	41	20	34	5	86	19.2	112
	2009	40	18	36	6	84	19.9	109
Isabel	1999	42	19	32	6	94	18.9	104
	2009	40	17	37	7	88	20.6	104
Central	1999	41	20	33	6	88	18.9	108
	2009	41	16	37	6	89	19.9	104
Rennell-Bellona	1999	41	17	31	11	108	19.8	107
	2009	40	16	34	10	100	21.0	104
Guadalcanal	1999	42	21	32	5	88	18.7	109
	2009	42	19	35	4	85	19.2	107
Malaita	1999	45	20	29	6	102	17.3	100
	2009	43	18	33	6	96	18.4	101
Makira-Ulawa	1999	42	21	31	5	92	18.2	106
	2009	43	17	35	5	94	18.9	106
Temotu	1999	41	20	32	7	93	18.8	94
	2009	40	17	35	8	92	20.2	96
Honiara	1999	31	28	39	2	50	22.0	126
	2009	32	24	41	3	53	22.7	112

A sex ratio of 100 means that there are equal numbers of males and females while a sex ratio lower than 100 means there are more females than males and a sex ratio higher than 100 meaning more males than females. Figure 14 shows there were significantly more males than females in Honiara, probably due to predominantly male migration towards

Honiara. Temotu on the other hand had more females than males with a sex ratio of only 96 males per 100 females.

Nevertheless, sex ratios in the Solomon Islands appear as abnormally high. It is true that the Honiara high ratio and Temotu low ratio can be explained by migration, but in all the other provinces the sex ratio is well over 100. Possible explanations of this issue are discussed in Appendix 1 and the conclusion is that the main cause is an under-count of women. Some possible reasons of this problem are also explained in Appendix 1. An attempt is done to correct this inaccuracy when population projections are carried out, but the indicators presented in this report are based on the counted population.

Figure 14: Sex ratios by province, Solomon Islands: 2009
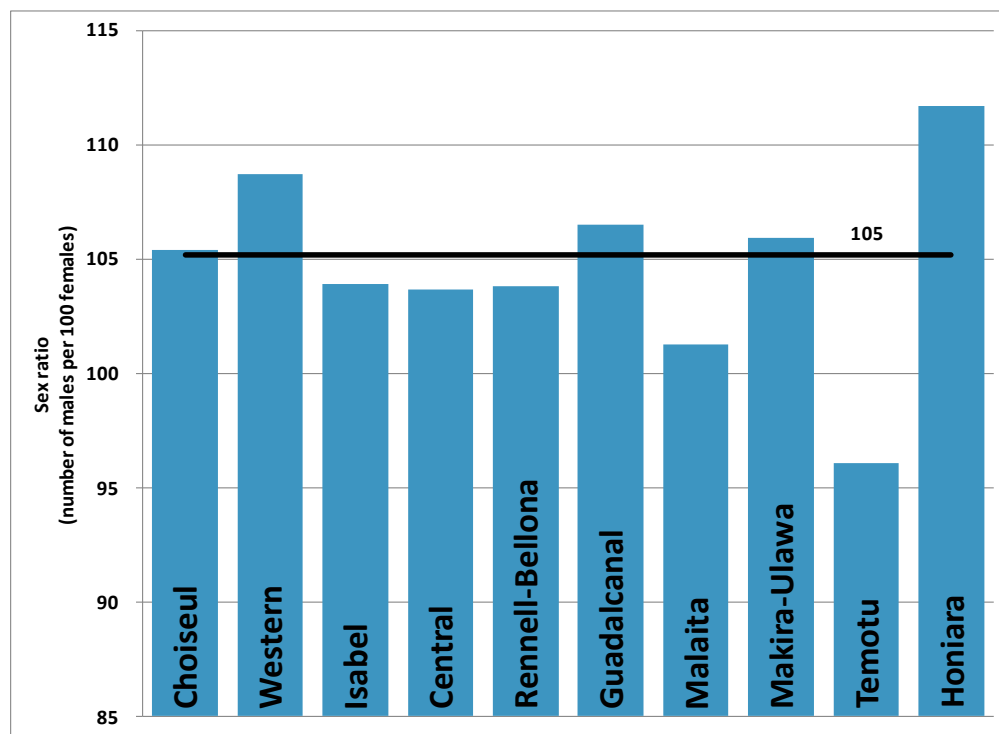
A population's age structure may be considered as a map of its demographic history. Persons of the same age constitute a cohort of people who were born during the same year (or period); they have been exposed to similar historical events and conditions. The age structure of the whole population at a given moment may be viewed as an aggregation of cohorts born in different years. A graphic representation of the age structure of the population such as an "age pyramid" shows the different surviving cohorts of people of each sex in the Solomon Islands.

A population pyramid shows the number of males and females in single years (Fig.15) or five-year age groups (Figs.16) starting with the youngest age group at the bottom, and increasing with age towards the top of the pyramid. The number of males is depicted to the left and the number of females to the right of the pyramid's center.

The shaded area in Figure 16 shows the population count of the 1999 census, while the thickly outlined area shows the population count of the 2009 census.

The Solomon Island's population pyramid (Fig.15) has the distinct features of a classical pyramid: it has a wide base, meaning that a large percentage of people are in the younger age groups, with increasingly narrow bars towards the top of the pyramid, representing decreasing age groups at older ages[2].

The population pyramids of the different provinces are shown in Figures 17-26.

It is important to note that in the single age pyramids, in spite of a general triangular pattern, there are some very long or short bars that form some sort of spikes. They are caused by the so call digit preference or age heaping. This problem takes place in most countries. Enumerators or respondents tend to report certain ages at the expenses of others. The preference refers to various ages having the same terminal digit (for example, if 5 is a favored digit, we may have a preference for ages 15, 25, 35, 45, etc.). The single age pyramids presented as following show some bars are noticeably longer than others. Those are precisely the results of digit preferences. It is important to note that when the age data are grouped in age intervals possible distortions caused by age heaping tend to disappear. Digit preferences will be examined again in Appendix 1.

The pyramids of Choiseul, Western, Isabel, Central, Rennell-Bellona, Malaita, Makira-Ulawa and Temotu all have one distinct characteristic in common, which is the narrow bars at roughly ages 20-34. It is evident that these provinces are losing people aged 20-30 years as they migrate into the urban centers in search for employment, education and/or for other reasons.

Honiara's population pyramid presents a very different picture compared to all other provinces (Fig.26). It shows a high number of people aged 15-30 years due to internal migration flows directed towards Honiara where the young people expect to find opportunities that are lacking in their home villages.

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[2] For a discussion on the accuracy of age reporting, and calculation of age accuracy indices, please refer to Appendix 1

Figure 15: Population pyramid by single years, The Solomon Islands: 2009
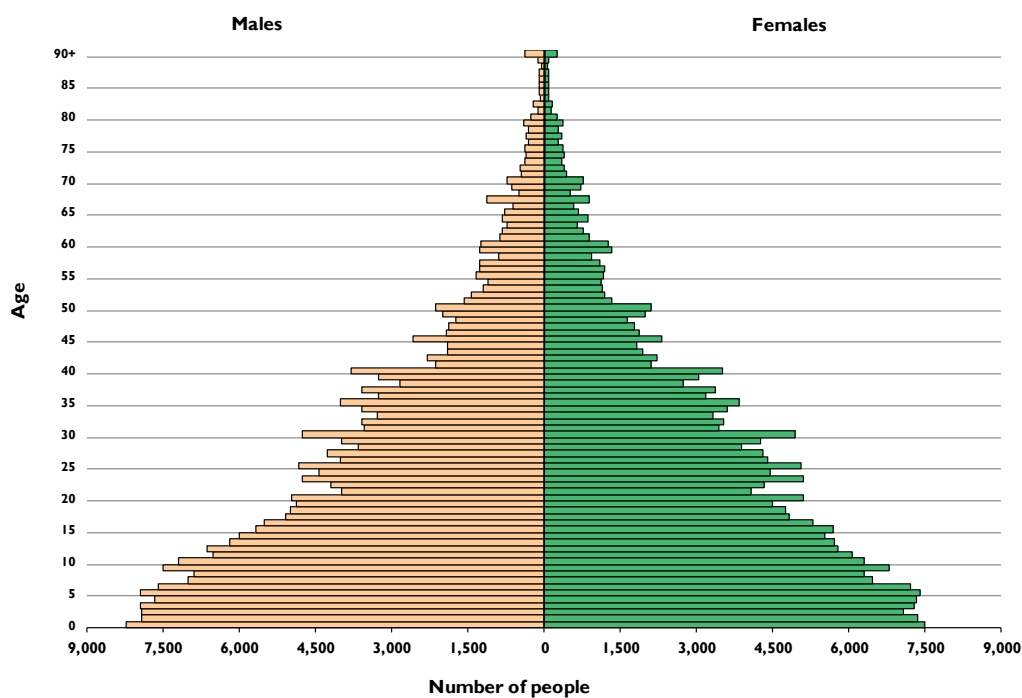
Figure 16: Population pyramid by 5-year age groups, Solomon Islands: 1999 and 2009
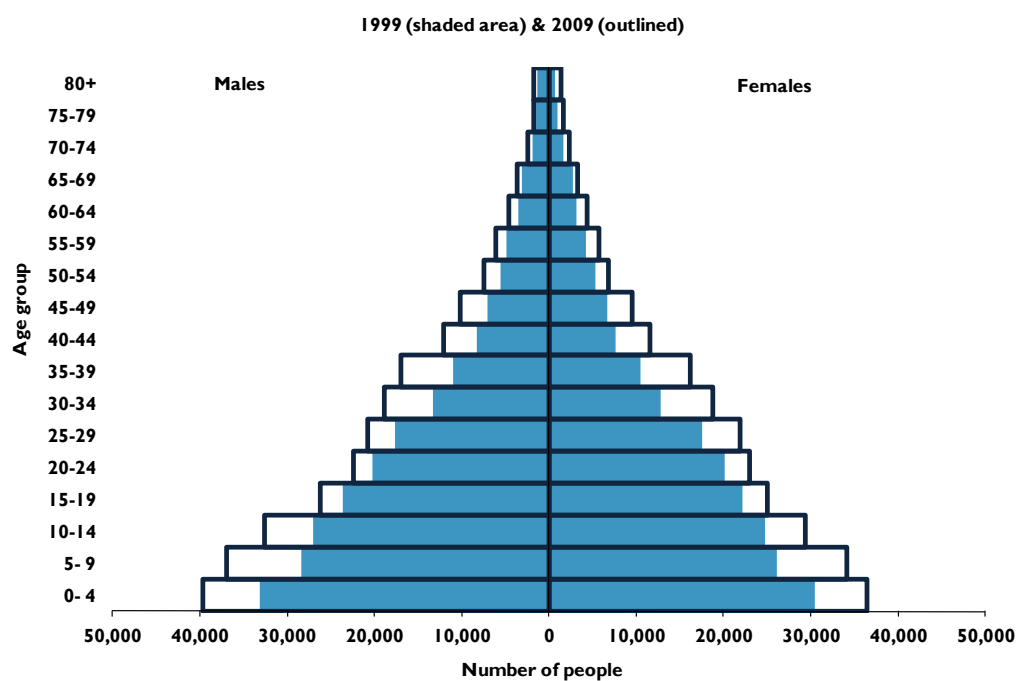
Figure 17: Population pyramid by single years, Choiseul: 2009
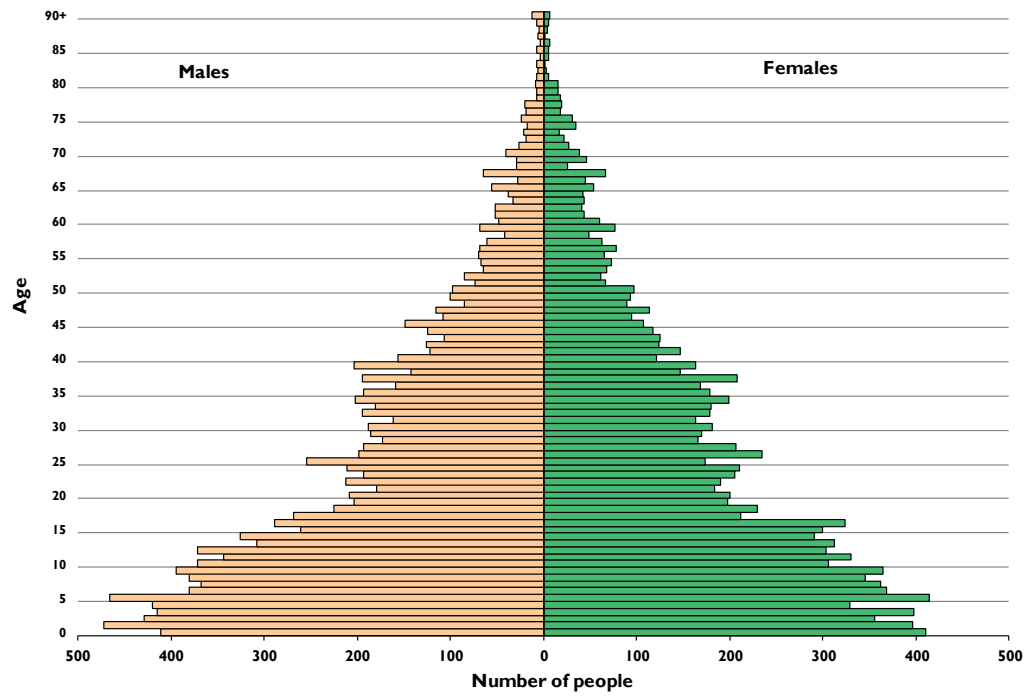
Figure 18: Population pyramid by single years, Western: 2009
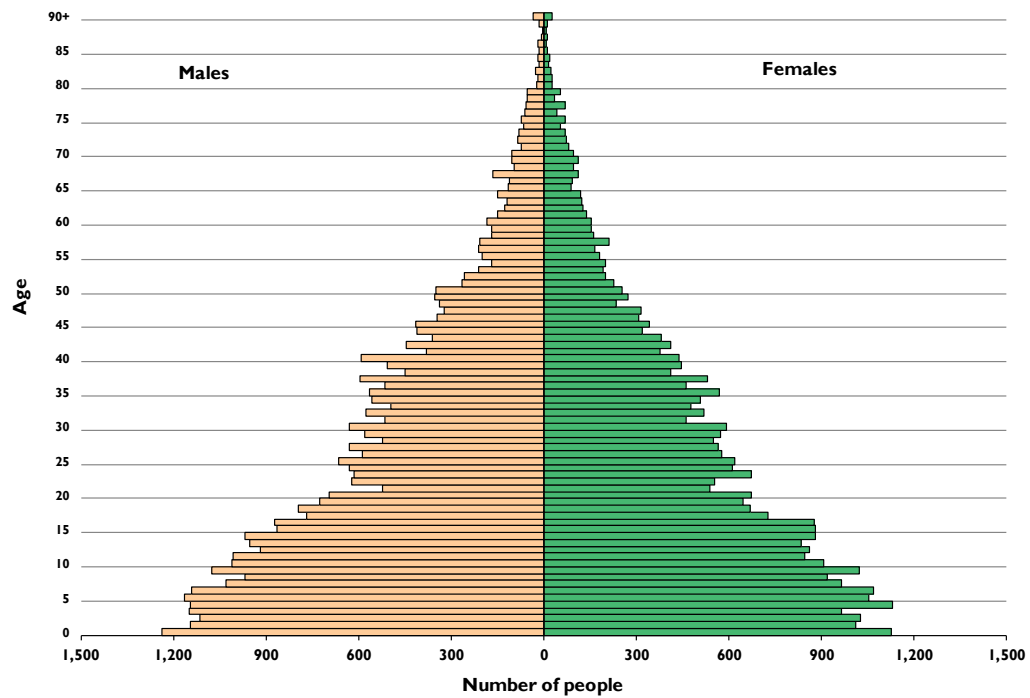
Figure 19: Population pyramid by single years, Isabel: 2009
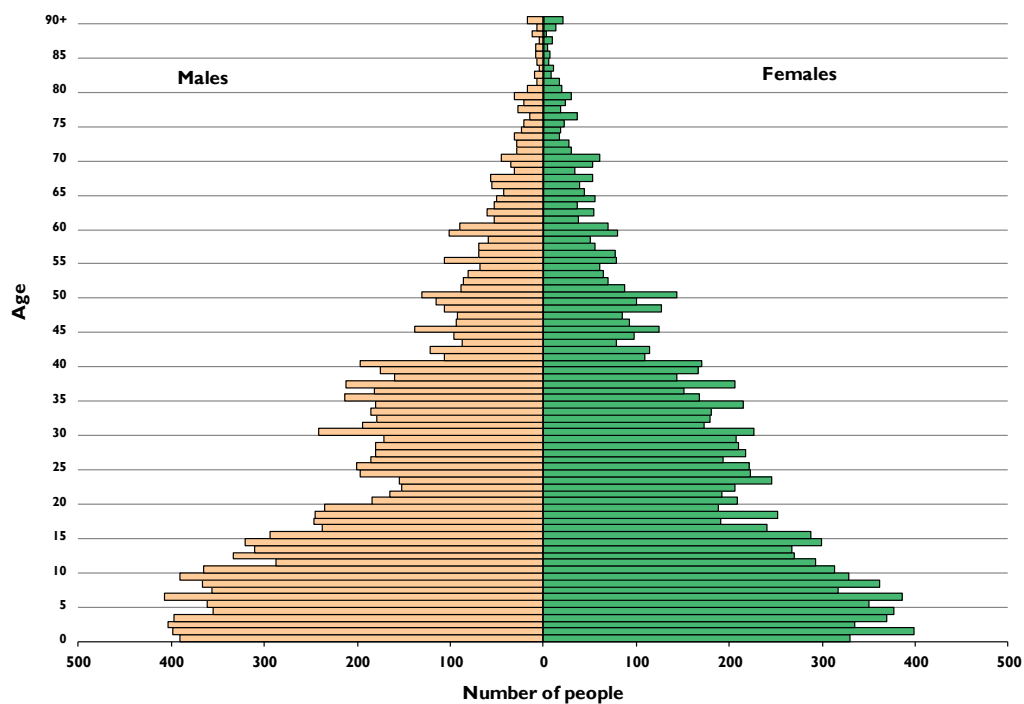
Figure 20: Population pyramid by single years, Central: 2009
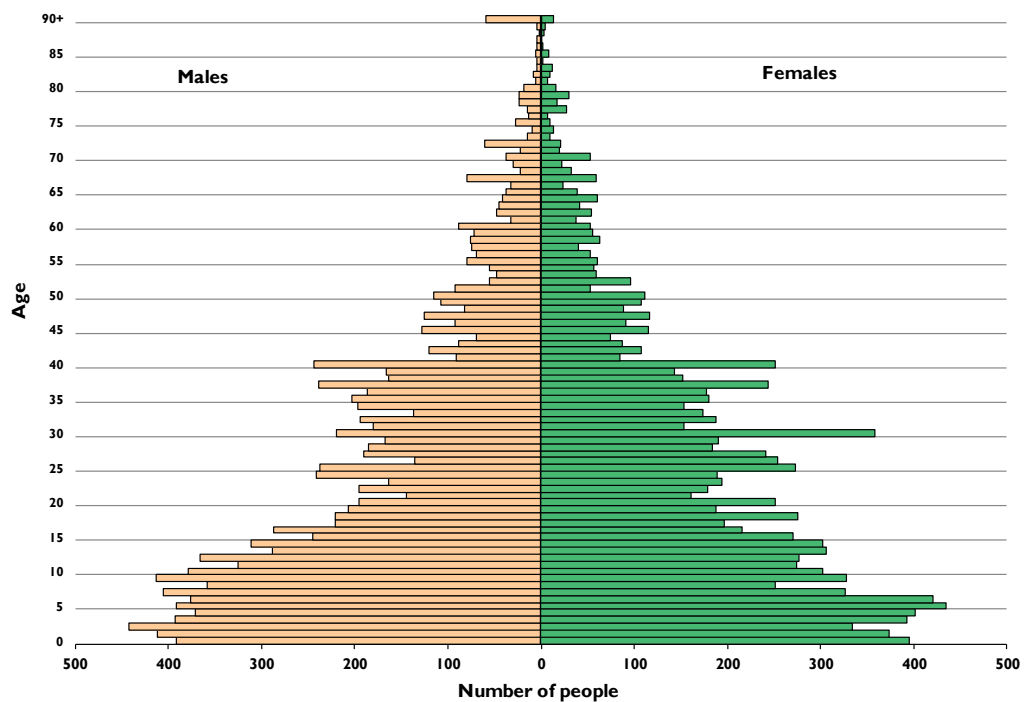
Figure 21: Population pyramid by single years, Rennell-Bellona: 2009
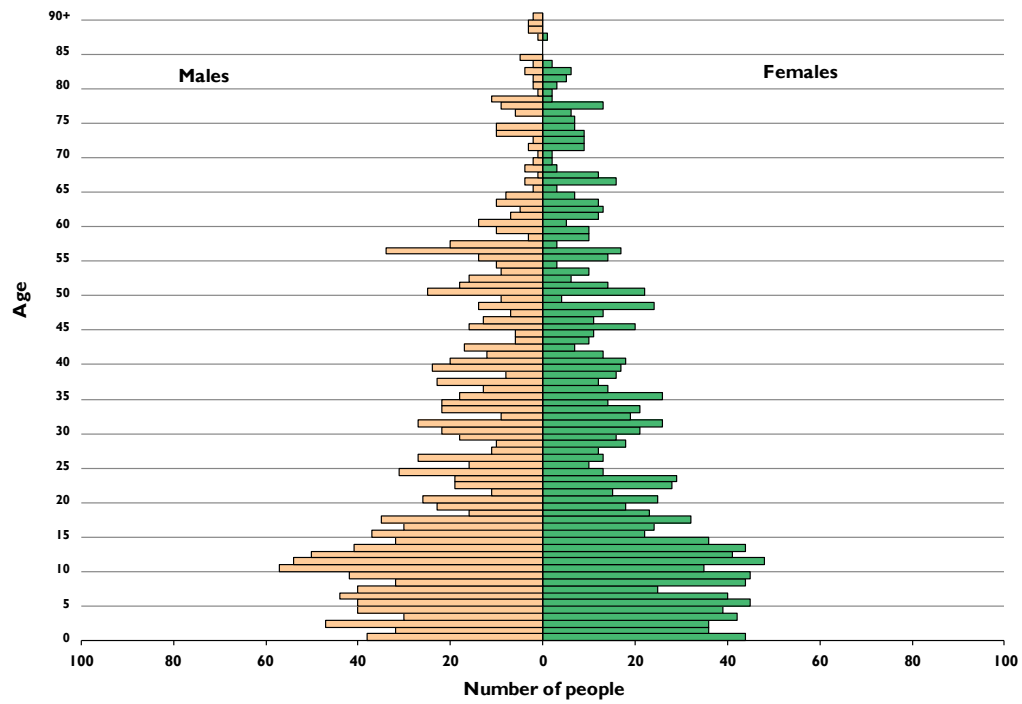
Figure 22: Population pyramid by single years, Guadalcanal: 2009
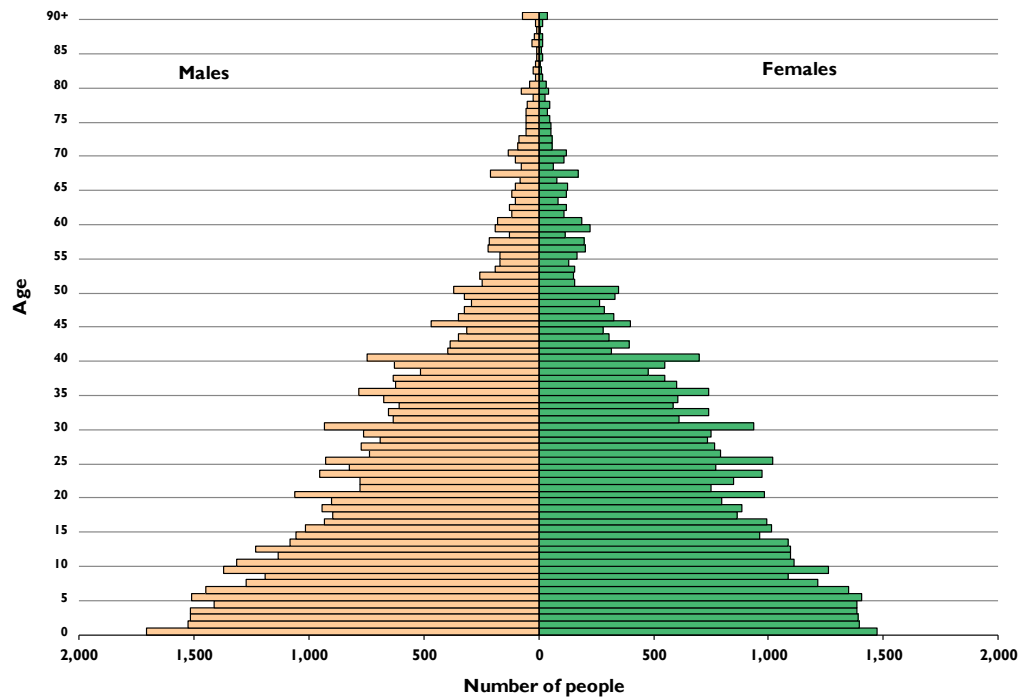
Figure 23: Population pyramid by single years, Malaita: 2009
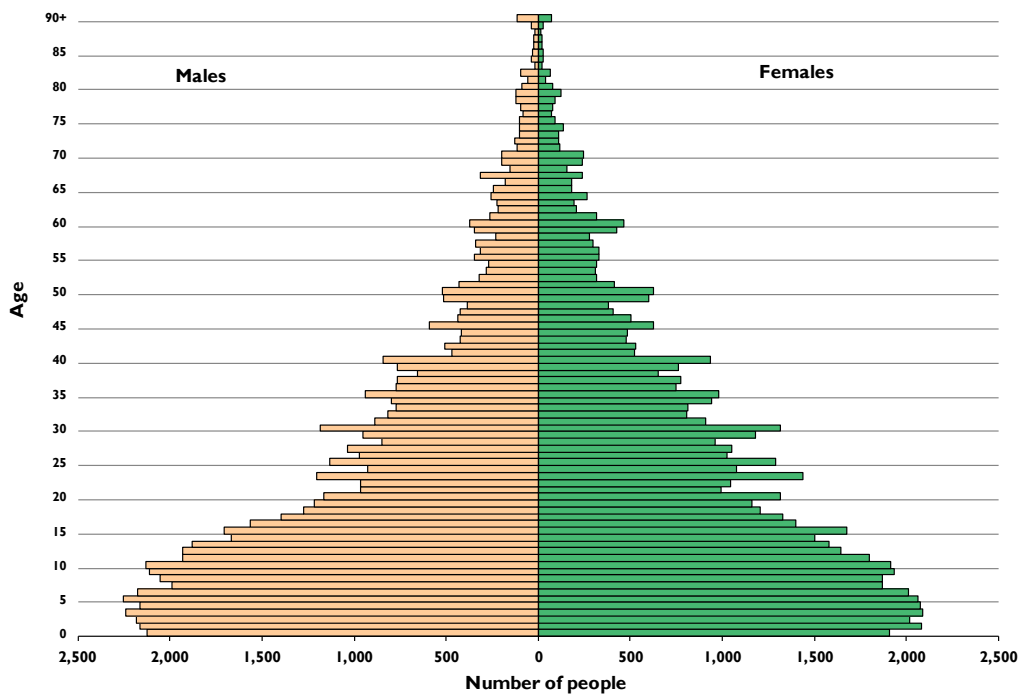
Figure 24: Population pyramid by single years, Makira-Ulawa: 2009
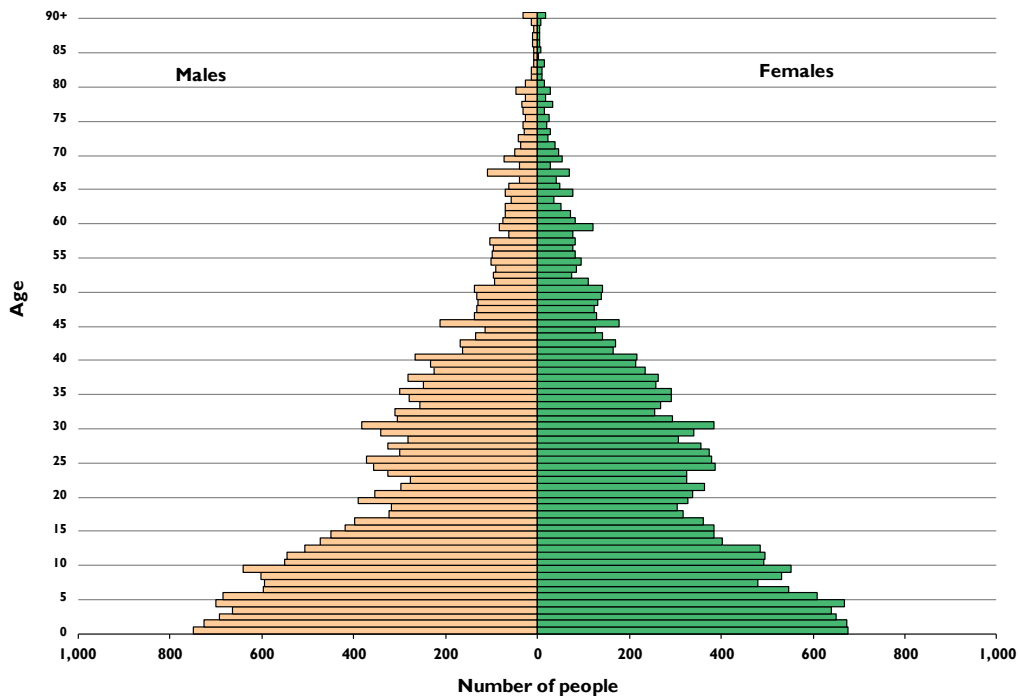
Figure 25: Population pyramid by single years, Temotu: 2009
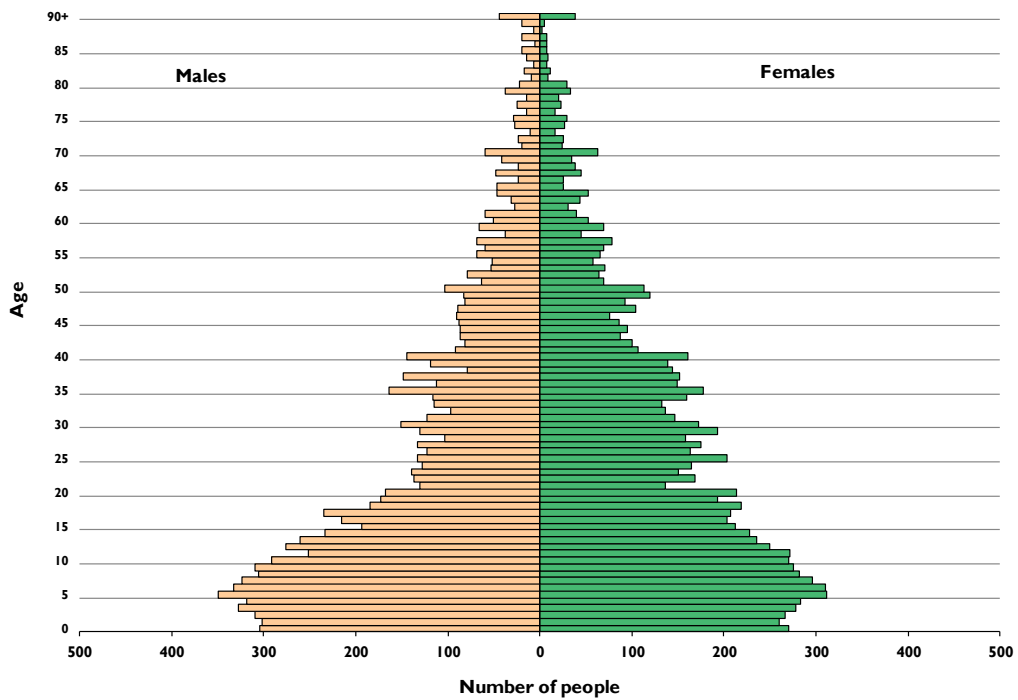
Figure 26: Population pyramid by single years, Honiara: 2009
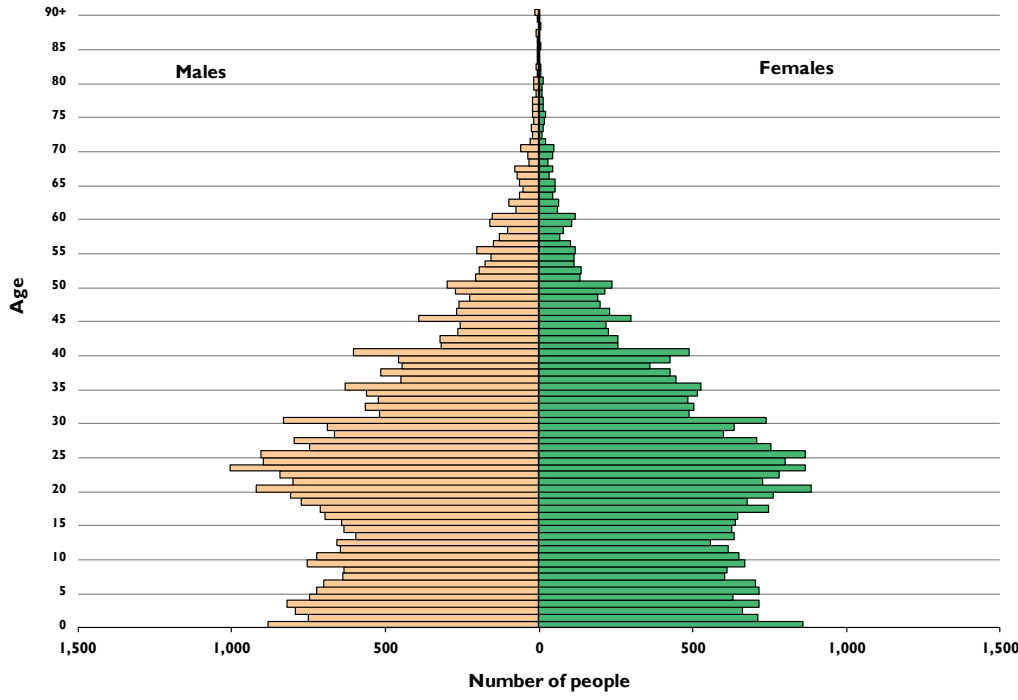
In accordance with the overall population structure, as illustrated by the population pyramids, several indicators can be calculated such as the *median age* and the *age dependency ratio.* (a comparison of the 1999 1nd 2009 age structures by province and rural-urban residence is shown in App.44)

The Solomon Islands population has a relatively young age structure, with 41 % of the population younger than 15 years of age; 54% are in the so called working age groups 15-59, and 5% were older than 60 years (Table 5 and Fig.27).

The age structure is also illustrated by the median age of 19.8 years (Table 5 and Fig.28), meaning that half of the Solomon Islands' population was younger and the other half older than 19.8 years. The median age in 1999 was only 18.8 years, indicating that the population structure was older in 2009 compared to 1999.

Honiara had 65% of its population in the age group 15-59 (Fig.27), caused by the influx of migrants from the other provinces. With a median age of 22.7 years, Honiara had the 'oldest' population in the country. However, Honiara had the lowest proportion of people aged over 60 years (3%).

Figure 28 shows a comparison of the *median* age by province. While Honiara had the oldest population, the provinces of Malaita and Makira-Ulawa had the youngest populations with a median age of younger than 19 years.

A common way to describe a population's age structure is via the *age dependency ratio*, which compares the dependent component of a country's population with its economically productive component. This is conventionally expressed as the ratio of young people (0–14 years) plus the old (60^+ years), to the working age population (15–59 years) as shown in Table 5 and Figure 29.

In 2009, Solomon Islands had a dependency ratio of 85, meaning that for every 100 people of working age, 85 people were in the age dependent category. The higher the dependency ratio, the higher the number of people that needs to be cared for by the working age population. The dependency ratio has slightly decreased since the 1999 census when it was 87. Based on the population structure of the different provincial populations, the age dependency ratios of the different provinces vary accordingly.

The most favorable dependency ratio can be found in Honiara with only 53 dependent people per 100 people of working age. Dependency ratios were significantly higher in Rennell-Bellona and Malaita where there were almost as many people in the 'dependent' age groups as there were people in the working age groups (15-59 years).

Figure 27: Population by broad age groups (in %) by province, Solomon Islands: 2009
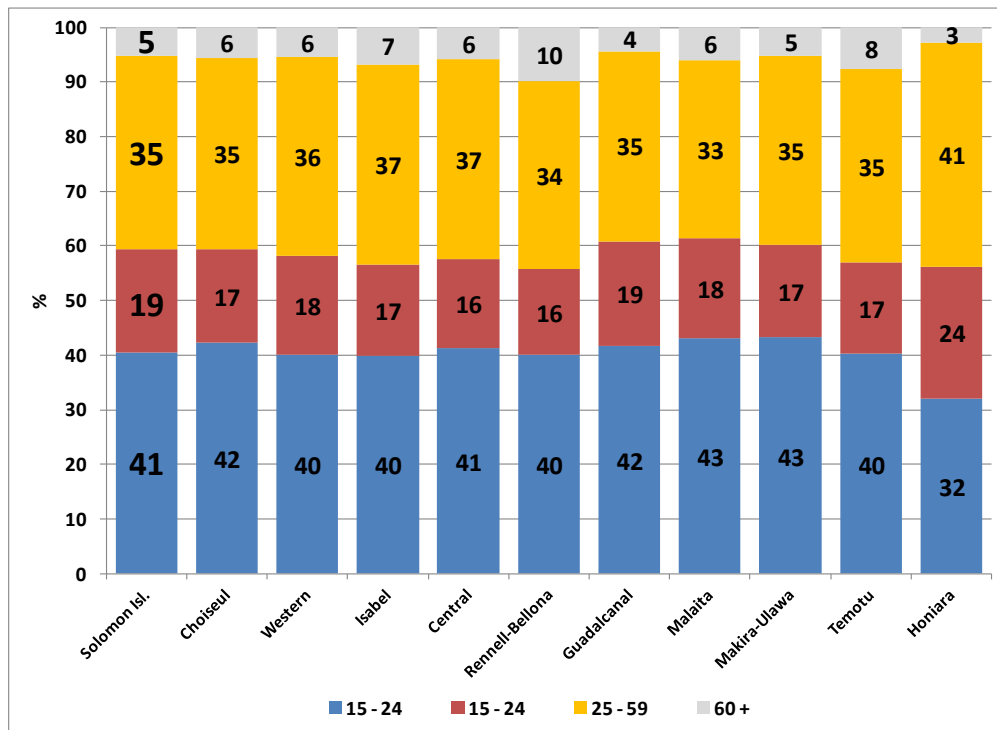
Figure 28: Population by median age and province, Solomon Islands: 2009
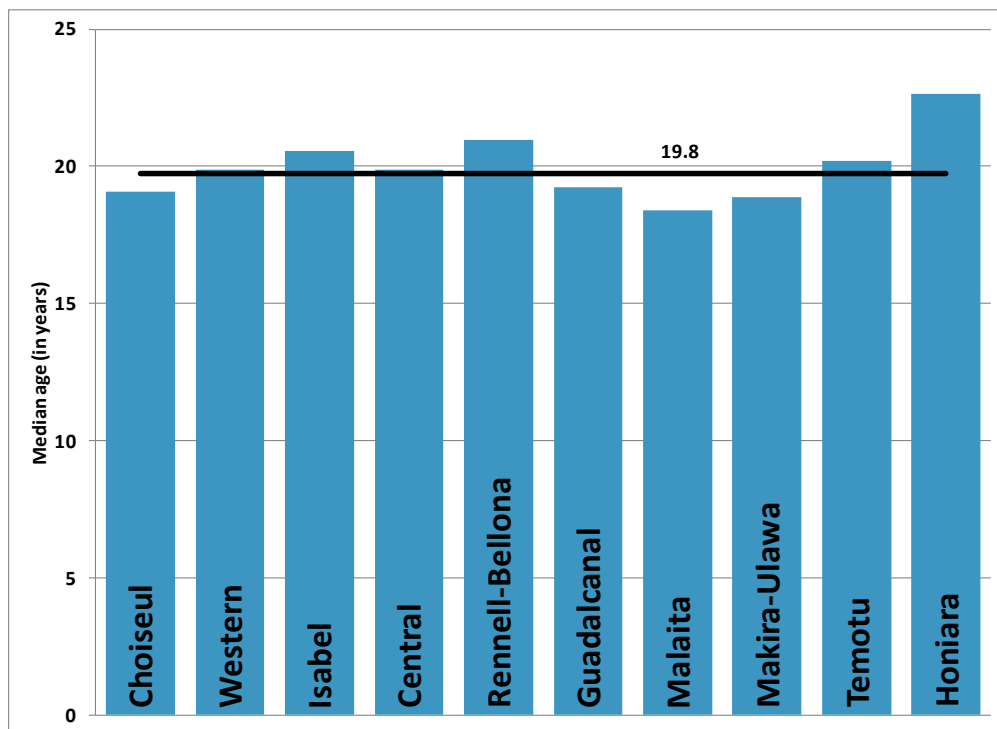
Figure 29: Population by age dependency ratio and province, Solomon Islands: 2009
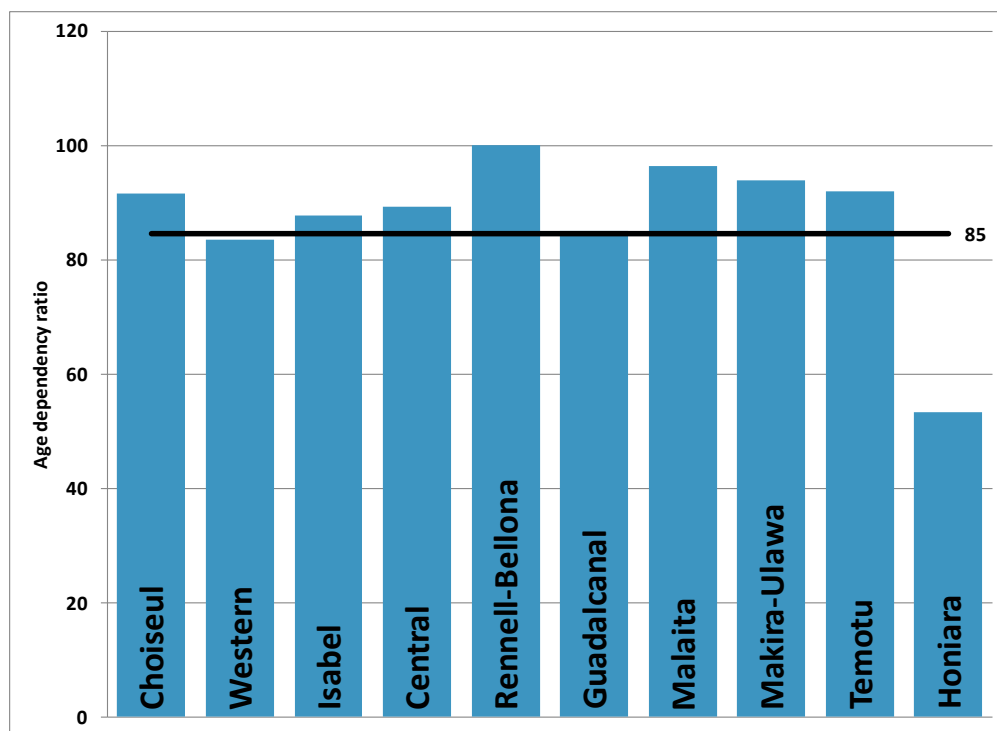
3. DEMOGRAPHIC COMPONENTS

3.1 Fertility

3.1.1 National estimates

In order to determine the level and pattern of fertility in the Solomon Islands, women 15 years of age and older were asked the following questions:

- Whether woman has ever given birth?
- How many children they had born alive?
- When was the last child born?

Based on the question whether a woman has eer given birth, it was found approximately 7% of woman remained childless at the end of their reproductive years. Childlessness was higher in the urban (9%) than the rural areas (6%).

The total number of children born alive to 151,395 women aged 15 and older was 432,103; 225,028 males and 207,075 females (Table 6). The average number of children born alive to all women (average parity) was 2.9 children per woman.

Table 6: Female population aged 15 and older by number of children ever born alive, Solomon Islands: 2009

Age of women	Number of women	Number of children ever born			Average number of children ever born		
		Males	Females	Total	Males	Females	Total
15–19	25,023	1,307	1,236	2,543	0.1	0.0	0.1
20–24	23,020	10,165	9,199	19,364	0.4	0.4	0.8
25–29	21,880	21,271	19,551	40,822	1.0	0.9	1.9
30–34	18,785	29,918	27,850	57,768	1.6	1.5	3.1
35–39	16,141	33,396	30,505	63,901	2.1	1.9	4.0
40–44	11,568	28,141	25,956	54,097	2.4	2.2	4.7
45–49	9,524	25,384	23,360	48,744	2.7	2.5	5.1
50–54	6,841	19,048	17,412	36,460	2.8	2.5	5.3
55–59	5,676	16,672	14,924	31,596	2.9	2.6	5.6
60–64	4,381	13,162	12,042	25,204	3.0	2.7	5.8
65–69	3,328	10,340	9,632	19,972	3.1	2.9	6.0
70+	5,228	16,224	15,408	31,632	3.1	2.9	6.1
Total	**151,395**	**225,028**	**207,075**	**432,103**	1.5	1.4	**2.9**

Average parity increases with the age of women. While women aged 15–19 had only very few children, women aged 45–49 had 5.1 children, and women older than 70 had on average 6 children. The average parities of women over 49 years of age is also called the *completed fertility rate*, a cohort measure demonstrating how many children a certain cohort of women who have completed their childbearing actually produced during those years.

Figure 30 shows a comparison of the reported average number of children ever born of the last three censuses. A fertility decline is apparent as the average number of children per woman at every age declined from one census to the next. While the average number of children of women aged 45-49 years was 6.3 in 1986, it declined to 5.8 and 5.1 in 1999 and 2009.

Figure 30: Female population aged 15-49 by average number of children ever born alive, Solomon Islands: 1989, 1999, and 2009
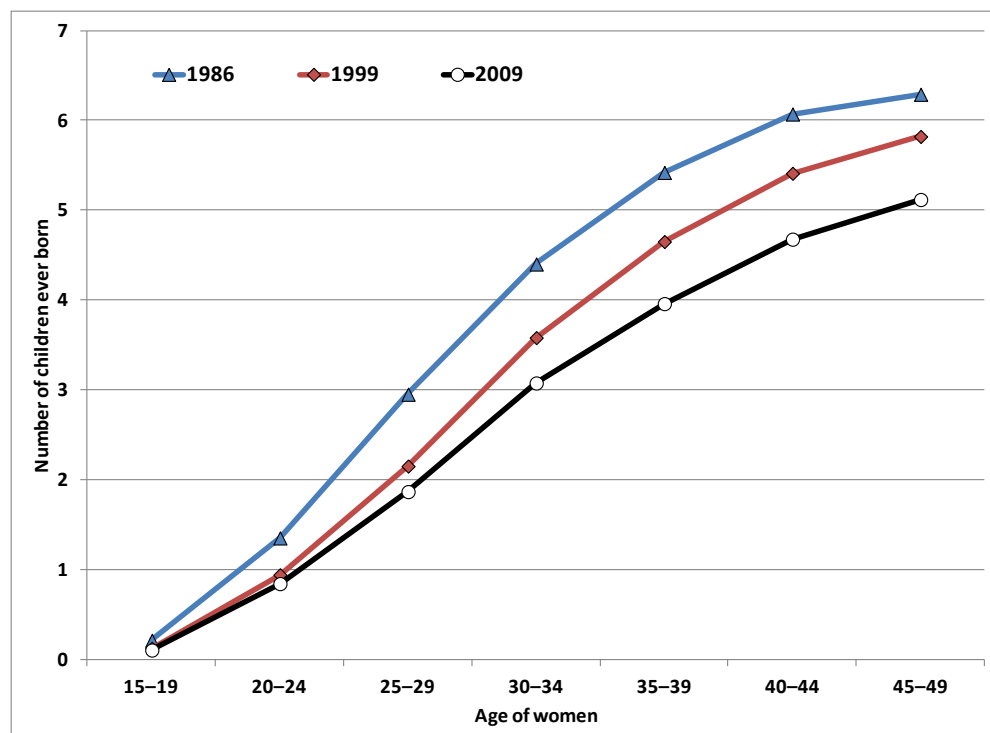
The census also included questions on whether mother's children lived in her household or elsewhere, or whether they have died (Fig.31). The proportion of children living in their mother's household decreased with the age of the mother, because as children grow older they leave their parents' home and form their own household.

Figure 31: Proportion of children ever born by age of mother and whether living in the same household as their mother, Solomon Islands: 2009
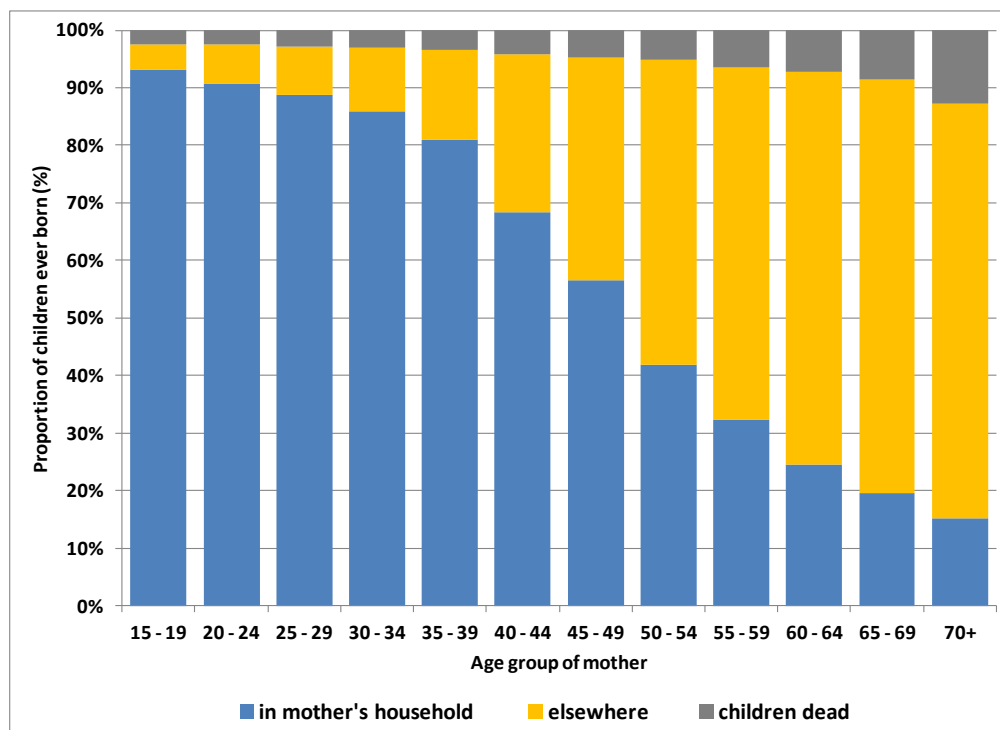
From the question on date of birth of the last born child, the number of births per year or period can be calculated (Table 7). Responses from women during the 2009 census indicated that 15,715 children were born during the one-year period prior to the census, between November 2008 and November 2009.

Table 7: Reported number of births during the one-year period before the census (23 November 2008 – 22 November 2009) by age group of women, Solomon Islands: 2009

| Age Group of women | Number of women | Number of children | | | *ASFR |
		Males	Females	Total	
15 - 19	25,023	529	515	1,044	0.042
20 - 24	23,020	2,182	1,922	4,104	0.178
25 - 29	21,880	2,344	2,153	4,497	0.206
30 - 34	18,785	1,737	1,607	3,344	0.178
35 - 39	16,141	1,074	861	1,935	0.120
40 - 44	11,568	317	292	609	0.053
45 - 49	9,524	91	91	182	0.019
Total	**125,941**	**8,274**	**7,441**	**15,715**	****TFR = 4.0**

*ASFR = Age-Specific Fertility Rate
**TFR = Total Fertility Rate

Unfortunately, a reliable number of registered births (from Solomon Islands' vital registration system) is not available, and a comparison of census data is not possible.(Section 7.2.1).

Figure 32 shows a comparison of the above data of the last 3 censuses. Again it can be seen that the fertility level of women of all ages declined since 1986. Fertility levels have especially decreased of women aged 20-24 years. Comparing fertility levels of 1999 with 2009 shows a decline for women aged 20-34 years.

Figure 32: Reported age-specific-fertility-rates (ASFR), Solomon Islands: 1986, 1999, 2009
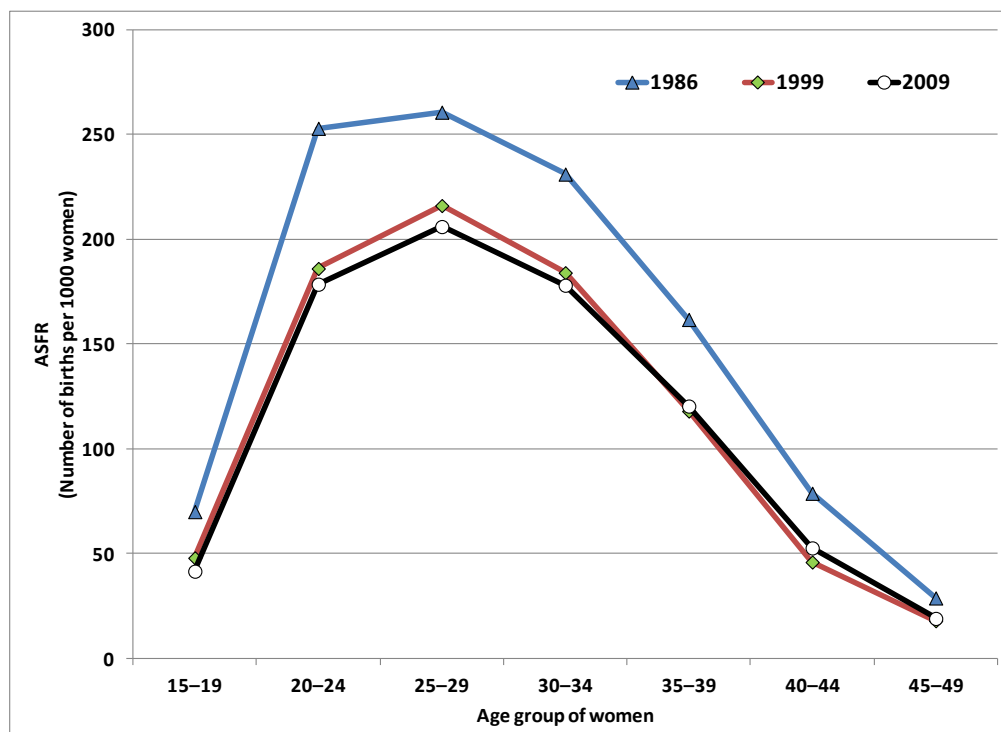
In order to estimate the Solomon Islands' fertility level, this analysis relies on indirect estimation techniques.

The first indirect method to estimate fertility applied here was the *own-children method* , which is a procedure deriving ASFRs for a 10- or 15-year period from a special census tabulation of children classified by age, and age of mother, both ages being given in single years at the time of the census. Age of mother can be determined only for those children who are enumerated in the same household as their mother (i.e. who are "own children" of a woman present in some enumerated household, hence the name of the method).

The demographic indicator most commonly used to describe a country's fertility situation is called the total fertility rate (TFR). This measure is an indication of the average number of children a woman gives birth to during her reproductive life (from ages 15–49 years). It is calculated from the number of live births by age of women in a given year — the age-specific fertility rates (ASFRs).

Fertility estimates derived using the own-children method based on the last five censuses (1970, 1976, 1986, 1999, and 2009) show that fertility levels have more or less steadily declined since 1975 when the TFR peaked at 7.7 children per woman; the TFR was exactly 6 in 1985, 5 in 1991, and is estimated at 4.1 for the 3-year period 2007-2009 (Fig.33).

This historical fertility pattern is very similar to many countries in the Pacific with high to very high fertility levels until the 1970s, when levels started to decrease.

Reasons are better availability and access to contraceptives, a better educated population, women's increased participation in the labor force, improved (reproductive) health care, and in general an increased westernization of people's lifestyles when access to Western metropolitan countries became easier after the opening of many international airports in Pacific Islands countries in the 1970s.

The own-children method has two major weaknesses. First, since the method estimates birth rates by single years, it uses children classified by single years of age. Therefore the results are very much affected by differential completeness of enumeration, age misreporting and age heaping. Averaging the results that refer to contiguous age groups is a way of reducing the effect of age heaping. However, considering the well-known deficiencies of census enumerations, especially among very young children, a drop in fertility during the two or three years immediately preceding the census is not necessarily an indication of fertility decline, but the result of under-counting of young children. Second, the basis of this method is the tabulation of children by single year of age and single year of age of mother. Hence, this can only be done if children are linked in some way to their mothers in their households. In the 2009 Census this was done by asking whether the biological mother of persons were living in the same households. However, as elsewhere, it is possible to suspect that not always the person reported as the biological mother is such. Sometimes the mother has died or is absent and the child has been *informally adopted* by a grandmother, an aunt or an older sister. This is known as the *adoption* or *grandmother effect* and tends to affect particularly age-specific fertility rates.

For these reasons, other indirect methods were also used to estimate fertility. The most frequently used indirect methods are the Brass-type methods. This approach was

pioneered by William Brass and improved by others. The sources of data for the Brass-type method are the number of children women ever had, and whether they had a birth in the year preceding the census. This information is available in most censuses. Several variants of the original Brass method were used here. The results of the applications of these methods are presented in Table 8.

Figure 33: Estimates of TFR based on "own-children method", Solomon Islands: 1957–2009
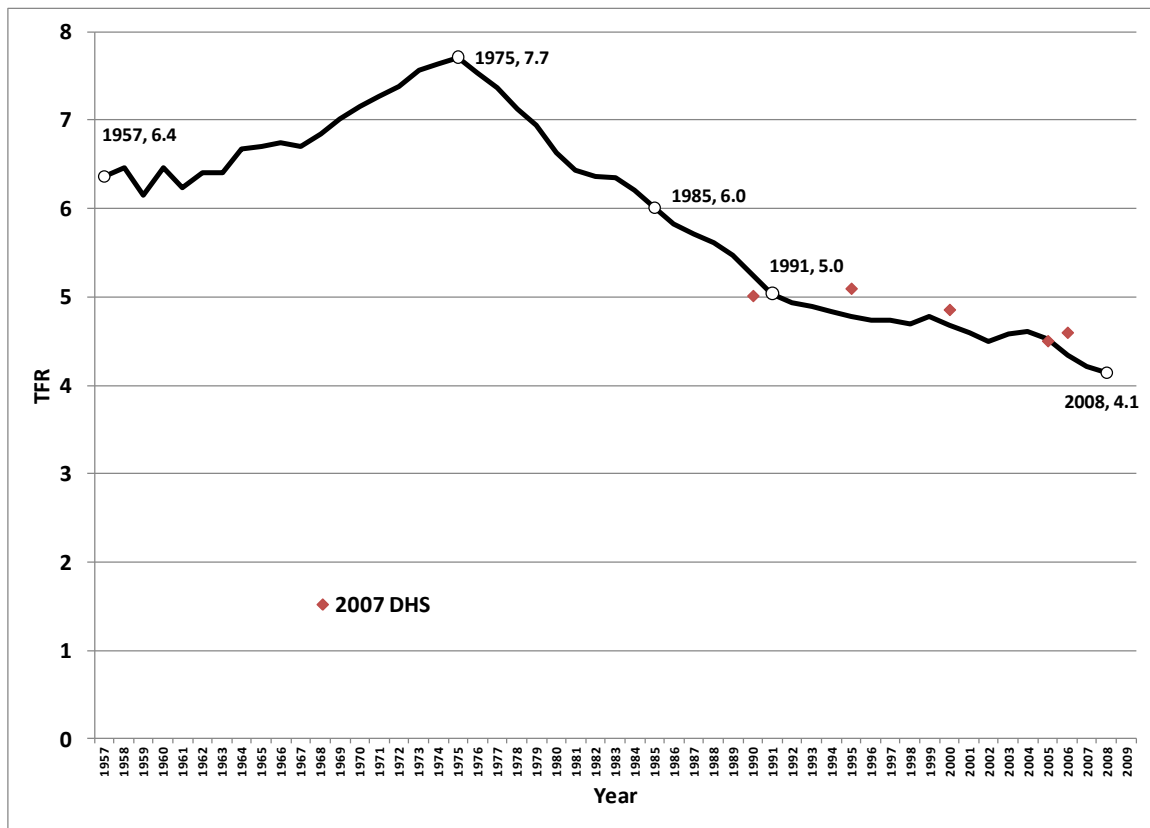
Table 8: Comparison of TFR estimates derived by various methods, Solomon Islands: 1999 and 2009

Year	Own-children method [1]	Arriaga method, using 1 point in time [2]	method, using 2 points in time: 1999 and 2009 [3]	Trussell P/F ratio technique [2]	Relational Gompertz method [4]	2007 DHS [5]
1999	**4.8**	4.8	4.7	5.0	5.1	5.1
2009	**4.1**	4.4	4.3	4.7	4.6	4.6

[1] 1999 estimates refer to 3-year period 1998-2000 and estimate for 2009 refers to period 2007-9
[2] using adjustment factors of women aged 20-24
[3] using adjustment factors of women aged 25-29
[4] using average of age group 20-39 based on ASFR and CEB
[5] value 4.6 refers to 3-year period before 2007 survey; 5.1 refers to 1996

The variants of the original Brass method are usually known by the name of their authors (Eduardo Arriaga, and T. James Trussell; the relational Gompertz method is based on the Gompertz distribution and it was developed by G. Feeney and also by W. Brass). These methods have several advantages and weaknesses but all of them are based on similar principles. In general, they seek to adjust the level of observed age-specific fertility rates, which are assumed to represent the true age pattern of fertility, to agree with the level of fertility indicated by the average parities (average number of children ever born) of women in age groups under 30 or 35, which are assumed to be accurate. During successful application of this method, the age pattern of the period fertility rates is combined with the level implied by the average parities of younger women to derive a set of fertility rates that is generally more reliable than either of its constituent parts. These methods are explained and discussed in two main publications: MANUAL X. INDIRECT TECHNIQUES FOR DEMOGRAPHIC ESTIMATION published by the United Nations (New York, 1973) and POPULATION ANALYSIS WITH MICROCOMPUTERS (PAS) by E. Arriaga and associates (U. S. Bureau of the Census, USAID, UNFPA, Washington, D. C., 1994).

A major limitation of these methods is the assumption of constant fertility. Although the original Brass method was quite sensitive to fertility changes, the other recent versions are more flexible regarding this assumption, unless fertility is declining very rapidly. In order to avoid even further the assumption of fertility decline, the utilization of two censuses has been proposed. In this case, the Arriaga method for two points in time was used. The main problem of this approach is that it is assumed that both censuses have the same level of under-enumeration, both by age and sex, a situation which hardly take place in the real world. The most frequently utilized method is the Trussell variant of the original Brass method and the Gompertz Relational Method. They are considered as the most reliable and robust to estimate recent level of fertility. The calculations for the Arriaga methods were done with the United Nations software MORTPAK 4.1 and the Trussell and Gompertz methods with PAS, from the US Bureau of the Census.

The results of the application of the different methods to estimate fertility are not very different. TFR varies from 4.6 to 5.1 in 1999 and in 2009 from 4.1 to 4.7. Even the results of the Demographic and Health Survey (DHS) are within this range. The result obtained from the Trussell variation and the Gompertz Relational Method are probably the nearest to the real fertility level observed at the end of the past decade in the Solomon Islands, considering the characteristics of the methods themself and their proximity of the result to the DHS. In other words, the fertility level estimated by the DHS validates the result obtained with the Trussell technique and Gompertz Relational Method. The Trussell method will be used for further fertility analyses. The problem with the Gompertz method is that it does not provide ASFRs. However, it is important to point out that regardless of the differences among the various methods, it is important to note that all of them indicate a decline in fertility, which is consistent with the long term decline suggested by the own-children method.

The relative distribution of the ASFR (adjusted by the Trussell technique) is presented in Figure 34. The percentages indicate the contribution of each age group of women to the overall fertility (TFR) and the complete curve represents the shape of the current fertility distribution, that is, the schedule by which women are currently having their children. According to Figure 34, the shape of the fertility distribution has changed very little from 1999 to 2009. The contribution to overall fertility has declined a little among teenagers (15-19) and among women 25-29 years old; it has remained almost constant among women 20-24, 30-34 and 45-49 years old and it has increased slightly in ages 35-39 and 40-44 years old. This increase to the overall fertility contribution of these two ages is odd. It suggests that fertility has increased in these two age groups of women during the decade. In fact, they have raised a little, from 52 to 57 births per 1,000 women in the case of the age group 40-45 years. This increase can also be observed in Figure 32. The reason for this unusual trend appears to be a problem of births over-imputation rather than an actual increase. However, it is important to point out that changes are quite small and it is possible to say that the age pattern of current fertility has remained constant during the decade.

Figure 34: Relative distribution of ASFRs, Solomon Islands: 1999 and 2009
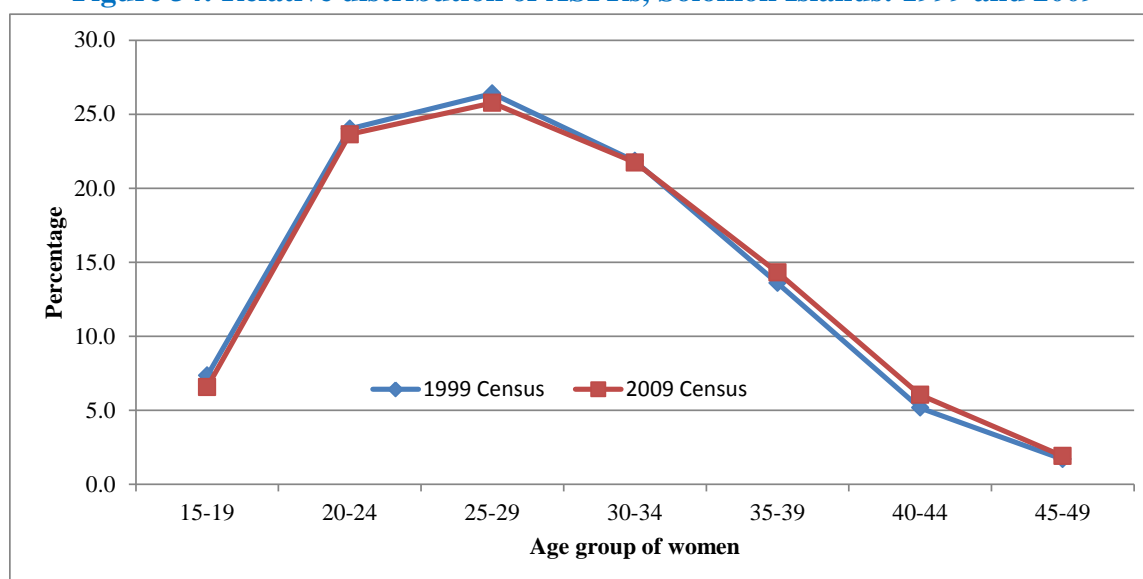
The number of births by age of women and, therefore, the total number of births during the one-year period prior to 2009 can be calculated by multiplying the ASFR (adjusted by the Trussell technique) times the enumerated number of women by age group in the census, and summing the number of birth by the age group of women. This exercise is presented in Table 9.

Table 9: Estimated age-specific fertility rate (ASFR), annual number of births, total fertility rate (TFR), and mean age at childbearing (MAC), Solomon Islands: 2009

Age group of women	Number of women	Estimated ASFR[1]	Estimated number of births [2]
15-19	25,023	0.062	1,555
20-24	23,020	0.223	5,137
25-29	21,880	0.243	5,316
30-34	18,785	0.205	3,848
35-39	16,141	0.135	2,175
40-44	11,568	0.057	657
45-49	9,524	0.018	170
Total	**125,941**		**18,858**
TFR		**4.7**	
MAC [3]			**29.5**

[1]Estimated with the Trussel technique
[2]ASFR x number of women
[3]Mean age at childbearing

The estimated number of birth of 18,858 in 2009 suggest that part of the population aged younger than one year was under-enumerated. The 2009 Census enumerated 15,730 under one year children. The difference of 3,128 children can be explained by infant mortality but also by an under-count of young children. This issue is discussed in a further chapter.

Finally, the national crude birth rate (CBR) can be calculated by dividing the estimated number of births (18,858) by the total census population (515,870). The result is 36.6 births per 1,000 population.

> **CBR** = 18,858/515,870 x 1,000 = **36.6** (there were 36 births/1,000 population)

3.1.2 Sub national estimates

This section contains fertility estimates by urban-rural localities and by province. The estimates on fertility levels are based on the Trussell variation of the Brass method while the trends were estimated with the own-children method. As mentioned above, this latter method is likely to have under-estimated fertility; however it provides a reasonable trend.

Figure 35 shows that the fertility level in urban areas (3.3) is much lower than in rural areas (5.2). The provinces of Choiseul, Temotu and Honiara have lower than national TFR. Rennell-Bellona, Malaita and Central exhibit rates well over the average.

Figure 35: TFR by place of residence, Solomon Islands: 2009
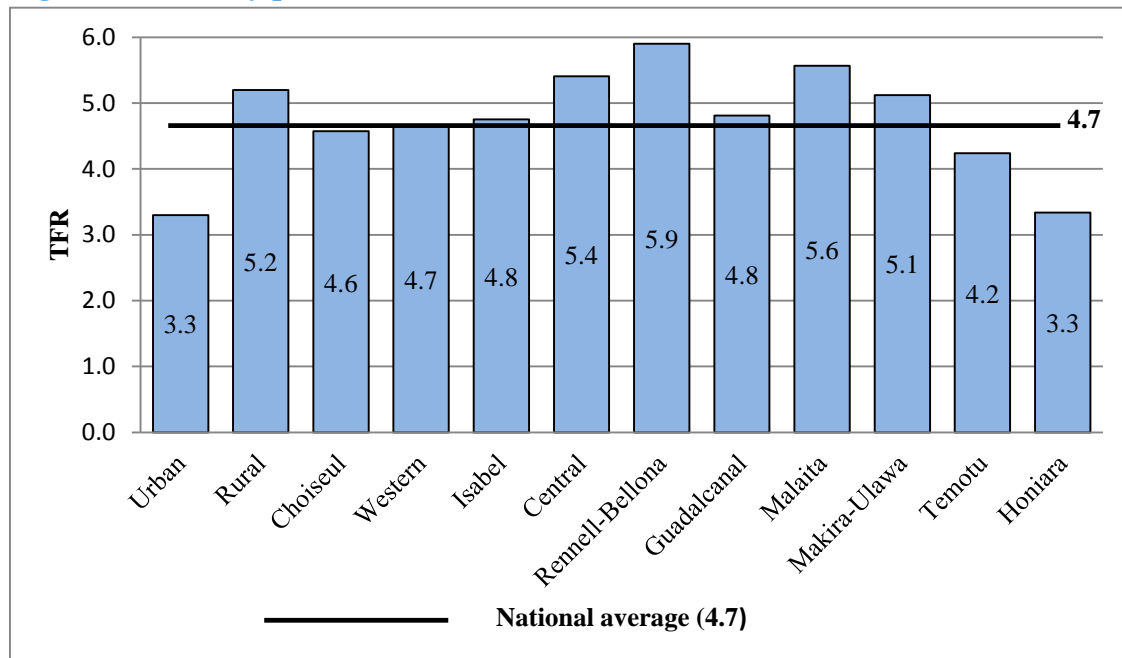
Figures 36-37 show the fertility trend throughout the period 1995-2009 by urban-rural residence and by province. It shows a fairly similar trend for all areas with a more or less constant decrease in fertility levels, although there seem to have been a slight acceleration of decrease during the period 1998-2003.

Moreover during the periods 1995-2000 and 2001-2006 there seem to have been stagnation in the otherwise overall declining fertility level in the rural areas (Fig. 36).

Figure 38 presents adolescent or teenage fertility rate, which is the number of births per 1,000 women 15-19 years old. Compared to the national average of 62, the rate is 40 in urban areas and 69 in rural areas and it is the highest in Makira-Ulawa (87) and Rennell-Bellona (82). The lowest rates are in Honiara (35) and Temotu (45). The contribution of teenage fertility to overall fertility (TFR) is low, only 6.6% at the national level. The province where adolescent fertility contributes less to overall fertility is in Central (4.4%) and where it contributes more is in Makira-Ulawa and Choiseul (8.4%).

Figure 36: Fertility trend by urban-rural residence, Solomon Islands: 1995-2009

Source: Michael Levin, Harvard University Center for Population and Development Studies

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Figure 37: Fertility trend by province, Solomon Islands: 1995-2009
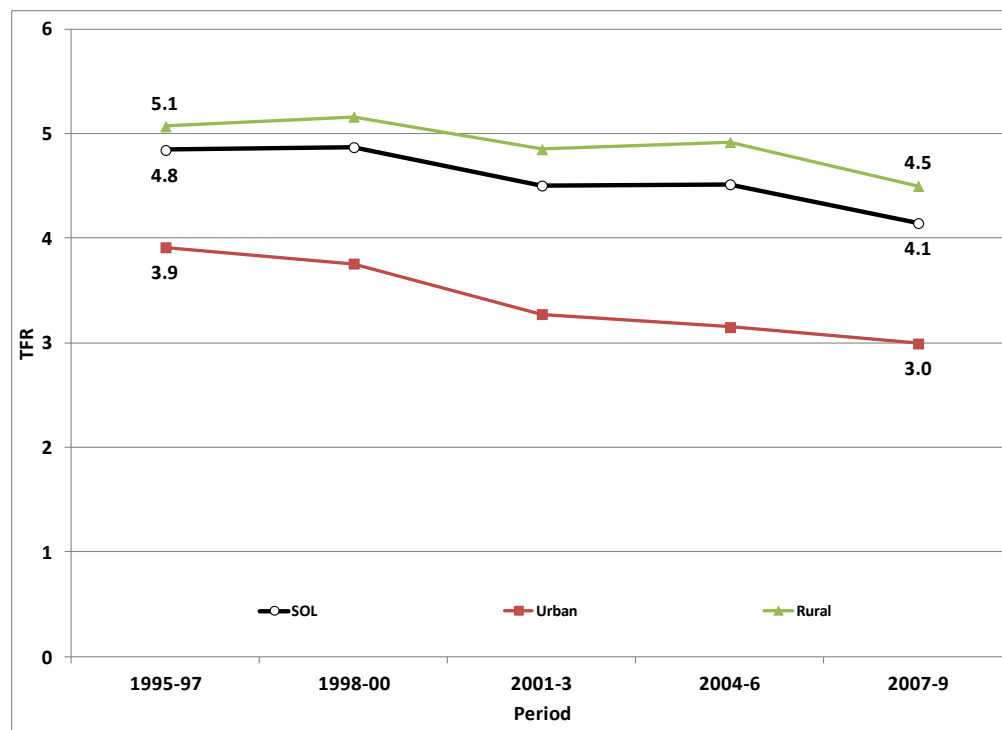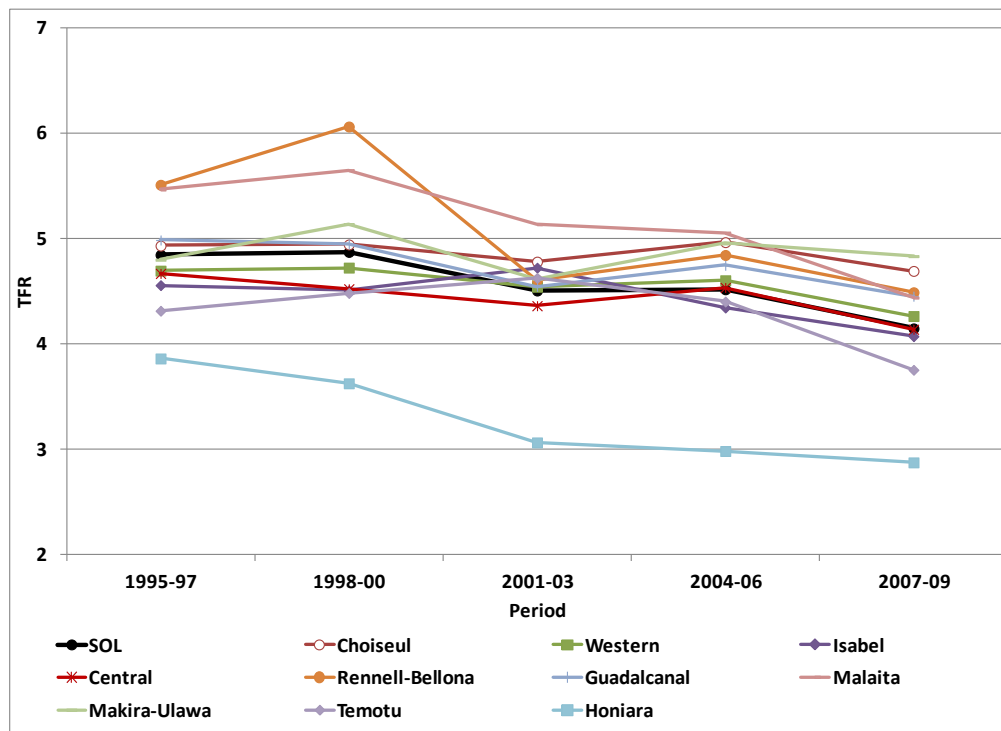
Source: Michael Levin, Harvard University Center for Population and Development Studies

Figure 38: Adolescent fertility rate (number of births per 1000 women aged 15-19 years), Solomon Islands: 2009
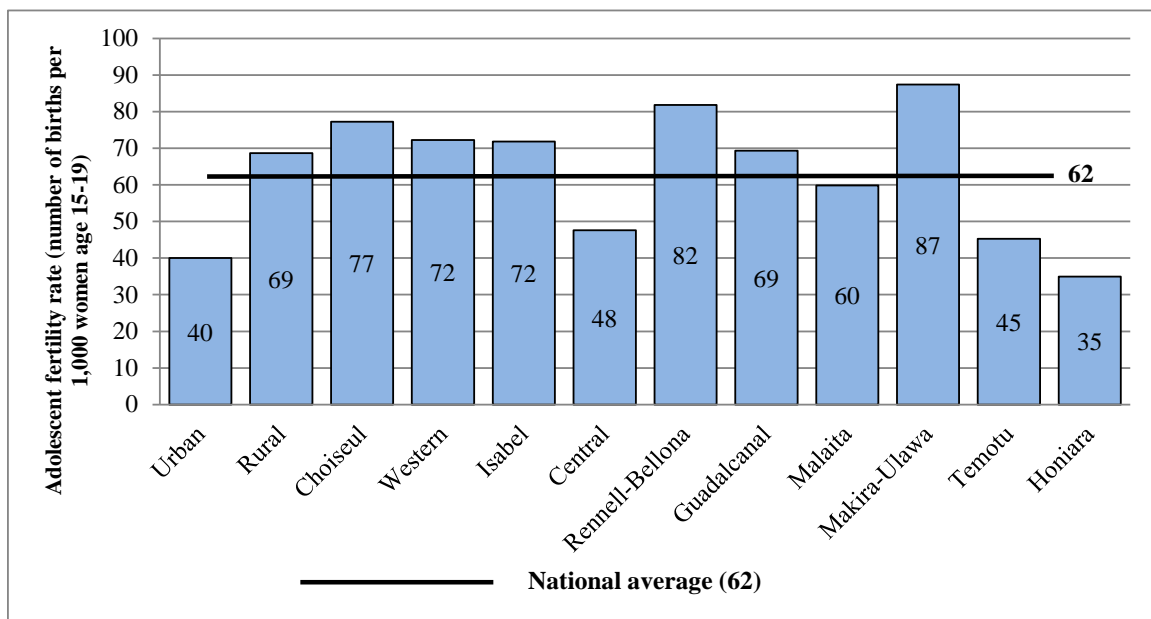
Figure 39: Fertility level (TFR) by educational attainment, Solomon Islands: 2009
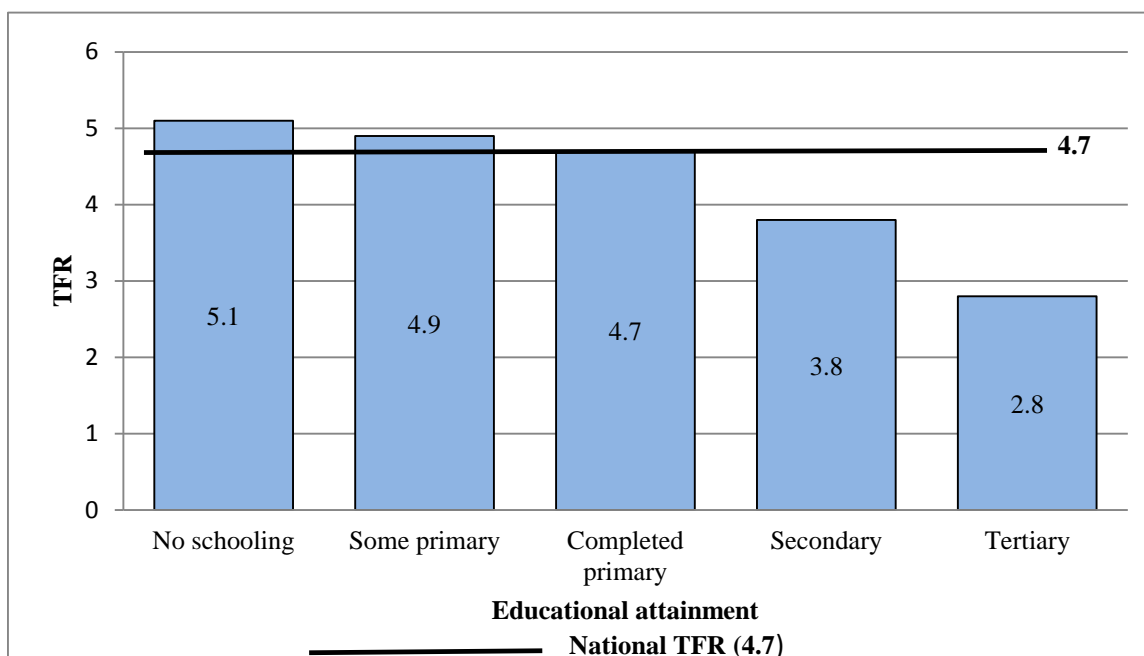
Finally, comparing the fertility levels of women by level of educational attainment shows a very straightforward and clear pattern: the higher the level of women's education, the lower the number of children per woman (Fig. 39). Women with no schooling or some primary education have over the national average TFR, while women with secondary and tertiary education have a TFR well above the average.

3.2 Mortality

The questions relating to mortality in the 2009 census were:

- How many live births a woman has ever had, and how many of those born were still alive and/or had died;
- Whether a respondent's mother and father was still alive (orphanhood);
- Whether a respondent's marital status was "widowed" (widowhood);
- Whether any residents of the household died during the last 12 months prior to the census.

3.2.1 National level estimates

3.2.1.1 Household deaths

Based on the reported number of deaths by age and sex derived from the household question on number of deaths of household residents who died during the last 12 months before the census, 1,721 deaths were recorded; 993 males, and 728 females (Table 10).

Both the *Brass Growth Balance Equation Method*[3] and the *Preston-Coale Method*[4] were applied to the collected data, and it appears that the reported number of household deaths is significantly underreported. If these data were directly used to calculate a life table (by for example using the PAS procedure LTPOPDTH) life expectancy at birth for males and females would calculate at 86 and 88 years, which is obviously much too high.

Interestingly the reported number of infant deaths (population younger than 1 year) seems considerably overstated, probably due to age misreporting, or coding errors. On the other hand, male and female IMRs would calculate at about 25 and 21 per 1000 for males and females, which is higher when comparing it to results using indirect methods (section 3.2.1.3).

The life tables calculated in section 3.2.1.5 that are based on a composite of estimated child and adult mortality rates suggest that there were 1,808 male and 1,072 female deaths in 2009 (Table 20). Comparing these estimates with the reported numbers of male (993) and female (728) household deaths result in a completeness of death reporting of only 58% for males and 72% for females.

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[3] Population Analysis Spreadsheets (PAS), procedure GRBAL, US Census Bureau, Washington, USA
[4] Population Analysis Spreadsheets (PAS), procedure PRECOA, US Census Bureau, Washington, USA

Table 10: Number of deaths of household residents by age and sex during the 12 months preceding the census and whether death was pregnancy related, Solomon Islands: 2009

Age group	Total number of deaths			Pregnancy related deaths
	Both	Male	Female	
0	432	242	190	
1-4	120	66	54	
5-9	68	34	34	
10-14	48	26	22	
15 - 19	40	20	20	1
20 - 24	56	33	23	4
25 - 29	74	43	31	2
30 - 34	76	37	39	8
35 - 39	57	30	27	5
40 - 44	59	32	27	4
45 - 49	74	38	36	
50 - 54	100	61	39	
55 - 59	83	48	35	
60 - 64	71	58	13	
65 - 69	96	56	40	
70 - 74	87	58	29	
75 - 79	75	52	23	
80 - 84	45	29	16	
85+	60	30	30	
Total	**1,721**	**993**	**728**	**24**

Model life table

However, the data on reported household deaths by age and sex was used to determine which of the different Coale-Demeny and United Nations model life tables compares best to the empirical Solomon Islands mortality pattern using MORTPAK's procedure COMPAR. The assumption was made that possible under-registration of deaths is not age specific and therefore does not affect the overall pattern of mortality.

It was found that the *North* pattern of the Coale-Demeny model life tables resembles most closely the empirical mortality pattern of the Solomon Islands population (Appendix 8 and 9).

3.2.1.2 Maternal mortality

Based on the collected information as presented in section 3.2.1.1 and Table 10, 24 pregnancy related deaths of women aged 15-44 years were recorded during the 12-month period before the census (23 November 2008 – 22 November 2009).

Once it was established that there were one or more deaths in the household during the reference period, an additional question was asked to identify pregnancy related deaths: "*If person who died was female, was the death pregnancy related?*".

The definition of a pregnancy related death is as follows:

> *A maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental causes.*
> *(World Health Organization, 1993)*

Please note that this definition was not available to census enumerators or respondents.

Table 11 summarizes several maternal mortality indicators, such as

- **MMRatio**, maternal mortality ratio: number of maternal deaths per 100,000 live births;

- **MMRate**, maternal mortality rate: number of maternal deaths per 1,000 women;

- **PMFD**, proportion of deaths due to maternal causes: ratio between numbers of reported female deaths and maternal deaths.

- **LTR**, lifetime risk of maternal death: reflects the chances of a woman dying from maternal causes over the course of her 35-year reproductive life span = 35 x MMRate

Table 11: National data on maternal mortality by women's age group, Solomon Islands: 2009

Age group	Number of women	Number of women's deaths in the last 12 months	Number of deths due to maternal causes	Number of live births in the last 12 months by maternal age group[1]	MM ratio (per 1,000 women)	MM rate (per 1,000 women)	Proportions of deaths due to maternal causes (PMFD)	Lifetime risk of maternal deaths, LTR (per 1,0000 women)
15 - 19	25,023	27	1	1,555	64	0.04	0.04	0.2
20 - 24	23,020	36	4	5,137	78	0.17	0.11	0.9
25 - 29	21,880	35	2	5,316	38	0.09	0.06	0.5
30 - 34	18,785	33	8	3,848	208	0.43	0.24	2.1
35 - 39	16,141	33	5	2,175	230	0.31	0.15	1.5
40 - 44	11,568	30	4	657	609	0.35	0.13	1.7
45 - 49	9,524	34	0	170	0	0.00	0.00	0
Total	125,941	228	24	18,858	127	0.19	0.11	6.7
Adjusted			27		143	0.21		7.5

[1] adjusted number of births based on Trussell technique

According to the recorded number of maternal (pregnancy related) deaths a MMRatio (maternal mortality ratio) of 127 is calculated; the MMRate (maternal mortality rate) is 0.19, and LTR (the lifetime risk of a maternal death) is 6.7.

However, as mentioned in section 3.2.1.1, the recorded number of household deaths was substantially underreported, and one can assume that the same is true for pregnancy related deaths. The estimated true number of female deaths was more likely in the range of 1,037 (section 3.2.1.5, Table 20) instead of the recorded number of only 728 deaths, representing an undercount of about 42%. With respect to the age group 15-49 years, 203 total female deaths were reported (Table 10) compared to an estimated number of 200 (Table 20), representing an undercount of 13% for female deaths for this age group.

Assuming that the reported number of maternal deaths is affected by the same factor of underreporting of total female deaths aged 15-49 years, and adjusting the pregnancy related deaths by a factor of 1.13 (accounting for the estimated 13% undercount) would bring the number of maternal deaths to 27, which in turn would raise the **MMRatio** to **143**, the **MMRate** to **0.21**, and the **LTR** to **7.5**.

It seems doubtful that the enumerators and/or respondents were aware of the exact definition of what exactly constitutes a '*pregnancy related death*' as it is not further described in the Enumerator Manual. Therefore the reported number of maternal deaths could be either over or under reported.

3.2.1.3 Child mortality

Infant and child survivorship can be estimated indirectly by examining answers of women aged between 15 and 50 years regarding numbers of children ever born and numbers of deceased children. When classified by the women's age, these numbers facilitate the computation of mean numbers of children ever born, mean numbers of children surviving and mean proportions of dead children.[6]

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[6]Estimating child mortality from information on children ever born and children surviving

Brass (1964, United Nations 1983) developed a procedure to convert proportions of dead children experienced by women in age groups 15-19, 20-24, et cetera into estimates of the probability of a child dying ($_xq_0$) before attaining certain exact age (i.e. before ages 1, 2, 3, 5, 10, 15 and 20). He found that the reported proportions of dead children are primarily a function of the age pattern of fertility of women, and more specifically of the mean age at childbearing. Depending on the mean age at childbearing in the population, a set of multipliers was derived to facilitate conversion of observed proportions of dead children in each age group of women into life table probabilities of dying. Later, Coale and Trussell (1974) derived new sets of multipliers using a wider range of empirical evidence to underpin the values that multipliers take on. The assumption of the Brass method of constant fertility and mortality can be relaxed if the rate of mortality decline is known and more or less constant over time. If so, the different probabilities of dying that are estimated can be exactly located in historical time so that a series of estimates of the IMR and, by extrapolation, e(0) can be deduced. It has been found that the probabilities of dying $_2q_0$, $_3q_0$ and $_5q_0$ are most reliable and these values are generally taken to estimate the mortality in early childhood, notably the IMR.

From all children that were ever born to women aged 15 years and older (432,103), 95% (410,359) were still alive and 21,744 children had died (Table 12).

The proportion of surviving females was higher than that of males (Table 13). While 95.3% of all female children ever born were still alive, only 94.7% of all male children had survived.

The proportion of surviving children decreases with the age of mothers (Table 13 and Fig.40). While 97.6% of all children that were ever born to women now aged 20–24 were still alive, only 95.3% of children born to women now aged 45–49 were still alive, and 87% of children born to women now aged 70 years and older remained alive.

This general trend is explained by the fact that as the age of mothers increases, so does the age of her children; the proportion of birth cohorts that have died rises with an increase in the age of mothers.

Table 12: Female population aged 15 and older by number of children ever born, number of children dead, and number of children still alive, Solomon Islands: 2009

Age of women	Total number of women	Total number of children ever born alive			Total number of children dead			Total number of children still alive		
		Total	Males	Females	Total	Males		Total	Males	Females
15 - 19	25,023	2,543	1,307	1,236	64	34	30	2,479	1,273	1,206
20 - 24	23,020	19,364	10,165	9,199	473	269	204	18,891	9,896	8,995
25 - 29	21,880	40,822	21,271	19,551	1,198	672	526	39,624	20,599	19,025
30 - 34	18,785	57,768	29,918	27,850	1,799	966	833	55,969	28,952	27,017
35 - 39	16,141	63,901	33,396	30,505	2,176	1,201	975	61,725	32,195	29,530
40 - 44	11,568	54,097	28,141	25,956	2,223	1,195	1,028	51,874	26,946	24,928
45 - 49	9,524	48,744	25,384	23,360	2,293	1,269	1,024	46,451	24,115	22,336
50 - 54	6,841	36,460	19,048	17,412	1,899	1,077	822	34,561	17,971	16,590
55 - 59	5,676	31,596	16,672	14,924	2,036	1,156	880	29,560	15,516	14,044
60 - 64	4,381	25,204	13,162	12,042	1,820	1,028	792	23,384	12,134	11,250
65 - 69	3,328	19,972	10,340	9,632	1,697	931	766	18,275	9,409	8,866
70 - 74	2,296	13,992	7,174	6,818	1,579	848	731	12,413	6,326	6,087
75 - 79	1,590	9,541	4,879	4,662	1,244	692	552	8,297	4,187	4,110
80 - 84	725	4,317	2,190	2,127	607	307	300	3,710	1,883	1,827
85+	617	3,782	1,981	1,801	636	351	285	3,146	1,630	1,516
Total	**151,395**	**432,103**	**225,028**	**207,075**	**21,744**	**11,996**	**9,748**	**410,359**	**213,032**	**197,327**

Table 13: Female population aged 15 and older by proportion of children ever born and still alive, and proportion now dead, Solomon Islands: 2009

Age of women	Total number of women	Proportion of children ever born still alive (%)			Proportion of children ever born now dead (%)		
		Total	Males	Females	Total	Males	Females
15 - 19	25,023	97.5	97.4	97.6	2.5	2.6	2.4
20 - 24	23,020	97.6	97.4	97.8	2.4	2.6	2.2
25 - 29	21,880	97.1	96.8	97.3	2.9	3.2	2.7
30 - 34	18,785	96.9	96.8	97.0	3.1	3.2	3.0
35 - 39	16,141	96.6	96.4	96.8	3.4	3.6	3.2
40 - 44	11,568	95.9	95.8	96.0	4.1	4.2	4.0
45 - 49	9,524	95.3	95.0	95.6	4.7	5.0	4.4
50 - 54	6,841	94.8	94.3	95.3	5.2	5.7	4.7
55 - 59	5,676	93.6	93.1	94.1	6.4	6.9	5.9
60 - 64	4,381	92.8	92.2	93.4	7.2	7.8	6.6
65 - 69	3,328	91.5	91.0	92.0	8.5	9.0	8.0
70 - 74	2,296	88.7	88.2	89.3	11.3	11.8	10.7
75 - 79	1,590	87.0	85.8	88.2	13.0	14.2	11.8
80 - 84	725	85.9	86.0	85.9	14.1	14.0	14.1
85+	617	83.2	82.3	84.2	16.8	17.7	15.8
Total	**151,395**	**95.0**	**94.7**	**95.3**	**5.0**	**5.3**	**4.7**

A comparison of data on children ever born and still alive from the 1986, 1999 and 2009 census data show continues improvements in the survival of children of women of all age groups. Especially the proportion of children of older women, have significantly increased, which points to a general improvement in the (child) mortality levels (Fig.41) in the Solomon Islands during the last 23 years.

Figure 40: Proportion of children ever born and still alive by sex and by age of mother, Solomon Islands: 2009
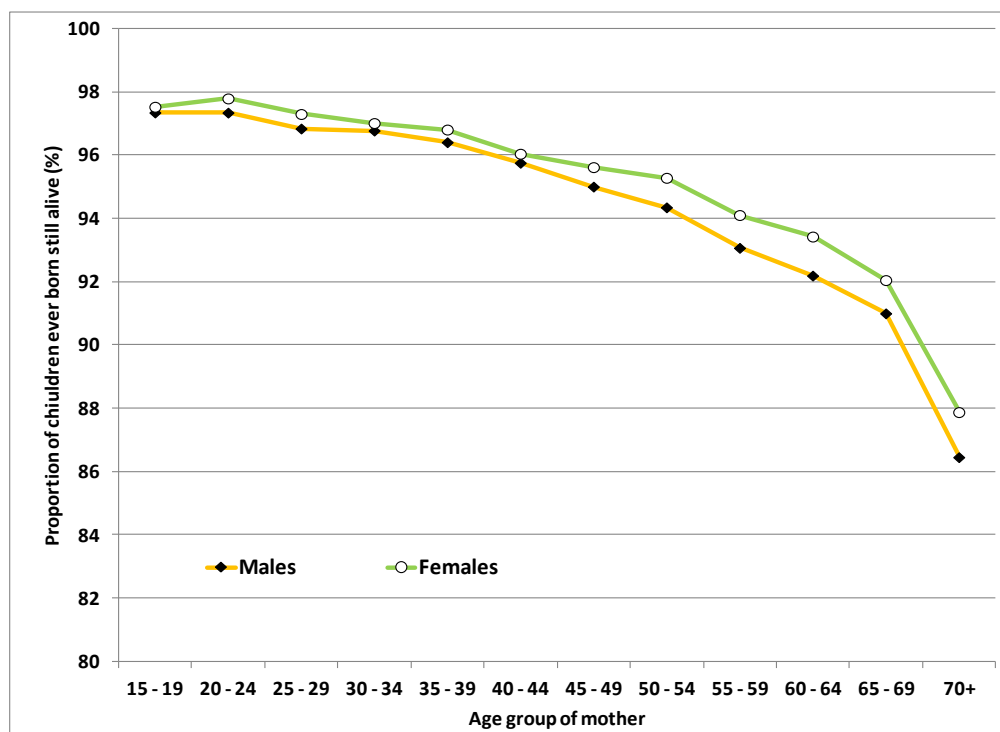
Figure 41: Proportion of children ever born and still alive by age of mother, Solomon Islands: 1986, 1999 and 2009
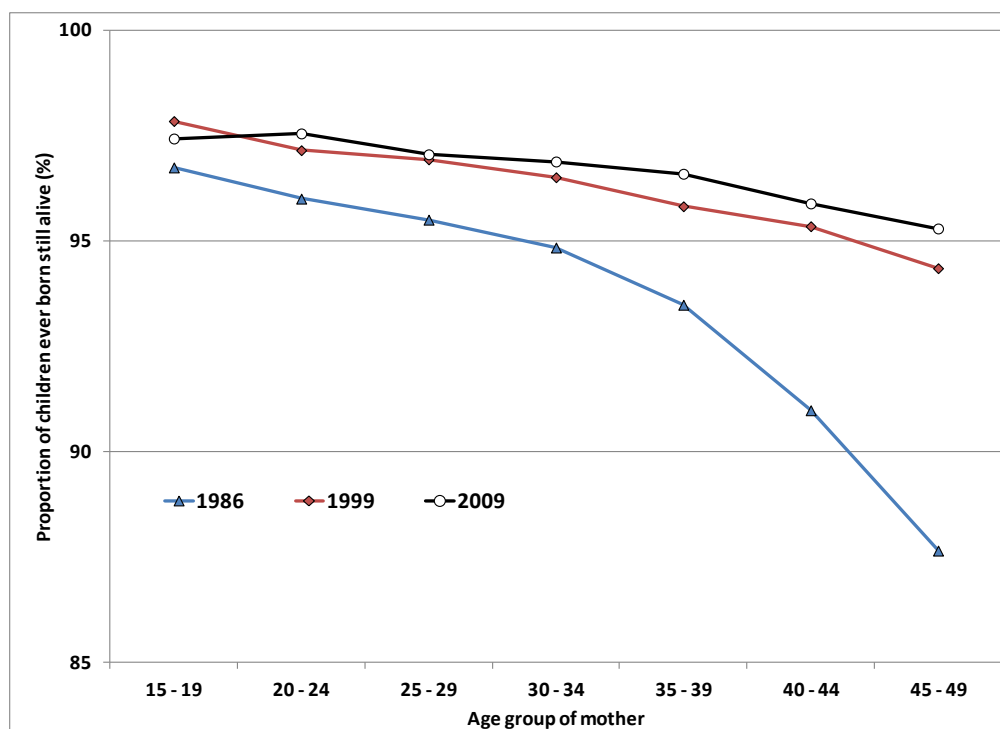
Using the above census data on children ever born and children still living (by age group of mother), the following mortality indices have been obtained using the United Nations software package MORTPAK4.1, procedures CEBCS, and the assumption that the Coale-Demeny North model life tables resembles most closely the empirical mortality pattern of the Solomon Islands population (section 3.2.1.1)(Apps. 10 and 11).

Table 14: Child mortality indicators, Solomon Islands: 2009

Indicator	1999			2009		
	Total	Males	Females	Total	Males	Females
Infant mortality rate (IMR) [1]	28	29	26	22	24	20
Child mortality rate (4q1) [2]	7	7	6	6	7	4
Under-5 mortality rate (q5) [3]	34	36	32	28	31	25

[1] = the number of deaths of children under one year of age per 1,000 live births
[2] = the probability of dying between age 1 and age 5 (per 1,000)
[3] = the probability of dying between birth and age 5(per 1,000)

The Infant Mortality Rate (IMR) in 2009 was estimated at 24 and 20 for males and females, respectively, which is an improvement compared to 1999[7] when the IMR was estimated at 29 and 26 for males and females (Table 14). These 1999 estimates were derived when applying the same indirect method to the 1999 data as presented above. Please note that the final estimates of the IMR for 1999 were 67 and 65 for males and females, based on an *alternative method* (further described in the 1999 census report). In retrospect, these estimates seem out of line compared to results of censuses taken before 1999 and 2009. The 2009 estimates are furthermore consistent with estimates derived from the 2007 Solomon Islands Demographic and Health Survey (Fig.42).

In general, the Solomon Islands have come a long way in improving child mortality rates when considering that the IMR in the 1960s was estimated at over 120 infant deaths per 1000 live births!

Child mortality, the probability of dying between age 1 and age 5, was estimated at 7 male deaths and 4 female deaths per 1,000 people of that age in 2009, a slight improvement compared to 1999.

Under 5 mortality, the probability of dying between birth and age 5, was estimated at 31 for males and 25 for females per 1,000 in 2009.

[7]1999 Solomon Islands population and housing census, Analytical report, page 96

Figure 42: Infant mortality rate (IMR), Solomon Islands: 1961-2009
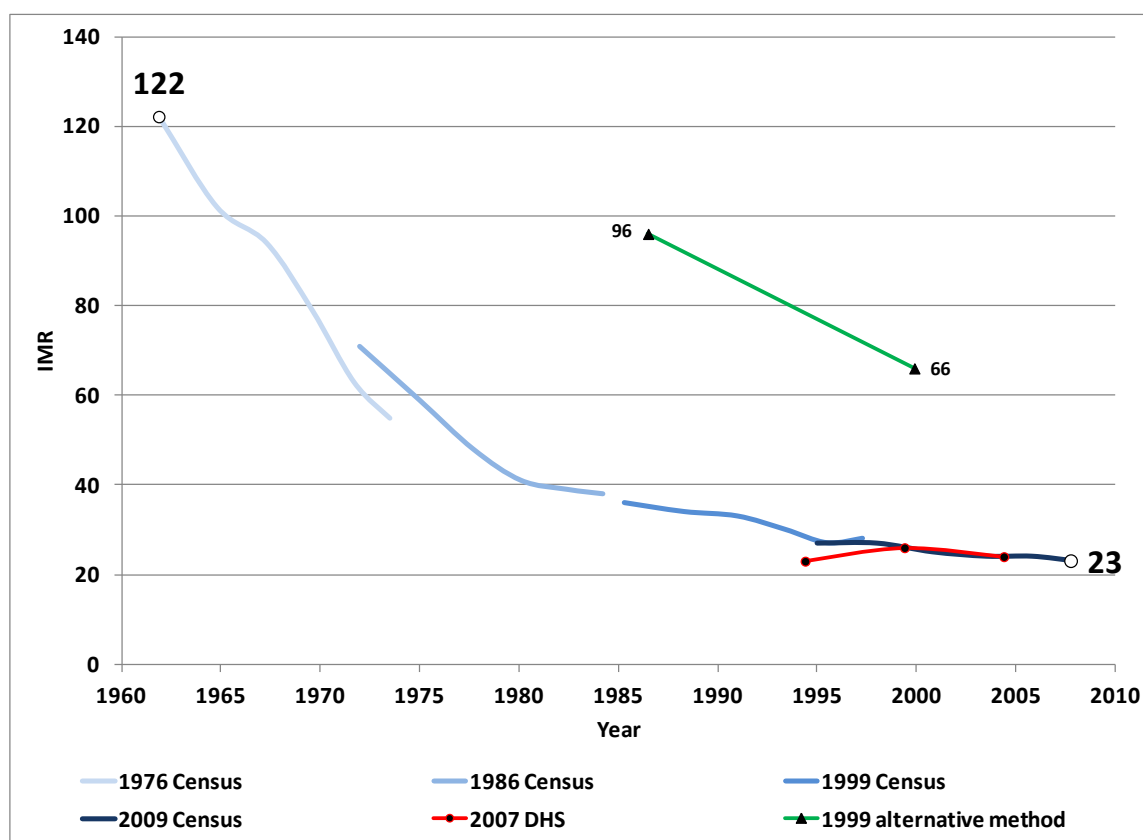
Source: of 1976, 1986 and 1999 census data and graph: CME Info[8] (www.childmortality.org).

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[8] CME Info is a database containing the latest child mortality estimates based on the research of the UN Inter-agency Group for Child Mortality Estimation

3.2.1.4 Adult mortality

Adult mortality levels can be estimated from responses to the question
- whether a respondent's mother or father was still alive (orphanhood), and
- Whether a respondent's marital status was "widowed" (widowhood).

Orphanhood

The census questionnaire included questions on whether respondents' mothers and fathers were still alive. The answers of persons in the age range 15-54 years to these questions can yield indirect estimates of adult mortality[9].

From the total population of 515,870, 73.1% responded that their father was still alive (377,320 people). This compares to 419,207 people or 81.3% who responded that their mother was still alive.

From Table 15 and Figure 43 it can be seen that the number and proportion of respondent's mother still alive is higher than that of fathers at any age of respondent. There are 2 explanations for it:

1. Females (mothers) usually live longer lives than males (fathers), and
2. Fathers are usually older than mothers, because of their age difference at marriage. In section 4.1, it was calculated that the average age at marriage (SMAM) is about 27.1 and 23.3 years for males and females respectively; an age difference of almost 4 years between spouses.

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[9]Estimating adult mortality from orphanhood data:

Brass (1974, United Nations 1983) developed a method whereby the reported proportions of respondents in two contiguous five-year age groups reporting that their mother was still alive at the time of the interview are converted into conditional probabilities of surviving from age 25 to age 35, 40, 45,…, et cetera. Similarly, because of the different age range of the reproductive life of men, conditional probabilities of survival of fathers are estimated from age 32.5 to 42.5, 47.5, 52.5,…, et cetera or from age 37.5 to 47.5, 52.5, 57.5,…, et cetera depending on the local situation.

For each five-year age group the reported proportions of respondents with a surviving mother or father is multiplied by a particular factor. Factors are based on outcomes of simulation studies using particular model mortality and fertility schedules. Hill and Trussell (1977) and Timaeus (1992) refined Brass' original method. The method assumes that men and women who do not have children have the same mortality characteristics as those who do. In situations where mortality levels change and the extent of change is known, the probabilities of survival provided can be computed as referring to a particular time in the past. Manual X of the United Nations (1983) discusses other assumptions of the method.

Table 15: Population by 5 year age group and whether biological father or mother is still alive, Solomon Islands: 2009

Age group	Number of respondents	Father still alive		Mother still alive	
		Yes	No	Yes	No
0 - 4	76,227	73,398	2,829	75,604	623
5 - 9	71,126	67,945	3,181	69,939	1,187
10 - 14	61,931	57,839	4,092	60,301	1,630
15 - 19	51,212	46,194	5,018	48,961	2,251
20 - 24	45,419	38,098	7,321	41,877	3,542
25 - 29	42,674	32,389	10,285	37,531	5,143
30 - 34	37,592	24,649	12,943	30,430	7,162
35 - 39	33,151	17,888	15,263	24,004	9,147
40 - 44	23,638	9,177	14,461	13,739	9,899
45 - 49	19,713	5,421	14,292	8,848	10,865
50 - 54	14,339	2,238	12,101	4,183	10,156
55 - 59	11,787	1,154	10,633	2,301	9,486
60 - 64	8,916	448	8,468	862	8,054
65 - 69	7,021	285	6,736	413	6,608
70+	11,124	197	10,927	214	10,910
Total	**515,870**	**377,320**	**138,550**	**419,207**	**96,663**

Figure 43: Proportion of respondent's father or mother still alive, Solomon Islands: 2009

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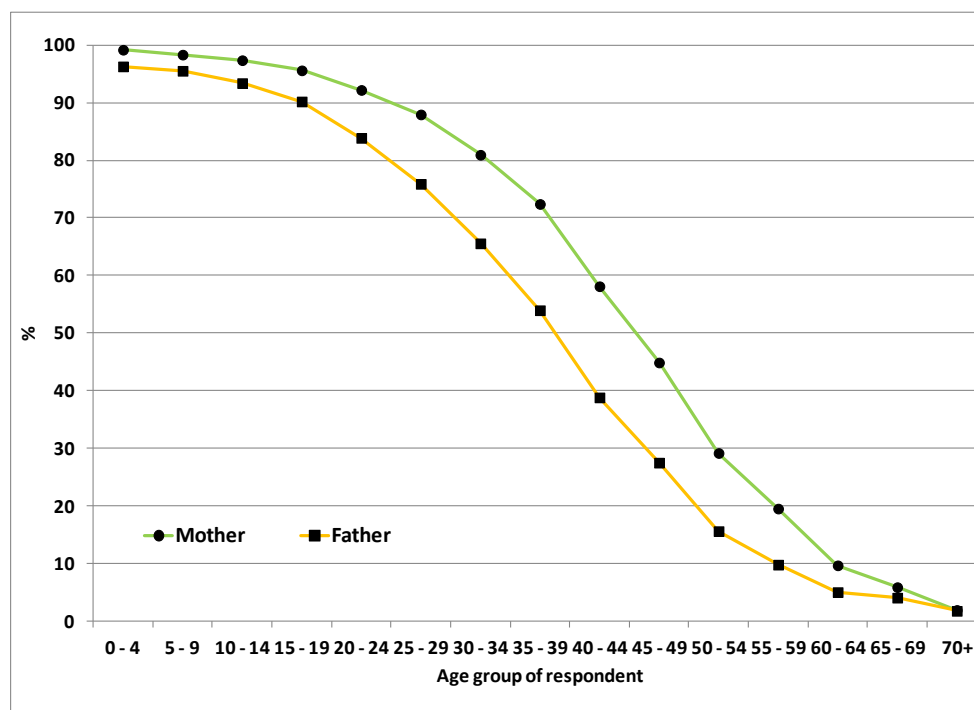
The data on orphanhood were used to calculate adult mortality rates, specifically the life expectancy at age 20 (Table 16). The software package MORTPAK, procedure ORPHAN, was used to calculate the adult mortality rates. Please note that the *mean age at childbearing (MAC)*, a required data input for this method, was calculated from the adjusted ASFR produced by the Trussell indirect technique for fertility estimation (Table 9). The MAC-value for males was adjusted by the age difference of the calculated *SMAMs*.

Life expectancy at age 20 - the number of years a 20-year old person can on average expect to live – was 50.2 years for males and 55.5 years for females. The calculated higher female life expectancy corresponds to the higher proportion of respondents mothers (females) still alive than their fathers (males).

Table 16: Life expectancy at age 20 (in years), based on the orphanhood method, MORTPAK's procedure ORPHAN, Solomon Islands: 1999 and 2009

Census year	Males	Females	Total
2009	50.2	55.5	52.8
1999	50.7	53.2	52.2

Widowhood

From Table 17 and Figure 44 it can be seen that the number and proportion of females widowed is higher than that of males. There are 2 explanations for it:

1. Females usually live longer lives than males (her spouse), and
2. Males are usually older than females, because of their age difference at marriage, as described above (orphanhood).

An attempt was made to use the data on widowhood to calculate adult mortality rates, specifically the life expectancy at age 20, by applying the software package MORTPAK, procedure WIDOW. Unfortunately, the data do not allow the calculation of female values, because the proportion of male widowers is too small to calculate any reasonable indicators.

There are 2 explanations for this:

1. Males did incorrectly state their marital status
2. A high proportion of males who lost their spouse remarried, and although widowed once, is tabulated as 'married'.

Table 17: Population 15 years and older by sex and widowed, Solomon Islands: 2009

Age group	Total			Widowed		
	Total	Males	Females	Total	Males	Females
15 - 19	51,212	26,189	25,023	51	5	46
20 - 24	45,419	22,399	23,020	162	13	149
25 - 29	42,674	20,794	21,880	234	17	217
30 - 34	37,592	18,807	18,785	302	41	261
35 - 39	33,151	17,010	16,141	430	64	366
40 - 44	23,638	12,070	11,568	649	92	557
45 - 49	19,713	10,189	9,524	877	121	756
50 - 54	14,339	7,498	6,841	1,143	167	976
55 - 59	11,787	6,111	5,676	1,279	223	1,056
60 - 64	8,916	4,535	4,381	1,499	276	1,223
65 - 69	7,021	3,693	3,328	1,561	332	1,229
70+	11,124	5,896	5,228	3,923	1,129	2,794
Total	**306,586**	**155,191**	**151,395**	**12,110**	**2,480**	**9,630**

Figure 44: Proportion of population 15 years and older by sex and widowed, Solomon Islands: 2009
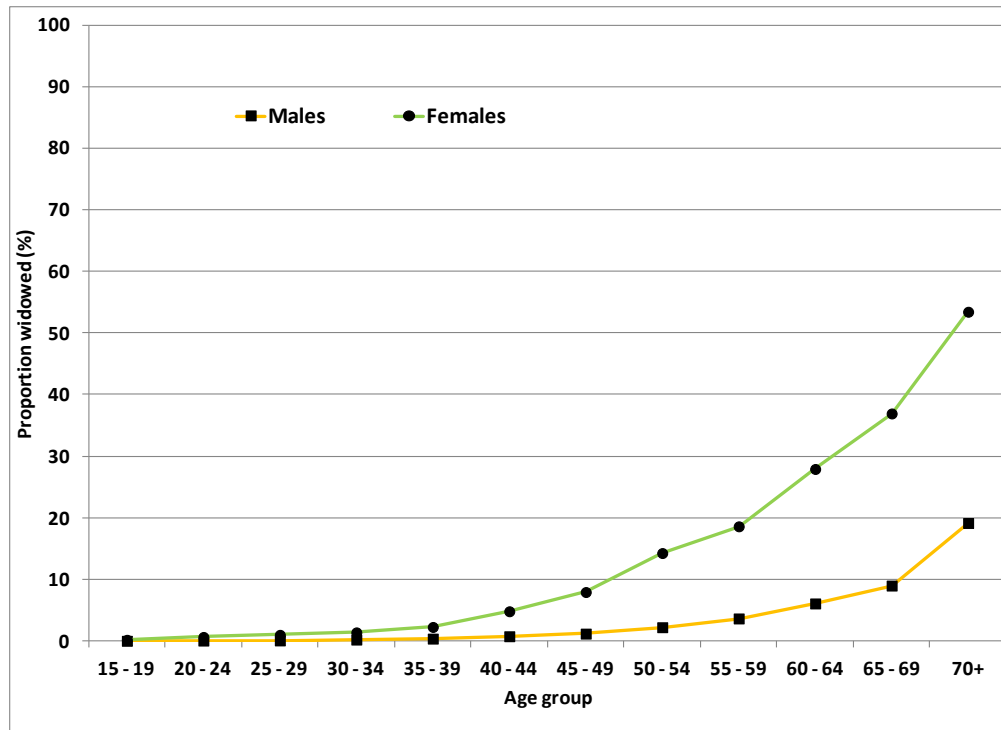
Nevertheless, the data on marital status (widowhood) provides interesting and valuable insights into mortality differentials between males and females, as the large difference in widowed males and females points to lower mortality rates (higher life expectancies) for females than males.

However, since the widowhood method cannot be applied to both males and females, it was decided to rely on the orphanhood method to calculate consistent data for males and females, i.e. using the same method for both sexes.

3.2.1.5 Complete life table

Apart from being valuable in their own right, estimates of childhood and adult mortality are also necessary inputs for constructing life tables for the Solomon Islands population. Life tables are essential to make population projections based on cohort component methodology[10].

Once again, the UN software package MORTPAK, procedure COMBIN, was used to calculate a complete life table for males and females. The following inputs were used (Table 18):

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[10]It must be remembered that, strictly speaking, the resulting composite life tables pertain to some ill-defined reference period, because the reference period for childhood mortality estimates (e.g. $l(1)$, $l(5)$) reflect the situation around 2007, whereas the adult mortality estimates of $e(20)$ reflect mortality conditions around 1999

Construction of Composite life table
The method to generate a composite life table essentially boils down to the following (Table 18):

1. Derive estimates of $l(1)$ and $l(5)$ based on estimates of $1q0$ (=IMR) and $4q1$ (=probability of dying before exact age 5 after survival to exact age 1) implied by the reported proportions dead for respondents in the age-group 20-24. The values used were:

   $1q0$(males) = .025 and
   $1q0$(females) = .021, and
   $4q1$(males) = .007 and
   $4q1$(females) = .005 (Table 17). Therefore,

   $l(1)_{males}$ = $l(0) - (1q0 \times l(0))$ = 100,000 - (.025 × 100,000) = 97,500
   $l(1)_{females}$ = $l(0) - (1q0 \times l(0))$ = 100,000 - (.021 × 100,000) = 97,900
   $l(5)_{males}$ = $l(1) - (4q0 \times l(1))$ = 97,100 - (.007 × 97,100) = 96,818
   $l(5)_{females}$ = $l(1) - (4q0 \times l(1))$ = 97,400 - (.005 × 97,400) = 97,411

2. Accept the calculated $e(20)$, that is: $e(20)_{male}$ = 50.2 years and $e(20)_{female}$ = 55.5 years.

3. Create a composite life table for men and women by fitting a model age pattern of mortality that uses the estimates in (1) and (2) as reference points. The assumption was made that the ultimate shape of the fitted model age pattern of mortality resembles age patterns found in region North model life tables of the Coale and Demeny model life table system (United Nations 1983 and United Nations 1988).

Table 18: Child and adult mortality indicators used to calculate complete life table, Solomon Islands: 2009

Indicators	Males	Females
Infant mortality rate (q0)	24	20
Child mortality (1q4)	7	4
l(1)	97,600	98,000
l(5)	96,917	97,608
E(20)	50.2	55.5

l(1) =   The probability of surviving to age 1 (times 100,000) in the population under study =
100000 * [1 – q(0)]

l(5) =   The probability of surviving to age 5 (times 100,000) in the population under study =
100000 * [1 – q(0)] * [1 – 1q4)]

Tables 19 and 20 show the complete life tables for males and females. The life expectancies at birth of 66.2 and 73.1 years for males and females which compares to 67.0 and 70.2 years for males and females based on the 1999 census[11].

Life tables for males and females for each province and the urban and rural populations are presented in Appendices 14-37.

The life tables for urban-rural and provincial distinctions were calculated according to the following approach: Infant mortality rates for both sexes by urban-rural areas and provinces were computed using the same indirect method used for the total population. To disaggregate the infant mortality by sex in the urban-rural and provincial distinction, the total differential magnitude was applied to each sub-division. The assumption is that the magnitude of sex differential is the same in urban-rural areas and provinces as in the total population (which is a reasonable assumption). Having obtained the infant mortality by sex for urban-rural and provinces, the Mortpak program MATCH was utilized (previously mentioned). This program calculates life tables using a given level of mortality and a model life table. In this case, the level of mortality was given by the infant mortality of the urban-rural areas or provinces (by sex) and the model life table by the national life table (also by sex). By using this approach, it is assumed that the pattern of mortality in urban-rural areas and provinces is the same as the national pattern (by sex) and differ only by the level of mortality, which is given by urban-rural and provincial infant mortality (this is also a reasonable assumption).

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[11] Please note that the officially released estimates of life expectancies at birth of 60.6 and 61.6 years from the 1999 census have been readjusted to be comparable to estimation methods used in this report.

Table 19: Abridged life table for Solomon Islands males: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9728	6,619,717	**66.2**
1	0.0020	0.0080	97,600	782	388,508	0.9898	6,521,849	66.8
5	0.0022	0.0110	96,818	1,064	481,431	0.9907	6,133,341	63.3
10	0.0015	0.0075	95,754	720	476,973	0.9896	5,651,910	59.0
15	0.0029	0.0142	95,035	1,350	472,022	0.9841	5,174,938	54.5
20	0.0034	0.0170	93,685	1,594	464,499	0.9827	4,702,916	50.2
25	0.0035	0.0175	92,091	1,615	456,441	0.9819	4,238,417	46.0
30	0.0038	0.0189	90,476	1,709	448,161	0.9801	3,781,975	41.8
35	0.0043	0.0212	88,767	1,879	439,246	0.9767	3,333,815	37.6
40	0.0053	0.0259	86,888	2,255	428,990	0.9709	2,894,569	33.3
45	0.0067	0.0330	84,633	2,789	416,519	0.9600	2,465,579	29.1
50	0.0098	0.0480	81,844	3,930	399,869	0.9447	2,049,060	25.0
55	0.0131	0.0637	77,915	4,963	377,776	0.9216	1,649,191	21.2
60	0.0202	0.0965	72,952	7,037	348,149	0.8808	1,271,415	17.4
65	0.0314	0.1463	65,915	9,642	306,644	0.8195	923,266	14.0
70	0.0497	0.2218	56,273	12,481	251,300	0.7274	616,622	11.0
75	0.0800	0.3340	43,792	14,627	182,801	0.4996	365,321	8.3
80	0.1598	...	29,165	29,165	182,520	...	182,520	6.3

Note: Highlighted are the input values as displayed in Table 18, as well as the life expectancy at birth (e0)

Table 20: Abridged life table for Solomon Islands females: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0204	0.0200	100,000	2,000	98,200	0.9785	7,305,722	**73.1**
1	0.0010	0.0040	98,000	392	391,056	0.9960	7,207,522	73.5
5	0.0006	0.0030	97,608	289	487,318	0.9973	6,816,465	69.8
10	0.0005	0.0024	97,319	234	486,011	0.9963	6,329,147	65.0
15	0.0011	0.0054	97,085	528	484,233	0.9932	5,843,136	60.2
20	0.0016	0.0078	96,557	750	480,964	0.9921	5,358,903	55.5
25	0.0016	0.0079	95,806	756	477,159	0.9917	4,877,938	50.9
30	0.0018	0.0088	95,050	838	473,196	0.9906	4,400,779	46.3
35	0.0020	0.0101	94,212	948	468,764	0.9886	3,927,583	41.7
40	0.0026	0.0130	93,264	1,208	463,441	0.9849	3,458,819	37.1
45	0.0036	0.0180	92,056	1,653	456,426	0.9765	2,995,379	32.5
50	0.0061	0.0299	90,403	2,700	445,701	0.9650	2,538,953	28.1
55	0.0083	0.0409	87,703	3,589	430,098	0.9475	2,093,252	23.9
60	0.0138	0.0669	84,115	5,625	407,517	0.9146	1,663,154	19.8
65	0.0226	0.1073	78,490	8,420	372,712	0.8651	1,255,637	16.0
70	0.0366	0.1683	70,070	11,794	322,436	0.7862	882,924	12.6
75	0.0618	0.2687	58,276	15,658	253,500	0.5477	560,488	9.6
80	0.1388	...	42,618	42,618	306,989	...	306,989	7.2

Note: Highlighted are the input values as displayed in Table 18, as well as the life expectancy at birth (e0)

Brief explanation of a life table (Tables 19 and 20)

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

Column "m(x,n)" shows the proportion of each age group dying in each age interval. These data are based on the observed mortality experience of a population. Column "l(x)" shows the number of people alive at the beginning of each age interval, starting with 100,000 at birth. Column "d(x,n)" shows the number who would die within each age interval. Column "L(x,n)" shows the total number of person-years that would be lived within each age interval. Column "T(x)" shows the total number of years of life to be shared by the population in the age interval and in all subsequent intervals. This measure takes into account the frequency of deaths that will occur in this and all subsequent intervals. As age increases and the population shrinks, the total person-years that the survivors have to live necessarily diminish.

Life expectancy is shown in Column "e(x)" — the average number of years remaining for a person at a given age interval.

The first value in column "**e(x)**" represents **life expectancy at birth**.
The first value in column "**q(x,n)**" is an approximation of the **infant mortality rate (IMR)**.
The second value in column "**q(x,n)**" is an approximation of the **child mortality rate**.

m(x,n) = age-specific death rate
q(x,n) = the probability of dying between two exact ages
l(x)   = the number of survivors at exact age x
d(x,n) = the number of deaths between two exact ages, x and x+n
L(x,n) = the number of person-years that would be lived within the indicated age interval
          (x and x+n) by the cohort of 100,000 births assumed.
S(x,n) = probability of surviving between two exact ages, x and x+n
T(x)   = total number of person-years that would be lived after the beginning of the
          indicated age interval by the cohort of 100,000 births assumed.
e(x)   = expectation of life from age x

Finally the annual number of deaths by age and sex can be calculated by multiplying the age-specific-death rates – the m(x) values in column 2 of tables 19 and 20 – by the male and female population size of each respective age group. The results are displayed in Table 21.

Table 21: Estimated number of deaths, and crude death rates (CDR) based on life table's age-specific-death rates [m(x)] and enumerated population size, Solomon Islands: 2009

Age group	Population size			m(x,n)		Estimated number of deaths		
	Male	Female	Total	Male	Female	Male	Female	Total
0	8,239	7,491	15,730	0.0245	0.0204	202	153	355
0 - 4	31,489	29,008	60,497	0.0020	0.0010	63	29	92
5 - 9	36,974	34,152	71,126	0.0022	0.0006	82	20	102
10 - 14	32,562	29,369	61,931	0.0015	0.0005	49	14	63
15 - 19	26,189	25,023	51,212	0.0029	0.0011	75	27	102
20 - 24	22,399	23,020	45,419	0.0034	0.0016	77	36	113
25 - 29	20,794	21,880	42,674	0.0035	0.0016	74	35	108
30 - 34	18,807	18,785	37,592	0.0038	0.0018	72	33	105
35 - 39	17,010	16,141	33,151	0.0043	0.0020	73	33	105
40 - 44	12,070	11,568	23,638	0.0053	0.0026	63	30	94
45 - 49	10,189	9,524	19,713	0.0067	0.0036	68	34	103
50 - 54	7,498	6,841	14,339	0.0098	0.0061	74	41	115
55 - 59	6,111	5,676	11,787	0.0131	0.0083	80	47	128
60 - 64	4,535	4,381	8,916	0.0202	0.0138	92	60	152
65 - 69	3,693	3,328	7,021	0.0314	0.0226	116	75	191
70 - 74	2,402	2,296	4,698	0.0497	0.0366	119	84	203
75 - 79	1,784	1,590	3,374	0.0800	0.0618	143	98	241
80+	1,710	1,342	3,052	0.1598	0.1388	273	186	460
Total	**264,455**	**251,415**	**515,870**			**1,795**	**1,037**	**2,832**
CDR*						**6.8**	**4.1**	**5.5**

CDR: crude death rate

The crude death rate (CDR) for the Solomon Islands is calculated as follows:

CDR = 2,832 / 515,870 x 1,000 = **5.5**   (5.5 deaths per 1,000 population in 2009)

Table 22: Life expectancy at birth in years (e0), Solomon Islands: 1999 and 2009

Census year	Males	Females	Total
2009	66.2	73.1	69.3
1999	67.0	70.2	68.6

The above mortality indicators clearly show more positive mortality indicators for females than for males, with females living longer, on average about six years longer, than males (Table 22). The findings are supported by the following data:

- the proportion of surviving female children was higher than males (Fig.40)
- more mothers than fathers survive to older ages (Fig.43)
- the proportion of widowed females was considerably higher than that of widowed males (Fig.44), indicating earlier death of male spouses.

While the overall level of mortality (life expectancy at birth) increased for females during the intercensal period 1999-2009, it unfortunately seems not to have improved for the Solomon Island's men; life expectancy at birth slightly decreased from 67.0 years to 66.2 years, despite an improvement of the infant mortality rate - also for boys. It therefore has to be concluded that a slight worsening of male adult mortality is the reason of the overall stagnation in male mortality, which is confirmed by the decrease in male life expectancy at age 20 from 50.7 years in 1999 to 50.2 years in 2009. A possible cause for the stagnating male adult mortality rates could be an increase in life style diseases such as unhealthy eating habits, smoking and excessive alcohol consumption, and/or a lack of regular physical exercise etc. Then again, it is very well possible that the violent ethnic unrest of the recent past may have taken its toll, particularly on the male population.

3.2.2 Sub national estimates

This section contains several mortality indicators by urban-rural distinction and by province. All life table estimates are based on the approach previously described.

A general observation is that all mortality indicators show better indicators in the urban than the rural areas, and that females are in general better off than males, although there are some exceptions to the general trend which is shown below.

The summary of main indicators in front of the report summarizes various mortality indicators by sex and place of residence, and figures show the results visually.

Children of mothers living in urban areas and/or Honiara have a much higher probability of survival than children of women living in rural areas (Fig.45). Compared to the national average, children of mothers living in Rennell-Bellona, Isabel, Malaita, Choiseul, and Central had the lowest probability of survival. In all provinces a higher proportion of female children ever born have survived than male children.

Of the population aged 60 years and older, more than 3 times as many females (40.6%) were widowed than males (12.3%). The proportion of females 60 years and older who are widowed was the highest in the province of Choiseul followed by Rennell-Bellona (Fig. 46). The proportions widowed were considerably higher in the rural than the urban areas. However, when interpreting the results it needs to be mentioned that males are usually older than their spouses, in Solomon Islands by about 4 years.

Figure 47 shows the proportions of the population orphaned, meaning that either their biological father or mother had died. On average more than a quarter (26.9%) of the population responded that their father had died, compared to 18.7% that their mother is not alive. Clearly more mothers survive to older ages than fathers. However, as mentioned before, fathers are usually older than mothers, because of their age difference at marriage. In general, the proportion of the population orphaned was higher in the rural than urban areas, and it was particularly high in Rennell-Bellona, Temotu, and Malaita.

Fortunately one of the most important mortality indicators, the infant mortality rate (IMR) has decreased since the last census in 1999, and stands at 24 and 20 infant deaths per 1000 live births for males and females respectively (Fig.48). In general the IMR of males is higher than that of females. Infant mortality rates are significantly lower in the urban than the rural areas. In some provinces it is extremely high as compared to the national average. They are the cases of Central and Rennell-Bellona. One likely important factor is the better availability and accessibility of (reproductive) health services.

The calculated adult mortality rates (45q15), the probability of death between the ages of 15 years and 60 years (number of deaths per 1,000), is presented in Figure 49. Again it shows higher probabilities of death for males than females, and for people living in the rural areas. The adult mortality rates were particularly high in Central and Rennell-Bellona.

Figures 50 and 51 show the life expectancies at age 20 (e20) and life expectancy at birth (e0). The pattern of both indicators is very similar. In general females live on average 6.9 years longer than males. Then again at age 20, the expected average life span of females is only about 5.3 years longer than males. Again, life expectancy is higher in urban than

in rural areas. The provinces with the highest values are Honiara, Makira-Ulawa and Guadalcanal and those with the lowest are Central and Rennell-Bellona.

It is important to point out that the previous results, especially those based on life table functions, should be interpreted with caution. It is relevant to remember that they are based on small populations and on assumptions that may be invalid in some cases.

Life tables for males and females for the urban and rural areas, as well as each province are presented in Apps.14-37..

Figure 45: Proportion of children ever born and still alive by sex and place of residence, Solomon Islands: 2009
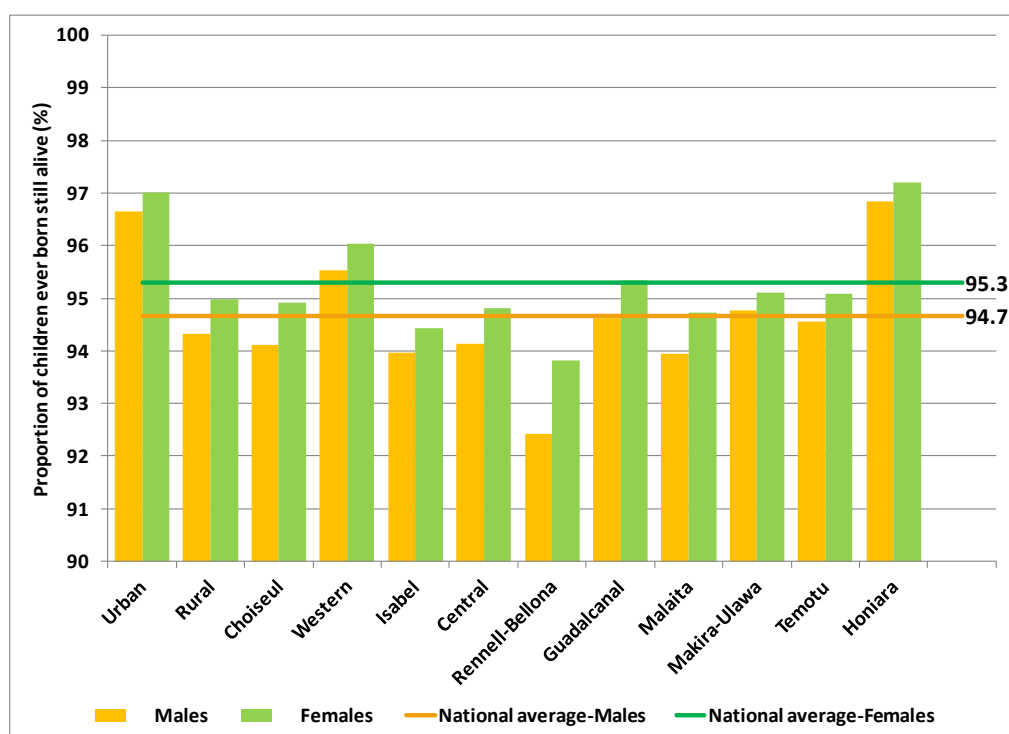
Figure 46: Proportion of population 60 years and older widowed by sex and place of residence, Solomon Islands: 2009
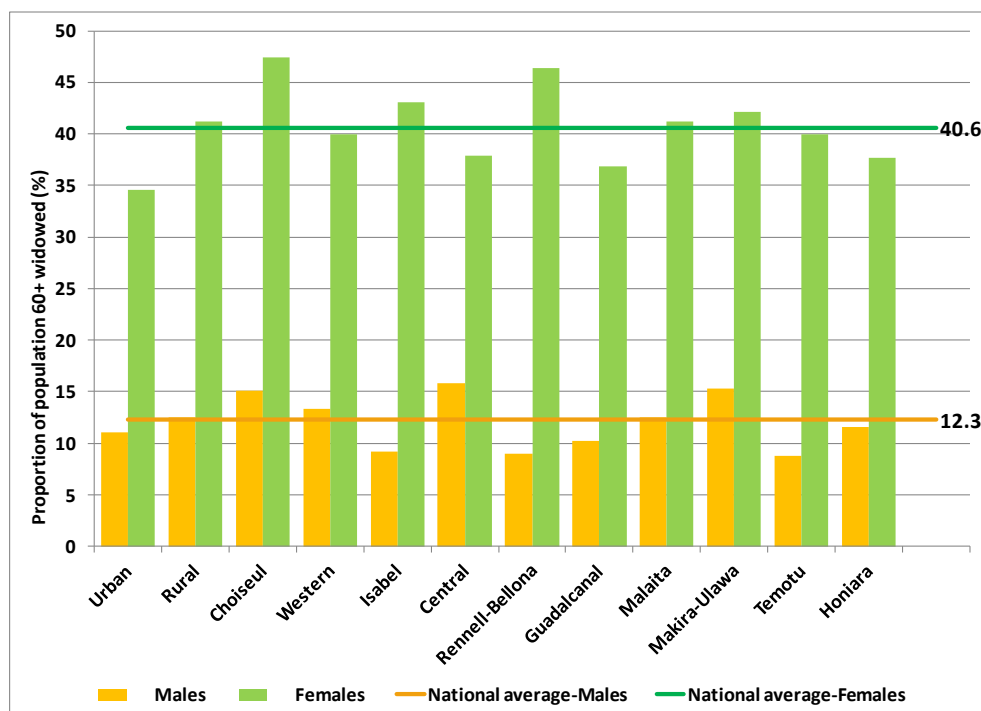
Figure 47: Proportion of population with father or mother dead (orphaned) by place of residence, Solomon Islands: 2009
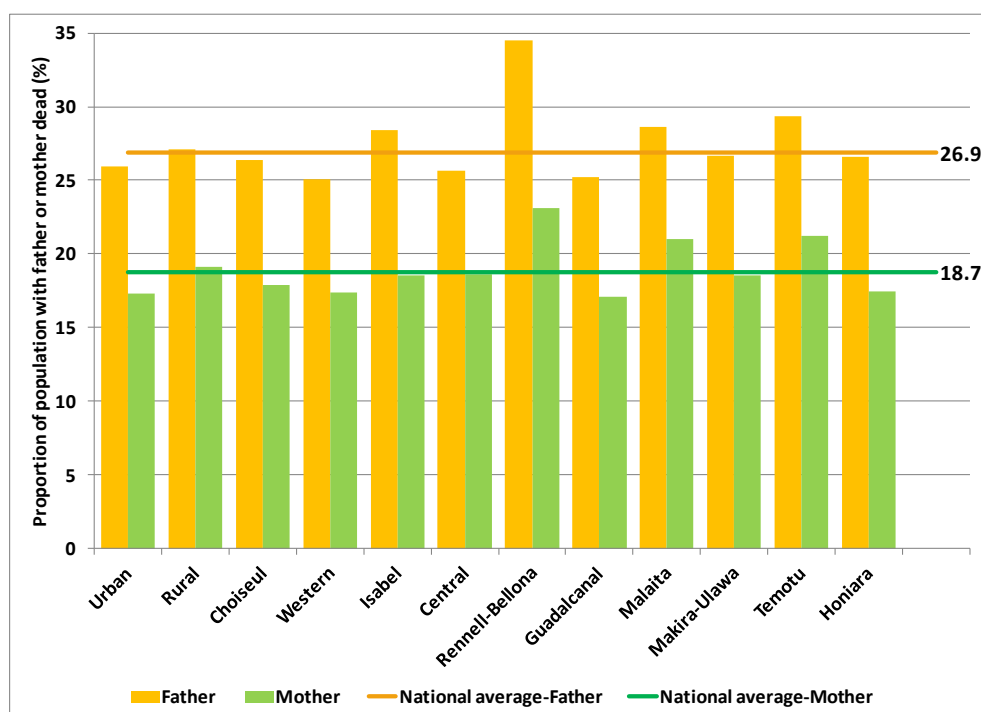
Figure 48: Infant mortality rate (IMR) by sex and place of residence, Solomon Islands: 2009
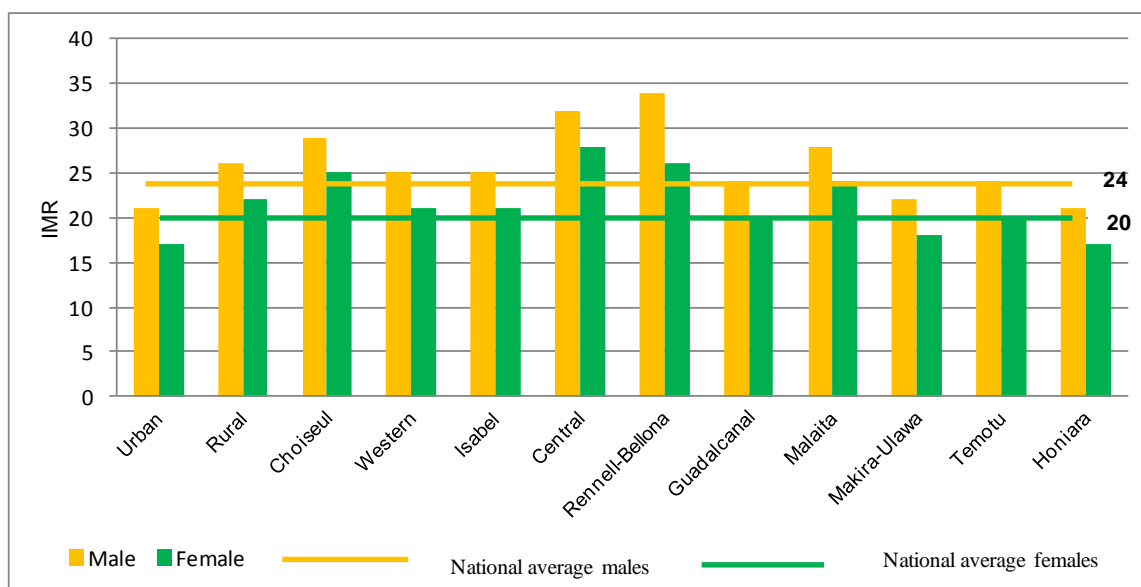
Figure 49: Adult mortality rate (45q15) by sex and place of residence, Solomon Islands: 2009
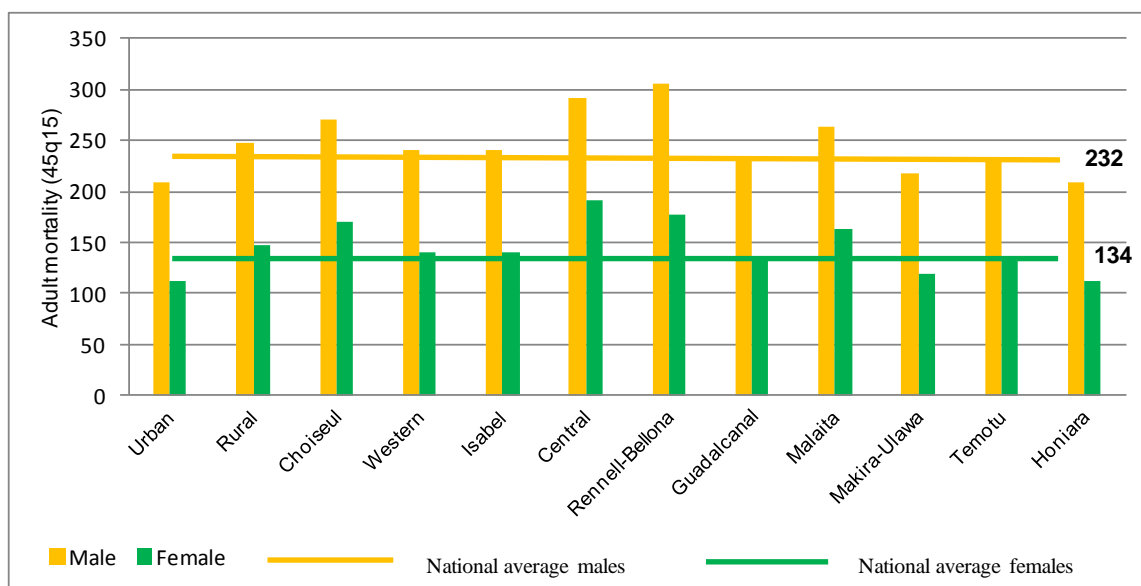
Figure 50: Life expectancy at age 20 (e20) by sex and place of residence, Solomon Islands: 2009
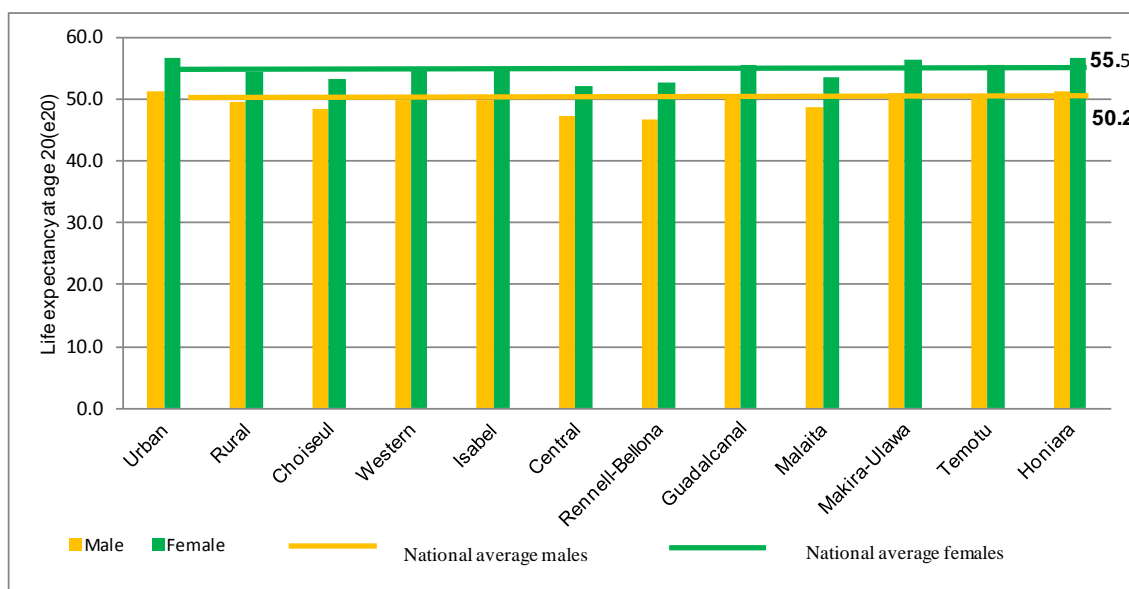
Figure 51: Life expectancy at birth (e0) by sex and place of residence, Solomon Islands: 2009
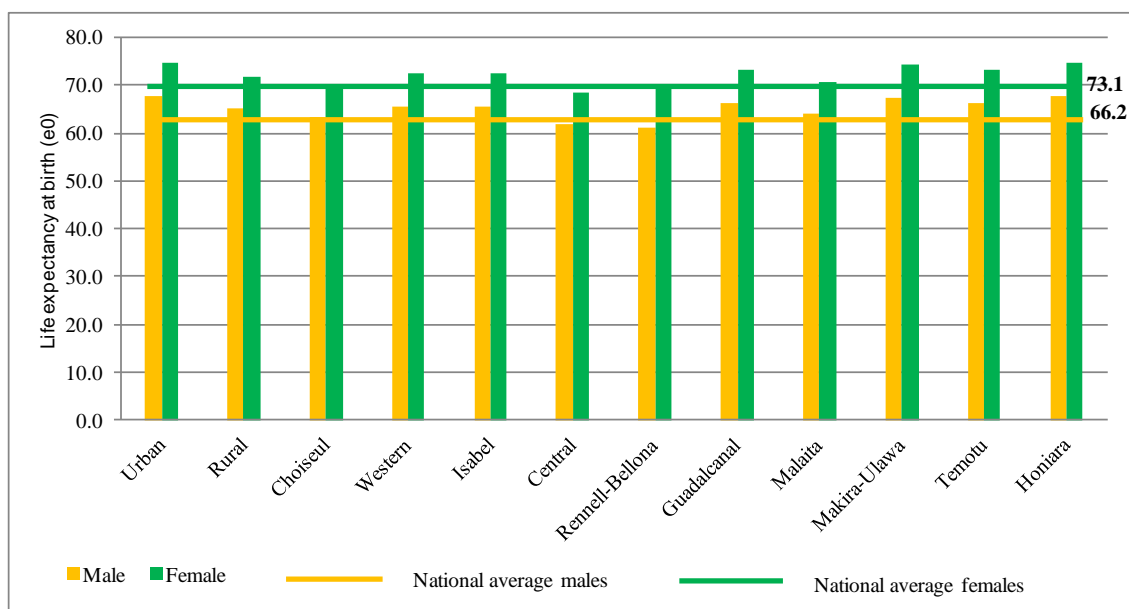
3.3 International migration

International migration refers to people who cross national boundaries to move to another country. In addition to this spatial consideration, time also plays a major role in the analysis of migration. People are usually regarded as migrants only after spending a minimum period of time in their country of destination. Usually the minimum time required to qualify as a migrant is half a year in-country, and sometimes even a full year. Someone coming for a short visit is not considered to be a migrant — he or she is considered to be a visitor or tourist.

Intent is also of crucial importance, as migration usually involves a change of a person's permanent residential address in pursuit of employment or educational opportunities.

The need to consider time and intent highlights one of the key problems concerning migration. Whether or not a particular person qualifies as a migrant can only be established after a certain period of time, usually at least six months, in order to determine whether the arriving and departing person qualifies as a visitor or migrant.

The net impact of migration flows (net migration) is measured as the difference between the number of arrivals (immigrants) and departures (emigrants) during a certain time period.

Net migration = **Arrivals** (immigrants) minus **Departures** (emigrants)

Therefore, if **net migration** was positive it means that the number of arrivals (immigrants) was higher than the number of departures (emigrants); if net migration was negative, the number of departures (emigrants) was higher than the number of arrivals.

The 2009 census included three questions that provide an indication of the level of immigration.

Questions were asked about a respondent's:
- usual place of residence,
- residence five years prior to the census, and
- place of birth.

Regarding respondent's usual place of residence, only 1,124 answered that they usually live overseas – 0.2% of the total population.

Regarding residential address five years prior to the census, 1,750 people (0.3%) of the population five years and older answered that they lived overseas.

Regarding place of birth, 2,797 people (less than 1% of the population) answered that they were born overseas.

However, these questions only give an indication on the level of immigration

The only indirect method for deriving at a crude indication of Solomon Islands' net migration level would be to apply the balancing equation to the intercensal 1999–2009 population growth rate.

Balancing equation

Population growth = **Births** minus **Deaths** plus **Net migration**

Net migration can be estimated as

Net migration = **Population growth** minus **Births** plus **Deaths**

or

Net migration rate = **Population growth rate** minus **CBR** plus **CDR**

CBR = Crude birth rate; CDR = Crude death rate

The intercensal population growth rate was 2.3%, and the estimated CBR and CDR are 36.6 per 1000 and 5.5 per 1000.

The derived net migration rate would be:

$$2.3 - 3.66 + 0.55 = \textbf{-0.81\%}$$

However, there are strong indications that the 2009 census suffered from a possible 8.3% under count as described in more detail in chapter 6, which would adjust the intercensal growth rate to about 3.1%. In this case, the calculated net migration rate would be zero, and no significant international migration had occurred during the intercensal period 1999-2009,

$$3.1 - 3.6 + 0.55 = \textbf{-0.01\%}$$

Which means that the population growth of the Solomon Islands is entirely determined by its natural growth: births and deaths.

4. SOCIAL CHARACTERISTICS

4.1 Marital status

During the 2009 census, 54% of males (83,304) and 56% of females (85,491) aged 15 and older were legally married and another 5% of males and females were living in a de facto relationship (Fig.52). The proportion never married (single), were 39% of males (60,483) and 30% of females (45,013).

A higher proportion of females (6%) were widowed than males (2%).

Figure 52: Population aged 15 and older by marital status, Solomon Islands: 2009
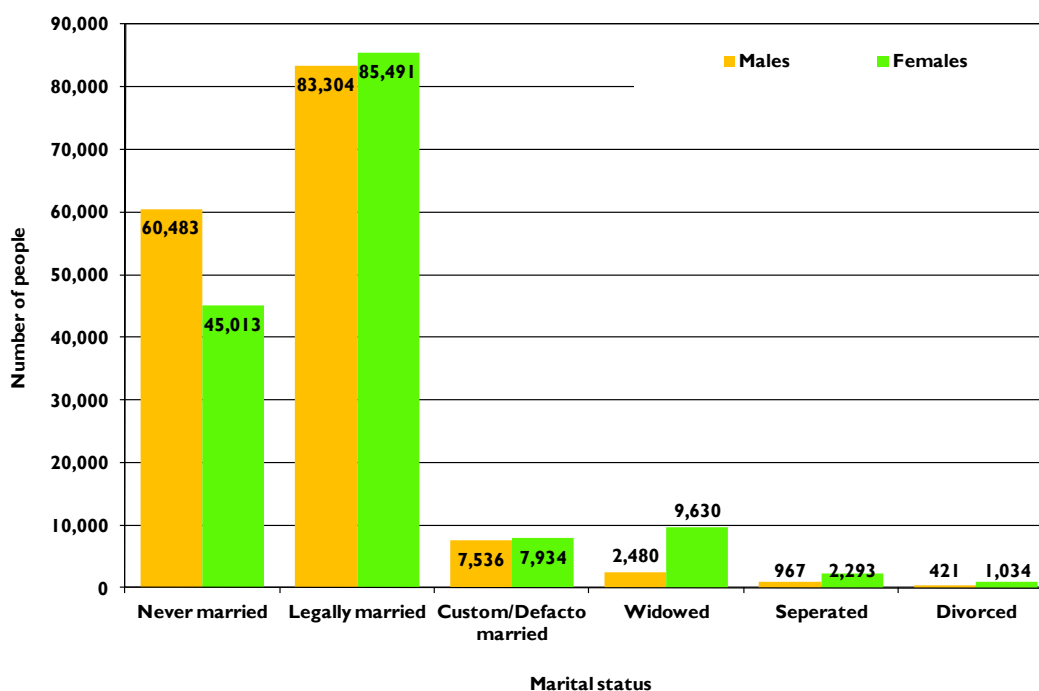
The age at marriage is an important proximate determinant of fertility. Women who marry at an early age often have more children than those marrying later.

The higher proportion of young married women compared with men of the same age indicates that women generally marry at younger ages than men (Table 23 and Fig.53). The average age at marriage (Singulate mean age at marriage, SMAM) was 27.1 and 23.3 years for males and females, respectively, and was calculated based on the proportion of those never married/single by age. There were notable differences in the age at marriage between the rural and urban areas (Fig.55). Urban dwellers tend to marry at an older age than their rural counterparts.

While only 2% of males were married at ages 15-19, it was about 10% of females. At age 20-24 half of all women were already married compared with 21% of males. Compared to earlier censuses, the percentage of males and females married at young ages has declined, and the average age at marriage increased for both males and females (Table 23 and Figs.53-54).

Table 23: Singulate mean age at marriage (SMAM[12]) and percentage married at young ages by sex, Solomon Islands: 1986, 1999, and 2009

Year	Average age at first marriage			Percentage ever married by age group (%)			
	SMAM*		Difference	15-19		20-24	
	Males	Females	(Men - Women)	Males	Females	Males	Females
1986	25.0	21.2	3.8	3.1	19.1	31.3	65.1
1999	26.1	22.6	3.4	2.6	13.0	24.0	55.1
2009	27.1	23.3	3.8	1.8	10.2	21.1	50.1

Figure 53: Singulate mean age at marriage (SMAM) by sex, Solomon Islands: 1986-2009
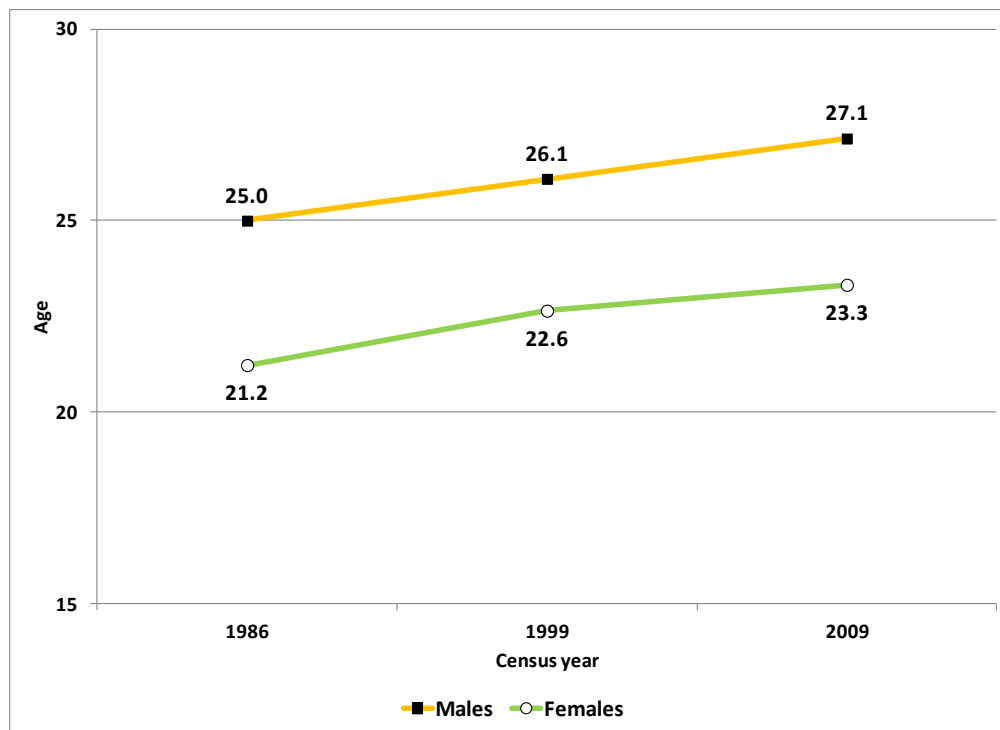
[12] 1983. United Nations. Manual X, indirect techniques for demographic estimation. New York: United Nations. 304 p.

Figure 54: Population married at young ages by sex (%), Solomon Islands: 1986, 1999, and 2009
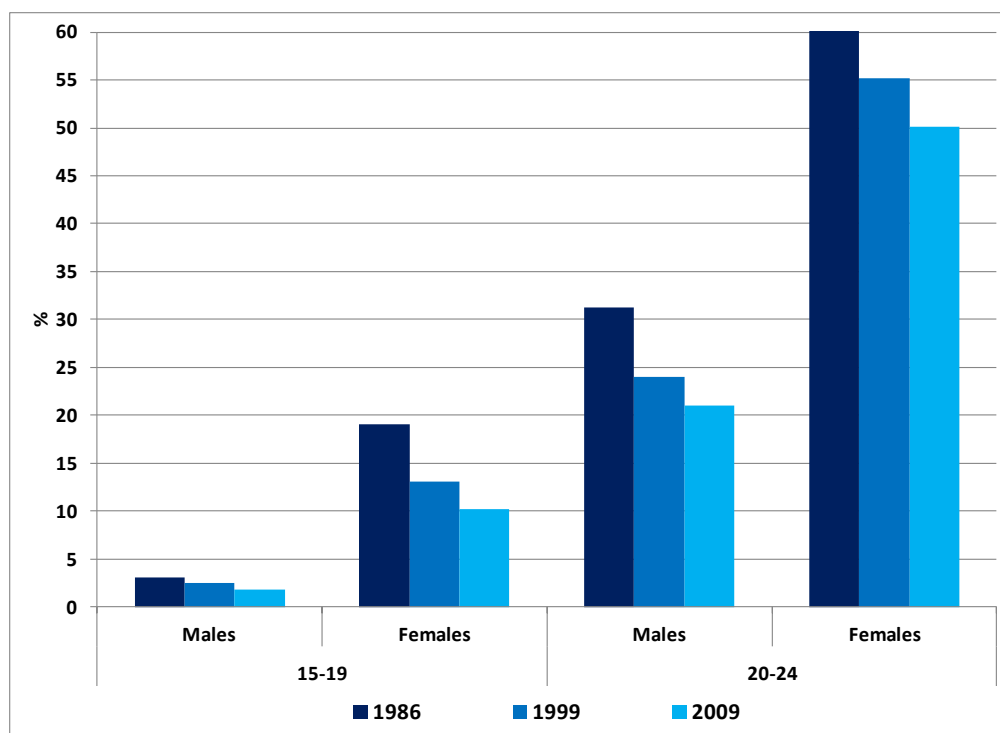
Figures 57 and 58 display the proportion of males and females married/never married by age. Clearly these two figures complement each other. When the proportion of the population married at a certain age is low, it is high for the proportion of the population never married at the same age, and vice versa.

Furthermore, the proportion of females of married status is higher than that of males until age 34. At that age, the proportion of married females steadily declines because an increasing number of females become widows (Fig.59). The discrepancy between the proportion of widowed males and widowed females, at ages 40 and older, increased continuously. At ages 40–45, only 1% of males were widowed, compared with 5% of females. At age 60 and older, only 6% of males were widowed, compared with 28% of females.

The higher proportion of widowed females is explained by:

- lower female mortality rates, and therefore longer life expectancies of female spouses,
- older age at marriage of males compared with their female partners as expressed in the average age at marriage (SMAM) above.

Therefore, male spouses usually die before their female partners.

Figure 55: Average age at marriage (SMAM) by sex and province, Solomon Islands: 2009
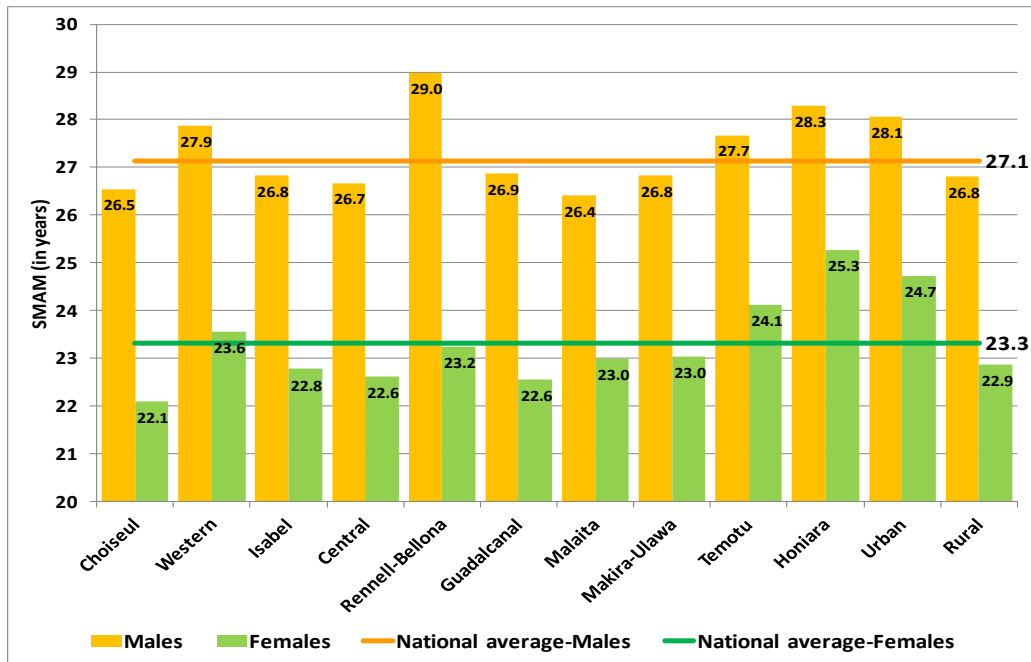
Figure 56: Population married at age 15-19 years by sex and province (%), Solomon Islands: 2009
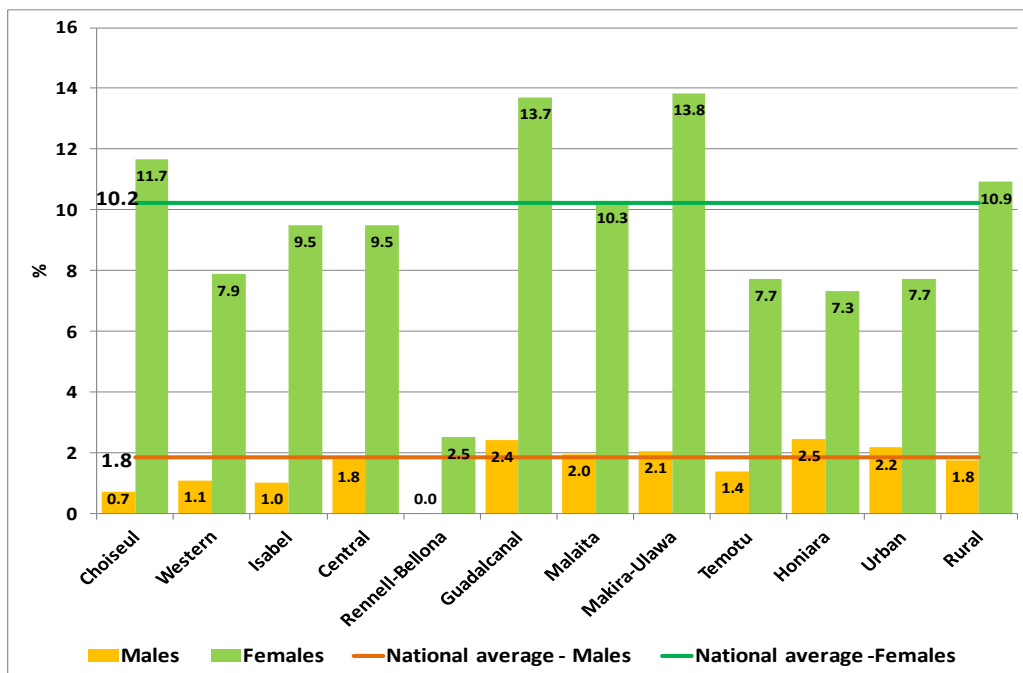
Figure 57: Population aged 15 and older by sex and proportion married, Solomon Islands: 2009
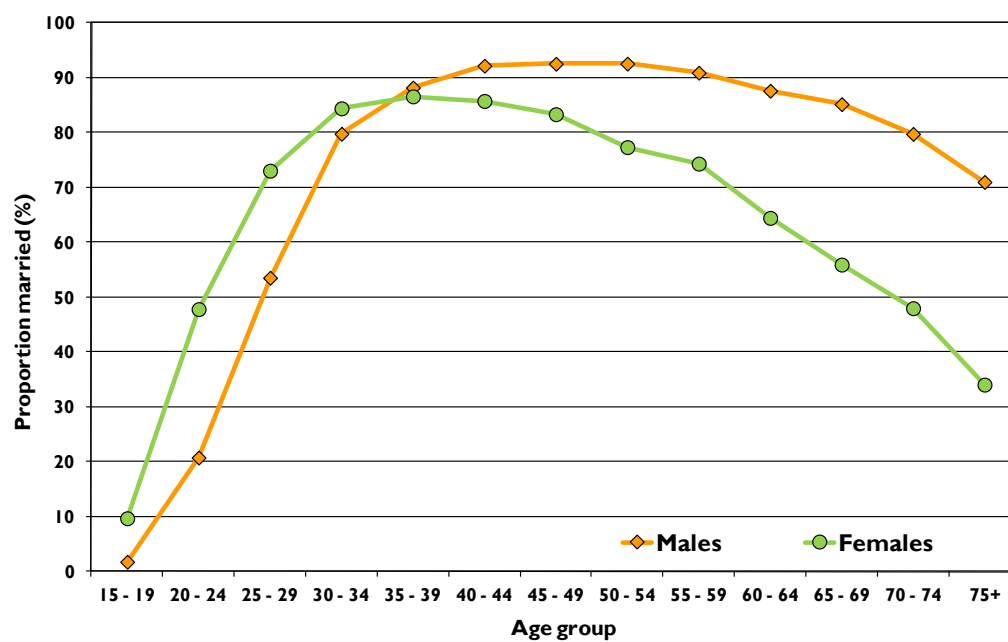
Note: 'married' include legally married and de facto relationships

Figure 58: Population aged 15 and older by sex and proportion never married (single), Solomon Islands: 2009
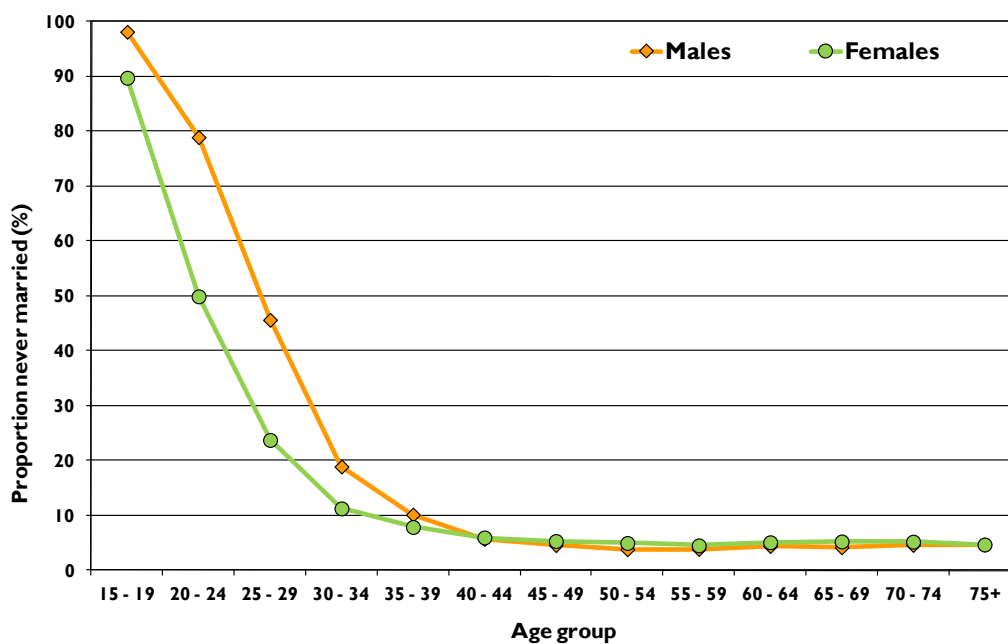
Figure 59: Population aged 15 and older by sex and proportion widowed, Solomon Islands: 2009
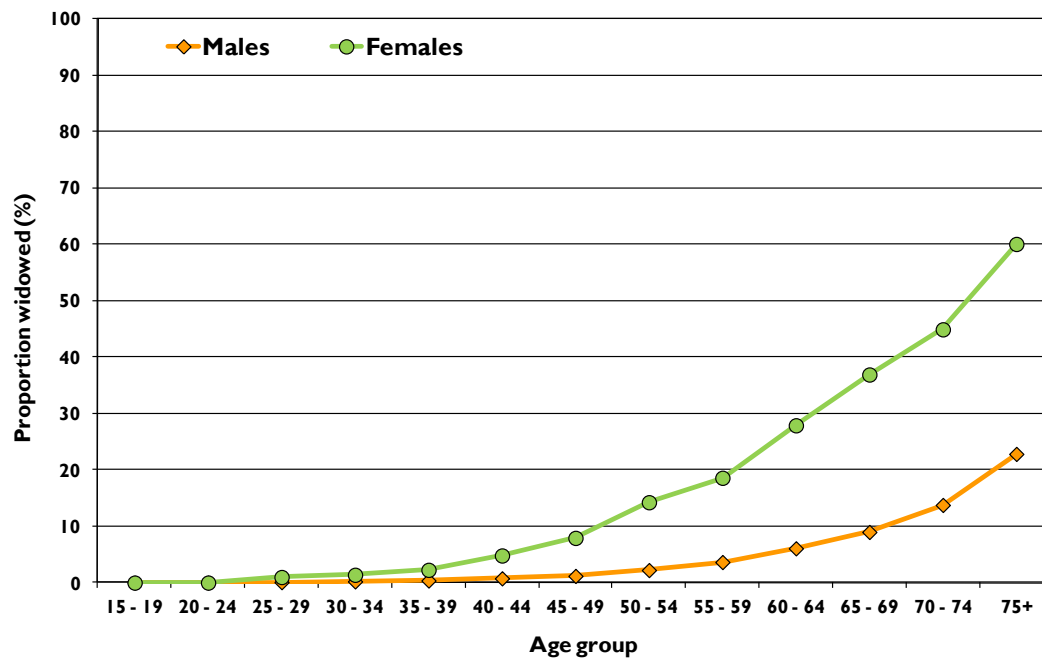
4.2 Religion

The Church of Melanesia continues to be the dominant religious denomination in the Solomon Islands, although its share has slightly decreased from 33% in 1999 to 32% or 164,639 persons in 2009 (Table 24 and Fig.60).

Table 24: Population by religious affiliation, Solomon Islands: 1999 and 2009

Religious denomination	1999	2009	% change
Church of Melanesia	134,288	164,639	22.6
Roman Catholic	77,728	100,999	29.9
South Sea Evangelical Church	69,651	88,395	26.9
Seventh Day Adventist	45,846	60,506	32.0
United Church	42,236	51,919	22.9
Christian Fellowship Church	9,693	13,153	35.7
Jehovah's Witness	7,485	9,444	26.2
Christian OutReach Church	3,841	5,303	38.1
Bahai	2,300	2,427	5.5
Custom Beliefs	2,633	4,191	59.2
No Religion/Faith	790	681	-13.8
Refuse to Answer	-	137	-
NS	1,413	-	-
Other	11,138	14,076	26.4
Total	**409,042**	**515,870**	**26.1**

The next largest group was the Roman Catholic Church with 100,999 members, and a share of 20% of all denominations, followed by the South Sea Evangelical Church (17%), the Seventh Day Adventists with a share of 12%, and the United Church (10%).

All other denominations had less than 7% of the population as members, and persons with no religion comprised of less than 1% of the Solomon Islands population.

The compositions of the different religious denominations were markedly different between the provinces. While Isabel, Temotu and Central were dominated by the Church of Melanesia, the United Church was particularly strongly represented in Choiseul and the Western province. Half of the populations in Rennell-Bellona were members of the Seventh Day Adventist Church, and the South Sea Evangelical Church had many followers in the provinces of Rennell-Bellona, Malaita, Makira-Ulawa, Honiara, and Guadalcanal.

Figure 60: Population by religious affiliation by province, Solomon Islands: 2009
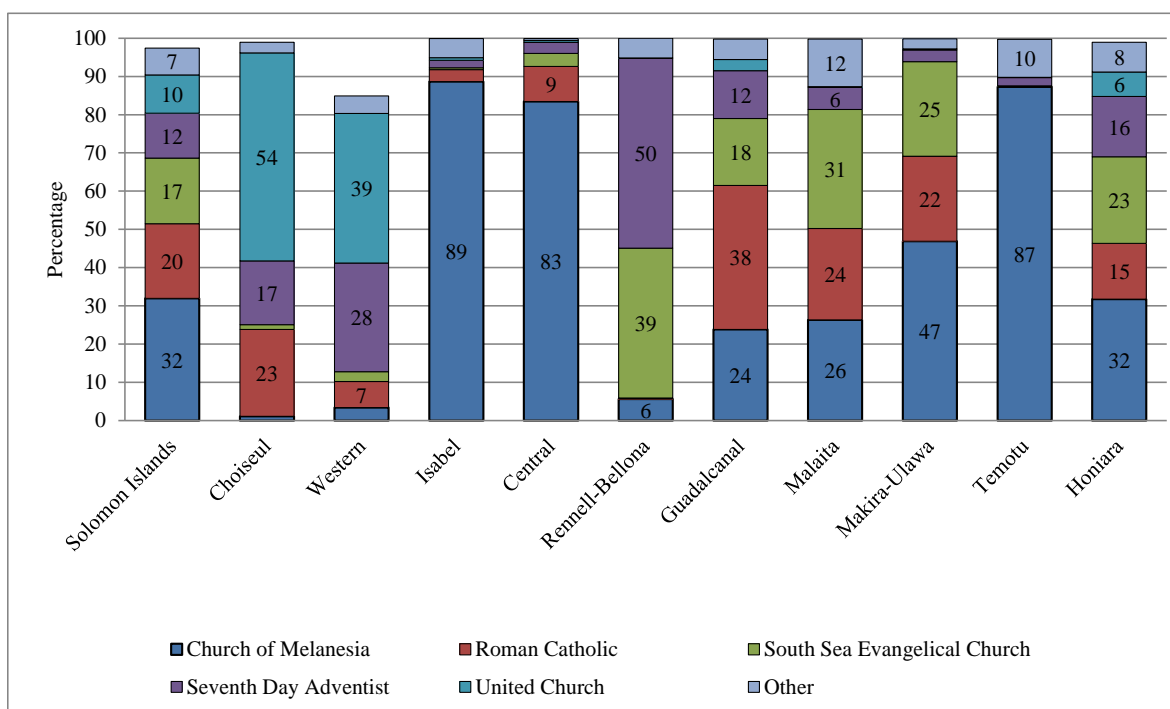
4.3 Ethnic origin

Based on information on the number of people by ethnic origin, the Solomon Islands has a very homogenous population composition, with 95% or 491,466 persons being Melanesians, 3% or 15,911 persons were Polynesians and 1% or 6,446 persons were Micronesians. In addition there were 654 Chinese and 721 people of European descent (Table 25 and Figure 61).

Table 25: Population by ethnic origin, Solomon Islands: 2009

Ethnicity	Number of people	Percent
Melanesian	491,466	95.3
Polynesian	15,911	3.1
Micronesian	6,446	1.2
Chinese	654	0.1
European	721	0.1
Other	672	0.1
Total	**515,870**	**100.0**

Figure 61: Population by ethnic origin and province (%), Solomon Islands: 2009
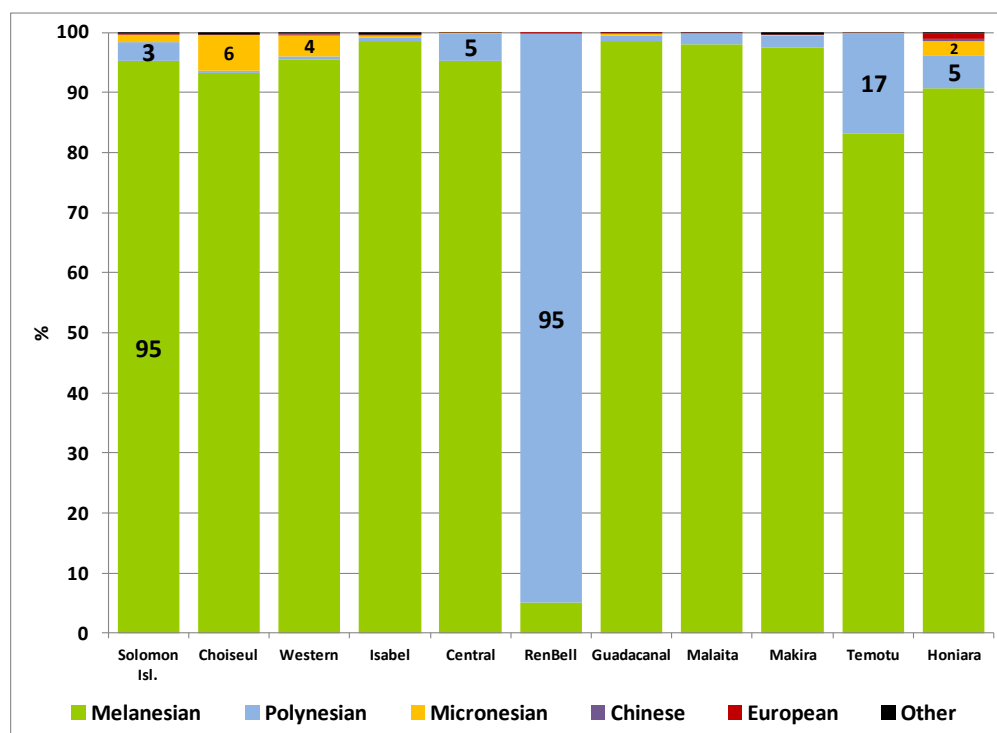
This overall pattern has remained essentially unchanged since 1959, although it needs mentioning that there was a noticeable increase in the number of Micronesians (I-

Kiribati) in the 1960s under the official resettlement schemes commissioned by the British Protectorate Government.

Furthermore, the number of Europeans had decreased somewhat since 1999 as a result of the civil unrest in 1999 causing many expatriate to be evacuated out of the country.

With the exception of Rennell-Bellona which is predominantly Polynesian, the people in all other provinces are mainly of Melanesians descent.

However, there is a noticeable minority of Micronesians in Choiseul, and the Western province, as well as Polynesians in Temotu, Central and Honiara.

The vast majority of Chinese and Europeans can be found in the urban areas, particularly in Honiara.

4.4 Disability

The Solomon Islands is a signatory to a United Nations convention to uphold the rights of people with disabilities; and is therefore obliged to:

"Promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and to promote respect for their inherent dignity."

For the 2009 Census the SINSO was requested by the Government and stakeholders to collect information on disabilities in the Solomon Islands.

The question on disabilities included in the 2009 Census concerned whether a person had any difficulties or health problems in seeing, hearing, walking, and/or remember or concentrating – regardless of the severity of the difficulties experienced (Table 26). It also asked whether a person cannot see, hear, walk or remember or concentrate at all – in other words, whether a person is blind, deaf, lame or senile and/or amnesic (Table 27).

Overall, about 14% of the total population reported a disability, and the proportion of females with a disability was slightly higher than that of males.

The disability that was most commonly mentioned were difficulties with remembering and/or concentration (42,225), followed by difficulties with vision (40,478 people), walking (35,157), and hearing (24,558).

Almost 5,300 people reported to have a severe disability, and of those about 3,300 people were recorded as senile and/or amnesic, and another 3,000 people could not walk at all (lameness). Almost 1,400 people were deaf, and about 900 people were blind (please note that a person can have more than one disability).

Table 26: Population reporting a disability regardless of the severity of the disability, Solomon Islands: 2009

Disability	Total	Males	Females
Vision	40,478	20,484	19,994
Hearing	24,558	12,319	12,239
Walking	35,157	16,769	18,388
Remembering or concentrating	42,225	20,460	21,765

Table 27: Population reporting a severe disability, Solomon Islands: 2009

Disability	Total	Males	Females
Blindness	907	411	496
Deafness	1,398	729	669
Lameness	2,975	1,491	1,484
Senile and/or amnesic	3,293	1,635	1,658

The proportions of the population with a disability were notably higher in Isabel, Makira-Ulawa, and Central compared to the national average, and it was lowest in Rennell-Bellona, Honiara, and Malaita (Fig.62).

Figure 62: Proportion of the population by sex and place of residence reporting a disability regardless of the severity of the disability, Solomon Islands: 2009
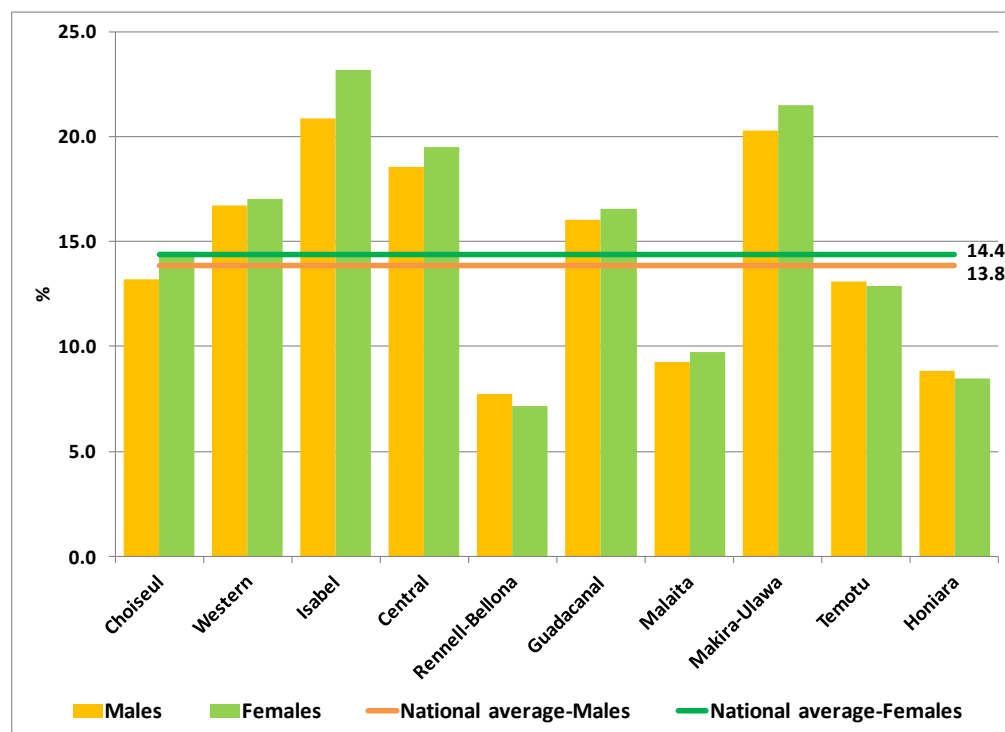
As can be expected, the proportion of the population with a disability increased with age (Figs.63-67).

While 10% of children younger than 5 years of age had a disability, it was below 5% for young people aged 5-19 years. From age 35 and onwards, the proportion of the population with a disability increased continuously. About half of the population aged 55-59 years reported a disability (Fig.63). The difficulty that was most commonly mentioned by the older population was vision (Fig.64) and walking (Fig.66).

Figure 63: Proportion of the population by age and sex reporting any disability regardless of the severity of the disability, Solomon Islands: 2009
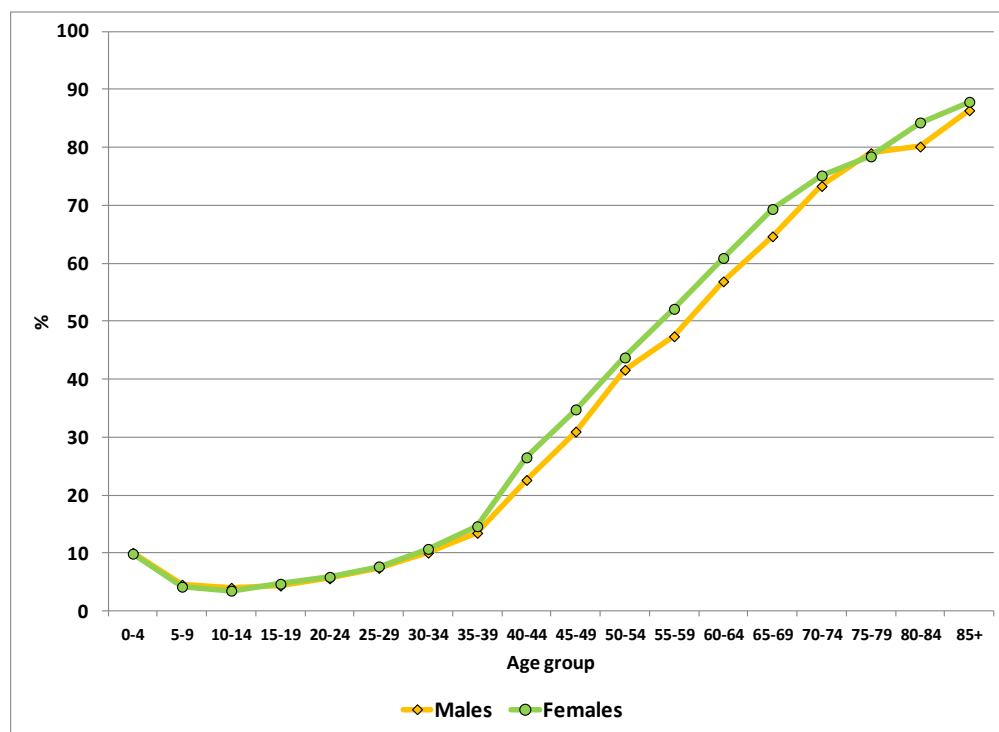
Figure 64: Proportion of the population by age and sex reporting difficulties seeing, Solomon Islands: 2009
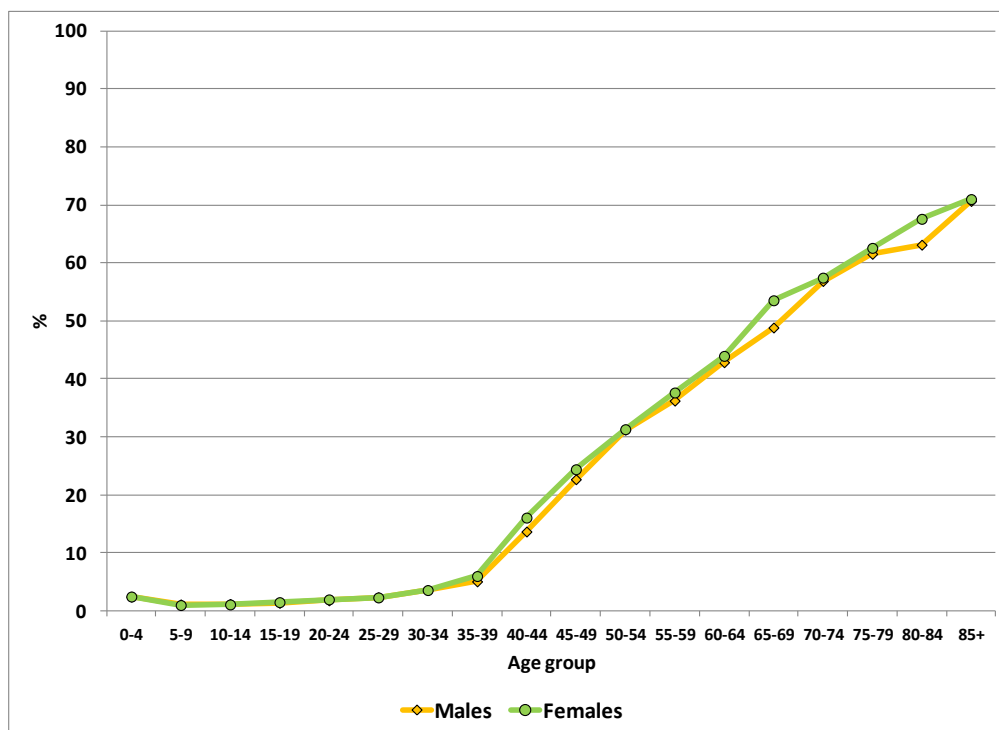
Figure 65: Proportion of the population by age and sex reporting difficulties hearing, Solomon Islands: 2009
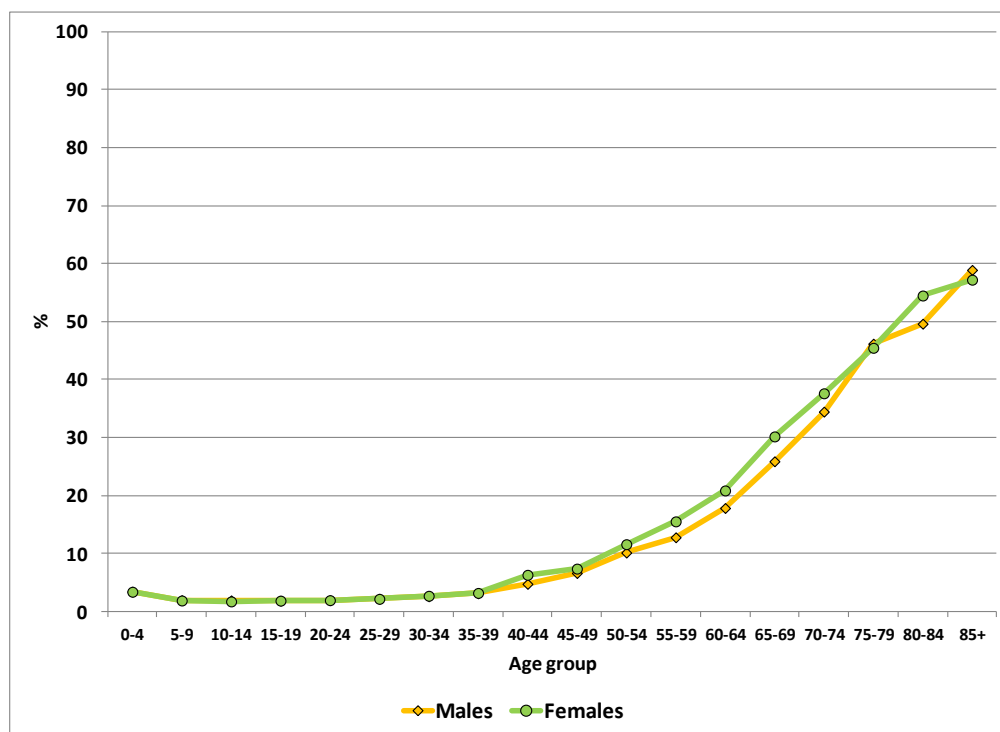
Figure 66: Proportion of the population by age and sex reporting difficulties walking, Solomon Islands: 2009
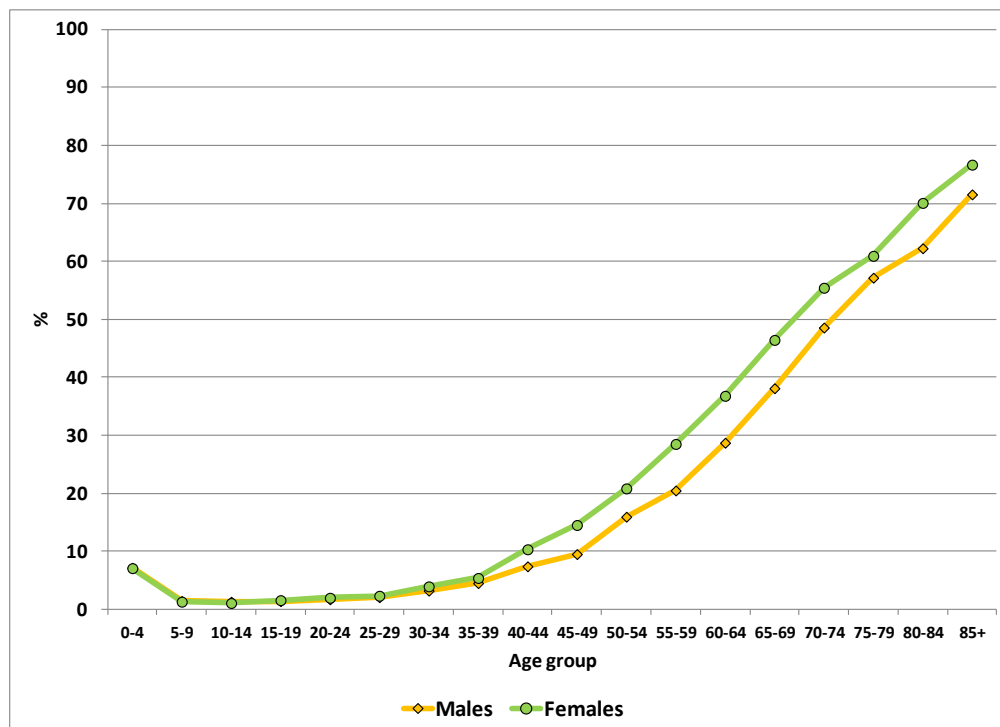
Figure 67: Proportion of the population by age and sex reporting difficulties remembering or concentrating, Solomon Islands: 2009
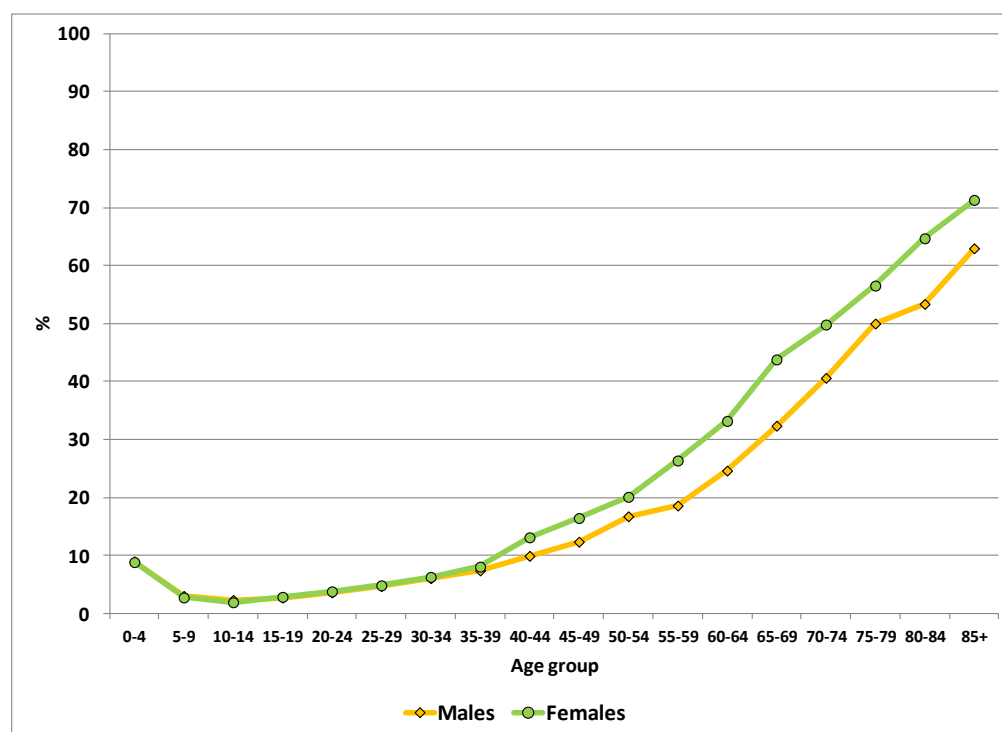
4.5 Educational characteristics

The Ministry of Education and Human Resource Development main policy objective[13] is to provide full enrollment opportunity to all children aged 6 to 15 years, and to achieve a 100% enrollment rate for primary education by 2015. Furthermore the policies aim at reducing the dropout rates and improves completion rates for children from Year 1 to Year 9.The education system consists of preschool (aged 3 to 5 years), primary (Standard 1 to 6) and secondary school (Form 1 to 7).

4.5.1 School enrollment

At the time of the census, 147,717 people of the total enumerated population 5 years and older were enrolled in schools; 78,013 males and 69,704 females. Of these, 142,900 people were enrolled full time and 4,817 were part time enrolled in an educational institution.The distribution of those attending a school by school level is shown in Table 28.

Table 28: Population 5 years and older by sex and enrolled in school by school level attending, Solomon Islands: 2009

Educational level	Total	Males	Females
Preschool	29,746	15,295	14,451
Primary	79,598	42,166	37,432
Standard 1	16,685	8,855	7,830
Standard 2	15,453	8,229	7,224
Standard 3	14,673	7,763	6,910
Standard 4	12,594	6,773	5,821
Standard 5	11,003	5,771	5,232
Standard 6	9,190	4,775	4,415
Secondary	24,466	12,852	11,614
Form 1	7,194	3,639	3,555
Form 2	6,293	3,282	3,011
Form 3	4,290	2,247	2,043
Form 4	3,013	1,601	1,412
Form 5	1,732	873	859
Form 6/7	1,944	1,210	734
Tertiary	1,881	1,146	735
Vocational	1,533	950	583
Other	10,493	5,604	4,889
Total	147,717	78,013	69,704

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[13] Policy Statement and Guidelines for Basic Education in Solomon Islands, 30th November 2009

Just over half of all students (79,598) were enrolled in primary schools, 17% in secondary schools (24,466) and 20% in Preschools (29,746). Only 1% (1,881) of all students attended a tertiary institution, and another 1,533 students (1%) attended a vocational institution. 'Other' institutions include apprenticeships, specialized trades schools, etc.

Not at any age were more than 90% of children enrolled in schools. The highest school enrollment rates were for the 9-13 year olds when almost 90% of children were in school. From the age of 14, school enrollment rates rapidly decrease, and at age 18 years only half of all children were still in school (Fig 68).

There were insignificant differences between male and female enrollment rates for students aged 6-15. From the age of 14 school enrollment rates for males were higher than females'.

Apart from the relatively large proportion of young people that had never been to school of about 7% of all teenagers aged 10-19 years (Fig.70), it is a worry that even at young ages of 8-12 years children had left school, and at age 15 almost 14% of children had already left school (Fig. 69).

With respect to the population aged 6-15 years, 84% were enrolled in school, 5% had already left school, and 11% had never been in school (Fig72). The percentage distribution is about the same for males and females. However, there were marked differences in school enrollment rates by place of residence. School attendance was higher in the urban (87%) than the rural areas (83%), and Malaita had by far the lowest enrollment rates of the 6-15 year olds. Only three-quarter were enrolled in school, and 18% had never been to school. On the other hand, Rennell-Bellona had with 96% the highest enrollment rates of 6-15 year olds, and only 2% had never been to school.

With respect to the secondary gross enrollment rates of the population aged 15-19 years, 63% were enrolled in school, 30% had left school, and 7% had never been to school (Fig.73). Not surprisingly, urban enrollment rates were higher than rural. Again Rennell-Bellona shows the highest enrollment rates in secondary education (83%), and Isabel the lowest (53%).

Figure 68: Proportion of the population aged 5-24 years by age and sex enrolled in school (%), Solomon Islands: 2009
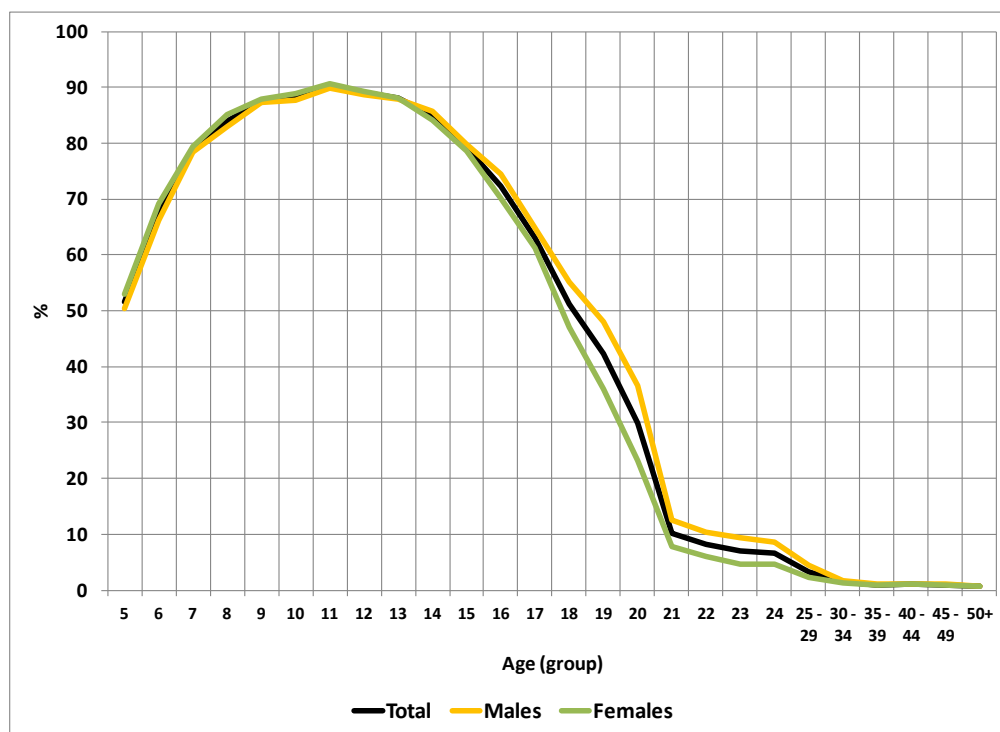
Figure 69: Proportion of the population aged 5-24 years by age and sex who left school (%), Solomon Islands: 2009
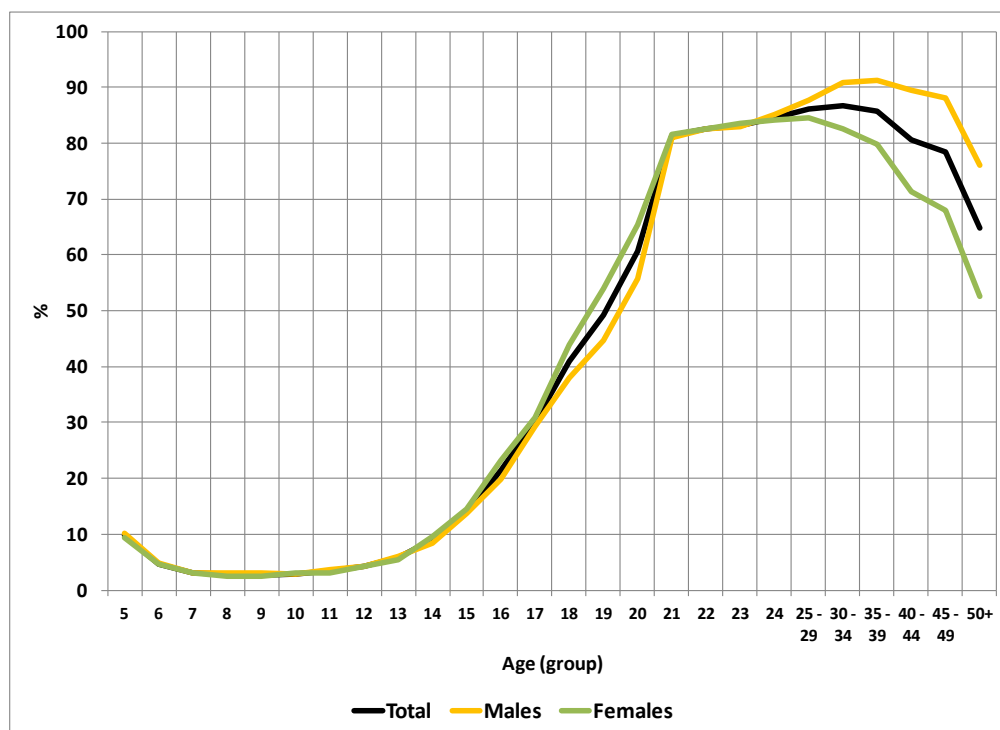
Figure 70: Proportion of the population aged 5-24 years by age and sex who have never been to school (%), Solomon Islands: 2009
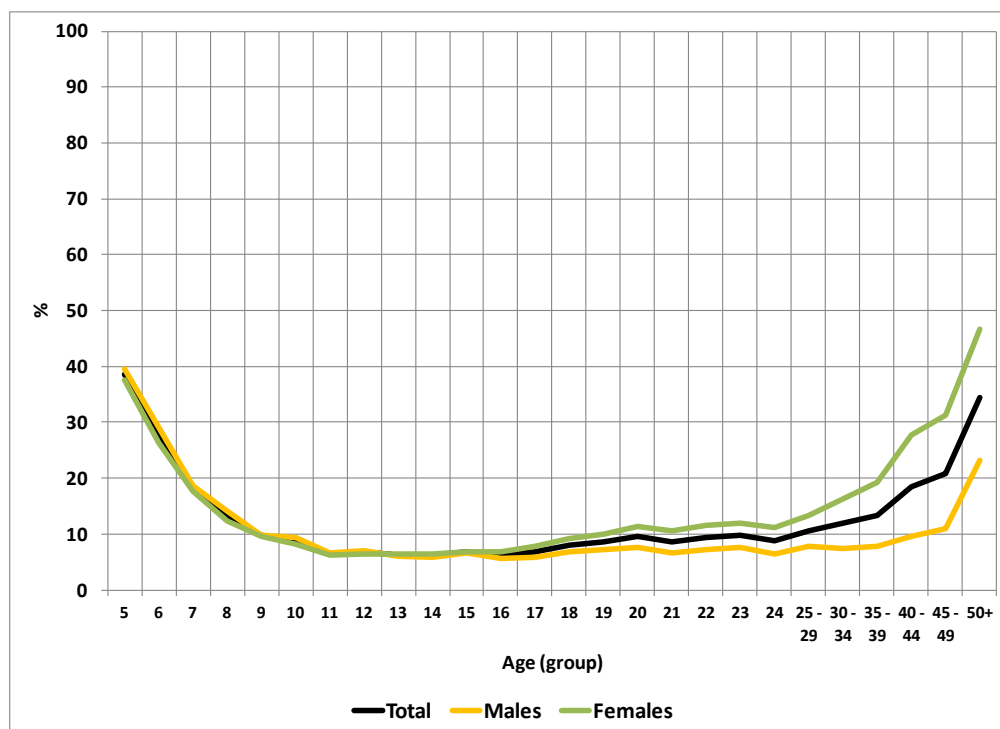
Figure 71: Proportion of the population aged 6-12 years by sex and school attendance status (%), Solomon Islands: 2009
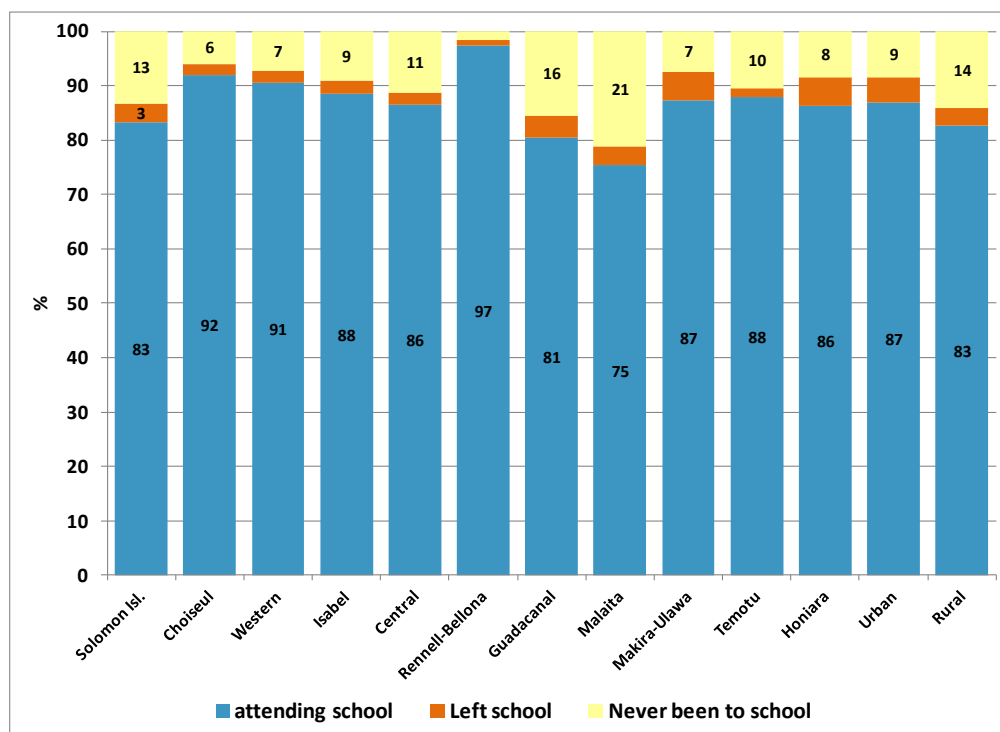
Figure 72: Proportion of the population aged 6-15 years by sex and school attendance status (%), Solomon Islands: 2009
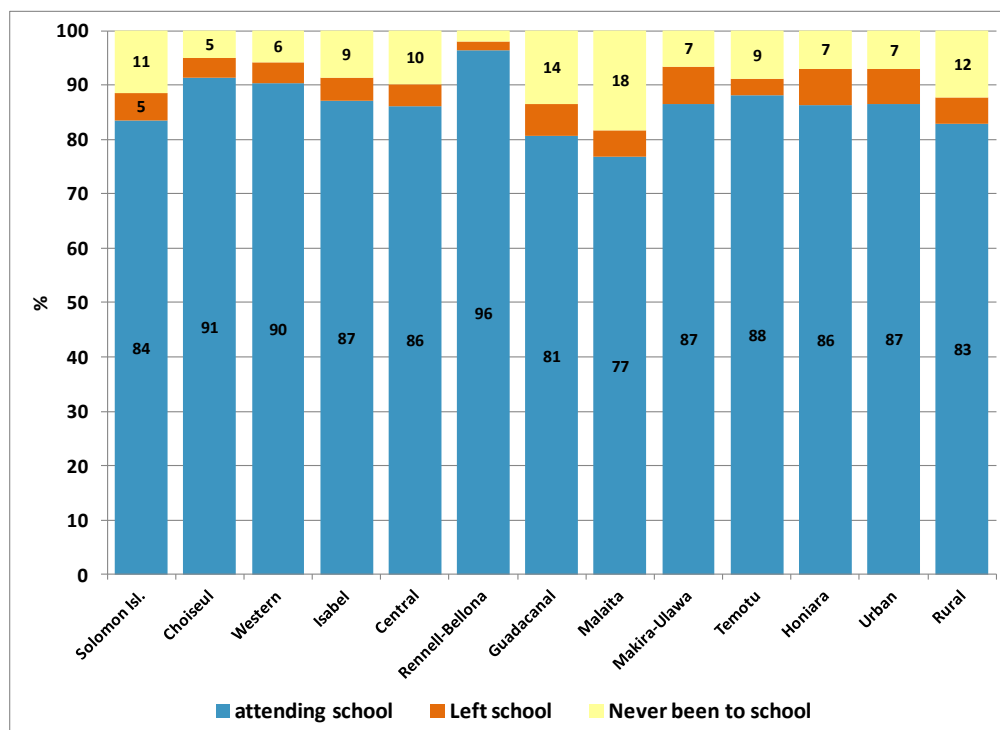
Figure 73: Proportion of the population aged 15-19 years by sex and school attendance status (%), Solomon Islands: 2009
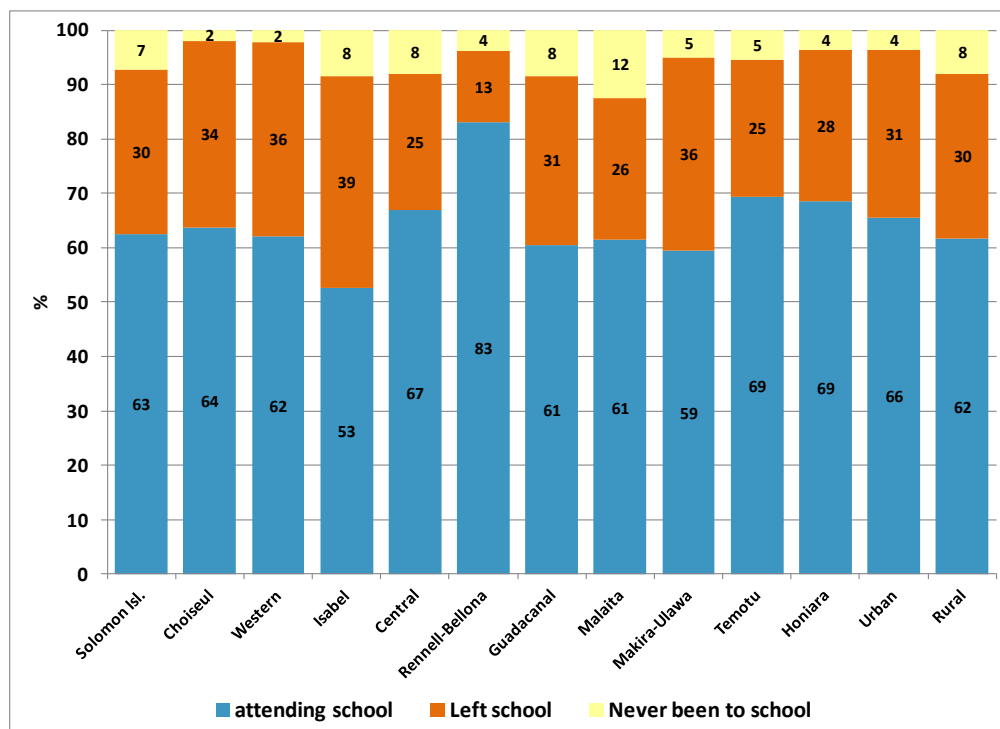
Since 1999 school enrolment rates have increased very significantly in the Solomon Islands (Fig.74). Primary school enrollment rates of the population 5-14 years[14] increased from just below 60% in 1999 to about 80% in 2009, and secondary school enrollment rates of the population 15-19 years increased from about 50% to over 60%. Enrollment rates were below 40% in 1986.

Furthermore, the gap between male and female school enrollment rates that existed in favor of males in previous censuses has decreased, and for primary education it is now even slightly higher for females than males.

Table 29 shows the enrolled population by age and school level enrolled. It can be seen that each school level is attended by a group of students that varies in an age range of sometimes 10 years or more. For example, Standard 5 was attended by students aged 8-19 years.

On the other hand, one and the same age group of students is divided among a vast number of school levels. For example students aged 12 years are attending a range of school levels that includes preschool to Form 3.

_____
[14] In this context this age group has been used in order to be comparable with the 1999 census report

Figure 74: School enrollment rates by sex, Solomon Islands: 1999 and 2009
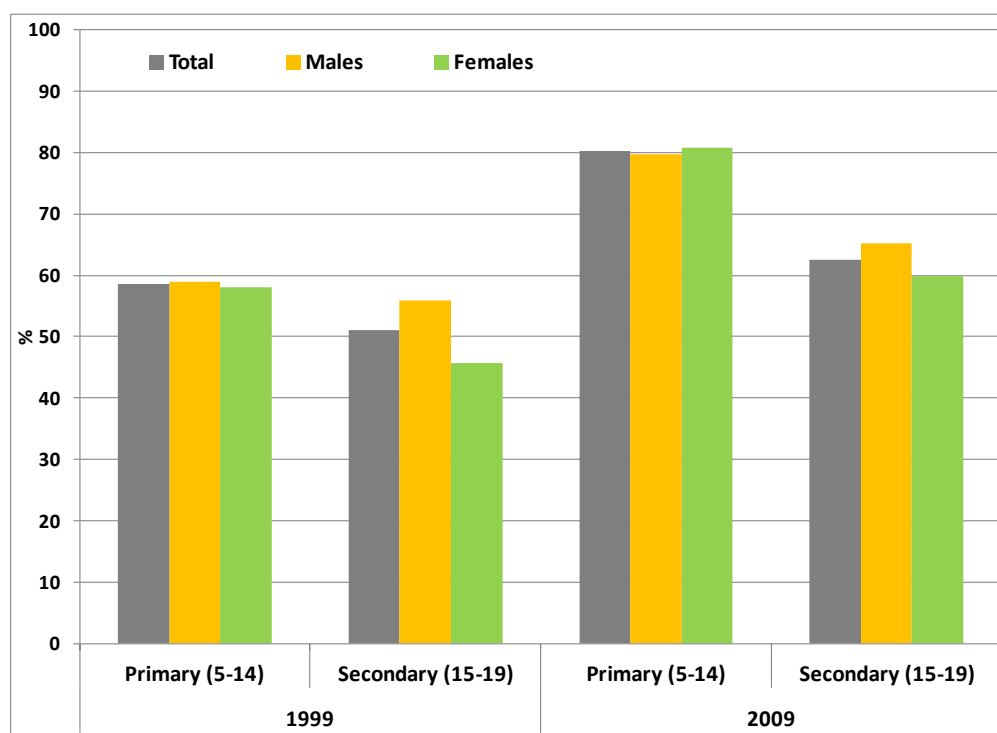
Table 29: Enrolled population by age and school level enrolled, Solomon Islands: 2009

Age of student	Total	Level of education															
		Pre school	Standard 1	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6/7	Tertiary	Vocational	Other
Total	147,717	29,746	16,685	15,453	14,673	12,594	11,003	9,190	7,194	6,293	4,290	3,013	1,732	1,944	1,881	1,533	10,493
5	7,929	6,918	368	139	-	-	-	-	-	-	-	-	-	-	-	-	504
6	10,007	8,292	908	219	55	-	-	-	-	-	-	-	-	-	-	-	533
7	10,633	6,871	2,432	587	171	34	-	-	-	-	-	-	-	-	-	-	538
8	11,078	4,288	4,098	1,631	361	73	13	-	-	-	-	-	-	-	-	-	614
9	12,510	2,185	4,369	3,618	1,351	265	28	-	-	-	-	-	-	-	-	-	694
10	11,923	777	2,532	3,867	2,767	959	205	65	24	-	-	-	-	-	-	-	727
11	11,358	277	1,248	2,679	3,448	2,168	694	163	24	8	-	-	-	-	-	-	649
12	11,056	138	503	1,480	2,806	2,860	1,826	593	115	36	20	-	-	-	-	-	679
13	10,477	-	227	712	1,753	2,641	2,484	1,405	510	114	31	13	-	-	-	-	587
14	9,777	-	-	342	1,013	1,719	2,305	1,899	1,272	528	96	20	14	-	-	-	569
15	9,002	-	-	179	454	960	1,593	1,972	1,712	1,153	344	72	18	-	-	-	545
16	7,824	-	-	-	311	460	934	1,408	1,565	1,508	796	299	51	5	4	14	469
17	6,265	-	-	-	183	188	400	762	944	1,294	1,024	784	190	30	20	23	423
18	4,986	-	-	-	-	267	201	367	571	822	875	797	481	142	26	51	386
19	3,962	-	-	-	-	-	320	236	283	519	666	626	526	359	57	74	296
20	3,002	-	-	-	-	-	-	320	153	304	431	401	443	394	141	137	278
21	816	-	-	-	-	-	-	-	19	7	7	1	3	276	205	91	207
22	691	-	-	-	-	-	-	-	2	-	-	-	6	199	182	119	183
23	685	-	-	-	-	-	-	-	-	-	-	-	-	176	229	129	151
24	589	-	-	-	-	-	-	-	-	-	-	-	-	123	207	113	146
25 - 29	1,422	-	-	-	-	-	-	-	-	-	-	-	-	222	548	312	340
30 - 34	540	-	-	-	-	-	-	-	-	-	-	-	-	18	153	194	175
35 - 39	325	-	-	-	-	-	-	-	-	-	-	-	-	-	76	125	124
40 - 44	259	-	-	-	-	-	-	-	-	-	-	-	-	-	28	33	198
45 - 49	187	-	-	-	-	-	-	-	-	-	-	-	-	-	5	31	151
50+	414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	327

4.5.2 Educational attainment

Based on data on the highest level of education completed, 21% of males and 16% of females 15 years and older responded that they had attended secondary education (Form 3-7). About 56-57 % completed only primary level, and 11% of males and 21% of females had no schooling completed (no schooling, preschool, or only some primary). Six per cent of males and three per cent of females had tertiary education (Figs.75-77).

As can be expected, educational levels were much higher in the urban compared to the rural areas. The proportion of the population 15 years and older living in the urban areas that attended secondary education was 32% compared to only 15% in rural areas. On the other hand, the proportion of the population with no education was 19% in the rural areas compared to 7% in the urban areas.

The proportion of the population with no education was particularly high in Malaita (27%), followed by Temotu (25%).

Honiara had the highest proportion of the population with secondary education (35%), followed by Isabel with 25%.

Figure 75: Number of people 12 years and older by sex and highest level of education completed, Solomon Islands: 2009

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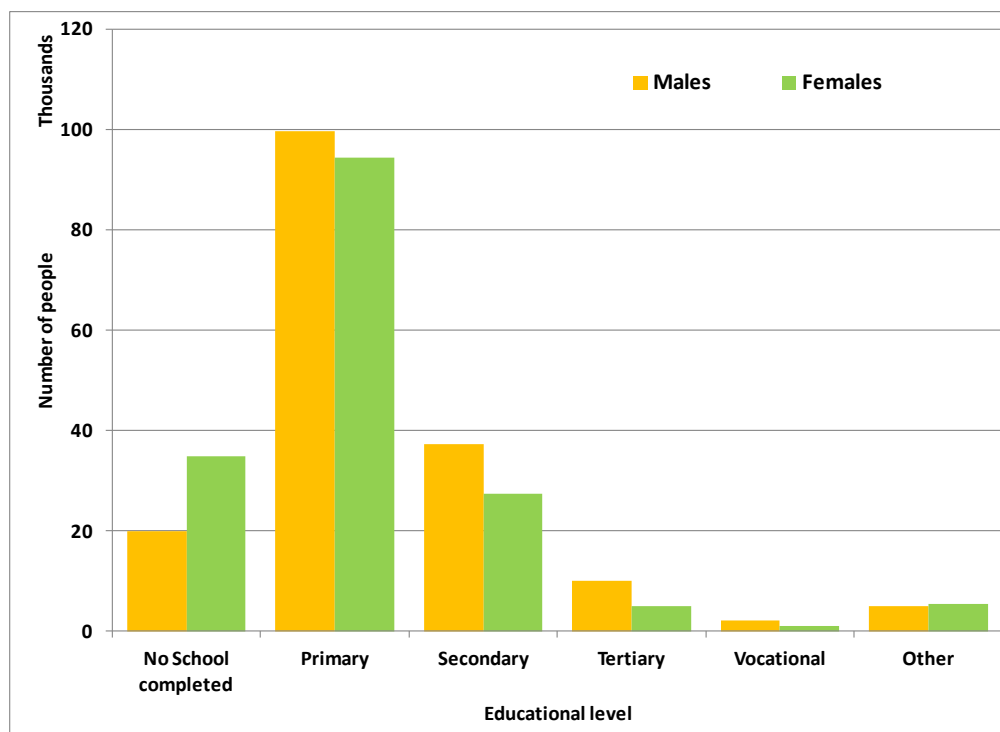
Figure 76: Population 12 years and older by sex and highest level of education completed (%), Solomon Islands: 2009
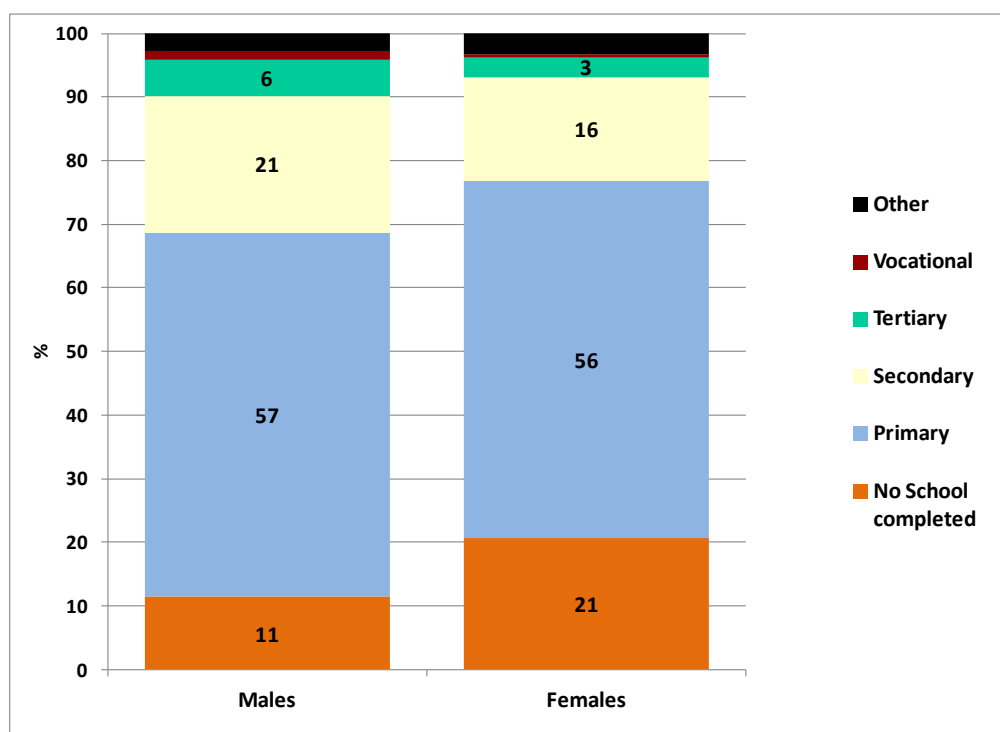
Figure 77: Population 15 years and older by sex, place of residence and highest level of education completed, Solomon Islands: 2009
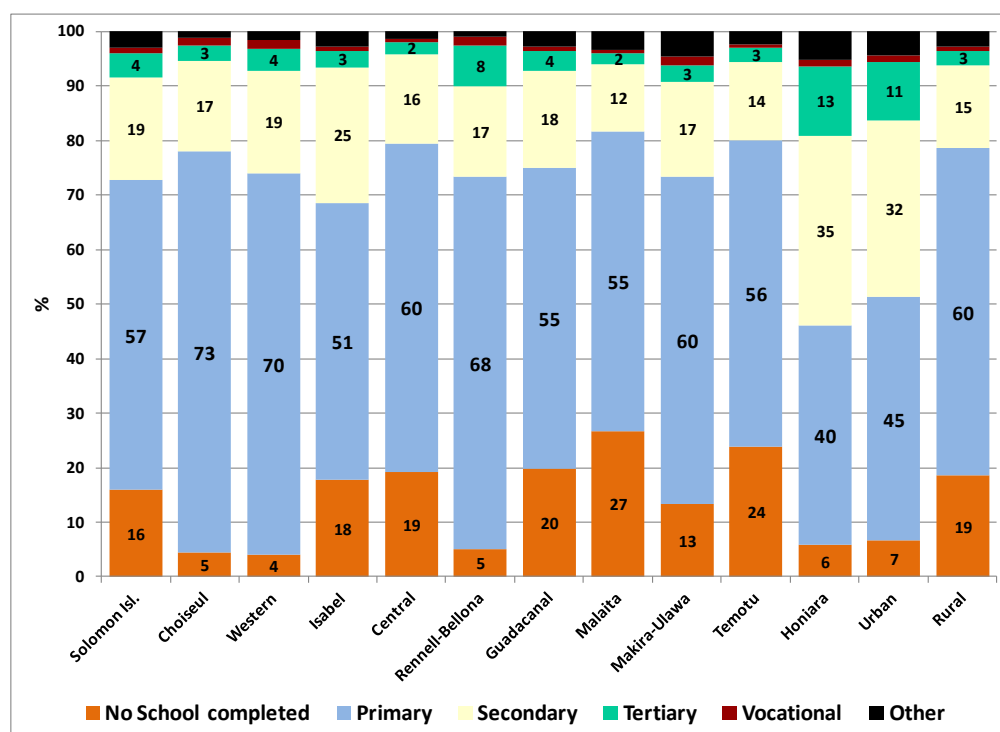
4.5.3 Literacy and language ability

4.5.3.1 Literacy

The literacy rate in a population is one of the most important indicators of development. Literacy - defined as the ability to read and write – refers to the skill that enables people to access, understand and communicate information in today's society. This skill contributes to a better understanding of one's environment, and other people, leading to improved health, knowledge and employment. Society at large, equally benefits from high literacy rates, as it is linked to better health, efficiency, and productivity.

It is possible to distinguish between levels of literacy, for instance in terms of the degree to which people are able to read or write, or whether people can read but not write. These distinctions require elaborate testing, that a census cannot undertake as it is a time-consuming survey method. However, the 2009 census did include a question in order to get a general indication of the literacy situation in the country. The question reads: "*Can you read and write a simple sentence in one or more of the following languages: English, Pidgin, Local language, or Other language?*". The way the question was phrased captures a basic skill of reading and writing, and not a more fluent literacy. A disadvantage of a question like this is that the obtained measure refers to self-reported literacy, which is likely to be biased as many illiterate people may be embarrassed to admit that they cannot read and write.

Based on the responses to the above question, the age group with the highest rate of literacy was the 15-19 year old population, with 90% literate. It is somewhat surprising that only 80% of the 10-14 year old school age population were literate as one would expect that they should be able to read and write a simple sentence(Fig 78).

From the age of 35 literacy rates gradually decline with increasing age of the population. While only 80% of the population aged 45-49 were literate, it was less than 60% of the population 70 years and older. From age 20, literacy rates were significantly higher for males than females. For example, at age 45-49, almost 90% of males were literate compared to only about 70% of females. Overall, the literacy rate for males and females aged 5 years and older was 80% and 74% respectively, for males and females aged 15-24 years it was 91% and 88% (Fig.79), and for the population 15 years and older it was 89% and 79% (Fig.80).

In terms of urban-rural distinction, literacy rates were noticeably higher in the urban compared to the rural areas: while almost 90% of the population 5 years and older and

96% of the population 15-24 years was literate in the urban areas, it was only 74% and 88% in the rural areas.

The provinces with higher than average literacy rates were Rennell-Bellona, Honiara, Western, Choiseul, and Makira-Ulawa. areas. The provinces of Malaita had significantly lower literacy rates than the national average.

Figure 78: Literacy rate of the population 5 years and older by sex (%), Solomon Islands: 2009
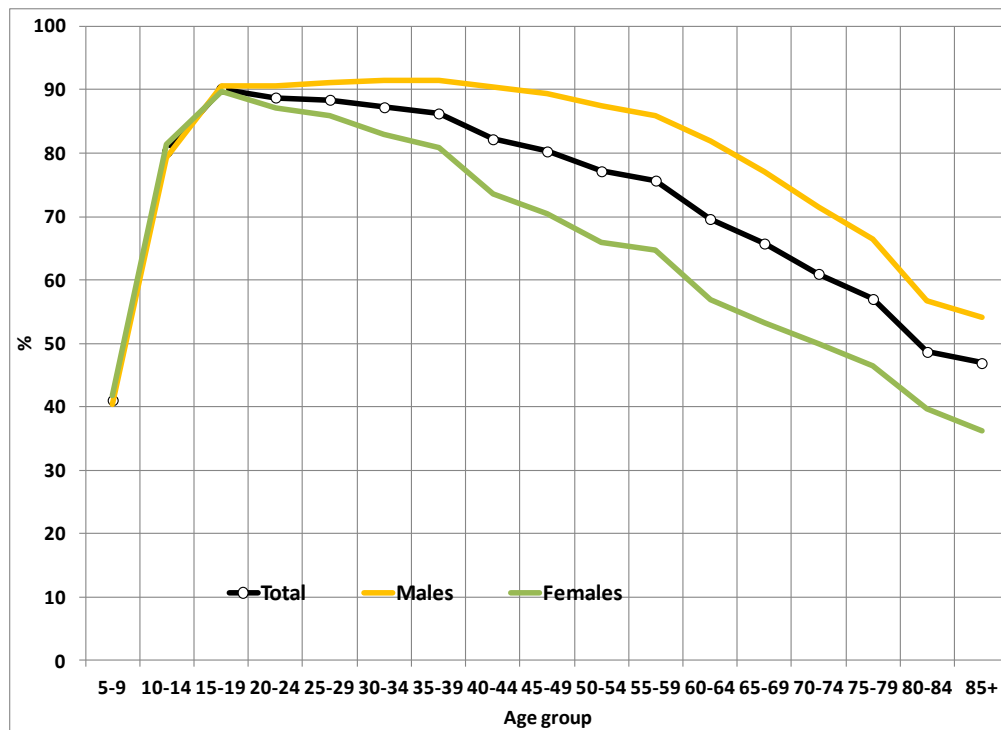
Figure 79: Literacy rate of the population aged 15-24 years by sex and place of residence (%), Solomon Islands: 2009
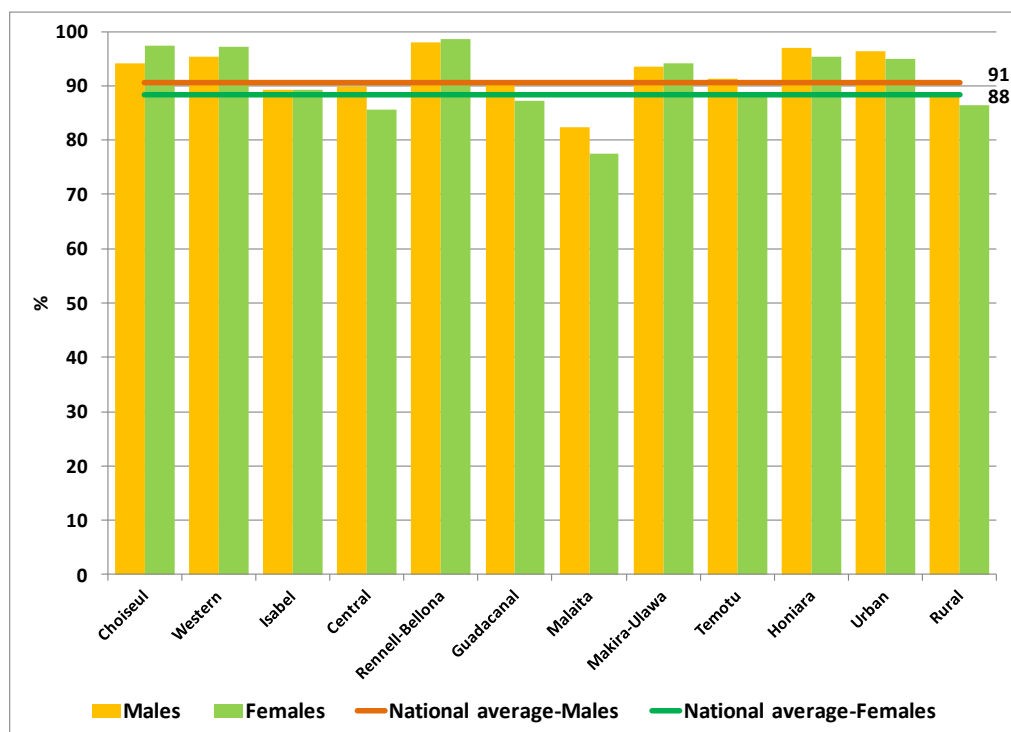
Figure 80: Literacy rate of the population aged 15 years and older by sex and place of residence (%), Solomon Islands: 2009
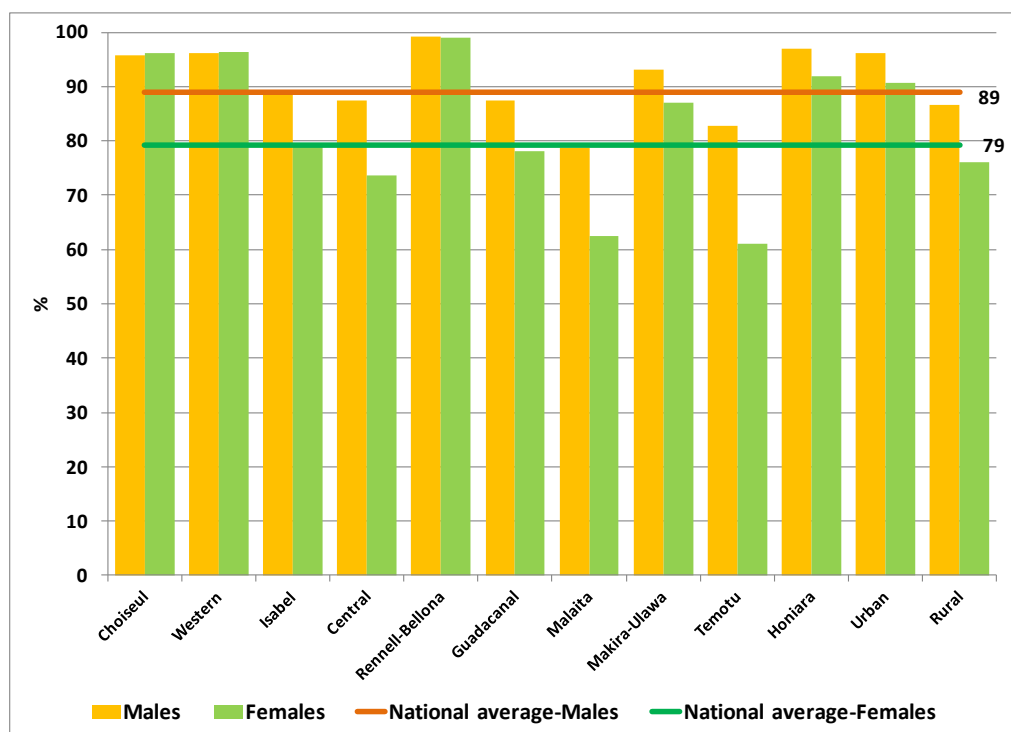
4.5.3.2 Language ability

Literacy in terms of language abilities is shown in Table 30 and Figures 81-88. Please note that a respondent could record speaking more than one language if applicable.

English was most widely spoken by 69% of the population 5 years and older; it was followed by Pidgin with 67%, and local languages (66%). An additional 27% of the population spoke 'other' languages. In most cases this category refers to other local languages if a person spoke more than one local language.

Language abilities varied extensively by place of residence. Generally language abilities in any language were much higher in the urban than the rural areas, and any language abilities were more widely spoken in Honiara, Rennell-Bellona, and the Western province. Malaita, Temotu and the Central province had the lowest literacy rate in any language.

The pattern in language ability by age and sex follows the general pattern as per the literacy rates. From the age of 20 language abilities are higher for males than females, and language proficiency for females declines from then onwards. In contrast, male language abilities remain high or even increase after age 20 and only start decreasing from age 40 onwards.

Table 30: Language ability by type of language, Solomon Islands: 2009

Language	Number of people speakig language			As % of population 5 years and older		
	Total	Males	Females	Total	Males	Females
English	303,384	163,838	139,546	69	73	65
Pidgin	292,704	157,374	135,330	67	70	63
Local language	290,632	154,628	136,004	66	69	63
Other language	117,427	63,211	54,216	27	28	25

Figure 81: English language ability of the population 5 years and older by place of residence (%), Solomon Islands: 2009
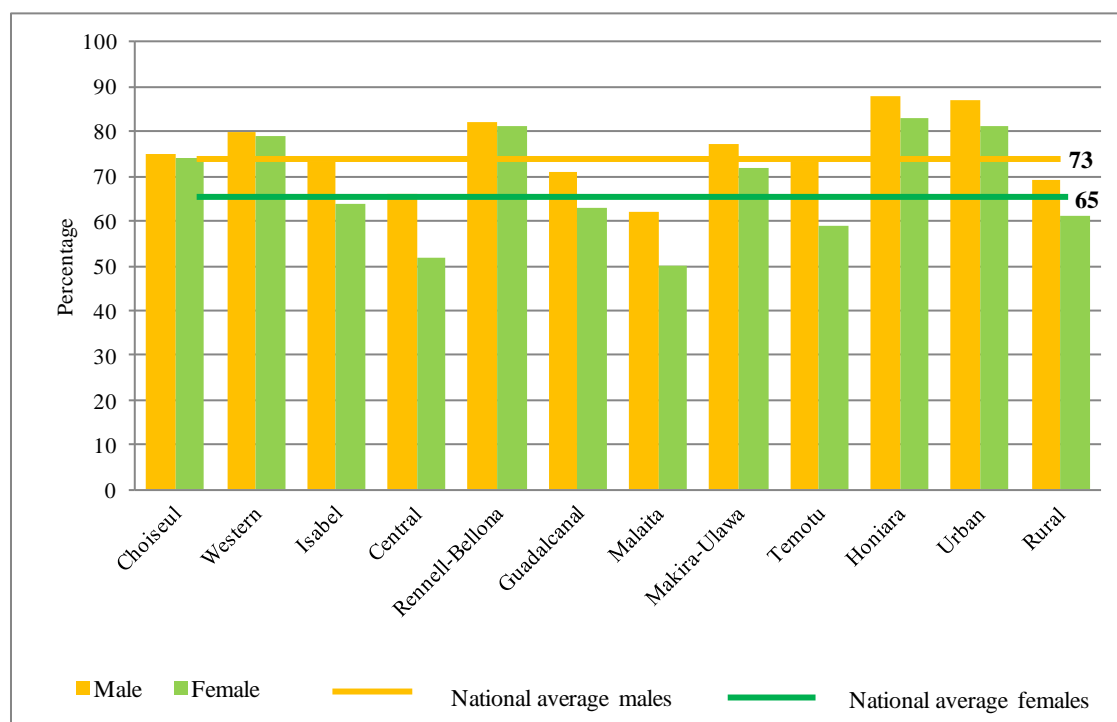
Figure 82: English language ability of the population 5 years and older by age and sex (%), Solomon Islands: 2009

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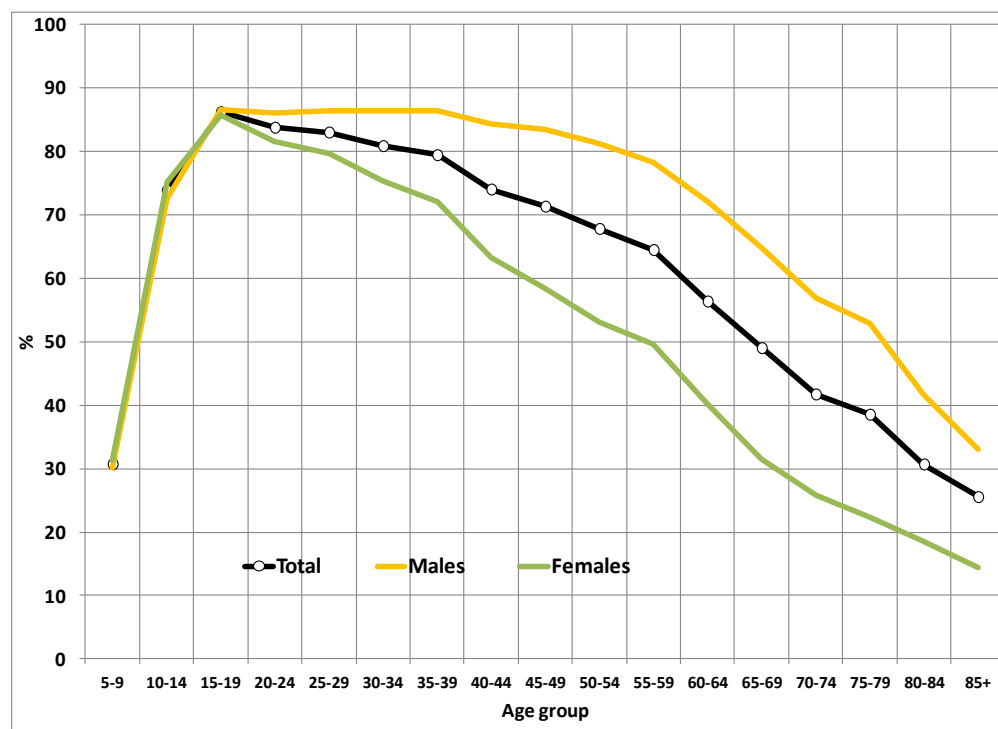
Figure 83: Pidgin language ability of the population 5 years and older by place of residence (%), Solomon Islands: 2009
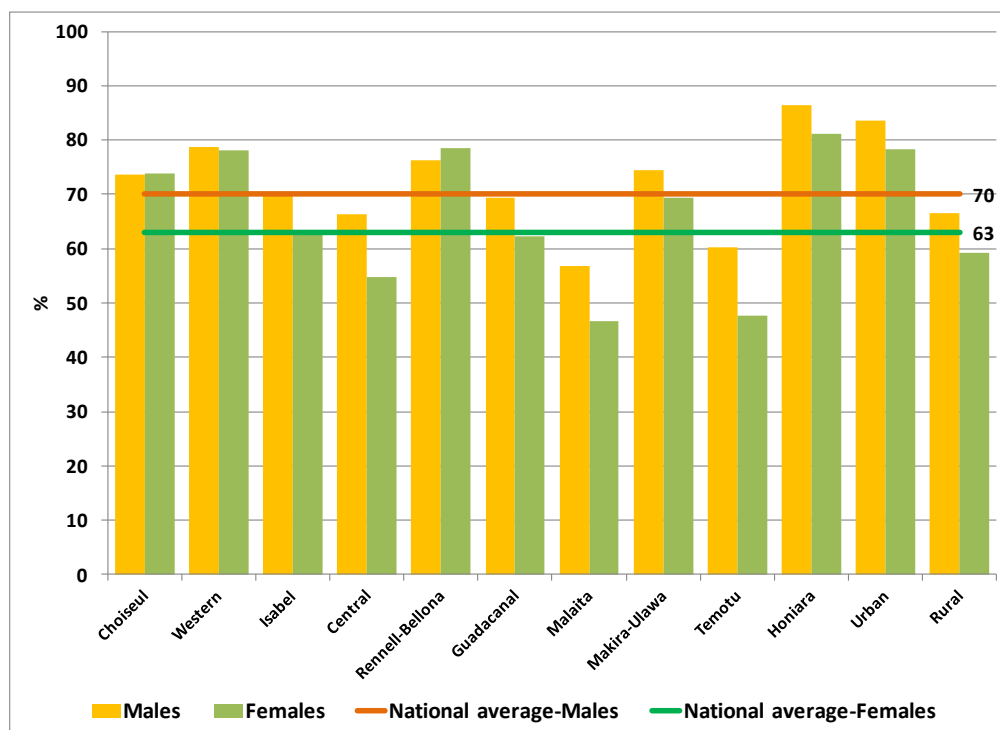
Figure 84: Pidgin language ability of the population 5 years and older by age and sex (%), Solomon Islands: 2009
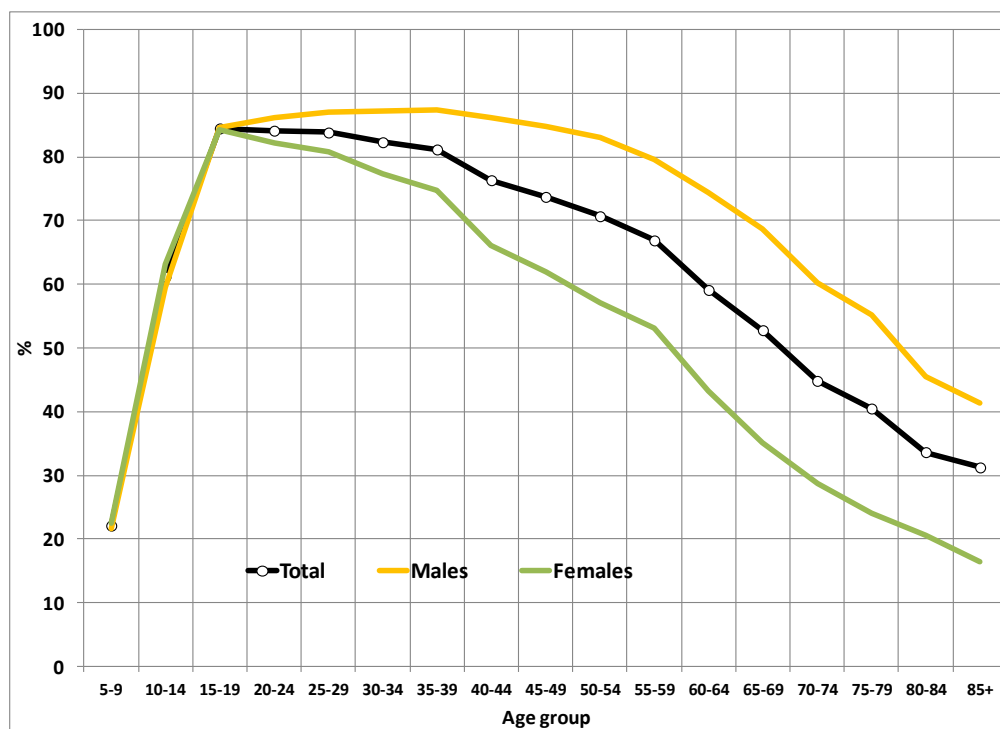
Figure 85: Local language ability of the population 5 years and older by place of residence (%), Solomon Islands: 2009
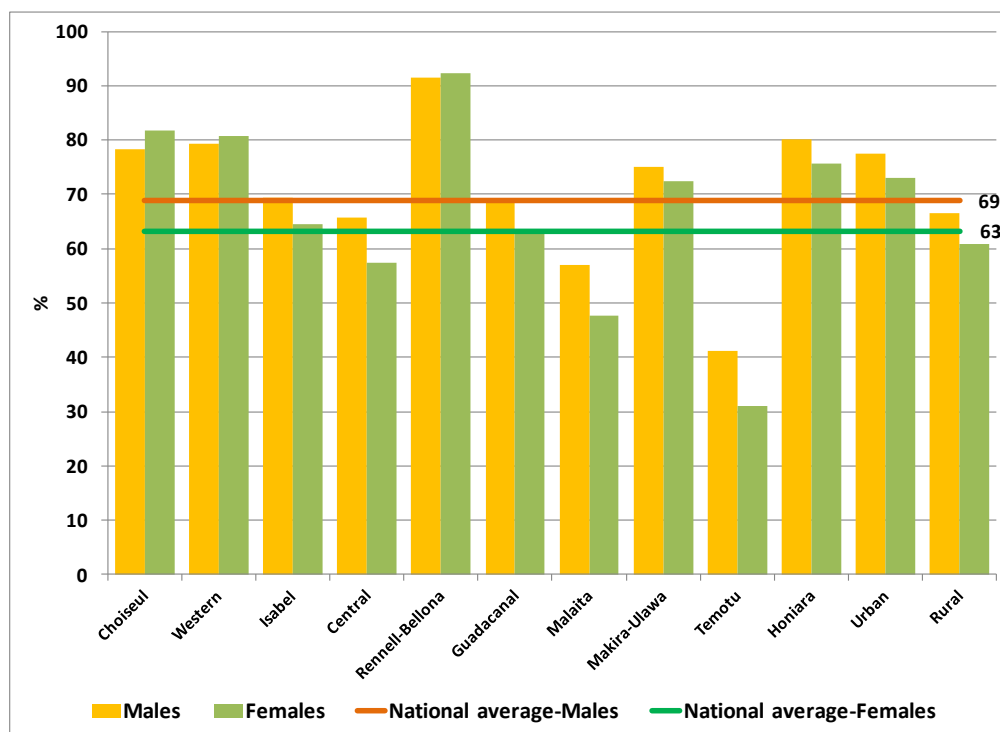
Figure 86: Local language ability of the population 5 years and older by age and sex (%), Solomon Islands: 2009
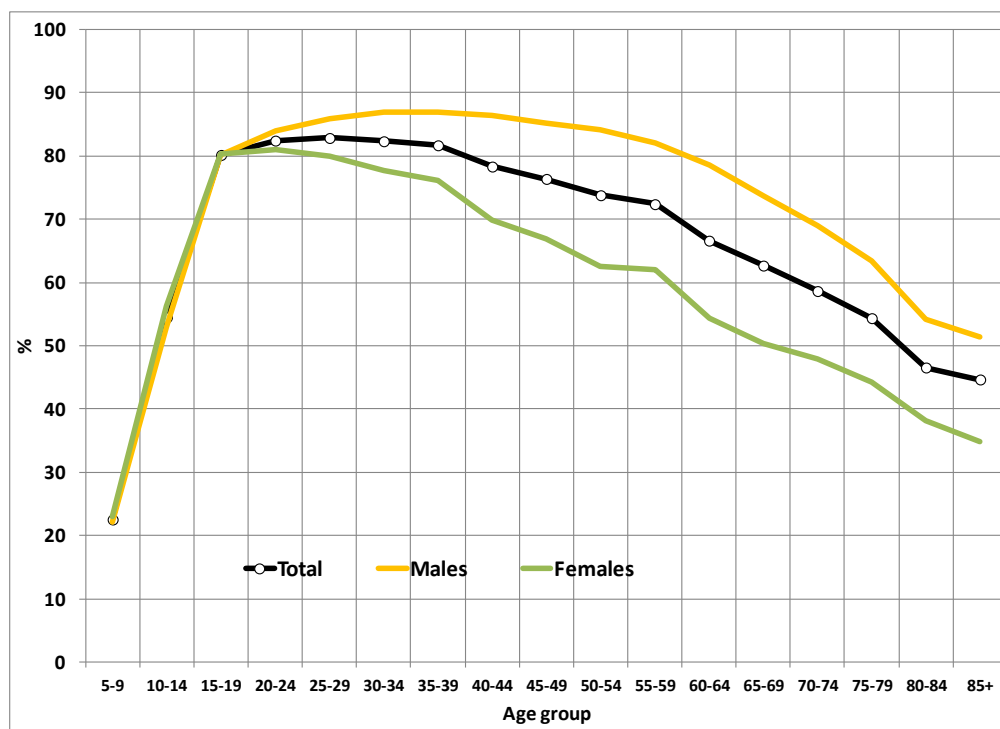
Figure 87: Other language ability of the population 5 years and older by place of residence (%), Solomon Islands: 2009
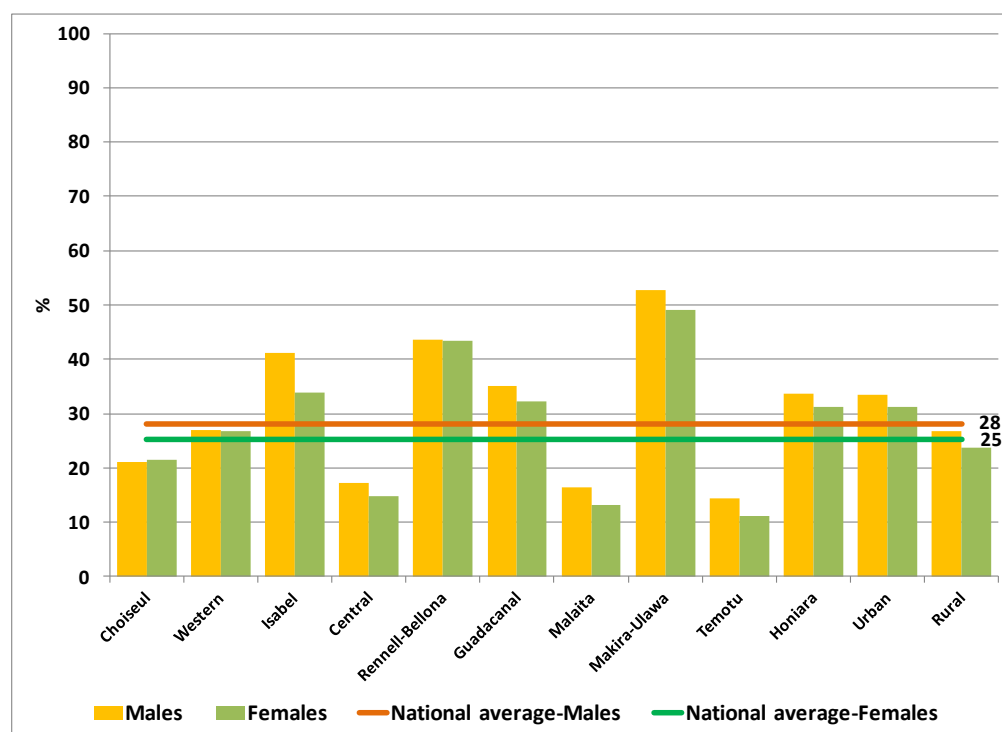
Figure 88: Other language ability of the population 5 years and older by age and sex (%), Solomon Islands: 2009
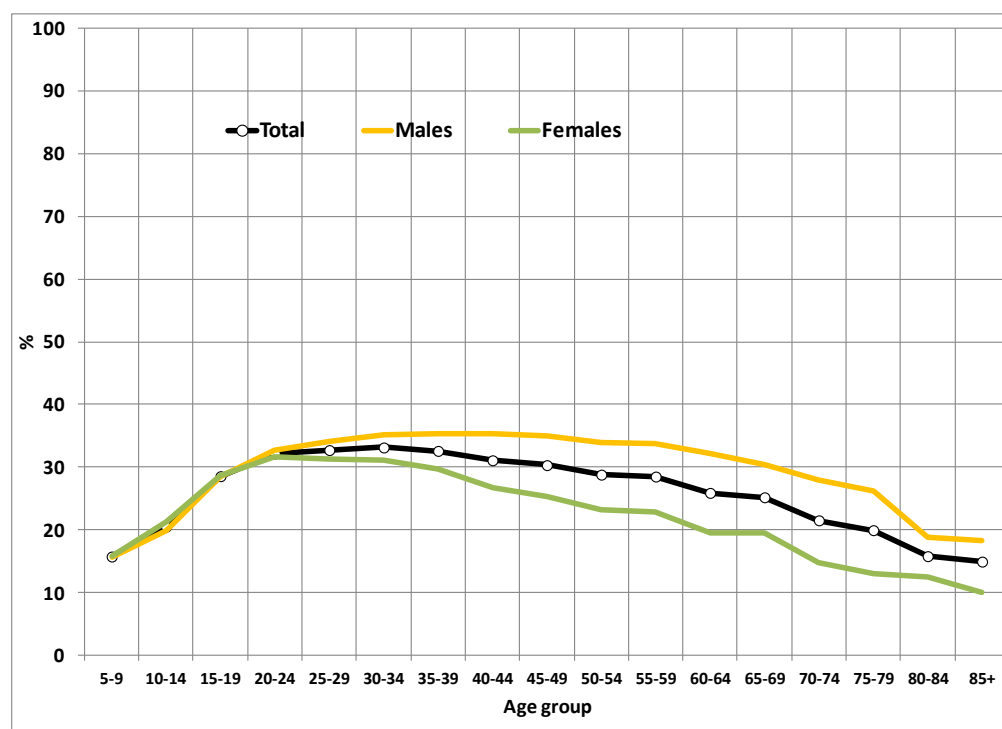
5. HOUSEHOLD AND HOUSING

5.1 Introduction

The household is the smallest organizational entity in the census and provided the unit of enumeration of individuals. The household also has important social significance in terms of production and reproduction, gender relations and group identification within communities. Although there is a large overlap with families, households are conceptually different, as they are defined by agreement on collaboration, not necessarily on kinship or consanguinity (blood ties). A distinction in this respect is made between private and collective household types (institutions).

This section addresses the average household size, but also household structure. In all households, one person was designated as head of that household. In principle, the household itself did this, but where necessary, the enumerator had to identify a head. All other household members were identified by their relationship to this head. Besides size and structure, households can be characterised by the characteristics of the individual household members. However, it is out of the scope of this report to elaborate on this matter.

Household: definition and types

In the census a household is defined as a group of people who share a common eating arrangement: members of a household normally eat food prepared in the same kitchen or they share in the cost, collection and preparation of that food. Although the identification of a household was based on a usual common eating arrangement of a group of people, enumeration coverage rules prescribed the inclusion of all and only those people who slept in the household on census night.

The census distinguished between two types of households:

A *private household:* a group of related people (for example a family) with or without additional persons who live together and share a common eating arrangement. A private household can also consist of one person or two to five unrelated persons who have a common eating arrangement.
A *collective household* (institution) consists of unrelated persons staying together for special reasons, like education, medical treatment, boarding, travel or imprisonment.

5.2 Number and size of households

In 2009, 92,241 households were counted; 91,251 private households and 990 non-private dwellings (institutions). The number of private households increased from 63,404 thousand in 1999 to 91,251 thousand in 2009, an overall increase of almost 28 thousand households (Tables 31 and 32).

Table 31: Number of households by household type and location, Solomon Islands: 2009

Province / Urban-Rural area	Household Type		
	Total households	Private households	Institutions
Total	**92,241**	**91,251**	**990**
Choiseul	4,740	4,712	28
Western	13,998	13,762	236
Isabel	5,212	5,143	69
Central	4,924	4,905	19
RenBell	709	688	21
Guadacanal	17,379	17,163	216
Malaita	24,556	24,421	135
Makira	7,311	7,173	138
Temotu	4,331	4,303	28
Honiara	9,081	8,981	100
Urban	15,643	15,382	261
Rural	76,598	75,869	729

Table 32: Population in private households, number of private households and average household size, by place of residence, Solomon Islands: 1999 and 2009

Place of residence	Number of private household		Number of people in private households		Average household size	
	1999	2009	1999	2009	1999	2009
SOLOMON ISLANDS	**63,404**	**91,251**	**389,922**	**504,985**	**6.1**	**5.5**
Urban	8,815	15,382	57,430	99,299	6.5	6.5
Rural	54,589	75,869	332,492	405,686	6.1	5.3
Choiseul	3,045	4,712	18,877	25,916	6.2	5.5
Western	9,570	13,762	57,379	73,333	6.0	5.3
Isabel	3,472	5,143	19,366	25,147	5.6	4.9
Central	3,533	4,905	20,596	25,809	5.8	5.3
RenBell	423	688	2,303	3,006	5.4	4.4
Guadacanal	10,164	17,163	58,016	91,919	5.7	5.4
Malaita	18,362	24,421	120,191	136,384	6.5	5.6
Makira	4,859	7,173	30,248	39,407	6.2	5.5
Temotu	3,335	4,303	18,243	21,104	5.5	4.9
Honiara city council	6,641	8,981	44,703	62,960	6.7	7.0

The overall average household size, the number of people per household, decreased from 6.1 to 5.5 people per household between 1999 and 2009 (Table 31and Fig.89).

The highest average household size was recorded in the Honiara city council with 7 people per household on average most likely due to incoming migrants from the other provinces.

The lowest household sizes were found in Rennell-Bellona (4.4), and Isabel and Temotu with just under 5 people per household.

In general, urban households (6.5) were significantly more crowded than rural households (5.3).

In 2009, the most common household size was 6 people per household (14,655), accounting for 16.1 % of all private households and 17.4% of the total population (87,930) lived in households of 6 people (Table 33 and Fig.90).

There were 3,553 single-person households accounting for 3.9% of all households which represents and increase compared to the 1999 census when there were only 1,861 households with a share of 2.9%.

On the other hand in 2009 there were 7,219 households with 10 persons or more (8%), which is a decrease, compared to 1999 when there were 7,836 households with 10 occupants or more representing 12.4% of all households in1999.

Table 33: Number of private households by household size and people per household (%), Solomon Islands: 2009

Household size	Private Households		People per household size	
	Number	**%**	**Number**	**%**
1	3,553	3.9	3,553	0.7
2	6,978	7.6	13,956	2.8
3	10,694	11.7	32,082	6.4
4	13,761	15.1	55,044	10.9
5	14,420	15.8	72,100	14.3
6	14,655	16.1	87,930	17.4
7	9,148	10.0	64,036	12.7
8	6,544	7.2	52,352	10.4
9	4,278	4.7	38,502	7.6
10	2,687	2.9	26,870	5.3
11	1,643	1.8	18,073	3.6
12	1,152	1.3	13,824	2.7
13	558	0.6	7,254	1.4
14	373	0.4	5,222	1.0
15+	806	0.9	14,132	2.8
NS	1	0.0	55	0.0
Total	**91,251**	**100.0**	**504,985**	**100.0**

Figure 89: Average household size (number of people per household) by place of residence, Solomon Islands: 2009
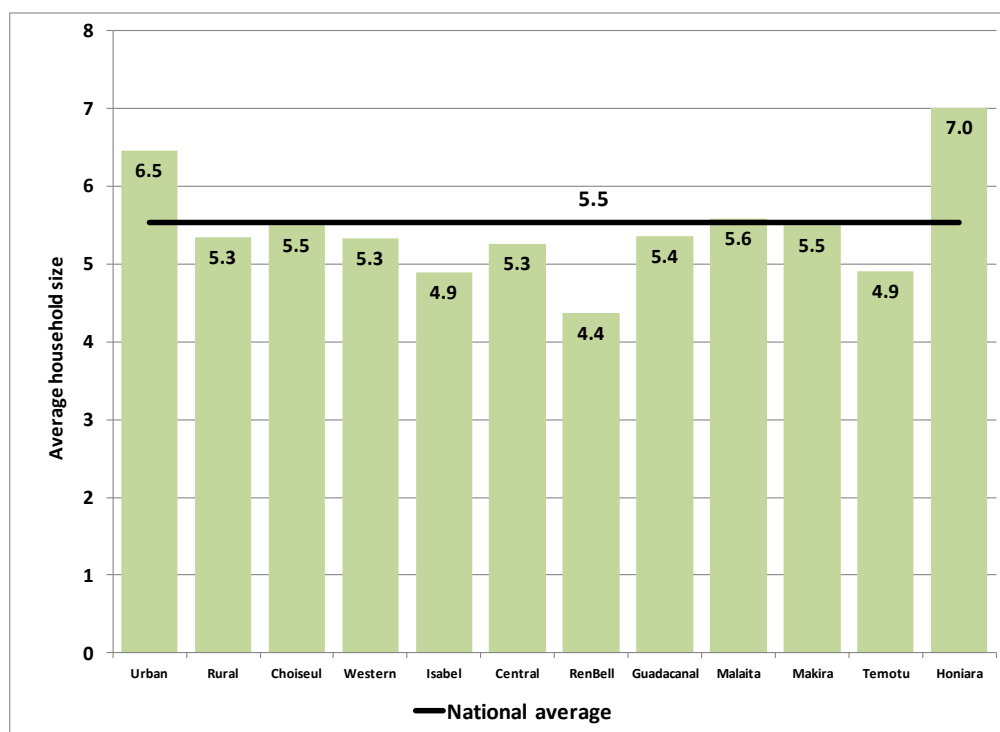
Figure 90: Distribution of households and people living in private households by household size (%), Solomon Islands: 2009
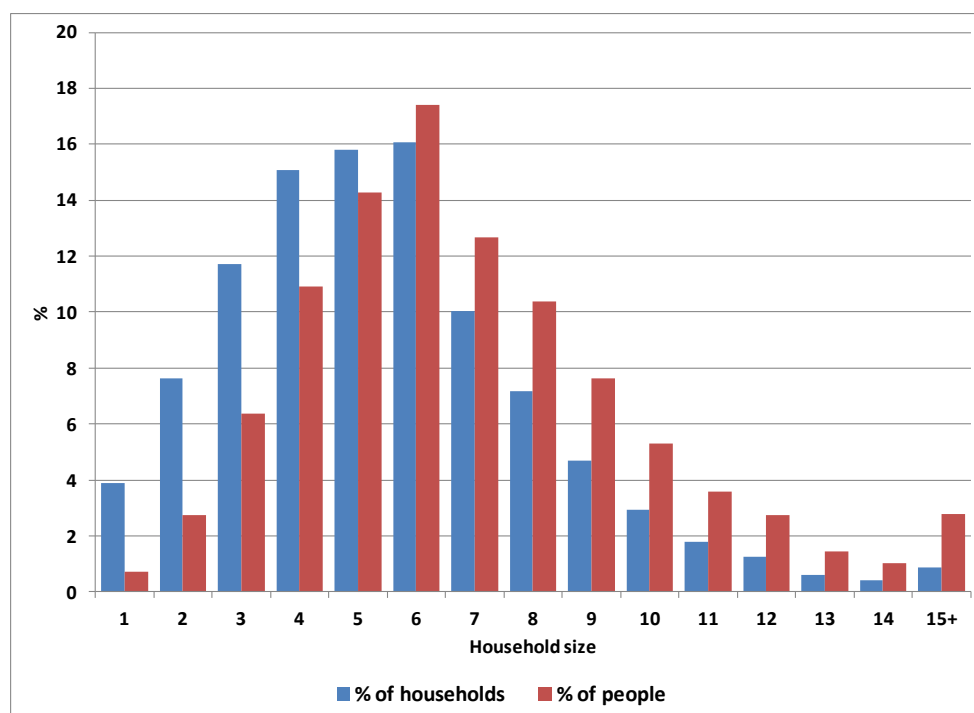
5.3 Household Characteristics

5.3.1 Household composition

Data on household composition were established by identifying a head of household who served as a reference person to whom all other people in the household, in terms of family membership, are related (Table 34).

Approximately 4 out of 5 heads of household (84%) in the Solomon Islands were men (76,653) with one-in-five (14,598 or 16%) households headed by women. This distribution has not changed since the 1999 census.

In most cases women headed the household when her spouse was not present (temporarily absent), or when the women were widowed; her husband had died.

Not surprisingly the majority of household members (55%) were children such as the sons and daughters of the household head, adopted children, children of in-laws, or grandchildren.

Fourteen percent of household members included the spouse of the head of household. Interestingly only 2% (1,271) of all spouses (70,828) were males, which supports the finding that females only head the household if a spouse is not present.

Two per cent of all household members were other relatives or not related to the head of household.

Table 34: Population by household composition (relationship to head of household), Solomon Islands: 2009

Relationship	In numbers			In percentage		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**
Head of household	91,251	76,653	14,598	18	30	6
Spouse of head	70,828	1,271	69,557	14	0	28
Son/Daughter	229,072	120,726	108,346	45	47	44
Adopted son/daughter	7,505	4,022	3,483	1	2	1
Son in law/daughter in law	7,360	3,087	4,273	1	1	2
Grandchild	32,625	17,619	15,006	6	7	6
Parent/Parents in law of head	7,121	2,064	5,057	1	1	2
Brother/Sister (including in laws)	15,895	8,434	7,461	3	3	3
Other relatives	33,522	18,577	14,945	7	7	6
Not related/friend	9,806	5,285	4,521	2	2	2
Total	**504,985**	**257,738**	**247,247**	**100**	**100**	**100**

5.3.2 Household income

5.3.2.1 Main household income

In 2009, 44% of the main source of household income in the Solomon Islands was from the sale of fish, crops or handicrafts. Another 24% of the main household income was from wages or salary, 6% from own business activities and 20% household income from other sources. Three percent of all households in the Solomon Islands recorded that they have no income (Fig.91).

The sources of income are very different in Honiara compared to the rest of the country. More than three-quarter of all households in Honiara received their main income from wages or salaries (78%). This percentage was much lower in the other provinces. For example, in Malaita only 12% of households relied on income from wages and salary, and it was 27% in the Western province which is the highest percentage of all provinces except Honiara.

When comparing the household income distribution by province it is evident that the sale of fish/crop/handicraft is the main source of income throughout the country apart from Honiara.

Figure 91: Proportion of private households by main source of household income and by province (%), Solomon Islands: 2009
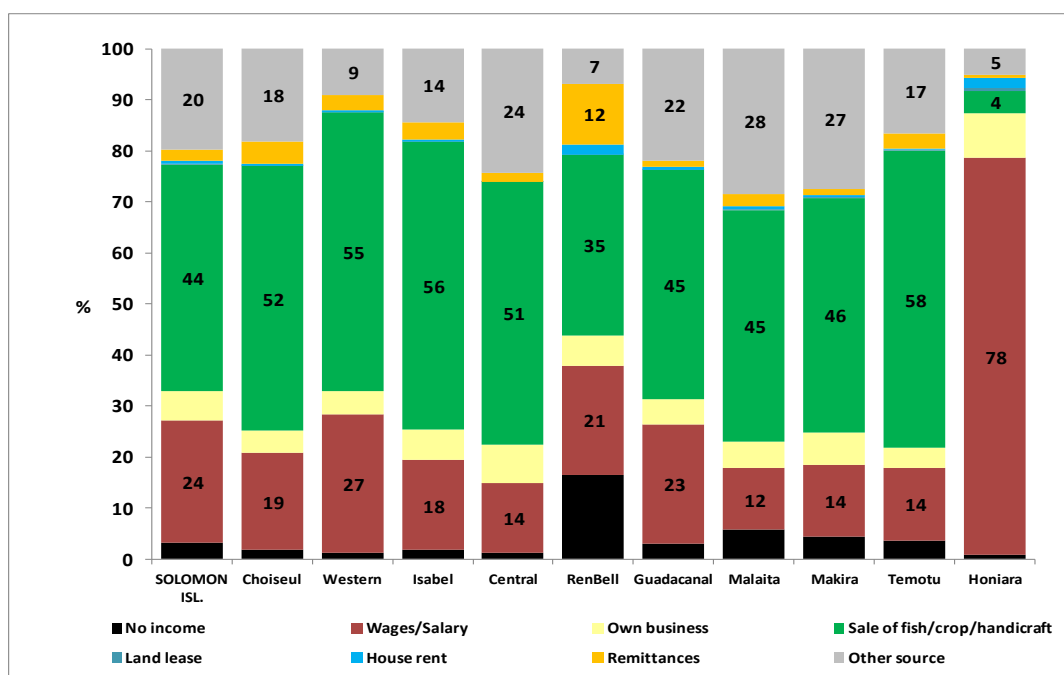
Another important source of income was remittances, especially in Rennell-Bellona where it comprised the main source of income for 12% of all households.

'Other' sources of income include the sale of other market produce such as household non-food items like flowers, motu leaves or housing thatching materials, and the sale of livestock such as pigs or chicken.

5.3.2.2 Remittances

The census included one question addressing the issue of remittances and asked: "*How much money (in SI$) has this household received from remittances in the last 12 months?*", followed by "*What is the province/country of the sender?*".

About one quarter of all households in the Solomon Islands received remittances during the 12 months before the census. Twelve percent of all households received less than SI$500, 4% received between SI$500 and SI$999, and 2% received between SI$1,000 - 1,499 and another 2% received more than SI$ 1,500(Fig.92).

The proportion of households receiving remittances was particularly high in Rennell-Bellona where more than half of all households received remittances, and 13% received more than SI$1,500 during the year before the census.

There was a relatively low proportion of households receiving remittances in Central and Temotu (16%), Guadalcanal (19%), and Honiara (20%).

Data by location of sender of remittances shows that for most provinces, Honiara was an important source of remittances (Fig.93), and an especially large proportion of households in Central and Rennell-Bellona received remittances from Honiara.

In general however, it needs mentioning that a sizeable proportion of remittances were received from senders within the same province of a household's residence. This is especially the case for Makira-Ulawa where 48% of all remittances are received from within the same province, Choiseul (43%), and Guadalcanal (40%).

Overall there were 1,254 households that received remittances from overseas, with residents in Australia being the main sender for 519 households in the Solomon Islands. Other important countries for sending remittances were New Zealand, Fiji and PNG (Table 35).

With 39% of all households that received remittances, Honiara was the province with the largest proportion of remittances received from overseas, followed by Western (10%), and Guadalcanal (9%).

Senders of remittances in Australia were of particular importance for households in Rennell-Bellona (55%) followed by Choiseul (52%) and Western (45%) and Guadalcanal (45%) (Fig.94).

Figure 92: Proportion of households by remittances received (%), Solomon Islands: 2009
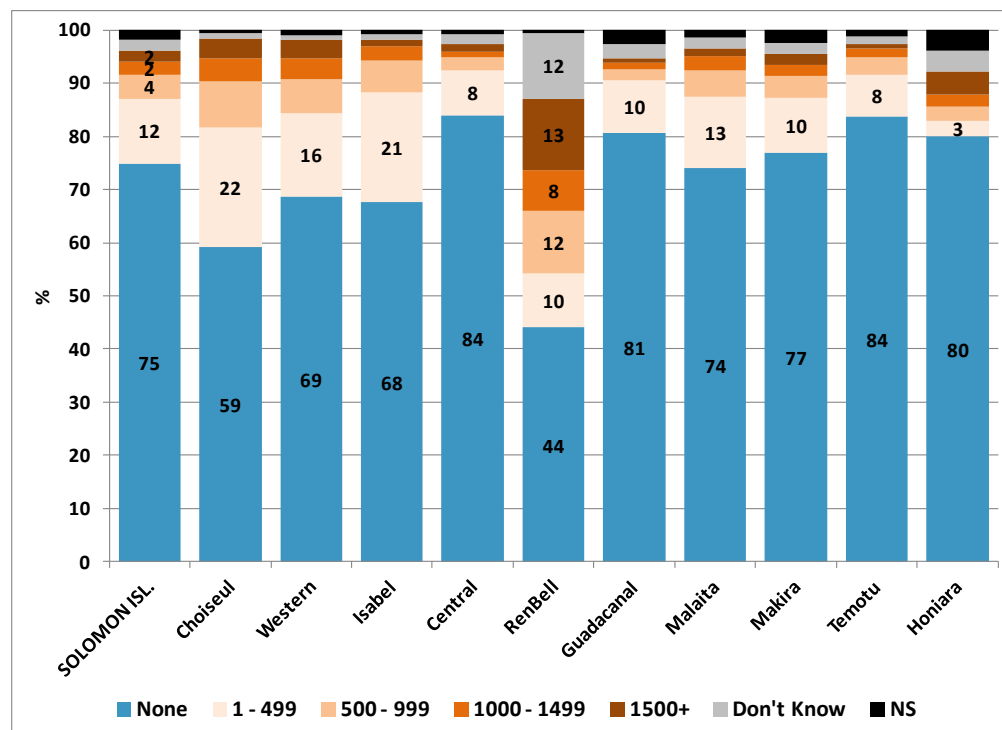
Senders from New Zealand and Fiji were relatively important for Temotu and Isabel.

PNG senders were relatively high represented among households in Rennell-Bellona (15%), Temotu (13%), Central 12%), and Honiara (11%).

Interestingly a significant proportion of 'other' countries in Makira-Ulawa included Canada.

Table 35: Number of households receiving remittances from overseas by country of sender, Solomon Islands: 2009

Country	Number of households
Australia	519
New Zealand	141
Fiji	127
Papua New Guinea	119
United States of America	70
Other Country	43
United Kingdom	41
Other Europe	62
Vanuatu	32
Other Asia	29
Other Pacific	23
Japan	18
Canada	17
Hong Kong	13
Total	**1,254**

Figure 93: Proportion of households receiving remittances by province and by location of sender of remittances (%), Solomon Islands: 2009
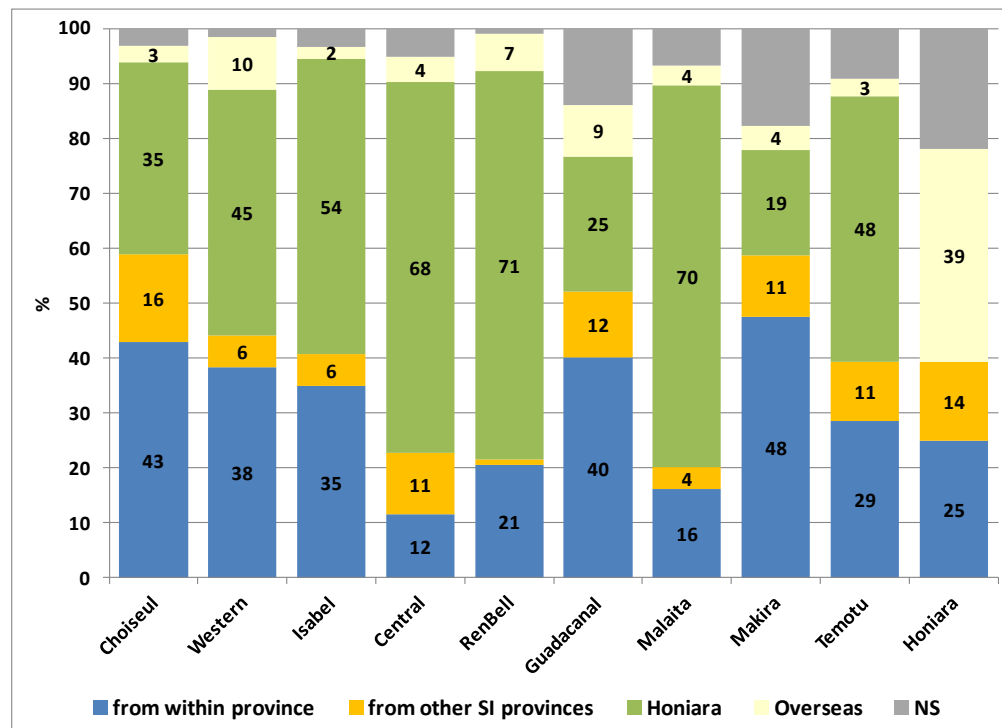
Figure 94: Proportion of households receiving remittances from overseas by province and by country of sender (%), Solomon Islands: 2009
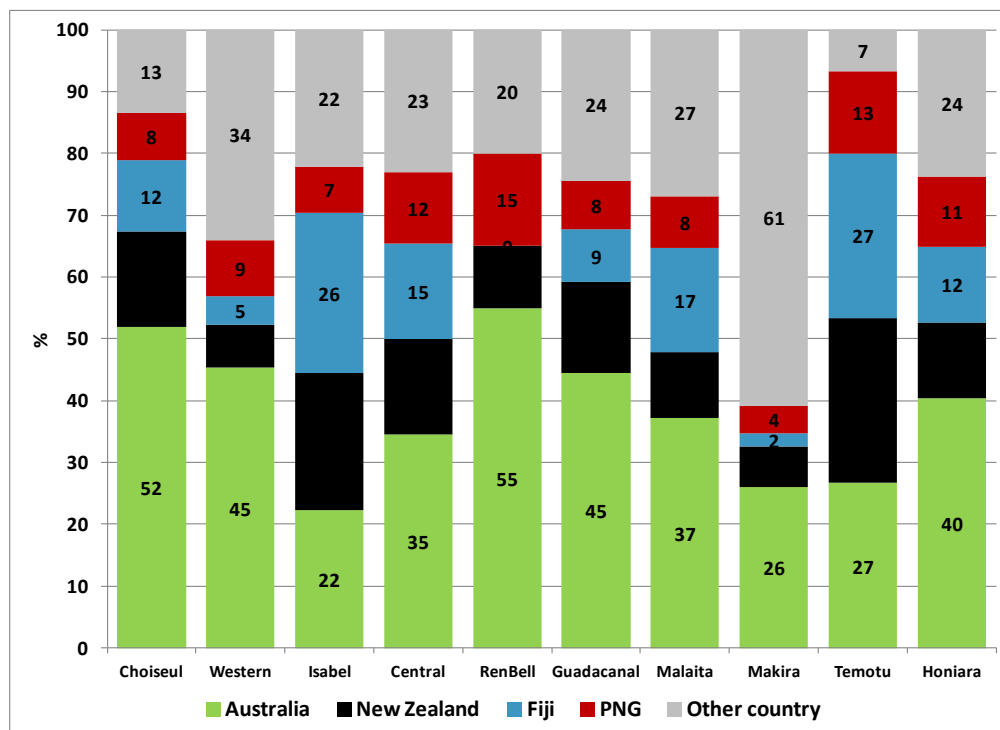
5.4. Agricultural cash crop, livestock and fisheries activities

The 2009 census included several questions on whether households were engaged in agricultural and fisheries activities such as:

- Whether a household is involved in growing food, and whether it is for sale or subsistence;
- Which cash crops are grown, such as vegetables/food crops, coco/copra, betel nut, cocoa, tobacco, timber, flowers, or others;
- Whether a household raises live stock such as cows, pigs, goats, horses, or poultry;
- Whether a household is involved in fishing, and whether it is for sale or subsistence;
- The type of fish a household buys, catches and consumes, and the frequency it does so.

5.4.1 Agricultural activities

In 2009, only 11% of households were not involved in growing any crops (Fig.95). As can be expected, this proportion is much higher in the urban (43%) than the rural areas (4%). Most households that grew crops did so for the purpose of own consumption (subsistence) as well as sale, with the exception of households in Rennell-Bellona, Makira-Ulawa and Honiara where most households grew crops mainly for own consumption. Only 1% of households grew crops for the sole purpose of selling it.

From those households that were involved in growing crops, most grew vegetables and food crops (71%), followed by betel nut (44%), coconut/copra (32%), cocoa (26%), flowers (14%), timber (10%), tobacco (9%), and other crops (7%) (Table 36 and Figs.96-103)

Figure 95: Proportion of private households by place of residence and whether involved in growing crops (%), Solomon Islands: 2009
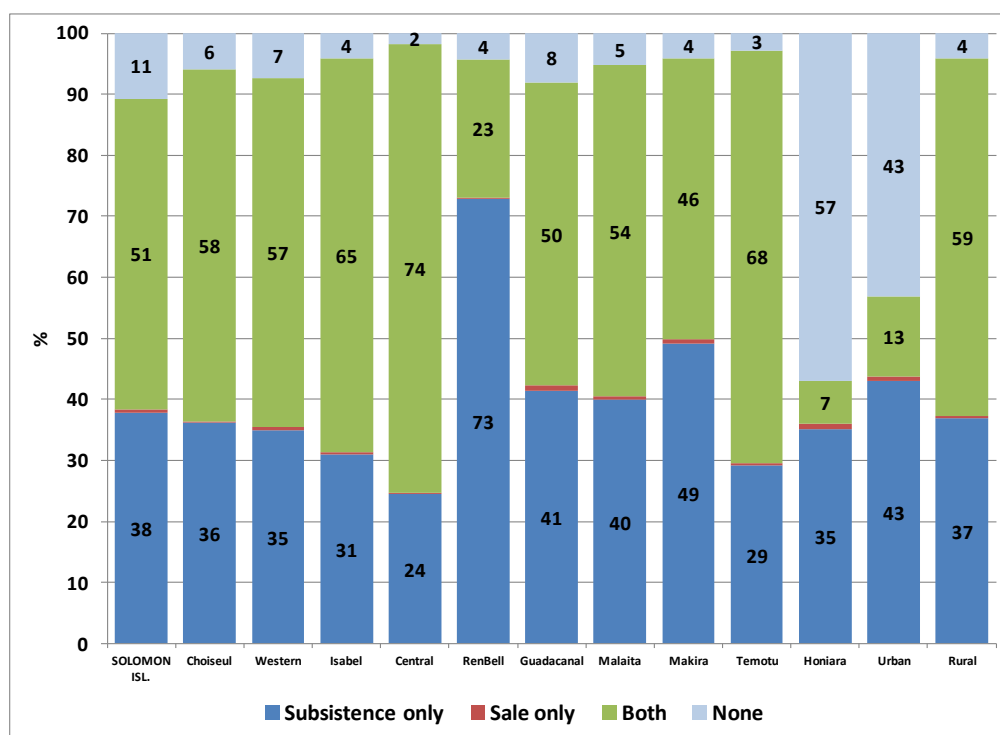
The highest proportion of households growing vegetables/food crops was in Temotu, coconut/copra in Choiseul, betel nut in Isabel, cacao in Makira-Ulawa, tobacco and timber in Temotu, and flowers in the Western province. A sizeable proportion of households in Isabel and Temotu also grew other crops.

Table 36: Proportion of private households by place of residence and agricultural activity (%), Solomon Islands: 2009

Place of residence	Veggies/ Food crops	Coconut/ Copra	Betel Nut	Cocoa	Tobacco	Timber	Flowers	Other
SOLOMON ISL.	**71**	**32**	**44**	**26**	**9**	**10**	**14**	**7**
Choiseul	82	51	60	9	3	20	12	2
Western	82	33	42	14	5	21	30	9
Isabel	81	30	77	5	17	14	17	35
Central	86	46	67	15	9	4	5	5
RenBell	81	18	1	-	0	2	22	5
Guadacanal	70	26	44	37	6	3	8	5
Malaita	72	34	38	42	10	9	14	5
Makira	67	44	56	49	15	8	5	2
Temotu	88	42	67	12	33	30	12	27
Honiara	26	3	1	0	0	0	13	2

Figure 96: Proportion of private households by place of residence and growing vegetables/food crops (%), Solomon Islands: 2009
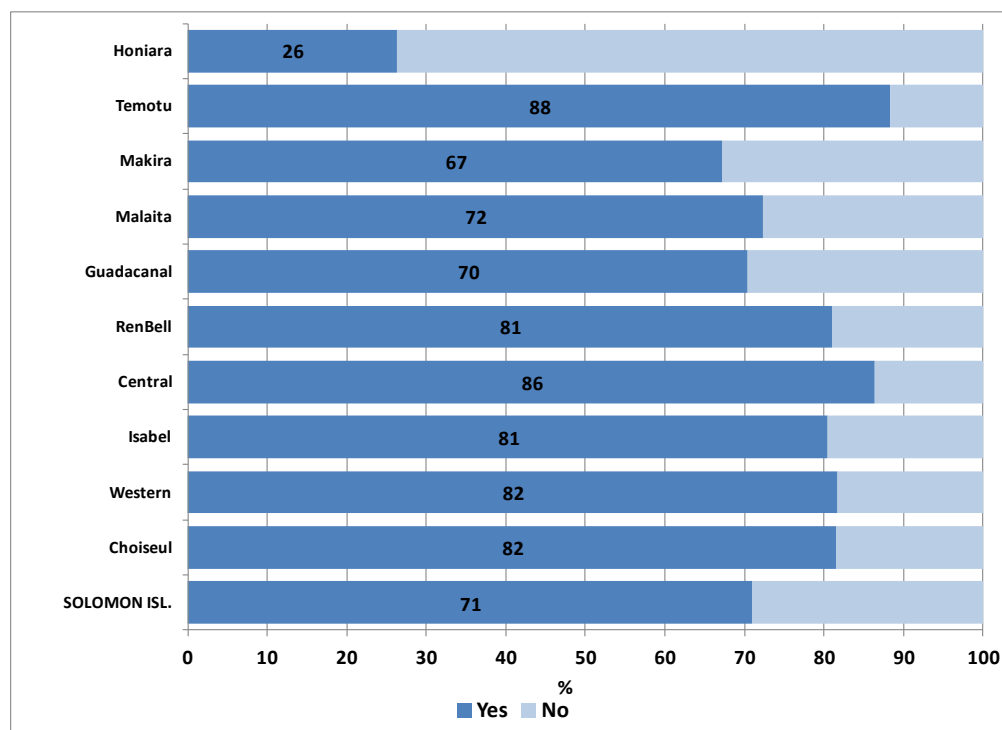
Figure 97: Proportion of private households by place of residence and growing coconut/copra (%), Solomon Islands: 2009
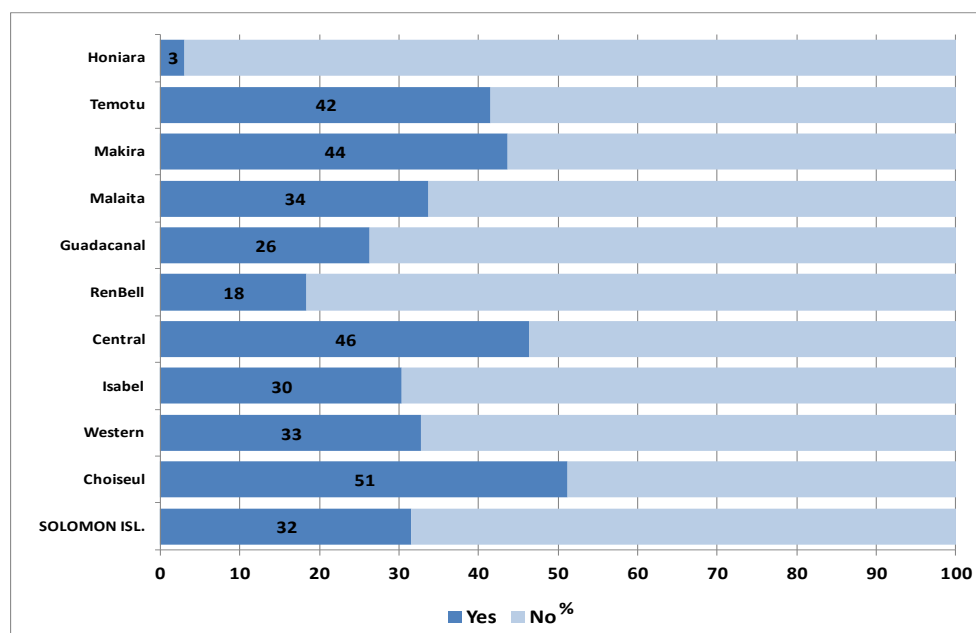
Figure 98: Proportion of private households by place of residence and growing betel nut (%), Solomon Islands: 2009
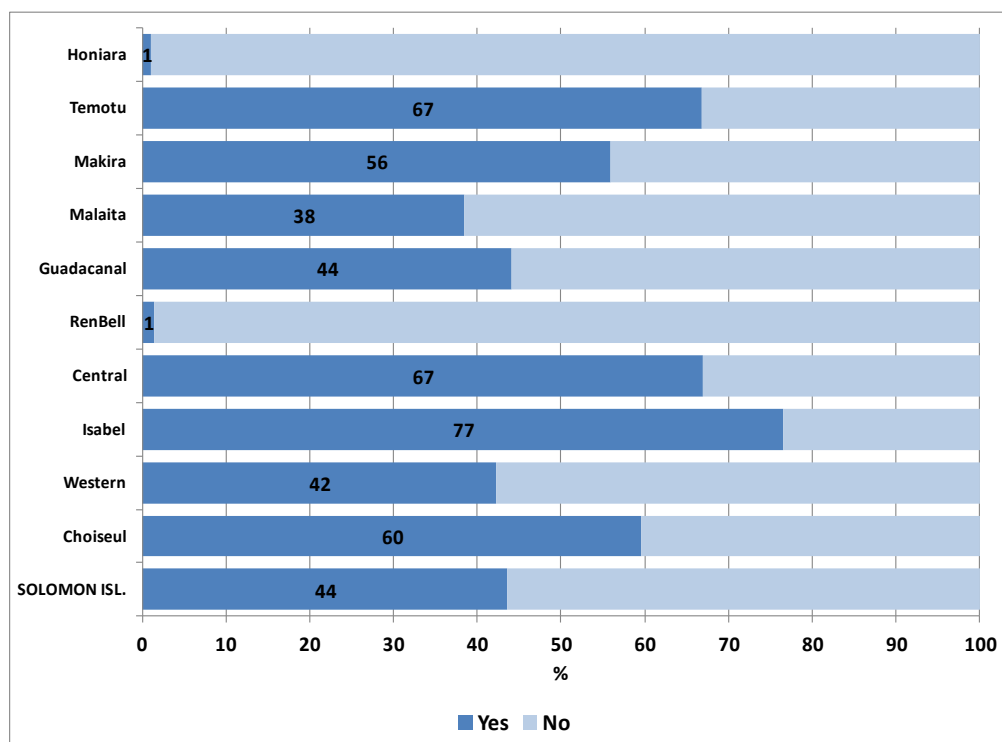
Figure 99: Proportion of private households by place of residence and growing cocoa (%), Solomon Islands: 2009
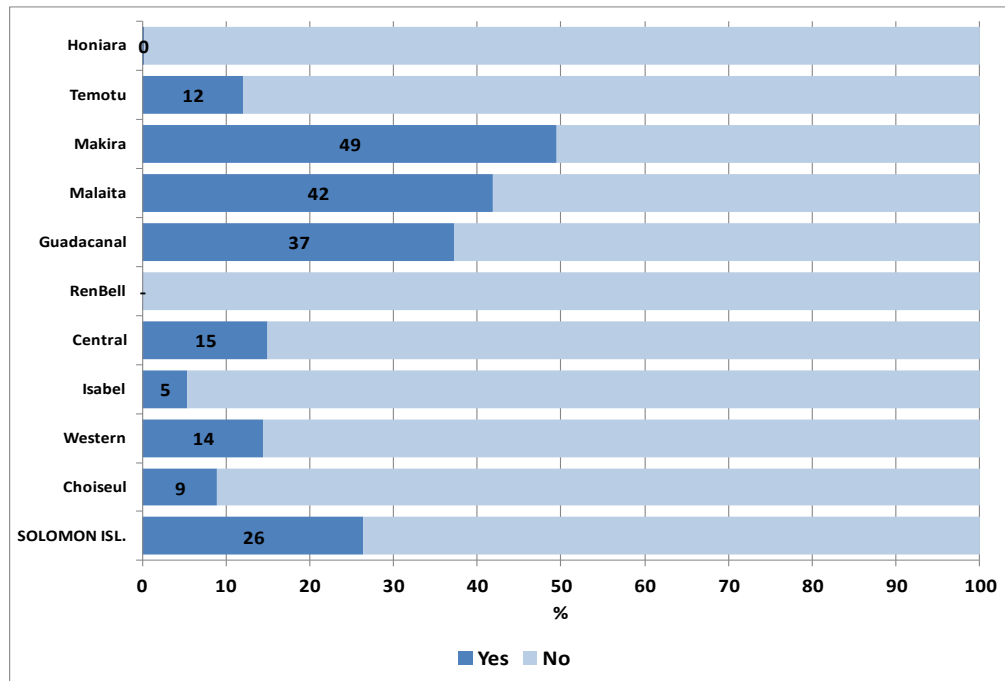
Figure 100: Proportion of private households by place of residence and growing tobacco (%), Solomon Islands: 2009
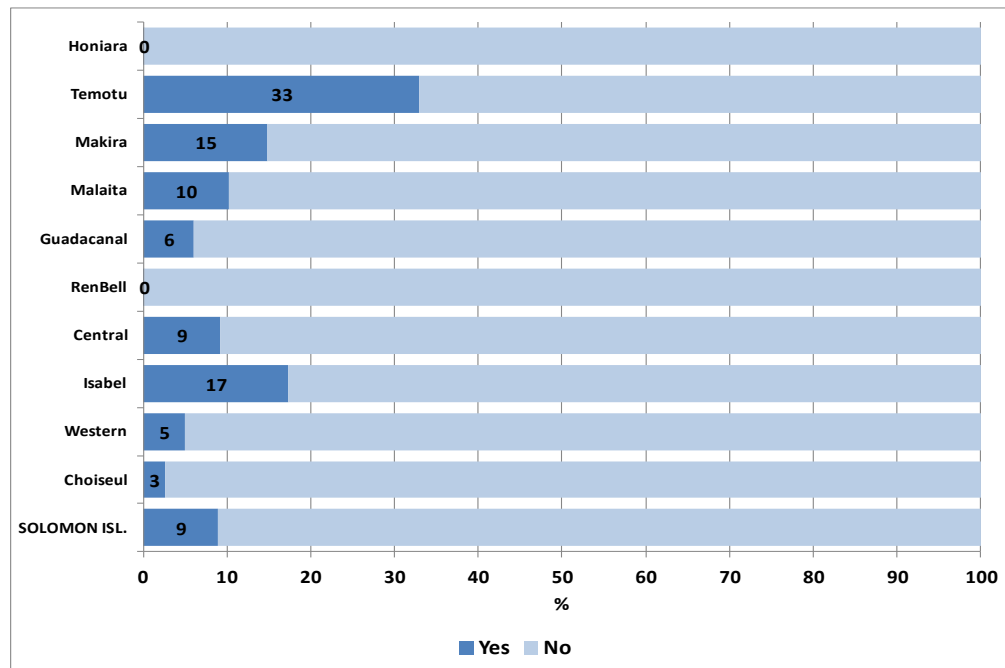
Figure 101: Proportion of private households by place of residence and growing timber (%), Solomon Islands: 2009
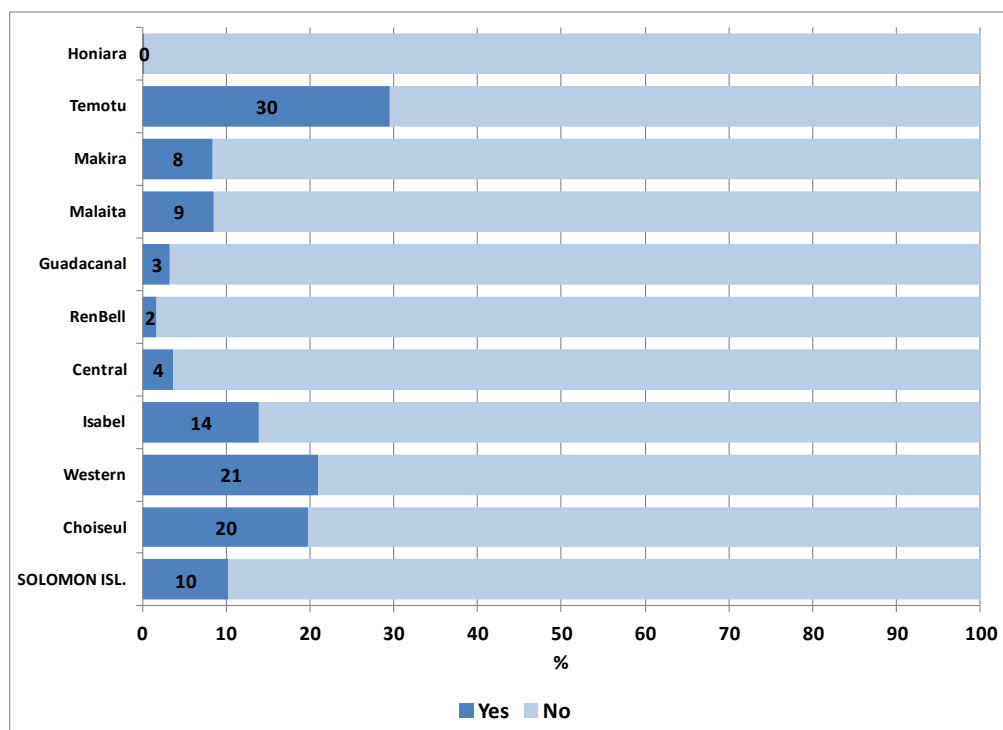
Figure 102: Proportion of private households by place of residence and growing flowers (%), Solomon Islands: 2009
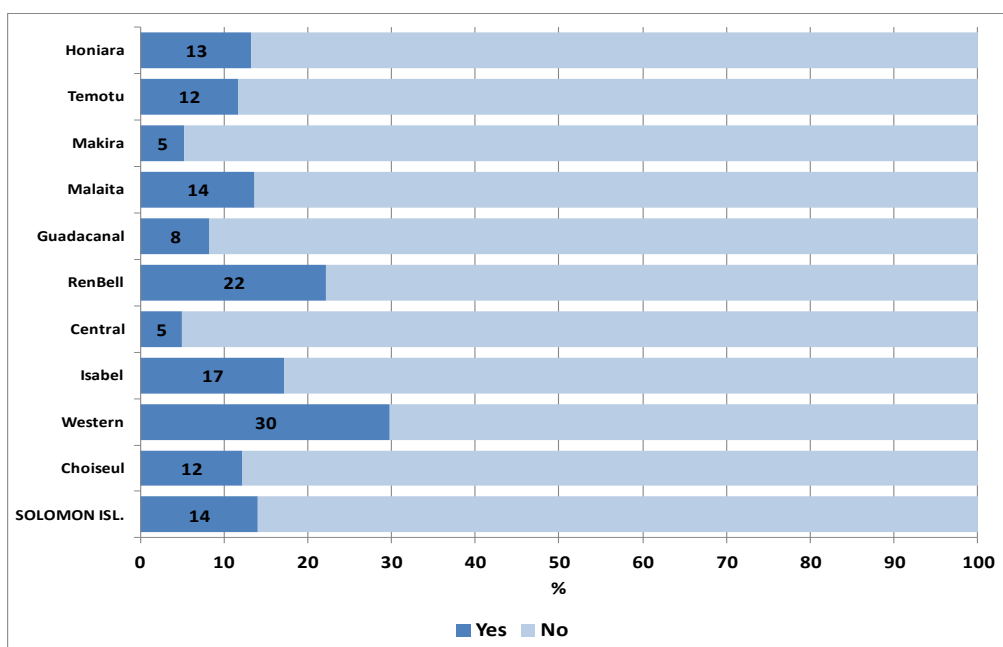
Figure 103: Proportion of private households by place of residence and growing other crops (%), Solomon Islands: 2009
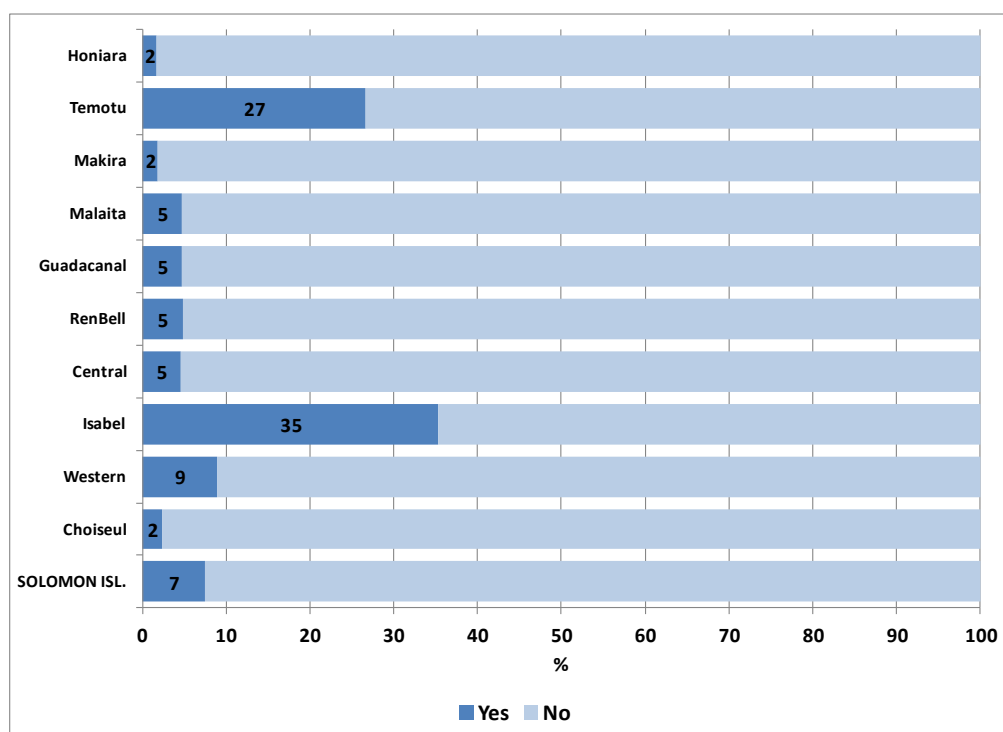
5.4.2 Livestock

The following section provides an overview on the number of livestock counted (Table 37), and the proportion of households that raise or own livestock (Figs.104-106). The respective question asked in the census was "Does this household have any livestock?", and answer boxes were provided for the number of cows, pigs, goats, horses, and poultry.

In terms of numbers, throughout the country, 30 thousand cows were counted, 121 thousand pigs, 20 thousand goats, 2,4 thousand horses, and about 350 thousand poultry. Most live stock of any kind was counted in Malaita. There were a relatively large number of cows in Honiara and Central, pigs were plentiful in Guadalcanal, and Makira-Ulawa, and there were a sizeable number of goats in Guadalcanal. Apart from Malaita, there were a relatively large number of horses in Honiara. With the exception of Honiara and Rennell-Bellona, poultry was plentiful in all other provinces.

Table 37: Total number of livestock, Solomon Islands: 2009

Place of residence	Number of livestock				
	Cows	Pigs	Goats	Horses	Poultry
SOLOMON ISL.	**30,363**	**120,971**	**20,222**	**2,441**	**349,991**
Choiseul	844	3,701	90	60	30,831
Western	1,751	5,257	985	161	58,534
Isabel	53	4,089	2,409	126	26,875
Central	3,102	6,322	1,104	343	17,647
RenBell	-	56	-	-	2,708
Guadacanal	2,235	23,383	4,110	21	65,645
Malaita	11,002	51,454	8,137	945	86,409
Makira	2,383	11,351	311	142	22,789
Temotu	2,924	9,356	1,098	80	22,491
Honiara	6,069	6,002	1,978	563	16,062

In terms of household's involvement in raising live stock, most households (54%) raised at least one kind of live stock (Fig.104). The proportion of households raising live stock was especially high in Temotu (83%) and Isabel (72%). Not surprisingly the proportion of households in Honiara raising live stock was with only 8% much lower than elsewhere in the country.

There was a particularly high proportion of households raising pigs in Temotu (70%), Malaita (55%), and Makira-Ulawa (51%)

Furthermore, there was a high proportion of households raising poultry in Isabel (61%), Temotu (59%), Choiseul (56%), and Rennell-Bellona (54%).

Only a small percentage of households in the provinces raised cows, goats and horses. For this reason, only a graphs for pigs and poultry are presented.(Figure 105 and 106).

Figure 104: Proportion of private households by place of residence and whether raising any livestock (%), Solomon Islands: 2009
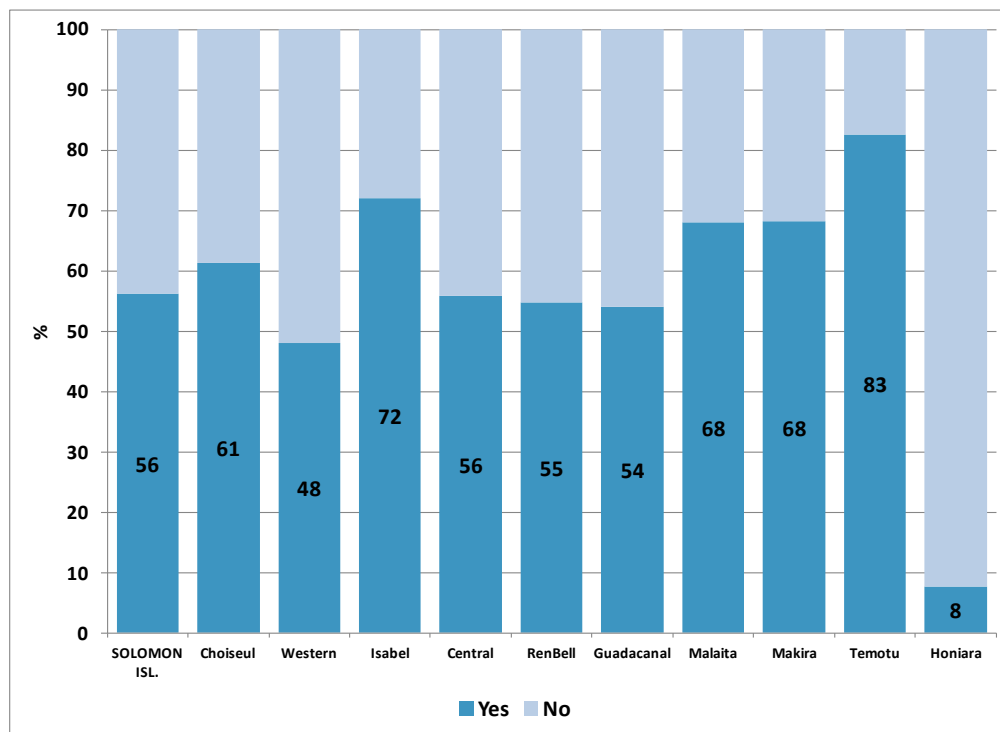
Figure 105: Proportion of private households by place of residence raising pigs (%), Solomon Islands: 2009
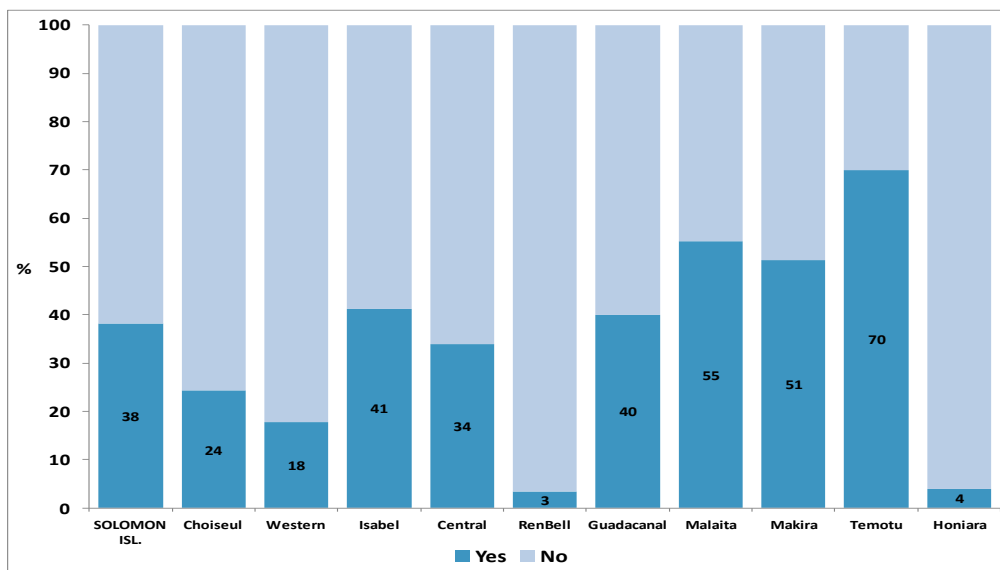
Figure 106: Proportion of private households by place of residence raising poultry (%), Solomon Islands: 2009
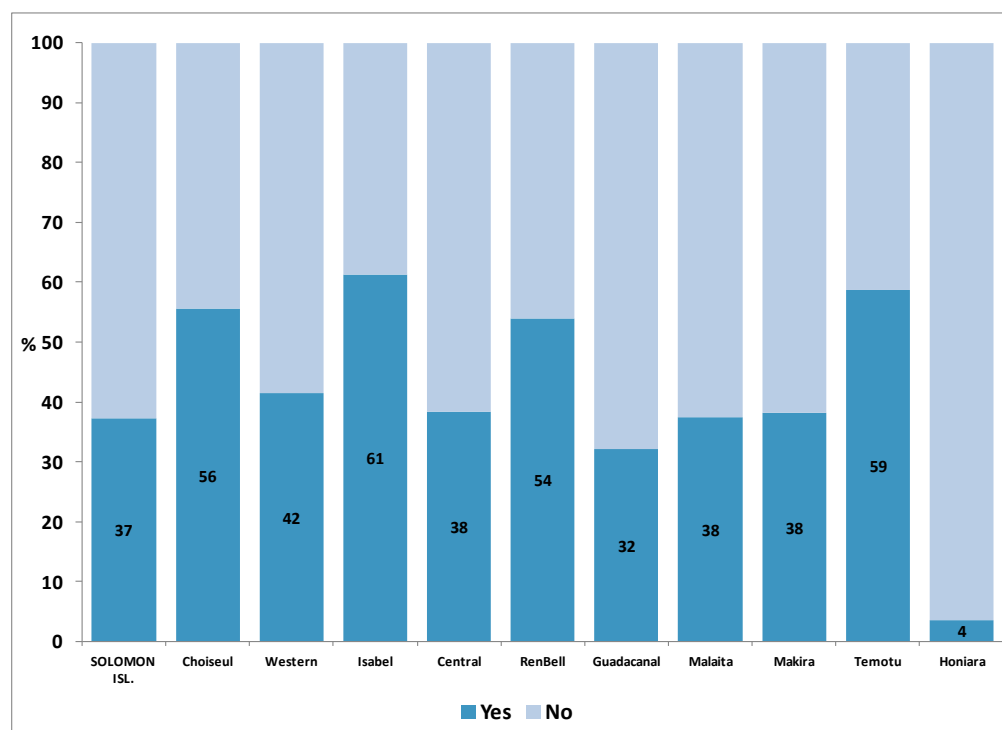
5.4.3 Fishing activities

The following section provides a summary on the number/proportion of households involved in fishing activities, and whether it was mainly for own consumption (subsistence), for sale, or both. The census question did not distinguish between fresh water and marine fishing activities (Fig.107).

The data show that 60% of all households in the Solomon Islands were engaged in fishing activities; 29% did this for own consumption only (subsistence), and 31% fished for personal consumption and the sale of their catch. Less than 1% of households (368) fished for the sole purpose of selling their catch.

While only 8% of households in Honiara were involved in fishing activities, it was highest in Temotu where 85% of all households did fishing, 83% in Western, and 81% in Isabel.

There were 113 households in Malaita that fished exclusively for commercial purposes.

With respect to the frequency of catching fish, most households that fish, did so once a week, and one in five households fished more than once a week. The highest proportion of households that fished more than once a month was in Choiseul (29%), Western (28%), and Temotu (27%) (Fig.108).

Almost half of all households (47%) in the Solomon Islands bought fish at least once a week (Fig.109). Another 24% bought fish once a month.

The highest proportion of households buying fish was in Honiara with 92% of all households buying fish at least once a month which is probably related to the fact that only a small proportion of households in Honiara catch fish themselves.

5.4.3.1 Fish consumption

Please note that it is not possible to extract the number or volume of fish or shellfish consumed from the 2009 census data. Rather it is the number and proportion of households involved with fish consumption, and the type of fish that is consumed (bought or caught) that is collected

The majority of households that consumed fish, caught or bought reef fish (73%), another 41% consumed tuna, 11% shellfish, 9% freshwater fish, and 4% bought or caught other types of fish or shellfish (Fig.110).

Compared to the national average, there was a higher proportion of households consuming **tuna** in Honiara (56%), Temotu (56%), Guadalcanal (53%), Malaita (47%), and Makira-Ulawa (45%).

Reef fish was most popular in Temotu (92%) and Choiseul (91%).

There were a noticeable proportion of households that consumed **freshwater fish** in Guadalcanal (29%) and Rennell-Bellona (25%).

With 43% a relatively large proportion of households in Temotu consumed **shellfish**.

Figure 107: Proportion of private households by place of residence and marine fishing activities (%), Solomon Islands: 2009
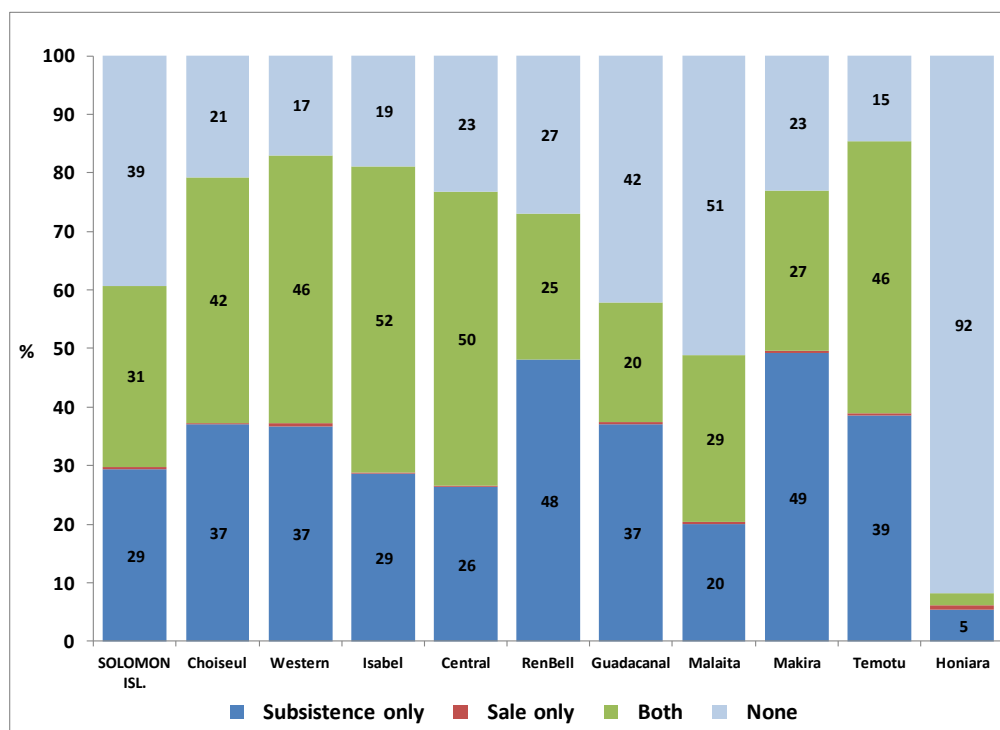
Figure 108: Proportion of private households by place of residence and frequency of catching fish (%), Solomon Islands: 2009
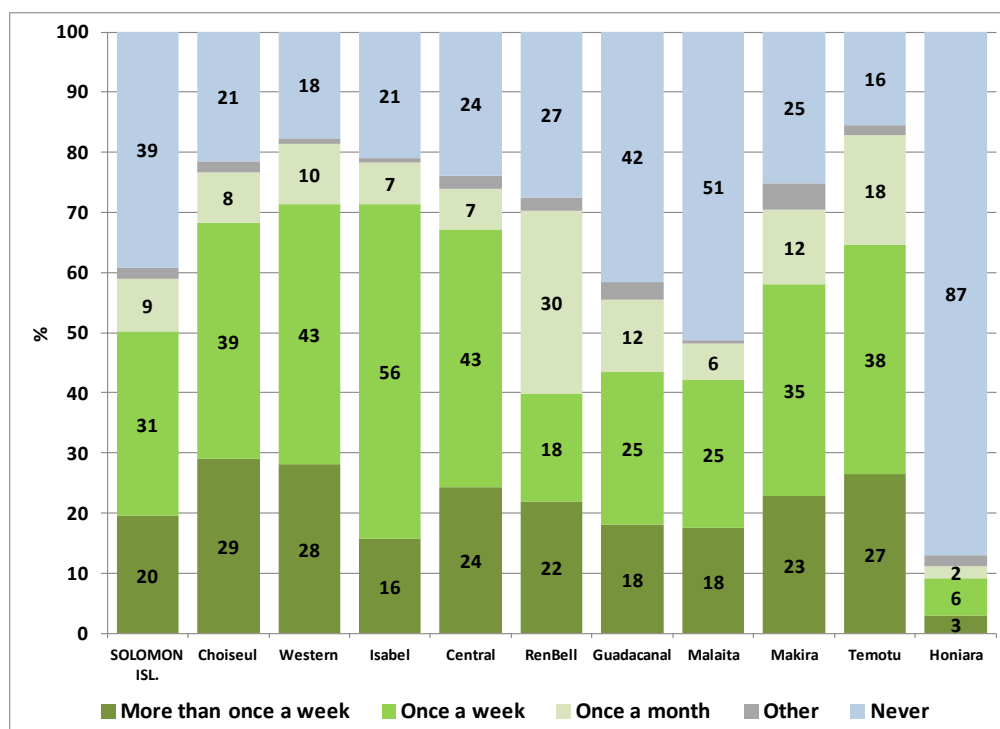
Figure 109: Proportion of private households by place of residence and frequency of buying fish (%), Solomon Islands: 2009
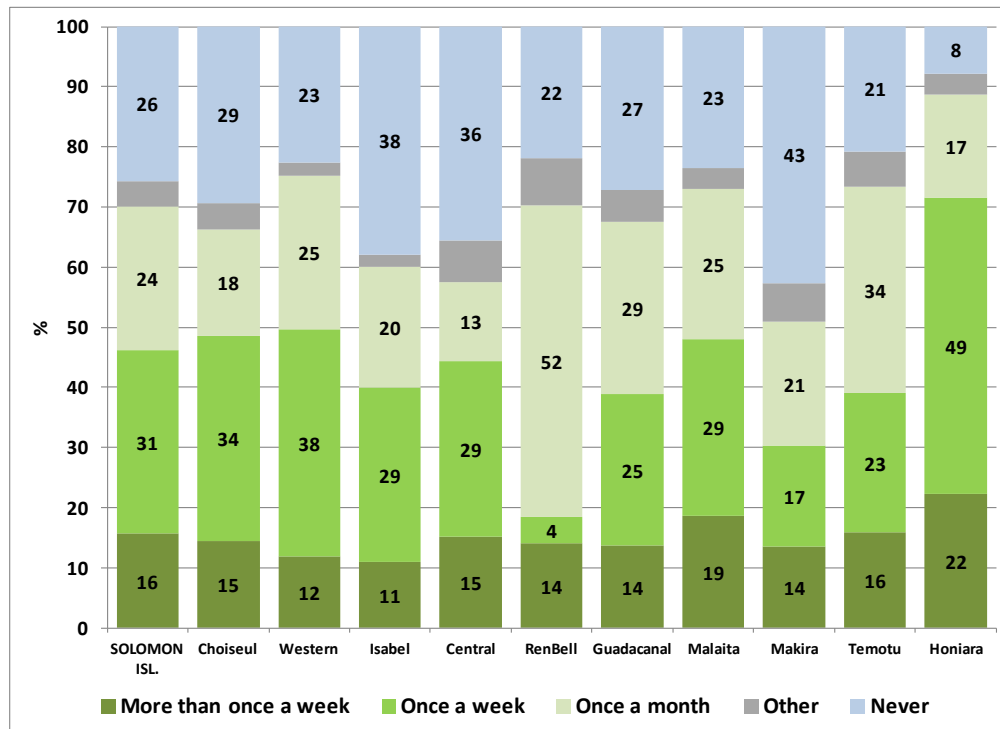
Figure 110: Proportion of the type of fish or shellfish consumed (bought or caught) by private households and place of residence (%), Solomon Islands: 2009
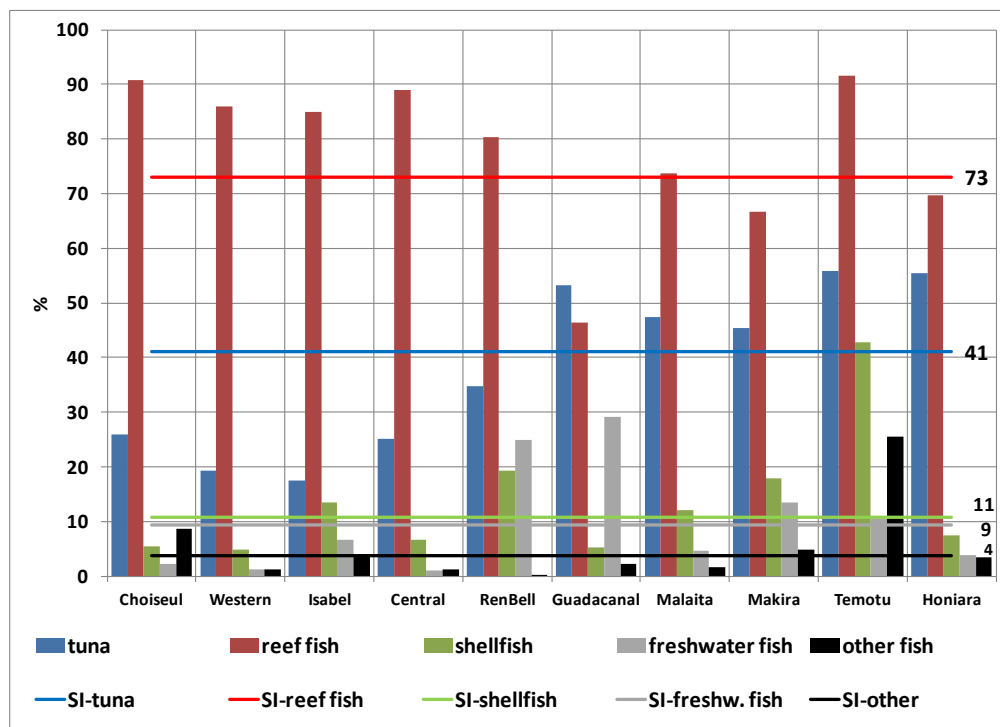
5.5 Housing

5.5.1 Introduction

As early as the 1970s, the national government's housing policy was to enable every Solomon Islands family to live in an affordable and adequate house, with reasonable comfort, health and safety. One of the government's aims was to ensure that private housing in the rural areas is of reasonable standard and comfort, and to rely to an important extent on local resources and skills to do so. According to the Sixth Development Plan, "Employers are required by the Labour Ordinance to provide 'proper and adequate' housing for employees who cannot return to their homes at the conclusion of their daily work" (British Solomon Islands Protectorate 1971). In the 1970s the government itself, too, was obliged by law to provide reasonable housing for its employees.

While it fulfils a variety of social roles, housing primarily provides shelter and security for the family and individuals, and provides a relative measure of social status and an expression of lifestyle choices and comfort. As an important social institution, housing provides owners with a sense of worth and belonging in any community, whether rural or urban.

The challenge for the country and any government of the day is to provide sustainable livelihoods, safe and secure living environments and a better quality of life for the poor and other vulnerable groups, while maintaining a reasonable standard of the existing housing stock. This is becoming more urgent in the urban areas because the national government has not put into place a social safety net to formally take care of the needs of the poor and vulnerable.

The Universal Declaration of Human Rights adopted in 1948 recognised the right to shelter as a component of the right to an adequate standard of living (UNCHS 1997). While recognising the importance placed on the above declaration, this chapter will not, however, discuss in detail the issue and meaning of 'adequate shelter' in the context of the Solomon Islands. Nor will it go into housing costs and the availability of credit facilities, and house rents and the affordability of these rent levels in the urban areas.

The housing stock is an important part of the country's economy and a major form of investment, and it provides employment and livelihood for a variety of other trades. "In most regions, housing has the potential of becoming an economic engine of growth because of its high yield on invested resources, a high multiplier effect, and a host of beneficial forward and backward linkages in the economy. However, while the economic

benefits of housing have been widely recognised, housing is rarely used as an element of poverty alleviation" (UNCHS 2000b).

Where population growth is more pronounced, there is more pressure on the available resources such as water and sanitation, land, and services. This competition for and access to the limited resources for house construction and services is more often a problem in urban than in rural areas.

According to the 2009 census, most private households,(83%), live in the rural areas. Thus, the rural sector has by far the largest population and, with 413,840 people, constitutes the major part of the Solomon Islands society and economy. For many years now, this rural sector has been providing and acting as a social safety net for many families, especially the vulnerable families who may well have been on the streets without shelter and food otherwise. This safety net mechanism is made possible by the nature of the local traditional land tenure system, which entitles every person born to an indigenous Solomon Islander to land inheritance through either the mother or the father. If the government were to recognise and support the coping mechanisms that have evolved in the rural environments and among the population over time, it would minimise the risks of economic shocks, the vulnerability of the poor with respect to land tenure, and homelessness.

5.5.2 Housing and land tenure

Shelter is very significant in the Solomon Islands culture. The great majority of households (74%) reside in owner-occupied dwellings, although there is a large difference between urban and rural areas in this respect: as many as (80%) of the dwellings in the rural sector are owner-occupied, compared with only (43%) of dwellings in the urban areas (Fig.111). In contrast to the urban areas, the rural sector provides security of land tenure. One of the reasons why the vast majority of household in the rural sector are owner-occupiers is that most rural land is customary. Most, if not all, of the villages in the rural areas of the country are located on communal lands owned by tribes and almost every rural householder lives on tribal or kinship land.

In contrast, urban land is under the jurisdiction of the Ministry of Lands. In order to build a house in the urban areas, Town and Country Planning Board regulations have to be met, while land is always registered. This might imply that access to urban land by ordinary and low-income families to build owner-occupied houses is limited. Furthermore, many urban residents are in formal employment and receive either rent-free housing provided by their employer, or have employers who pay their rent costs. These factors, as well as the fact that many residents stay in town only temporarily, partly explain why almost

one-third of urban households rent their homes, and a further fifth live in rent-free dwellings either with 'wantoks' or relatives, or in dwellings owned or rented by their employers.

The proportion of households renting from a private landlord was with 22% of all households highest in Honiara, and relatively insignificant in all other provinces.

The majority of households in the Solomon Islands (75%) reside on land classified as "freehold" (Fig.112), 9% lived on land leased from Government, and 7% leased land from a private land owner or occupied it as part of a customary arrangement.

The land tenure structure is very different in urban Honiara, than the largely rural other provinces. The majority of private households in Honiara lease land from Government (58%). Here only 23% of households reside on land classified as 'freehold'.

Figure 111: Proportion of private households by place of residence and housing tenure (%), Solomon Islands: 2009
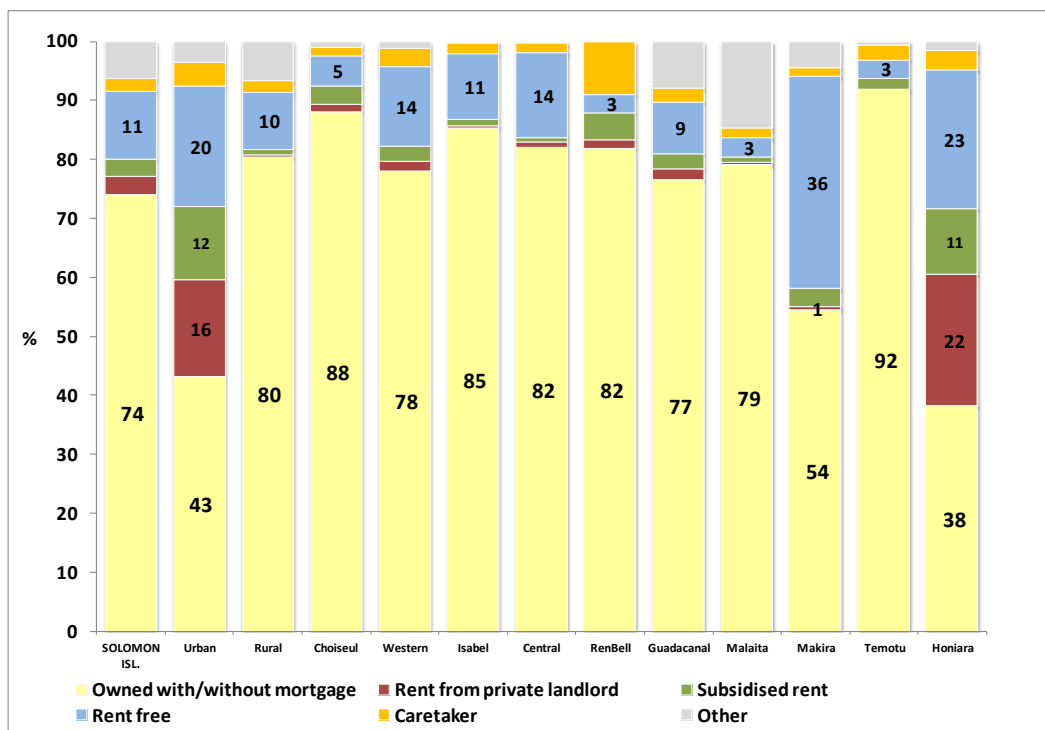
Figure 112: Proportion of private households by place of residence and land tenure (%), Solomon Islands: 2009
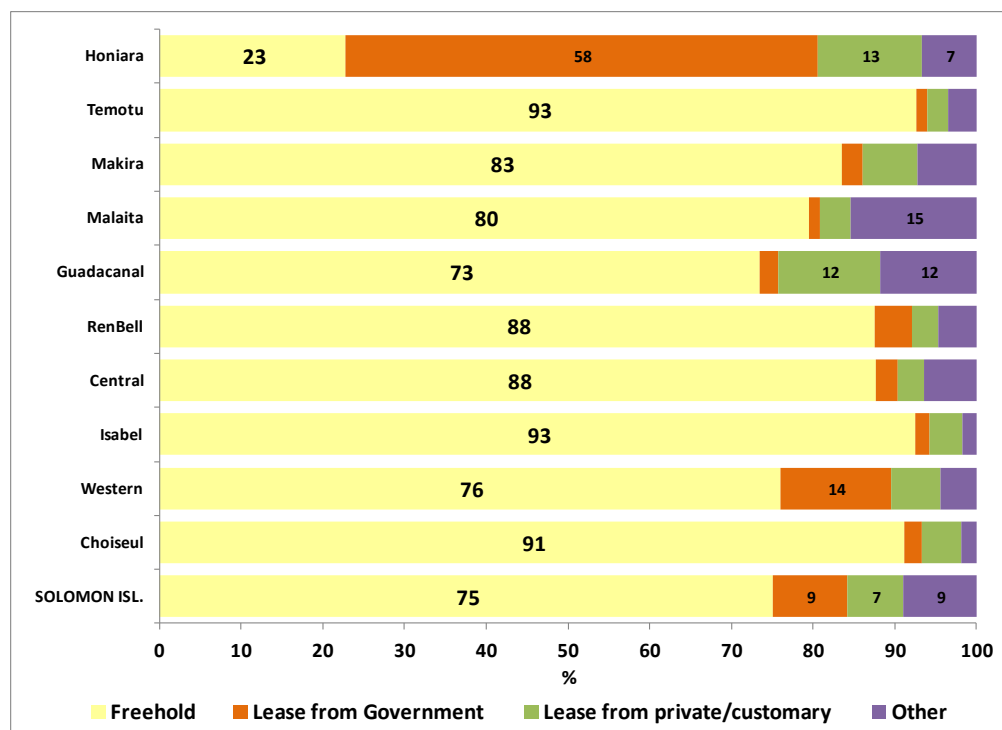
5.5.3 Type of living quarters

The 2009 census provides information on the type of building that each household lives in. Seven building categories were distinguished:

- one family house detached from any other house,
- one family house attached to one or more houses,
- building with 2 or more apartments,
- building with 2 or more households which share a kitchen/toilet,
- lodging house
- dwelling attached to a shop or other non-residential building,
- Other (any other type of building that cannot be classified as one of the above types (e.g., hotels, ships, hospitals, prisons, police barracks, et cetera).

The majority, 92% of the Solomon Islands households had living quarters of one family house detached from any other house, 4% of households were one family house attached to one or more houses, 2% of households had living quarters classified as buildings with

2 or more households which share a kitchen/toilet, and 1% of households were living in buildings with 2 or more apartments (Fig.113).

Figure 113: Proportion of private households by place of residence and living quarters (%), Solomon Islands: 2009
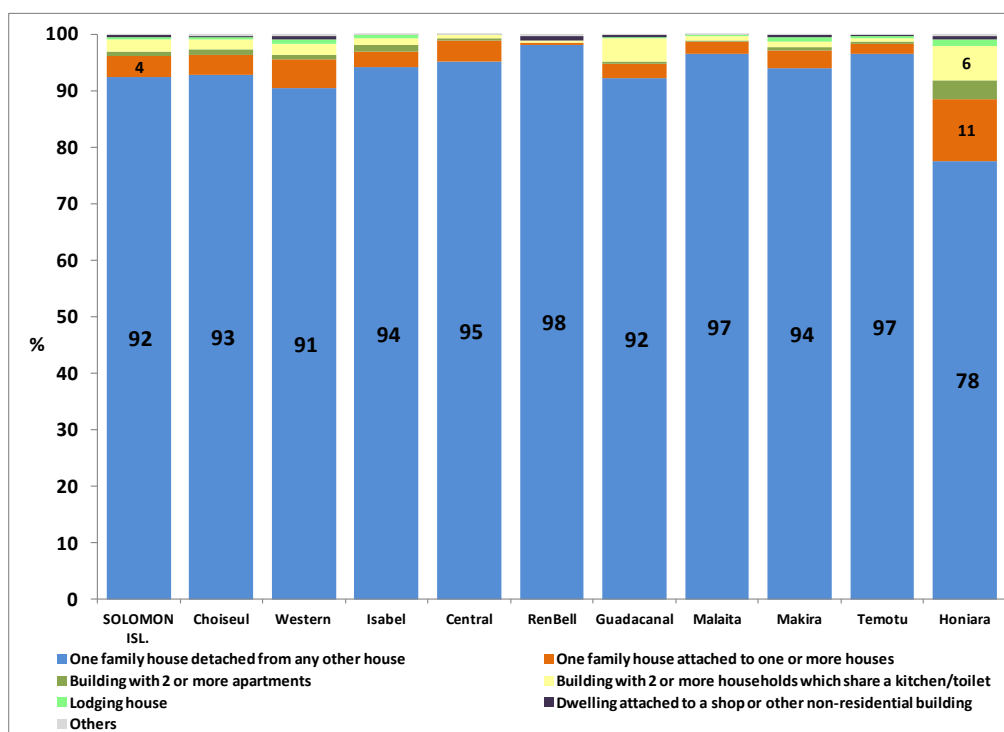
Living quarters of one family house attached to one or more houses was much higher in the urban areas of Honiara (11%) than in the other provinces. In addition, 6% of all private households in Honiara lived in buildings with 2 or more households which share a kitchen/toilet.

5.5.4 Number of rooms

The distribution of dwellings by number of rooms is displayed in Figure 114. It shows that the majority (64% each) of all dwellings in the Solomon Islands had 2 rooms or 3 rooms, and another 16% had 4 rooms; 13% had only 1 room. The average number of rooms was 2.8 rooms per dwelling (Table 38). The provinces with the highest number of rooms per dwelling on average were Western (3.1), Choiseul, Isabel, and Malaita with exactly 3 rooms on average. The provinces with the lowest number of rooms were Guadalcanal (2.2), and Temotu and Central with only 2.3 rooms on average.

Table 38: Average number of rooms per dwelling by place of residence, Solomon Islands: 2009

SOLOMON ISL.	URBAN	RURAL	Choiseul	Western	Isabel	Central	RenBell	Guadacanal	Malaita	Makira	Temotu	Honiara
2.8	2.9	2.8	3.0	3.1	3.0	2.3	2.8	2.2	3.0	2.8	2.3	2.9

Figure 114: Proportion of private households by place of residence and number of rooms (%), Solomon Islands: 2009
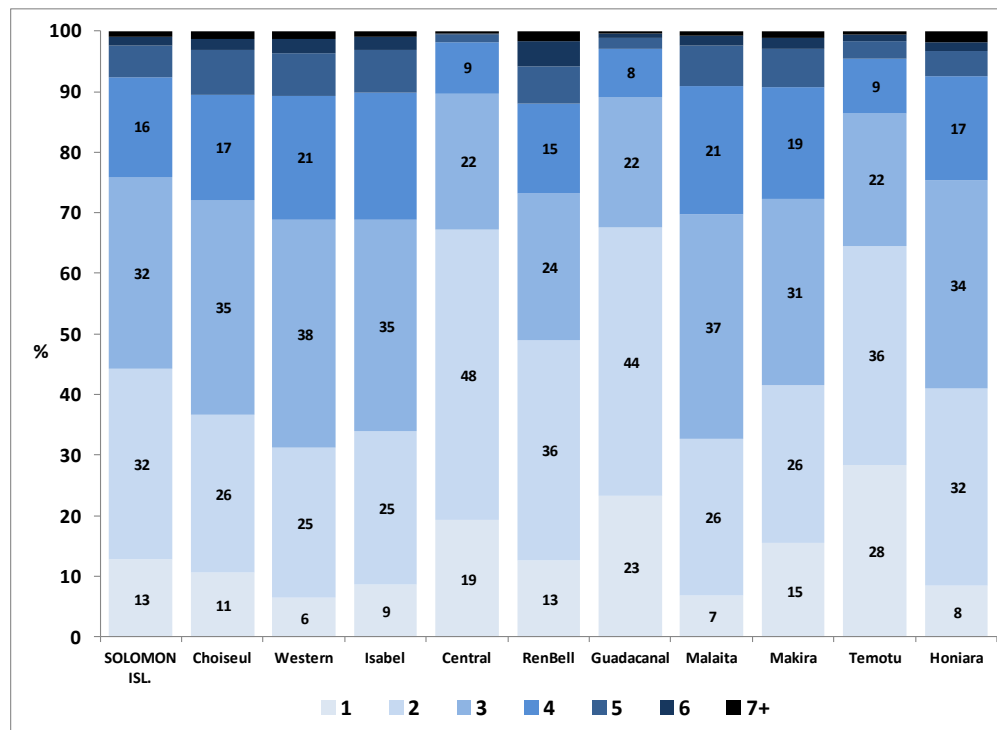
5.5.5 Construction material used for dwellings

Walls

Fifty four percent of the material used for the walls of private dwellings was traditional materials, followed by wood (38%), and 3% used the more durable concrete (3%) (Fig.115). While traditional materials for the walls were mainly used in Temotu (86%) and Makira-Ulawa, wood was the preferred material in Rennell-Bellona (79%), Honiara (67%) and Western (59%). A sizeable proportion of dwellings in Honiara used concrete for the walls (16%).

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Roofs

Roofing metal accounted for 36% of the material used for roofs (Fig.116) and 61% traditional materials. Roofing metal was most commonly used in Rennell-Bellona (95%), Honiara (78%), and Western (49%), while traditional materials were especially dominantly in Temotu (88%) and Makira-Ulawa (83%).

Floors

The three most used materials for the construction of floors in the Solomon Islands were wood (62%), traditional materials (29%), and concrete (6%). However, one in five dwellings in Honiara used concrete for their floors and one in six dwellings in Central as well (Fig 117).

Wooden floors were predominant in Rennell-Bellona (92%), Western (85%), and Honiara (76%).

Figure 115: Proportion of private households by place of residence and main type of material used for the walls of dwellings (%), Solomon Islands: 2009
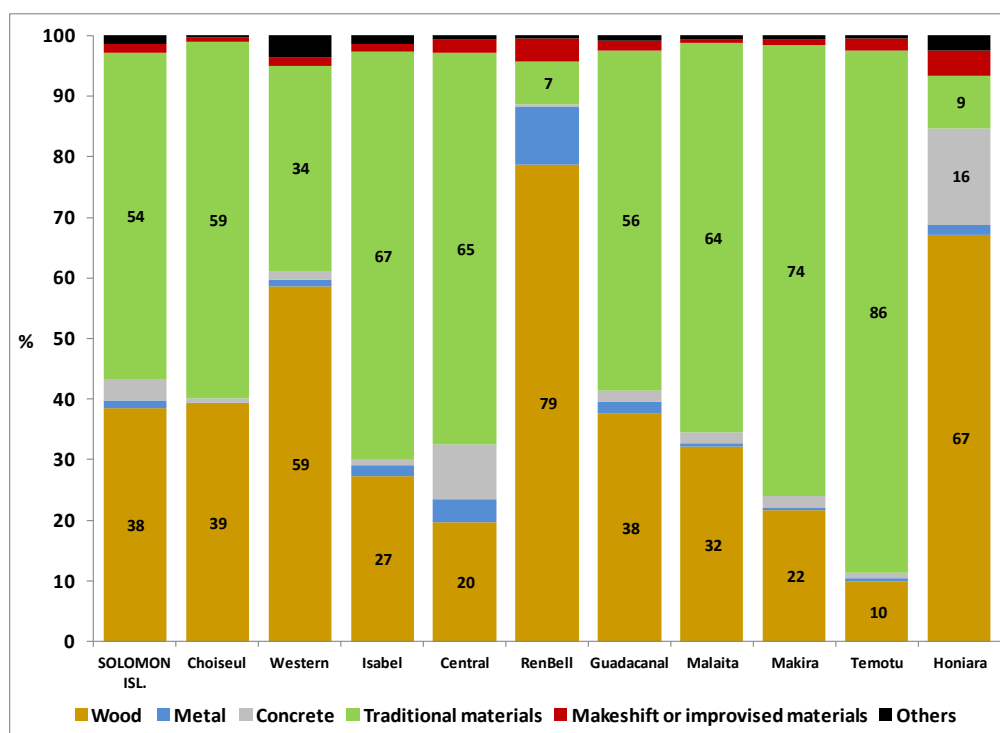
Figure 116: Proportion of private households by place of residence and main type of material used for the roofs of dwellings (%), Solomon Islands: 2009
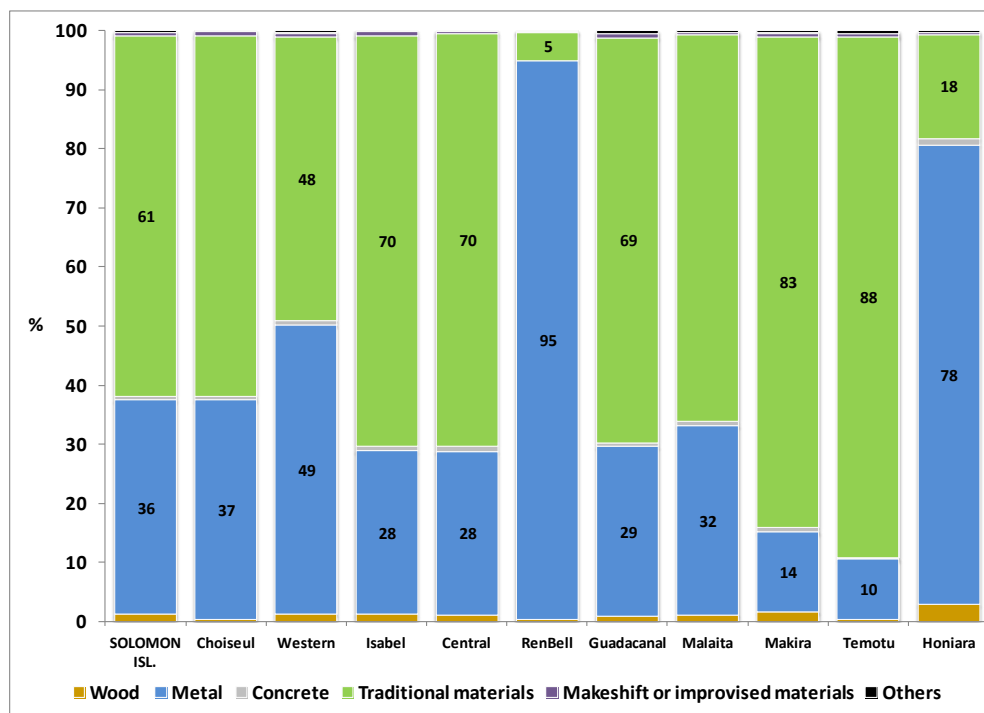
Figure 117: Proportion of private households by place of residence and main type of material used for the floors of dwelling (%), Solomon Islands: 2009
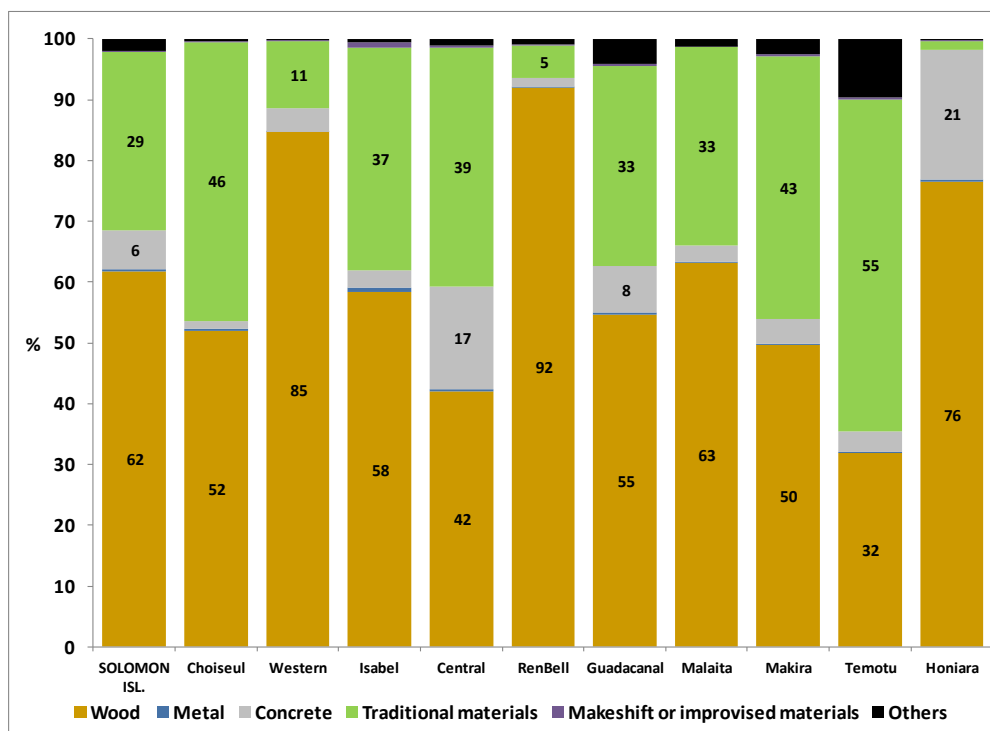
5.5.6 Water source for drinking and washing

5.5.6.1 Introduction

The general access of the population to water, sanitation, electricity and other basic amenities are an important measure of the country's development. Improving the quality and sustainability of electricity and water supply and of sanitation are very essential for social and economic growth, and employment creation.

The main providers of piped water in the Solomon Islands are the Solomon Islands Water Authority (SIWA) and the Rural Water Supply and Sanitation (RWSS). In 1992, the SIWA Act was enacted by Parliament and SIWA (formerly the Water Unit of the Public Works Ministry) then became an authority and formally commenced operations in 1994. Under the Act, "SIWA is responsible for the development and management of water and wastewater services in all urban and provincial centres throughout the Solomon Islands." Its main aim is to "…provide safe, sustainable and reliable water and wastewater services to the Solomon Islands urban areas." (Solomon Islands Water Authority 1997). SIWA provides water to Honiara, Auki, Tulagi and Noro. The mission of RWSS is to complement SIWA and to supply water to the rural areas. RWSS has implemented between 75 and 100 water supply projects and has constructed hundreds of sanitation facilities yearly, spread throughout all nine provinces.

The distribution of the Solomon Islands dwellings by main source of drinking water is displayed in Figure 118. It shows that 35% of dwellings in the country were connected to communal standpipe used as source for drinking water, another 25% used the river/stream as their source, followed by 12% who used a household tank, 11% used a communal tank, and 9% used metered piped water through SIWA.

Metered piped water was only significantly provided in Honiara where 75% of all households obtained their drinking water through SIWA. Otherwise the main source of drinking water varies widely between provinces. While the vast majority in Rennell-Bellona (80%) used a household tank, many households in the other provinces, especially in Isabel, used a communal standpipe.

A river or stream was a significant source of drinking water in Guadalcanal (38%), Makira-Ulawa (34%) and Malaita (33%).

The distribution of dwellings by main source of washing water is displayed in Figure 119. It shows the great variation by main source of washing water in the provinces. Privately piped water was only a significant source of washing water in urban Honiara (61%), otherwise in the other provinces the main source of washing water was a river, stream or lake, or a communal standpipe. Water from a household tank was the most common source of washing water in Rennell-Bellona (67%).

Figure 118: Proportion of private households by place of residence and main source of drinking water (%), Solomon Islands: 2009
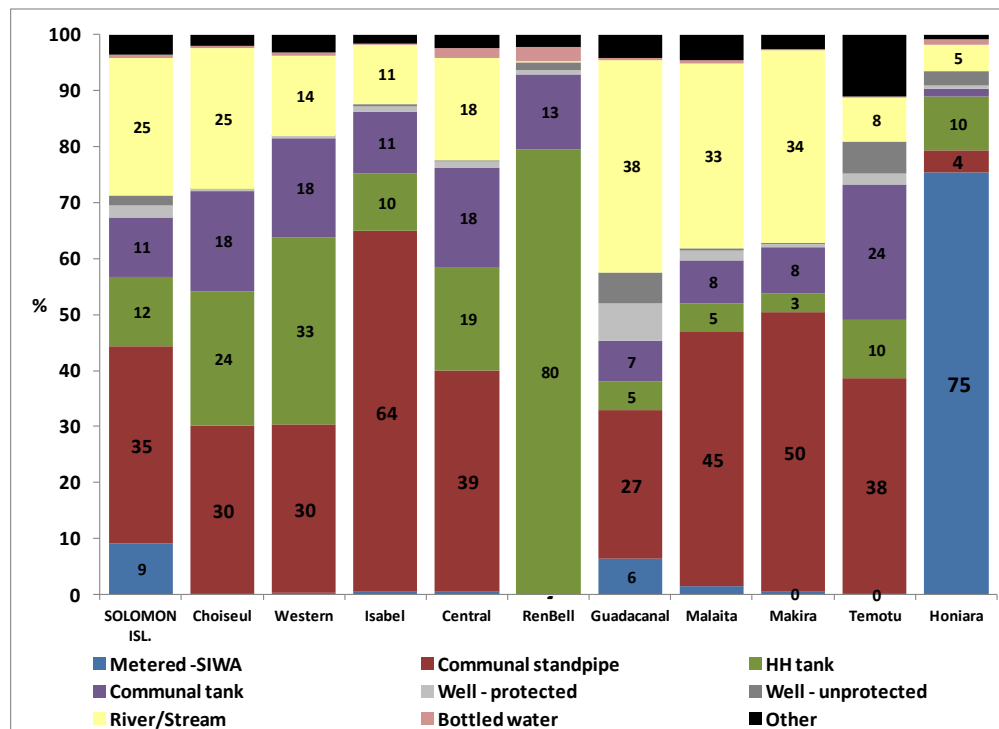
Figure 119: Proportion of private households by place of residence and main source of washing water (%), Solomon Islands: 2009
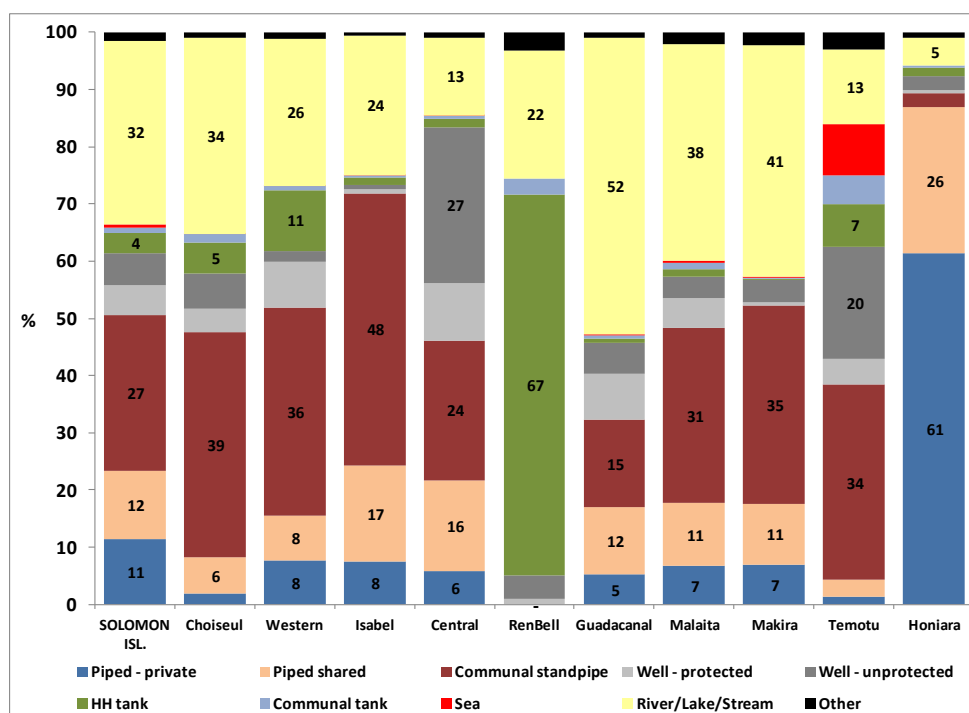
5.5.7 Main energy source for lighting and cooking

The main source of energy for lighting in the Solomon Islands was the kerosene lamp used by 75% of all households (Fig.120). A further 12% of all households used electricity source from the main grid, and 9% got their energy from using solar panels.

Not surprisingly urban Honiara has the highest usage of electricity main grid (64%).

Kerosene lamp is used as the main source of lighting in all the provinces with the exception of Rennell-Bellona where solar energy was used by 75% of all households.

Figure 120: Proportion of private households by place of residence and main source of lighting (%), Solomon Islands: 2009
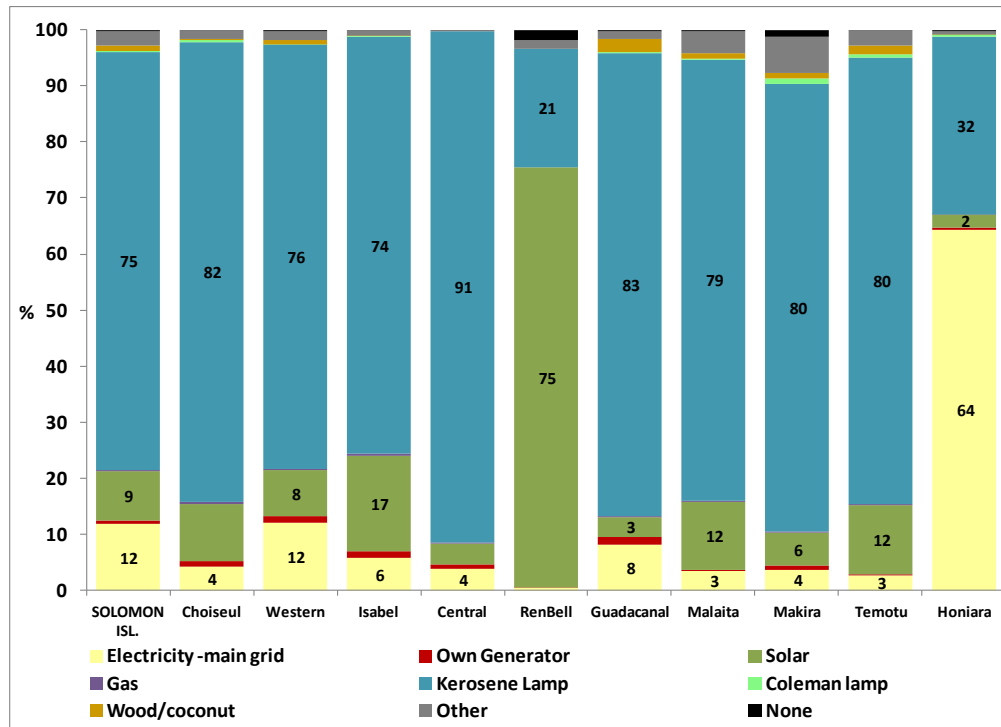
The main source of energy for cooking was wood/coconut shells which were used by 93% of all households in the Solomon Islands (Fig.121).5% of all households used gas.

However, gas usage was more dominant in the urban areas of Honiara city council where 37% of all households used gas. Still also in Honiara the majority of households (53%) used wood or coconut shells as their main source of energy for cooking.

Figure 121: Proportion of private households by place of residence and main source for cooking (%), Solomon Islands: 2009
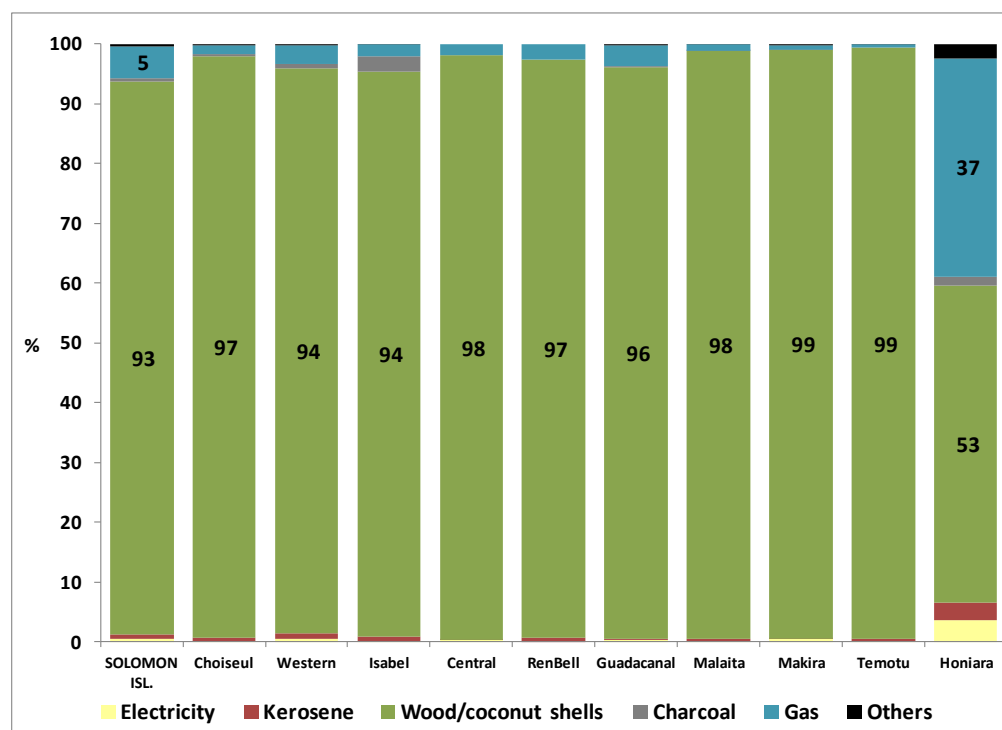
5.5.8 Main toilet facility

Modern toilet facilities refer to installations constructed to dispose of human excreta. Therefore, they exclude toilet facilities in the sense of bush, rivers, beaches or sea. In the census,the following types of (modern) toilets are distinguished:

- Flush toilet (an installation that has its own cleaning-water system, which washes away the waste), either private or shared with other households
- Water sealed toilet (an installation where the toilet is cleaned after use by pouring water from a bucket), either private or shared with other households
- Pit latrine (a (covered) hole in the ground used as a toilet), either private or shared with other households
- Others (any type of toilet that does not fit any of the above descriptions)

One third of all households in the Solomon Islands did not have access to a toilet facility, meaning either a flush toilet, a water sealed toilet, or a pit latrine (Fig.122). This proportion is especially high in Temotu where 80% have no access to a toilet facility, Choiseul (72%), and Central (62%).

Fourteen percent of all households share their toilets with members of other households.

Honiara was the only place where the majority of households had access to a flush toilet, and more than half (54%) of all households did not share it with other household members.

A pit latrine, either private or shared, was available to a majority of households in Rennell-Bellona, and 43% of households in Malaita used a pit latrine.

Unfortunately a large proportion (24%) of households used 'other' toilet facilities that are not further specified.

Figure 122: Proportion of private households by place of residence and main type of toilet facility (%), Solomon Islands: 2009
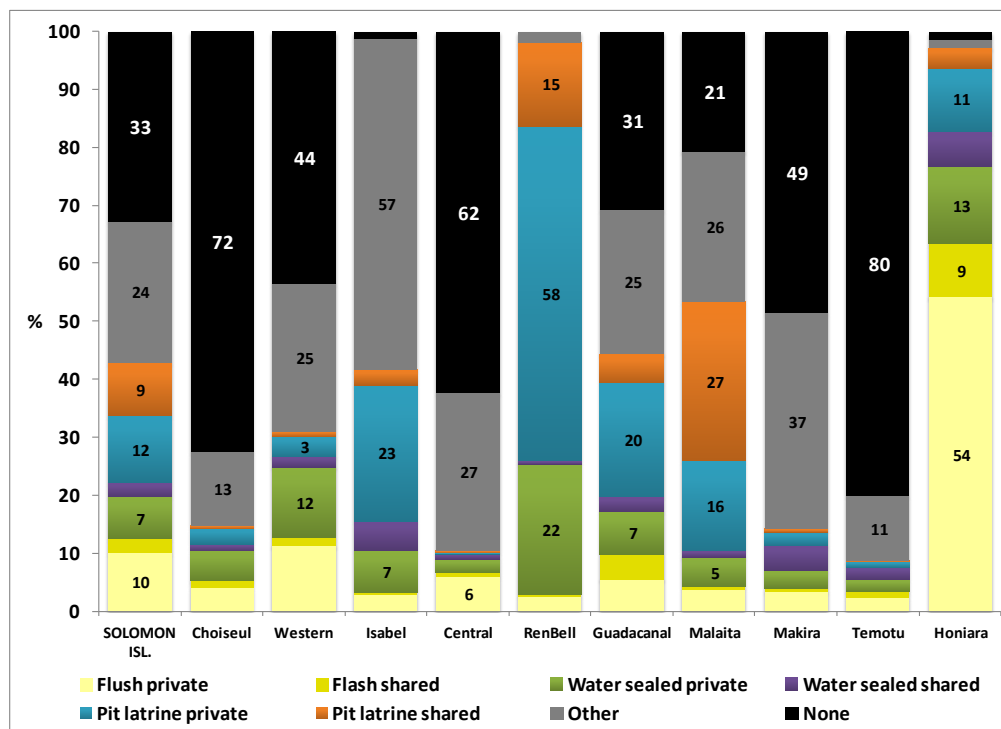
5.5.9 Means of waste disposal

During the 2009 census, information was collected with respect to how households manage their rubbish disposal. The census recorded 7 different means of rubbish disposal in the Solomon Islands: Government waste collection, taken to a central place for disposal; Burry; Burning; River/stream; Sea; Backyard; or others means of waste disposal.

In the Solomon Islands, 60% of all households used their backyard as a means for waste disposal, followed by disposing it into the sea (19%), burning it (8%), and 5% of all households had their rubbish collected by the Government waste collection (Fig.123). However, this service was only available by any significance in Honiara, where 36% of households used the Government waste collection to dispose of their rubbish.

In most provinces the majority of households disposed their waste in their backyard. Exceptions were households in Rennell-Bellona where 63% burned their waste, and Temotu and Central where a large proportion disposed their rubbish in the sea.

Figure 123: Proportion of private households by place of residence and main mode of waste disposal (%), Solomon Islands: 2009
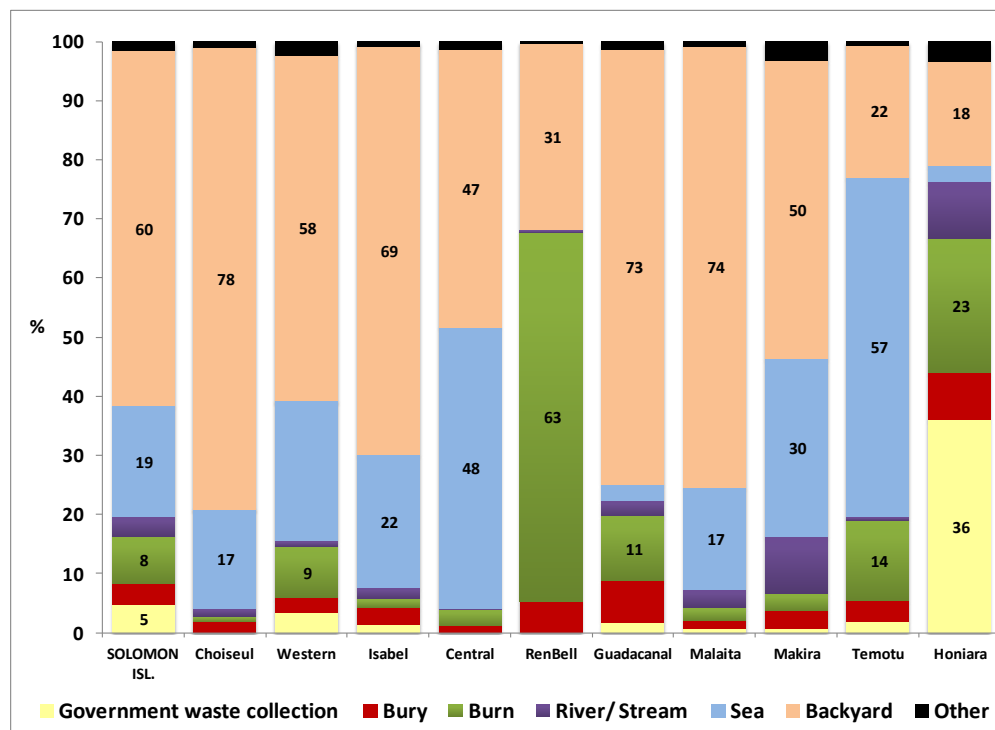
5.6 Amenities and capital goods

This section briefly summarizes the availability of a variety of household items and appliances. The different sections include a summary table presenting the total number of items by place of residence.

Subsequently graphs are added that show the proportion of households by place of residence with at least one item that is in working order. It excludes any items that were broken, borrowed or rented. The graphs therefore are simply divided into two categories: 'yes' if the household owns the item or 'no' if it does not own the item.

5.6.1 Means of communication

Means of communications include the availability and use of land line telephones, mobile phones, and internet connections.

Only 2% of all households in the Solomon Islands had a landline phone available (Fig.124), mainly in Honiara where 16% of households had a landline phone.

Mobile phones were much more commonly used than land line telephones, although by a minority of 21% of all households (Fig.125). While more than three-quarters of household in Honiara had a mobile phone, it was only 6% of households in Choiseul, and 8% in Central and Malaita.

Households with an internet connection barely exist in the Solomon Islands (Fig.126). In total there were only 541 households recorded with an Internet connection; less than 1% of all households. Of these 541 households, 365 were located in Honiara, and 102 in the Western province. There was no Internet in Rennell-Bellona and Temotu.

Figure 124: Proportion of private households by place of residence and availability of a telephone (land-line) (%), Solomon Islands: 2009
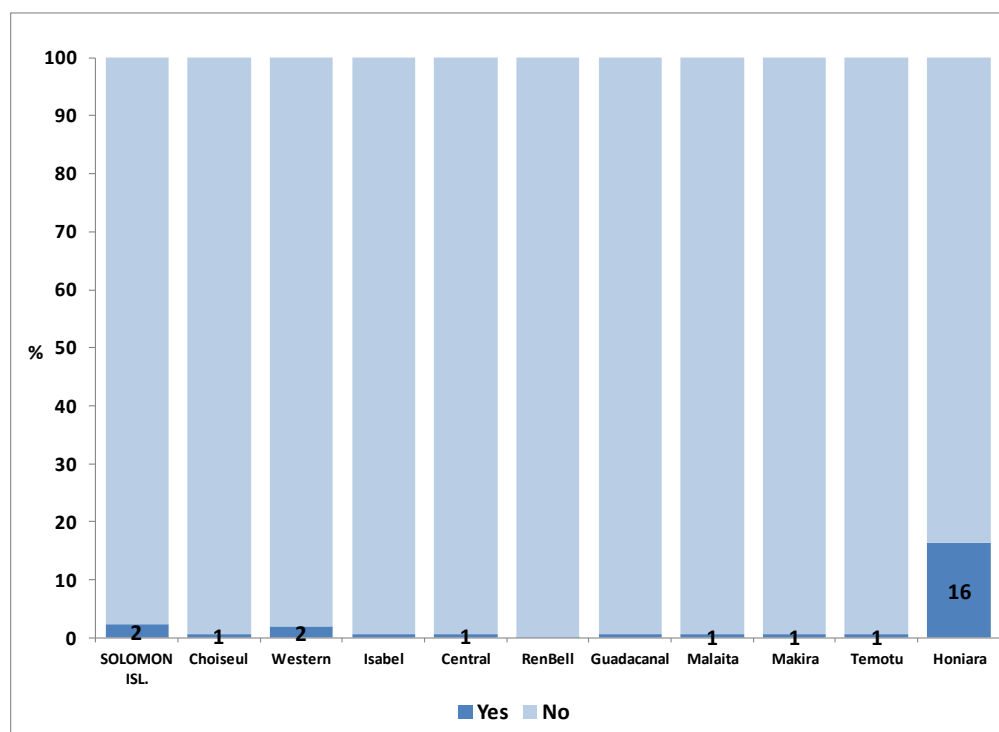
Figure 125: Proportion of private households by place of residence and availability of a mobile phone (%), Solomon Islands: 2009
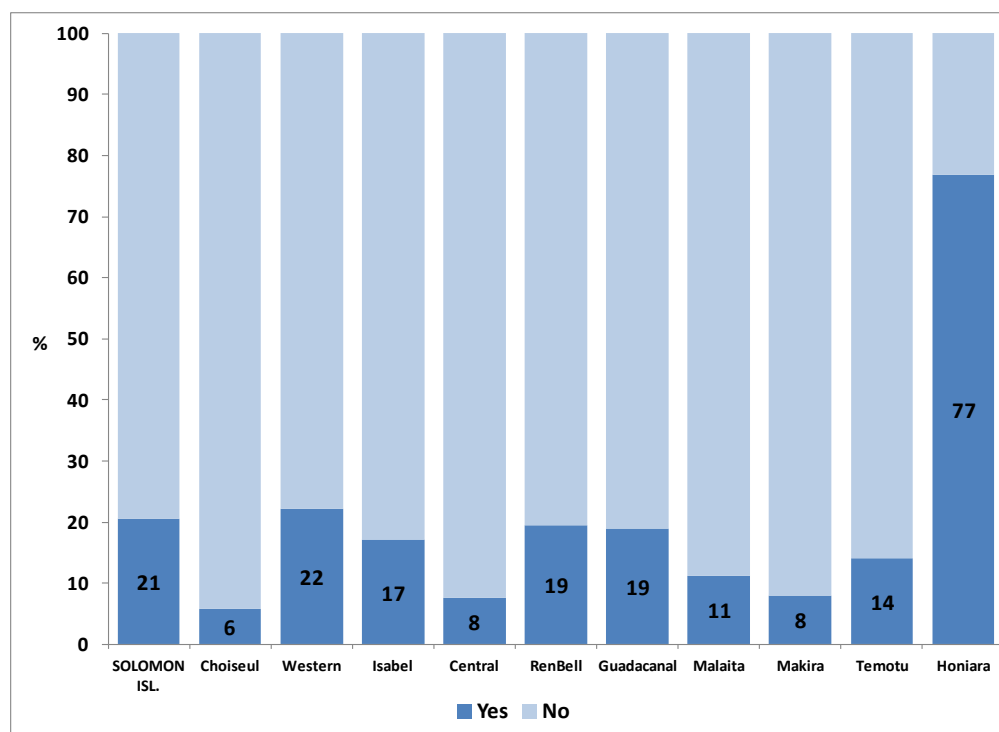
Figure 126: Proportion of private households by place of residence and availability of an Internet connection (%), Solomon Islands: 2009
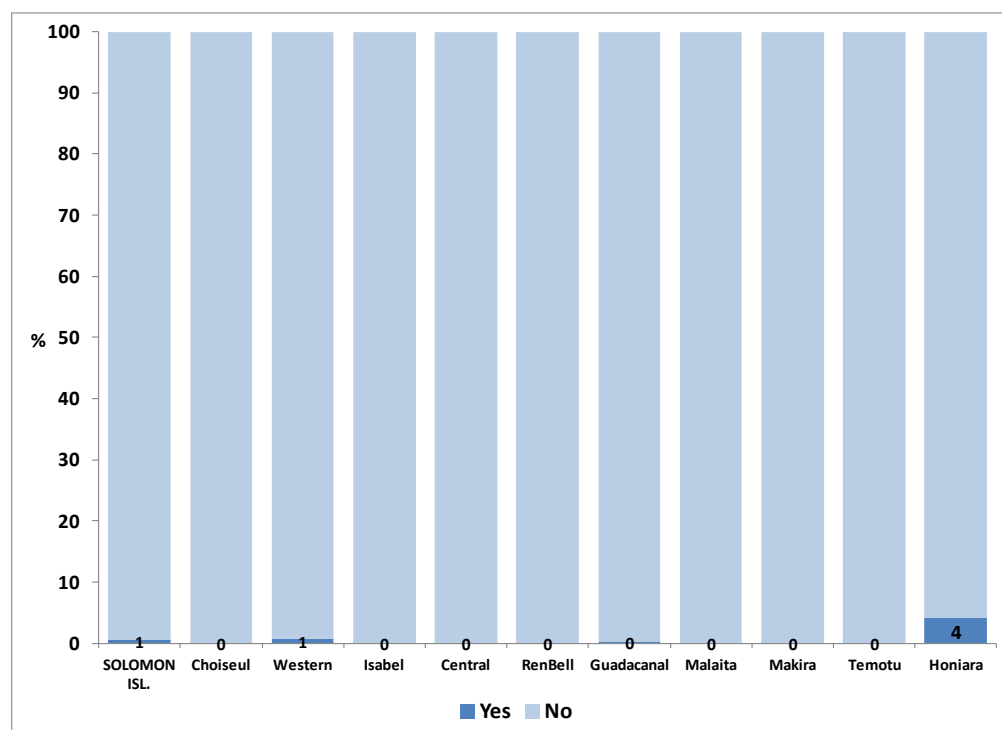
5.6.2 Household utility appliances

This section briefly describes the availability of fridge/freezer and generator.

Although 6,346 fridge/freezer and 6,541 were counted during the census (Table 39).While the vast majority of fridge/freezers were located in Honiara (4,147), where 39% of all households had one (Fig 127), generators were more common in the other provinces than in Honiara (Fig 128).While on average 7% of all households owned a generator, it was with 14% of all households much higher in the Western Province. One in ten households in Choiseul had a generator.

Table 39: Number of items of cooking appliances by place of residence, Solomon Islands: 2009

Place of residence	Item	
	Fridge/Freezer	Generator
SOLOMON ISL.	**6,346**	**6,541**
Choiseul	45	510
Western	884	1,979
Isabel	133	453
Central	99	397
RenBell	8	45
Guadacanal	523	1,385
Malaita	347	851
Makira	90	243
Temotu	70	97
Honiara	4,147	581

Figure 127: Proportion of private households by place of residence and availability of a fridge/freezer (%), Solomon Islands: 2009
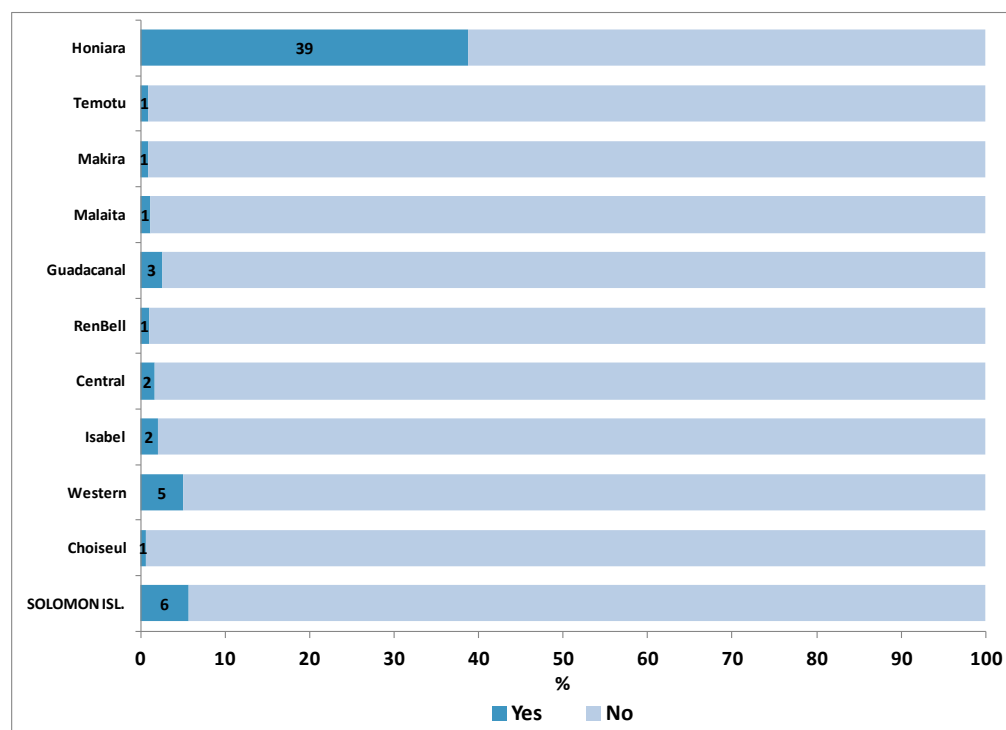
Figure 128: Proportion of private households by place of residence and availability of a generator (%), Solomon Islands: 2009
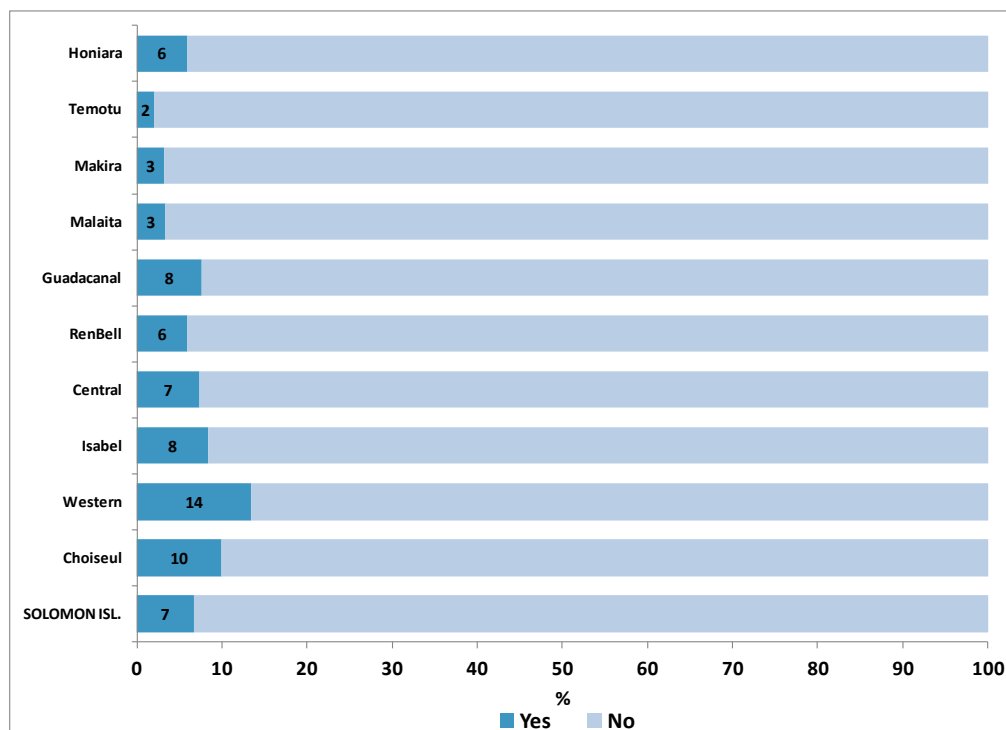
5.6.3 Entertainment and communications appliances

The total count of entertainment/communication items available in the Solomon Islands during the 2009 census count TVs, computers, radios, mobiles phones and HF radios is listed in Table 40.Fingures 129-132 show the proportion of households that own at least on item in working order.

Not surprisingly the proportion of household with any of the items above is highest in Honiara where 61% own a radio,52% a TV,23% a computer and 77% a mobile phone. These percentages were much lower in all the other provinces with the exception of the availability of a radio which also relatively common in the other provinces.

However, overall only 3% of all households owned a computer, only 12% a TV, and only one in five households had a mobile phone. Even a radio was only available to 44% of all households.

Table 40: Number of items of entertainment/communications appliances by place of residence, Solomon Islands: 2009

Place of residence	Item				
	TV	Computer	Radio	Mobile phone	HF radio
Solomon Islands	11,455	4,183	43,626	33,521	1,298
Choiseul	380	58	2,253	426	85
Western	2,431	461	5,999	4,696	267
Isabel	386	45	3,254	1,269	41
Central	341	43	2,211	543	22
Rennell-Bellona	29	27	283	204	27
Guadalcanal	1,285	370	8,159	5,320	100
Malaita	1,313	239	11,852	3,694	172
Makira-Ulawa	79	62	2,617	815	115
Temotu	87	31	858	850	33
Honiara	5,124	2,847	6,140	15,704	436

Figure 129: Proportion of private households by place of residence and availability of a radio (%), Solomon Islands: 2009

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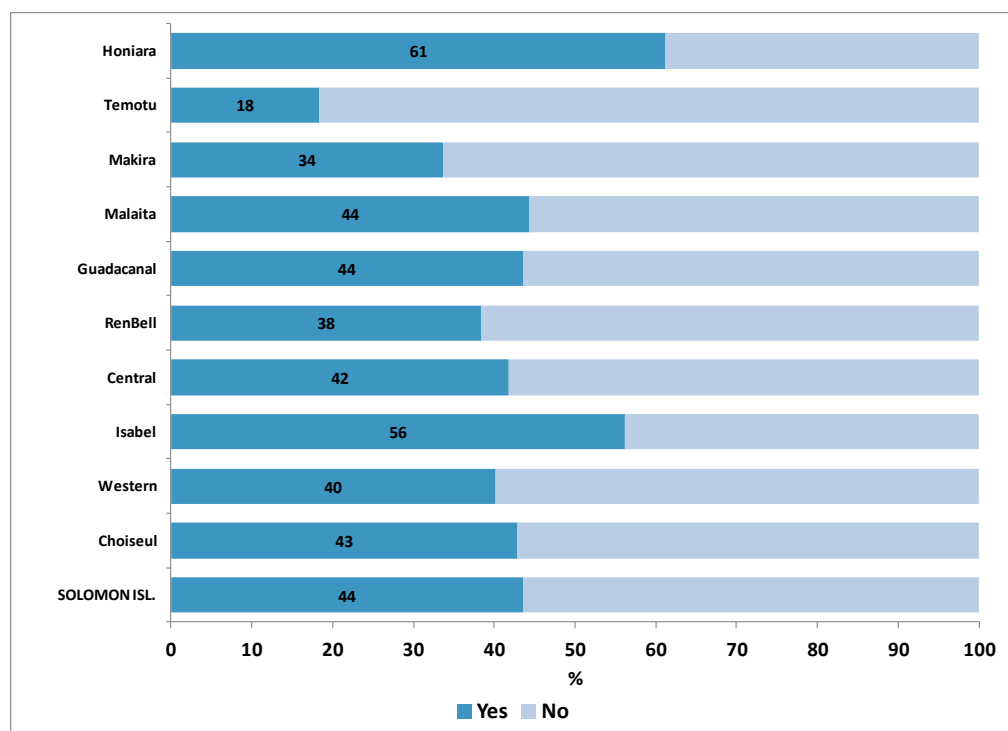
Figure 130: Proportion of private households by place of residence and availability of a TV (%), Solomon Islands: 2009
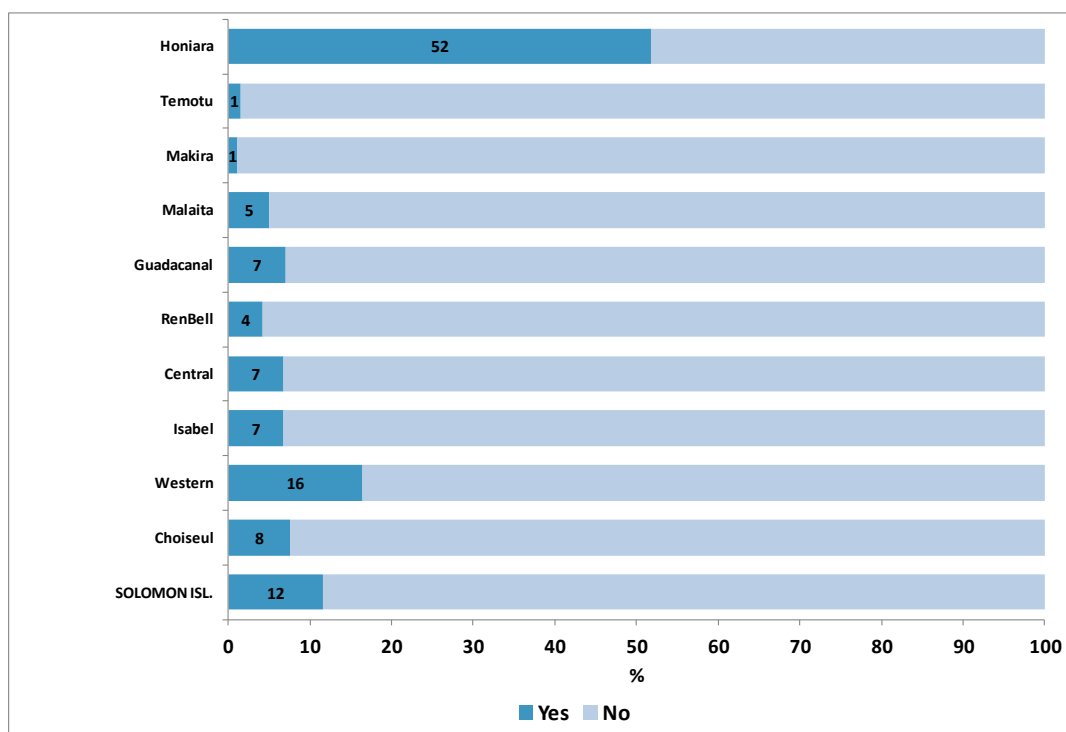
Figure 131: Proportion of private households by place of residence and availability of a computer (%), Solomon Islands: 2009
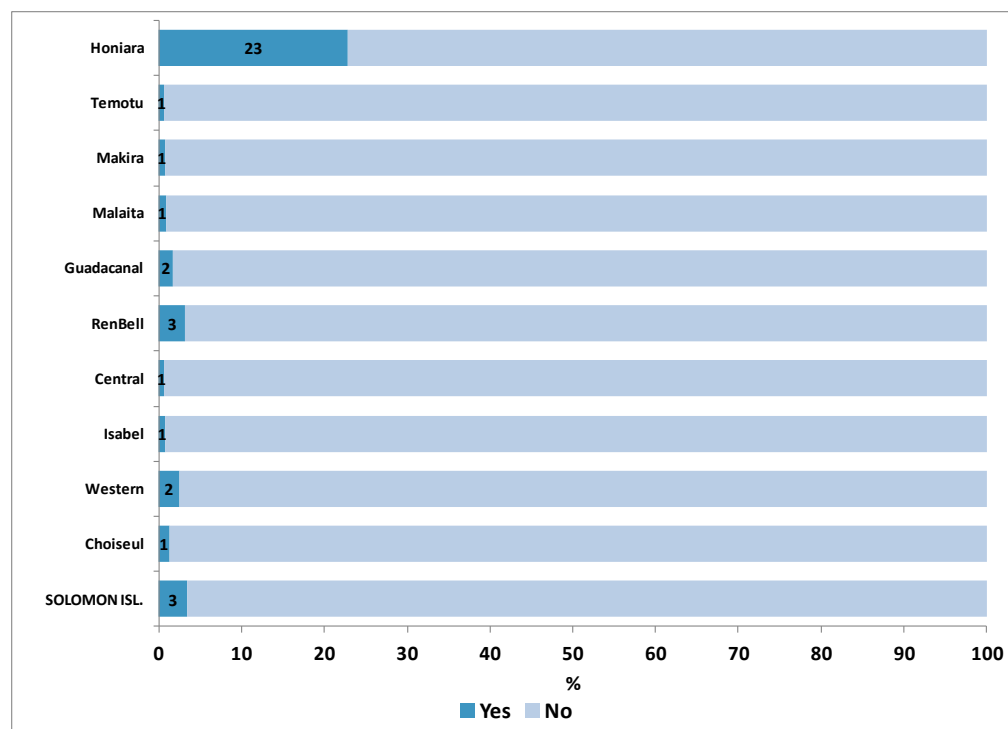
Figure 132: Proportion of private households by place of residence and availability of a mobile phone (%), Solomon Islands: 2009
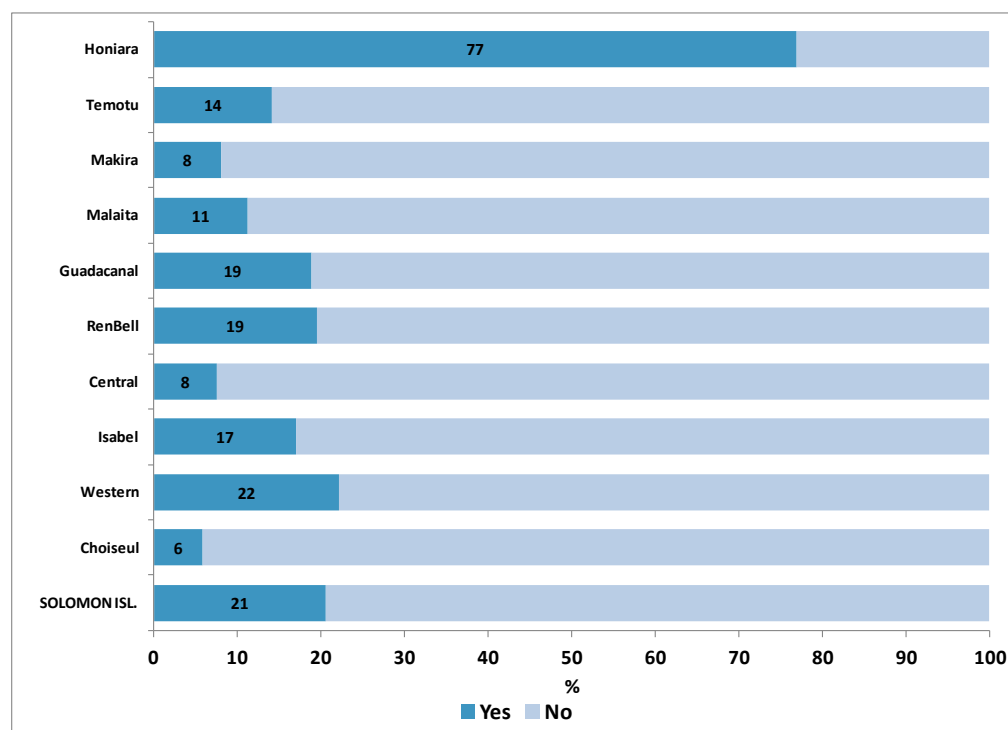
5.6.4 Means of transportation

Only a very small minority of households in the Solomon Islands had the following means of transport; car/bus (2%), motor bike (< 1%), or boat (2%). However, 39% owned a canoe and 7% an outboard motor (Table 41 and Fig.133-136).

More than 70% of all cars and buses were owned by households in Honiara.

The relative high proportion of households with canoes and outboard motors in the provinces other than Honiara underlines the importance of sea travel for the economies and the people living there.

There were an especially high proportion of households with canoes and outboard motors in Western, Choiseul, Isabel and Central provinces.

Table 41: Number of transport items by place of residence, Solomon Islands: 2009

Place of residence	Item					
	Car/Bus	Motobike	Truck	Canoes	Boat/Ship	Outboard Motor
SOLOMON ISL.	**2,931**	**468**	**1,898**	**53,737**	**2,548**	**6,103**
Choiseul	11	26	40	5,239	440	539
Western	152	79	179	15,299	455	2,046
Isabel	17	12	23	5,203	475	644
Central	1	53	22	4,444	49	499
RenBell	-	6	3	117	8	42
Guadacanal	458	59	403	3,807	144	394
Malaita	174	106	348	12,986	699	1,234
Makira	8	10	53	3,401	113	200
Temotu	28	50	23	2,867	76	148
Honiara	2,082	67	804	374	89	357

Figure 133: Proportion of private households by place of residence and availability of a car/bus (%), Solomon Islands: 2009

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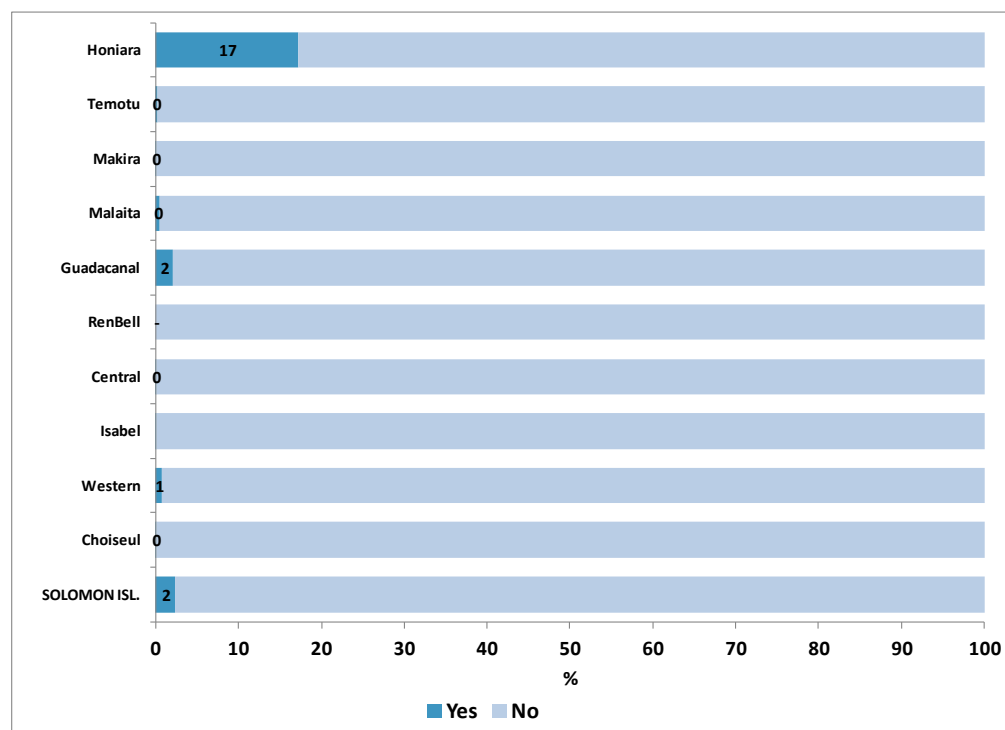
Figure 134: Proportion of private households by place of residence and availability of a boat (%), Solomon Islands: 2009
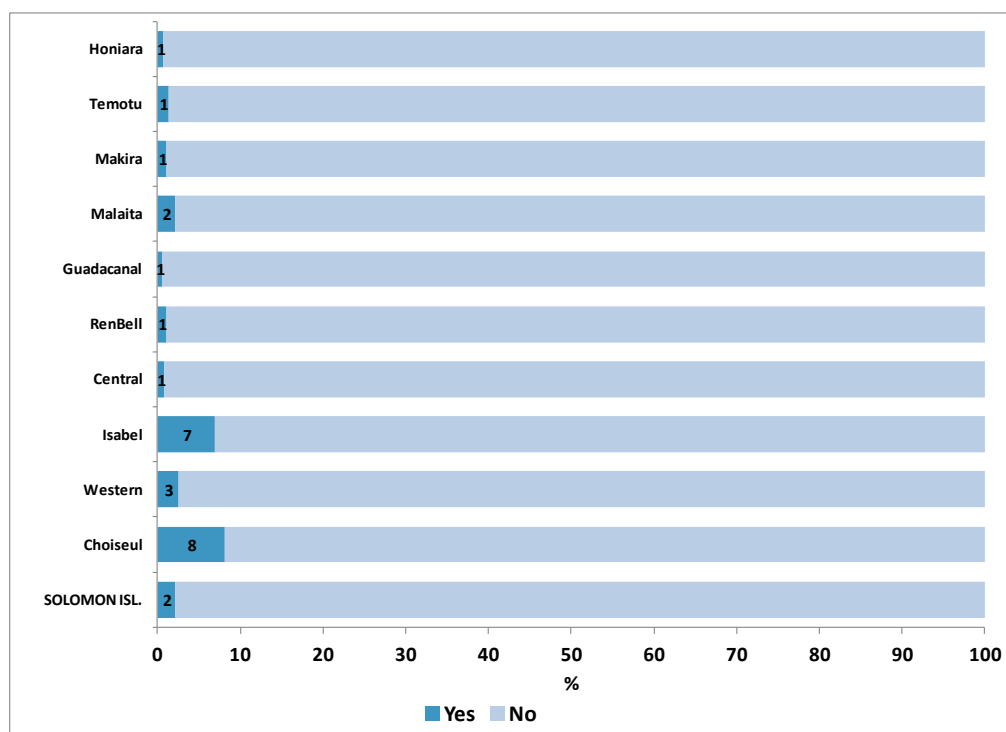
Figure 135: Proportion of private households by place of residence and availability of a canoe (%), Solomon Islands: 2009

5.6.5 Bednets

Although the census question specifically aimed at recording <u>insecticide treated</u> bednets, it seems doubtful that respondents were clear about whether or not their bednets were actually insecticide treated, and the collected information should be used with caution.

The majority of all households in the Solomon Islands had at least one insecticide treated bednet (75%) as shown in Figure 137. In total 210,657 bednets were counted in the 2009 census (Table 42). More than two-third of households in all the provinces of the country stated that they had (insecticide treated) bednets, with the exception of Rennell-Bellona province where it is only one quarter of all households, and Honiara where it was only 59% of all households.

Table 42: Number of private households by place of residence and availability of bednets, Solomon Islands: 2009

Place of Residence	Households with/without bednets			Number of bednets
	Total	Yes	No	
SOLOMON ISLANDS	**91,251**	**68,567**	**22,684**	**210,657**
Choiseul	4,712	4,112	600	13,126
Western	13,762	11,601	2,161	37,809
Isabel	5,143	4,670	473	16,093
Central	4,905	4,258	647	14,056
RenBell	688	169	519	276
Guadacanal	17,163	13,025	4,138	35,747
Malaita	24,421	16,426	7,995	48,265
Makira	7,173	5,541	1,632	17,575
Temotu	4,303	3,441	862	11,447
Honiara city council	8,981	5,324	3,657	16,263

Figure 137: Proportion of private households by place of residence and availability of bednets (%), Solomon Islands: 2009

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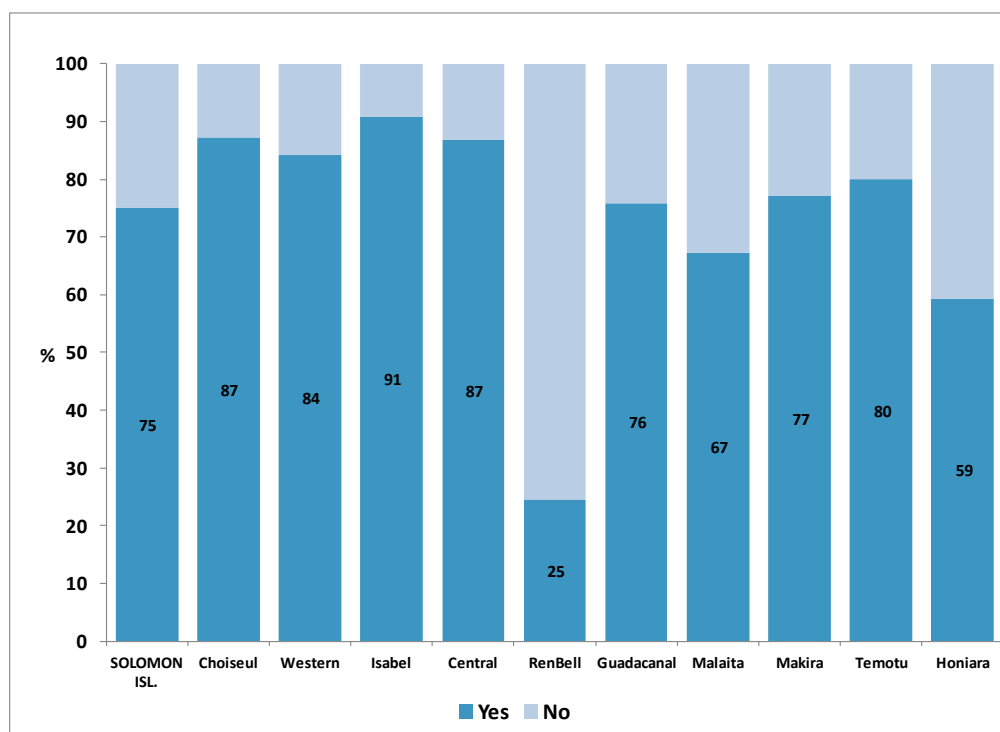
6. POPULATION PROJECTIONS

Timely and accurate information about population trends is in high demand for anyone making decisions in business, research, government and the community. Knowledge about the current size and structure of a country's population is needed for the formulation and implementation of policies and programmes in almost all areas of public life. As policies are aimed at resolving current issues through the achievement of goals in the future, knowledge about future population trends is required. Activities in areas as diverse as health, environment, poverty reduction, social progress, and economic growth rely on comprehensive and consistent demographic information.

The appropriate method to produce population trends is to prepare estimates and projections of population size and structure by age and sex.

The starting point for any projection is a reliable and current age–sex distribution of a population. Furthermore, information on recent levels and patterns of fertility, mortality, and migration is needed.

The cohort-component method was used to compute the population projections presented in this report. This procedure simulates population changes as a result of changes in the components of growth: fertility, mortality and migration. Based on past information and current levels, assumptions are made about future trends in these components of change. The assumed rates are applied to the age and sex structure of the population in a simulation that takes into account:

- the age at which people die is related to their sex and age,
- women have children, and
- some people change their place of residence.

The cohort-component method of projecting a population follows each cohort of people of the same age and sex throughout their lifetime, according to their exposure to fertility, mortality and migration[15].The software package used for the projections was MORTPAK[16,] application PROJECT

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

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[15]1994.Arriaga.E.E.Populations analysis with microcomputers, volume I, Presentation of techniques,p.309-310.US Census Bureau ,Department of Commerce,USA.

[16] MORTPAK for Windows (Version 4.1) was developed by the Population Division, Department of Economic and Social Affairs of the United Nations Secretariat.

6.1 National projections

Projection assumptions

As a general guideline, when preparing multiple assumptions about future levels of fertility, mortality and migration, it is advisable to arrive at outcomes that are symmetrical. This means that the level of low and high, or fast and slow, growth assumptions should be equally positioned with respect to the medium level assumption (i.e. above and below).

The following demographic inputs were developed for the projections.

Projection period

The population projections cover the 45-year period of 2009–2054.

Base population

Projections are based on the 2009 Solomon Islands census age and sex distribution, adjusted to mid-year 2009. The population is further adjusted for suspected under enumeration of 8.3% which includes particularly the age groups 15-29 of males, children younger than 10 years, and a general undercount of females. Table 43 and Figures 138 (males) and 139 (females) show a comparison of the actual 2009 population count, and results of a population projection that used the 1999 population as a starting point (base population), and intercensal fertility and mortality estimates. The adjusted population size is consistent with the estimated levels of birth and death rates, as well as applying MORTPAK procedure CENCT to the 1999 and 2009 censuses. In general, a comparison of the enumerated and projected population shows a relatively good fit for most male and female age groups.

The undercount of young children in censuses is a common occurrence for the following reasons:

- Teenage women did not state the birth of their child
- Unmarried women did not state the birth of their child(ren)
- Women whose child died shortly after birth did not state the birth of the child
- Women did not state the birth of a child from different father than present husband
- Women who had multiple births (either twins or triplets), or had 2 births during the 12 month period before the census, only recorded 1 birth
- Women temporarily absent from their permanent household were counted, but

their fertility status was not recorded, and/or wrongly assumed to be zero.
- Older women (who may have had many children) did not remember the exact date of birth of their last child.
- Errors during data recording/processing

The 15-29 year old males are usually the highly mobile age groups who are absent from their usual place of residence/household in search for employment or further education, and have not been captured at their (temporary) place of residence during the census count, which caused the undercount of this particular age group of males.

In total the enumerated census population of 515,870 was adjusted by 43 thousand to a new total of 558,457 people (Table 43).

Because the projections should refer to the mid-year of each year of the projection period, the base year population has further been adjusted to a total of 551,525 for mid-year 2009 (the PAS procedure MOVEPOP has been used to estimate the mid-year population from the November census population) (Table 44).

Table 43: Comparison of the projected population with the enumerated population, Solomon Islands 2009

Age Group	2009 census count			2009 projection			Difference = count - projected			Percentage difference		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	39,728	36,499	76,227	45,536	44,240	89,775	-5,808	-7,741	-13,548	-14.6	-21.2	-17.8
5-9	36,974	34,152	71,126	40,329	39,125	79,454	-3,355	-4,973	-8,328	-9.1	-14.6	-11.7
10-14	32,562	29,369	61,931	32,497	30,073	62,570	65	-704	-639	0.2	-2.4	-1.0
15-19	26,189	25,023	51,212	28,017	25,856	53,873	-1,828	-833	-2,661	-7.0	-3.3	-5.2
20-24	22,399	23,020	45,419	26,466	24,463	50,929	-4,067	-1,443	-5,510	-18.2	-6.3	-12.1
25-29	20,794	21,880	42,674	22,976	21,919	44,894	-2,182	-39	-2,220	-10.5	-0.2	-5.2
30-34	18,807	18,785	37,592	19,581	19,770	39,351	-774	-985	-1,759	-4.1	-5.2	-4.7
35-39	17,010	16,141	33,151	17,090	17,169	34,259	-80	-1,028	-1,108	-0.5	-6.4	-3.3
40-44	12,070	11,568	23,638	12,822	12,531	25,353	-752	-963	-1,715	-6.2	-8.3	-7.3
45-49	10,189	9,524	19,713	10,543	10,205	20,748	-354	-681	-1,035	-3.5	-7.2	-5.3
50-54	7,498	6,841	14,339	7,837	7,345	15,182	-339	-504	-843	-4.5	-7.4	-5.9
55-59	6,111	5,676	11,787	6,489	6,252	12,742	-378	-576	-955	-6.2	-10.2	-8.1
60-64	4,535	4,381	8,916	4,859	4,888	9,747	-324	-507	-831	-7.1	-11.6	-9.3
65-69	3,693	3,328	7,021	4,022	3,711	7,732	-329	-383	-711	-8.9	-11.5	-10.1
70-74	2,402	2,296	4,698	2,602	2,549	5,151	-200	-253	-453	-8.3	-11.0	-9.6
75-79	1,784	1,590	3,374	1,922	1,897	3,819	-138	-307	-445	-7.7	-19.3	-13.2
80+	1,710	1,342	3,052	1,602	1,275	2,877	108	67	175	6.3	5.0	5.7
Total	**264,455**	**251,415**	**515,870**	**285,188**	**273,269**	**558,457**	**-20,733**	**-21,854**	**-42,587**	**-7.8**	**-8.7**	**-8.3**

Figure 138: Comparison of the projected male population with the enumerated male population, Solomon Islands 2009
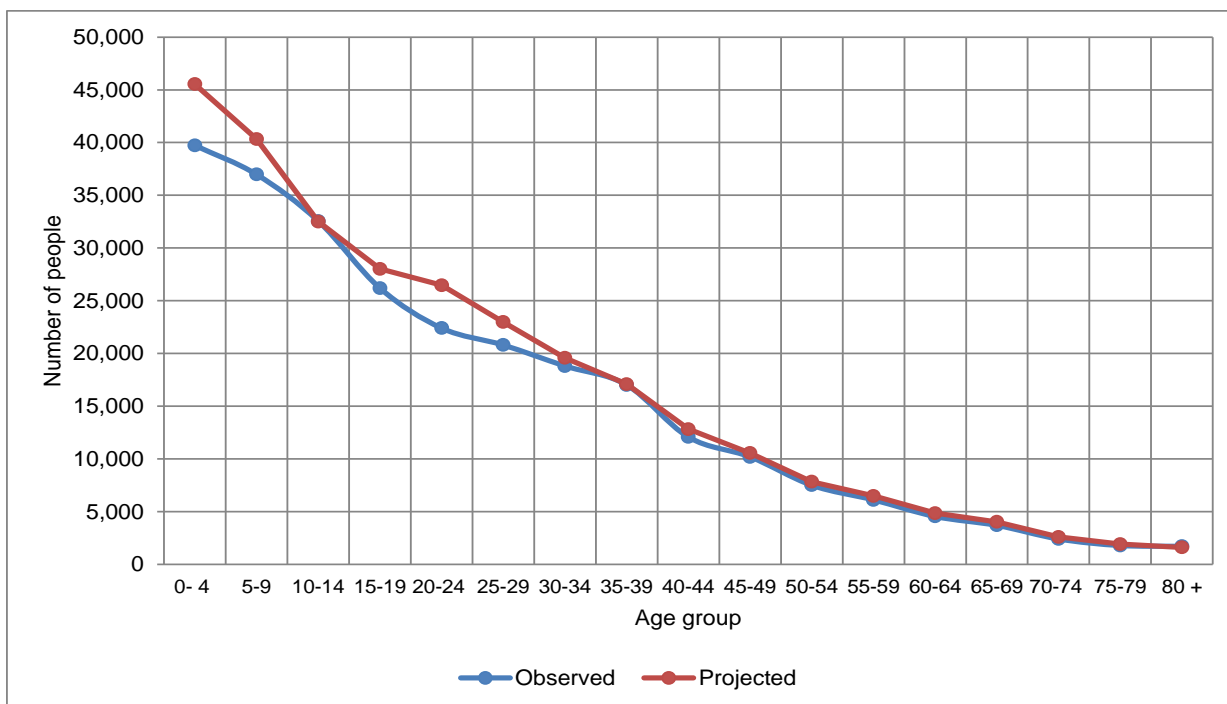
Figure 139: Comparison of the projected female population with the enumerated female population, Solomon Islands 2009
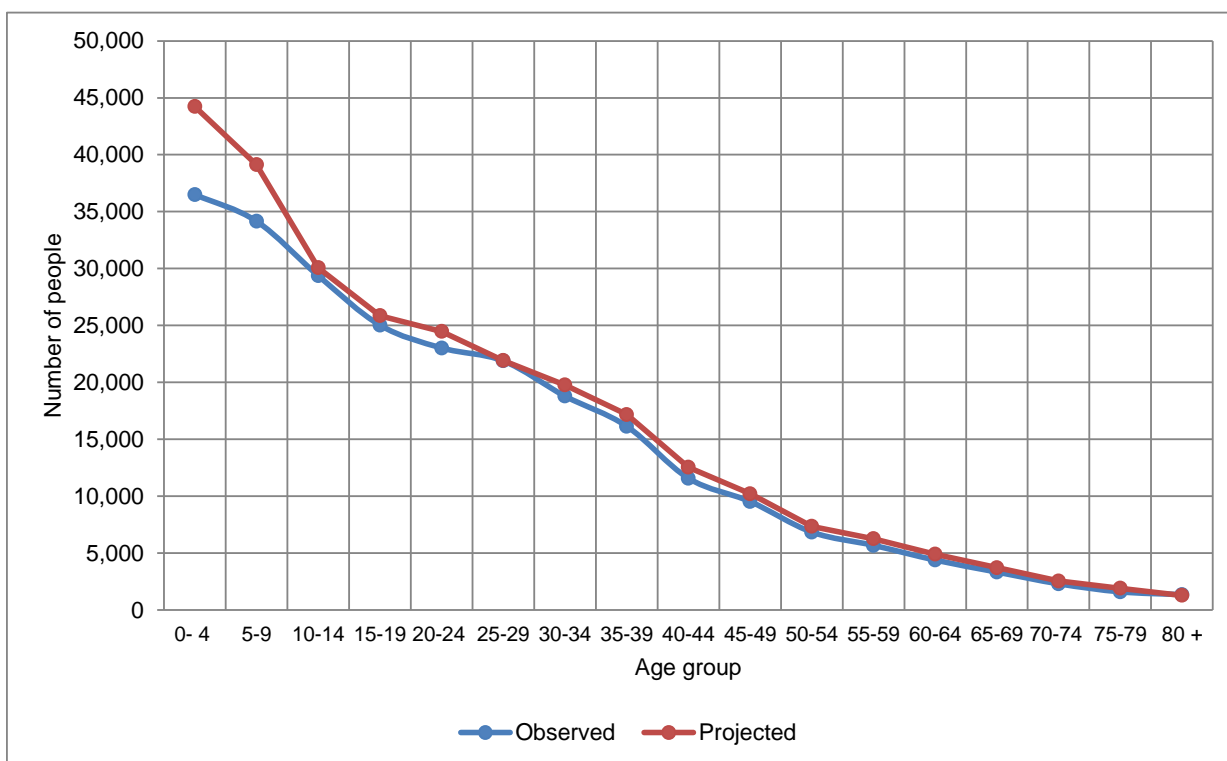
Age Group	Base population (1 July 2009)		
	Males	Females	Total
0- 4	44,971	43,691	88,662
5-9	39,828	38,639	78,467
10-14	32,093	29,700	61,793
15-19	27,670	25,535	53,205
20-24	26,137	24,159	50,296
25-29	22,691	21,647	44,338
30-34	19,337	19,525	38,862
35-39	16,878	16,956	33,834
40-44	12,664	12,375	25,039
45-49	10,412	10,078	20,490
50-54	7,739	7,254	14,993
55-59	6,409	6,175	12,584
60-64	4,798	4,828	9,626
65-69	3,972	3,665	7,637
70-74	2,569	2,517	5,086
75-79	1,898	1,874	3,772
80 +	1,582	1,259	2,841
Total	281,648	269,877	551,525

Fertility

The estimated TFR of the period 2009 and associated ASFR, as described in Section 3.1 (Table 9) are used as a starting point, with four different assumptions made about future fertility developments (Fig.140).

The future TFR level of the medium fertility assumption is assumed to reach 2.0, which is the average level of TFR of populations in present-day Australia, France, New Zealand and the United States (App. 38). This level will be reached (by means of extrapolation) with a pace of fertility decline that is based on the Solomon Islands' past fertility trend. According to this pace, the Solomon Islands will reach a TFR of 2.0 in the year 2060, and will reach a level of 2.1 at the end of the projection period in 2054.

The reason for choosing the fertility level of countries such as Australia, France, New Zealand and the United States as the future level for Solomon Islands is twofold:

1) These countries have completed the "demographic transition" (see explanatory note in App.40). Appendix 33 shows that the TFR of these four countries has remained at an almost constant level of 2.0 over the last 35 years (1975–2010).

2) They are regarded as the metropolitan focal points of Pacific Island countries.

Therefore the medium fertility assumption is set as follows.

Assumption 1 — Medium Fertility: Fertility decreases to 2.1 in the year 2054 (as described above).

The high and low fertility assumptions were built symmetrically around the medium fertility assumption.

Assumption 2 — High Fertility: The high fertility assumption assumes a TFR of 0.5 higher than the medium fertility level. Therefore, the level of TFR in 2054 is 2.6.

Assumption 3 — Low Fertility: The low fertility assumption assumes a TFR of 0.5 lower than the medium fertility level. Therefore, the level of TFR in 2054 is 1.6.

Assumption 4 — Constant Fertility: This is a purely academic assumption, with the purpose to demonstrate what would happen to the Solomon Islands in terms of population size if the current TFR of 4.1 remains constant at this level for the entire projection period.

Figure 140: Estimated past levels of fertility, and future fertility assumptions for projections, Solomon Islands: 1999–2054
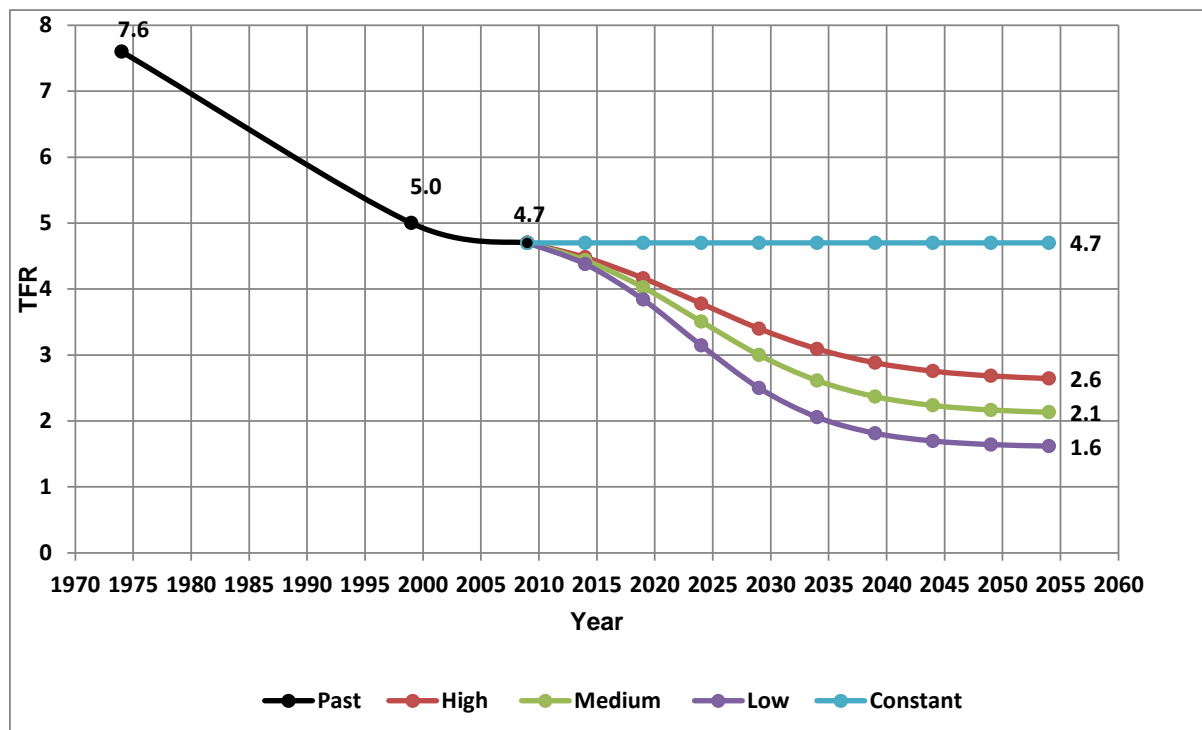
Sex ratio at birth

Available data from the respective Solomon Islands censuses consistently point to a sex ratio at birth that is significantly higher than the 105 generally found around the world. The sex ratio of children ever born to women as reported in the 2009 census (**109**) is comparable to the figures that were found in the 1999, 1986 and 1976 censuses. The sex ratio of 109 based on children ever born is similar to the male-female ratio of the population 1 year and younger, and the age group 0-4 years. It is also consistent with sex ratio of male-female children born during the year before the census.

Mortality

It is thought that under normal circumstances (meaning in the absence of catastrophes such as wars, epidemics and major natural disasters), the Solomon Islands' health situation and mortality levels will continuously improve throughout the projection period.

The estimated life expectancies at birth [E(0)] — 66.2 years and 73.1 years for males and females, respectively — are used as the starting point for projections in 2009. These estimates are based on the estimates as outlined in section 3.2.

Assumption: The population projections presented here assumes a rising trend in life expectancy for males and females according to the UN working models of mortality improvement, as described in "World Population Prospects, p. 144[17] (App.34). According to this model, current estimated life expectancies gradually increase and reach 75.8 and 81.4 years in 2054 for males and females, respectively (Fig.141).

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

The derived mortality pattern (age-specific death rates) was compared with the different Coale-Demeny and United Nations model life tables using MORTPAK4.1, procedure COMPAR. The assumption was made that possible under-registration of deaths is not age specific and therefore does not affect the overall pattern of mortality. It was found that the **Coale-Demeny North** model pattern resembles most closely the empirical mortality pattern of Solomon Islands (see section 3.2).

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[17] 1995.United Nations. World Population prospect.NewcYork:United Nations.886p.

Figure 141: Estimated past levels of mortality, and future mortality assumptions for projections, Solomon Islands: 1986–2054
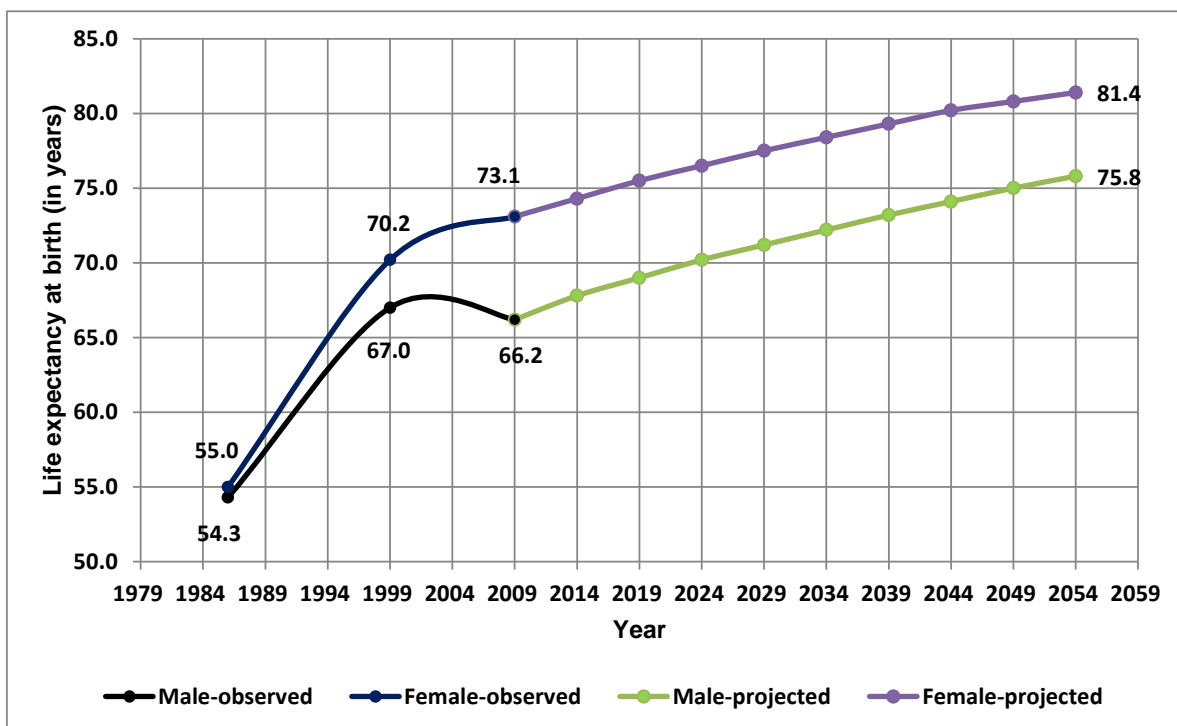
Migration

Making meaningful assumptions about future migration developments provides the single greatest difficulty for undertaking population projections, because many of the social and economic parameters shaping migration patterns depend largely on countries' overall social, economic and political developments, as well as environmental factors (e.g. possible sea level rise, frequency and strength of cyclones). All of these factors fluctuate widely and are hard to predict. Migration projections also depend on economic and political developments overseas.

Apart from these global considerations, making assumptions about migration is difficult because reliable information on international arrivals and departures.

However, at present the Solomon Islands population is not known for migrating permanently overseas at any significant measure, while the Solomon Islands itself is not an immigration country either. Furthermore, a brief analysis of the fertility and mortality level reveals that the last intercensal population growth rate (taking a 8.3% under enumeration of the 2009 census into account as described above) closely resembles the

current natural growth rate, which implies that there is very little international migration (see section 3.3).

In view of the absence of significant past international migration, it is decided to assume zero net migration for the entire projection period as it is impossible to predict what the level of migration would be should it occur in future. Of course the projections needs to be amended should this situation change.

Projection results

The four different fertility assumptions results in four different projections (Table 45 and Fig.142). These different projections highlight the impact of different levels of fertility on the population size and structure of Solomon Islands: The higher the fertility level assumed, the higher the population outcome.

Table 45: Population size according to four projection variants, Solomon Islands: 2010–2050

Fertility assumption	Year								
	2010	2015	2020	2025	2030	2035	2040	2045	2050
Constant	568,035	656,243	755,638	871,384	1,007,804	1,166,692	1,349,328	1,557,843	1,797,031
High	568,035	653,609	743,728	838,624	937,444	1,039,112	1,143,237	1,249,915	1,357,860
Medium	**568,035**	**656,243**	**751,194**	**843,066**	**930,102**	**1,014,968**	**1,099,463**	**1,181,450**	**1,261,167**
Low	568,035	652,292	735,549	814,100	885,971	951,069	1,008,794	1,060,347	1,105,109

The four population projection scenarios are described in detail below:

1) **High population scenario.** This projection outcome is determined by applying the high fertility assumption (slow fertility decline). This scenario results in a population size of 937 thousand in the year 2030, and 1.4 million people in the year 2050.

2) **Medium population scenario.** This projection outcome is determined by applying the medium fertility assumption (moderate fertility decline). This scenario results in a population size of 930 thousand in the year 2030, and 1.3 million people in 2050.

3) **Low population scenario.** This projection outcome is determined by applying the low fertility assumption (fast fertility decline). This scenario results in a population size of 886 thousand in the year 2030, and for just 1.1 million people in the year 2050.

4) **Constant population scenario.** This projection outcome is determined by assuming that the current high level of fertility remains constant during the entire projection period. This scenario results in a population size of 1 million people in the year 2030, and 1.8 million people in the year 2050.

In general it becomes clear that the population will increase substantially regardless of which projection scenario is used.

It can be seen that the impact of the different projections on the population size until the year 2020 are relatively minor. Significant population differences based on the different projection assumptions can only be expected thereafter.

Figures 143 to 150 provide the comparative results of the various projections, and highlight the differential impact on population size, growth and structure.

The school age population aged 6–15 years can be expected to increase from its current size of about 135 thousand regardless of the projection scenario used (Fig.143) and after the year 2020 according to the low fertility assumptions, and after year 2,035 according to the medium fertility assumptions. All other scenarios cause the school age population to constantly increase in future.

According to the constant population scenario, assuming constant fertility at its present high level, the school age population would more than double until 2050.

Should the high fertility scenario materialize in future, the school age population would continuously increase until it reaches 256 thousand pupils in 2050.

According to the medium scenario, the school age population aged 6–15 would increase to about 216 thousand people in 2030 when it stabilizes before it starts a slow decline from the year 2035 until it reaches 213 thousand in 2050.

Figure 143: School age population aged 6–15 years according to high, medium, low and constant population projection scenarios, Solomon Islands: 2009-2050
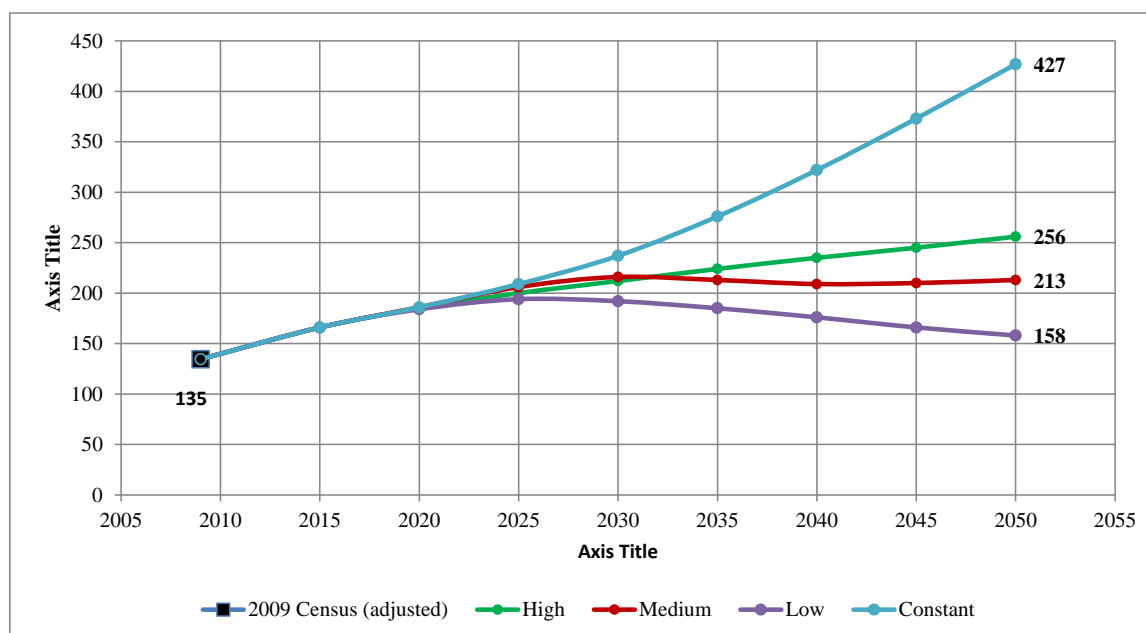
The general impact on the future population structure by broad age groups can be seen in Table 46 and Figures 144 to 146. Regardless of the projection scenario used, the size of the working age population (aged 15–59) will be much larger than in 2009 (294 thousand), and will be 348 thousand in 2015, and will further increase to more than 500 thousand people in 2030. According to the medium variant scenario, the working age population will reach 790 thousand in the year 2050. Please note that the size of the population aged 15 years and older in the year 2015 is not affected by the different fertility assumptions made, as these particular age groups were already born in 2009 at the start of the projections.

Another general outcome is that the population aged 60 and older will be significantly larger than 29 thousand in 2009, regardless of the projection scenario used. The 'elderly' population will be 36 thousand in 2015, 66 thousand in 2030, and approximately 150 thousand in 2050. Therefore the population will grow older regardless of which projection is used, as is expressed in the median age, which will increase from 19.4 years in 2009 to 22.4 in 2030 and 29.8 in 2050 according to the *medium projection variant*. Again, the size of the population aged 60 years and older is not affected by the different

fertility assumptions as these people were all born at the time of the 2009 census (base year of projections).

The proportion of the young population aged 0–14 (as part of the total population) will decrease regardless of the type of projection scenario used. However, its size will increase at least until 2030, and only under the *low projection scenario* would the population aged 0-14 decrease thereafter.

The size of the population younger than 15 years is likely to increase from about 229 thousand in 2009 to about 321 thousand in 2030 (according to the *medium population scenarios*), and would be 332 thousand in 2050. On the other hand the size of the young population will be much higher than that if fertility levels follow the trend of the *high fertility assumption* in which case there could be almost 395 thousand people aged 0-14 years in 2050.

The three different projection scenarios will produce very different population growth rates: the *high population scenario* will result in an annual population growth rate of 2.2% in 2030, while the *medium population scenario* will only produce 1.9% annual growth in 2030, and only 1.6% in 2050. The growth rate will slow under any projection scenario.

Finally, the different projections result in very different age-dependency ratios: the lower the level of future fertility, the lower the age-dependency ratio.

Table 46: Population structure and indicators according to four different projection scenarios, Solomon Islands: 2010, 2030 and 2050

Indicator	2010	Constant		High		Medium		Low	
		2030	2050	2030	2050	2030	2050	2030	2050
Population by broad age groups (%)									
0-14 years	42	40	39	35	29	35	26	32	21
15-59 years	53	54	52	58	60	58	63	61	66
60 years and older	5	7	8	7	11	7	12	7	13
Dependency ratio	88	86	91	73	67	71	60	64	52
Median age	19.4	18.3	20.4	22.2	27.2	22.4	29.8	23.6	33.0
Average annual growth rate (%)	3.0	3.0	2.9	2.2	1.6	1.9	1.3	1.6	0.8

Figure 144: Population projections by broad age groups according to four scenarios, Solomon Islands: 2015
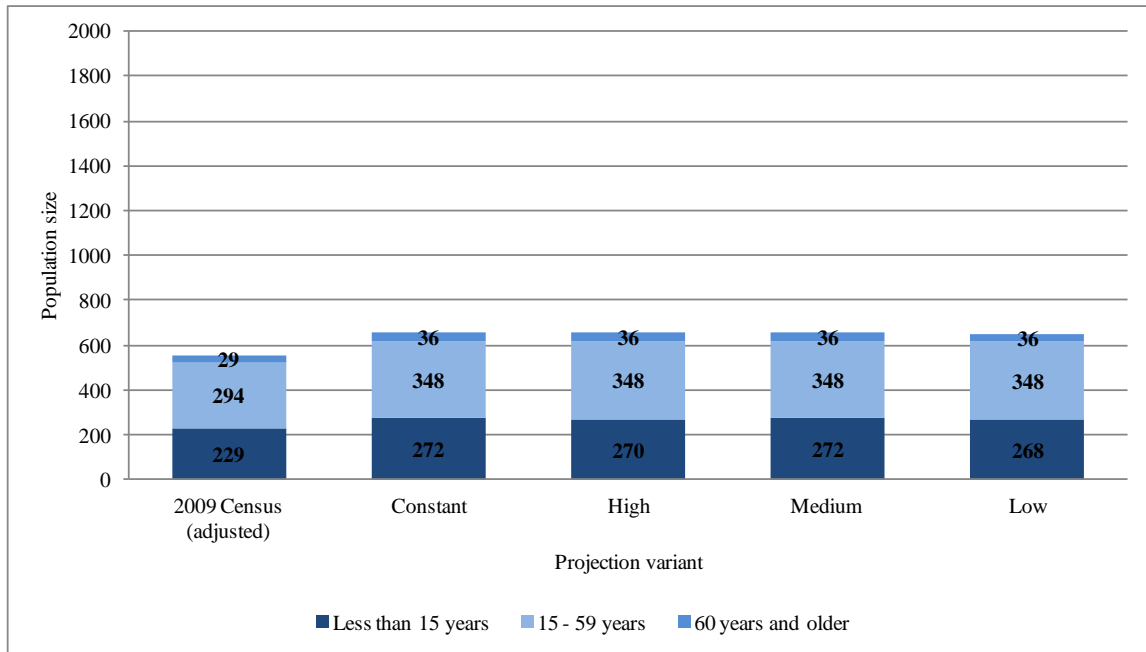
Figure 145: Population projections by broad age groups according to four scenarios, Solomon Islands: 2030
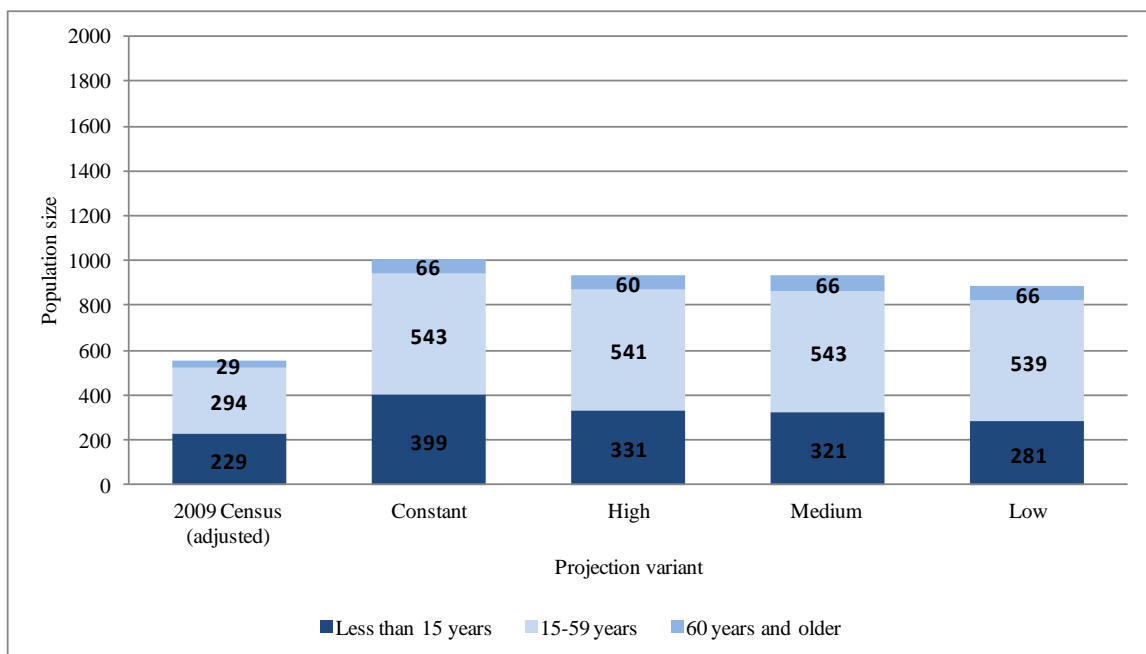
Figure 146: Population projections by broad age groups according to four scenarios, Solomon Islands: 2050
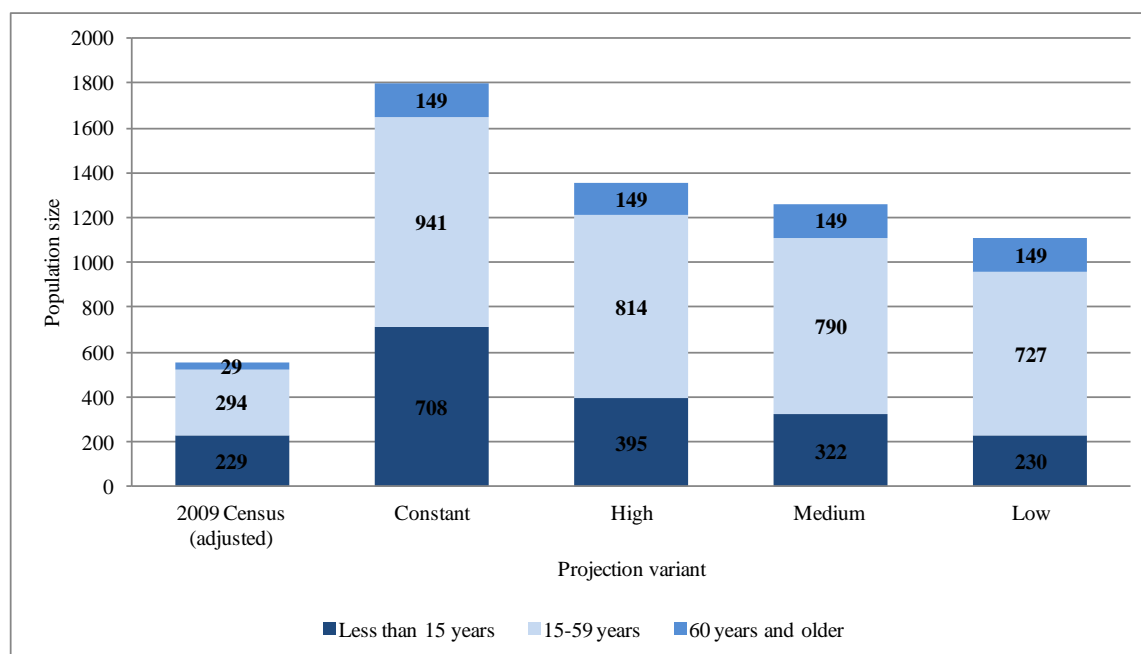
The different impacts on the population size and structure are furthermore illustrated as population pyramids (Figs. 147 to 150). The shaded area represents the 2010 population size by sex and age group, and the outlined area represents the estimated (projected) population size in 2050, according to the constant (Fig.147), high (Fig.148), medium (Fig.149), and low (Fig.150) population scenarios.

Figure 147 illustrates the impact *of constant high level fertility*. It shows what the population would look like if the current level of 4.7 children per woman remains at this level for the entire projection period 2009–2050. As is shown in Figure 142, the population would then be 1.8 million people.

The different shaped pyramids of the four different projection scenarios clearly illustrate that the difference in population size and structure in 2050 is the size of the population aged 0–39. It highlights the effect of the assumed fertility level on future population size and structure: the lower the assumption of the future fertility level, the smaller the size of the population younger than 40 years of age in the future (the population size of the population 40 years and older in the year 2050 is not affected by the different fertility assumptions). It is interesting to note that according to the low fertility projection, the population under 10 years old is larger in 2010 than in 2050. This is the result of the assumed rapid and substantial fertility decline.

Figure 147: Population pyramid, Constant fertility projection, Solomon Islands: 2010 and 2050
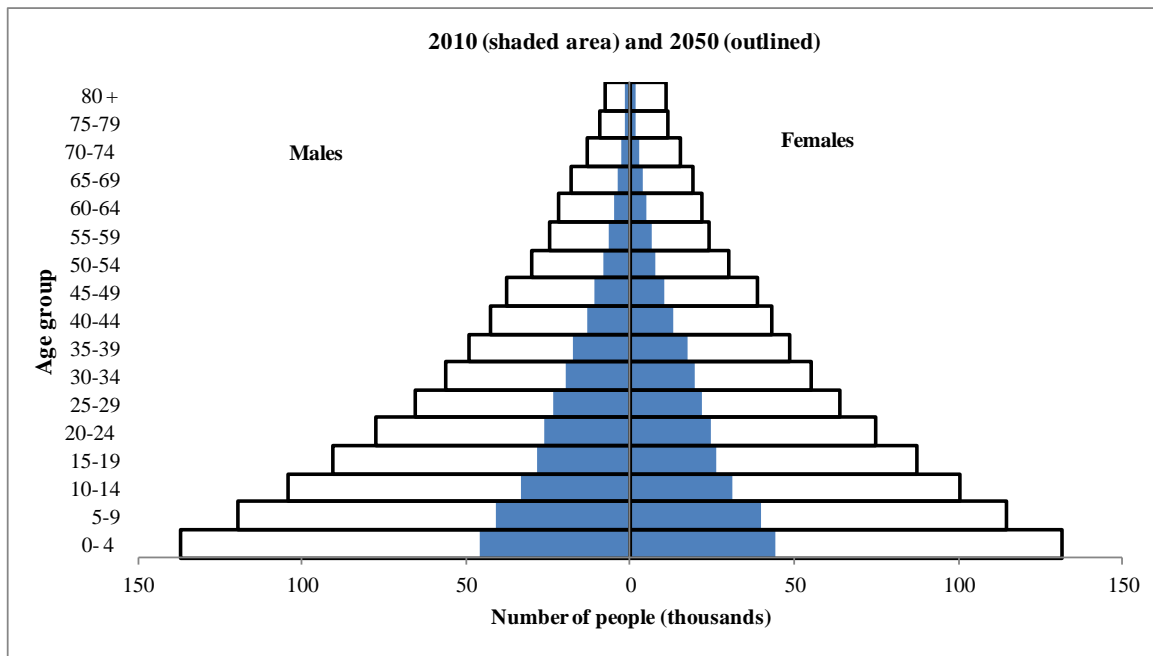
Figure 148: Population pyramid, High fertility projection, Solomon Islands: 2010 and 2050
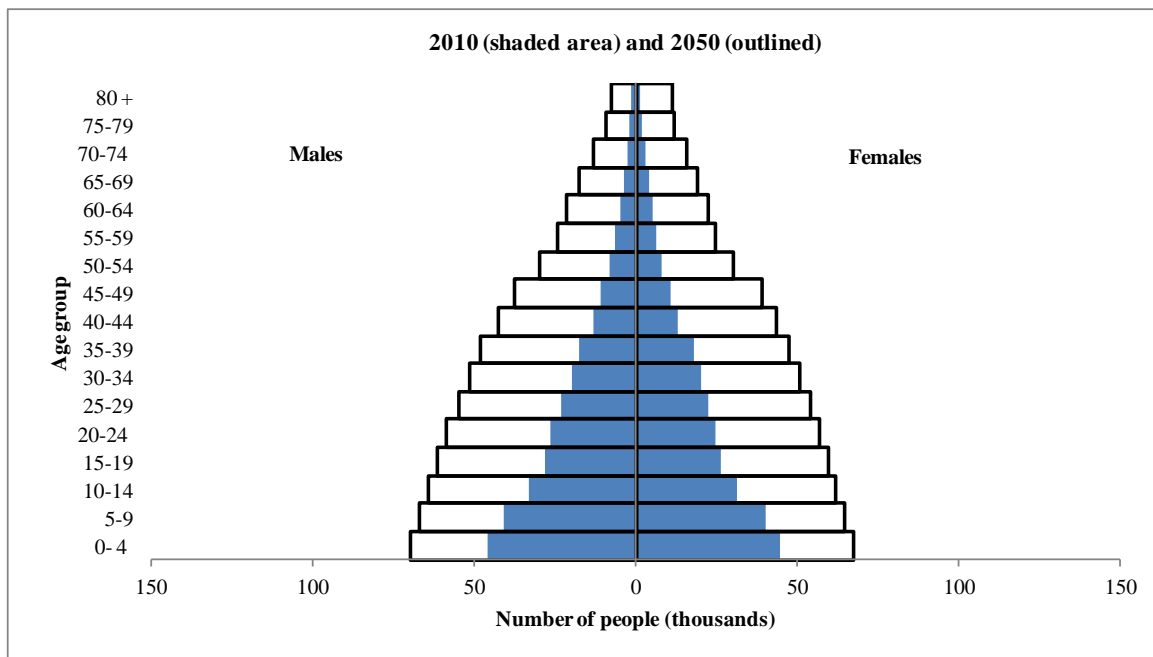
Figure 149: Population pyramid, Medium fertility projection, Solomon Islands: 2010 and 2050

2010 (shaded area) and 2050 (outlined)

Males — Females

Age group: 80+, 75-79, 70-74, 65-69, 60-64, 55-59, 50-54, 45-49, 40-44, 35-39, 30-34, 25-29, 20-24, 15-19, 10-14, 5-9, 0-4

Number of people (thousands)
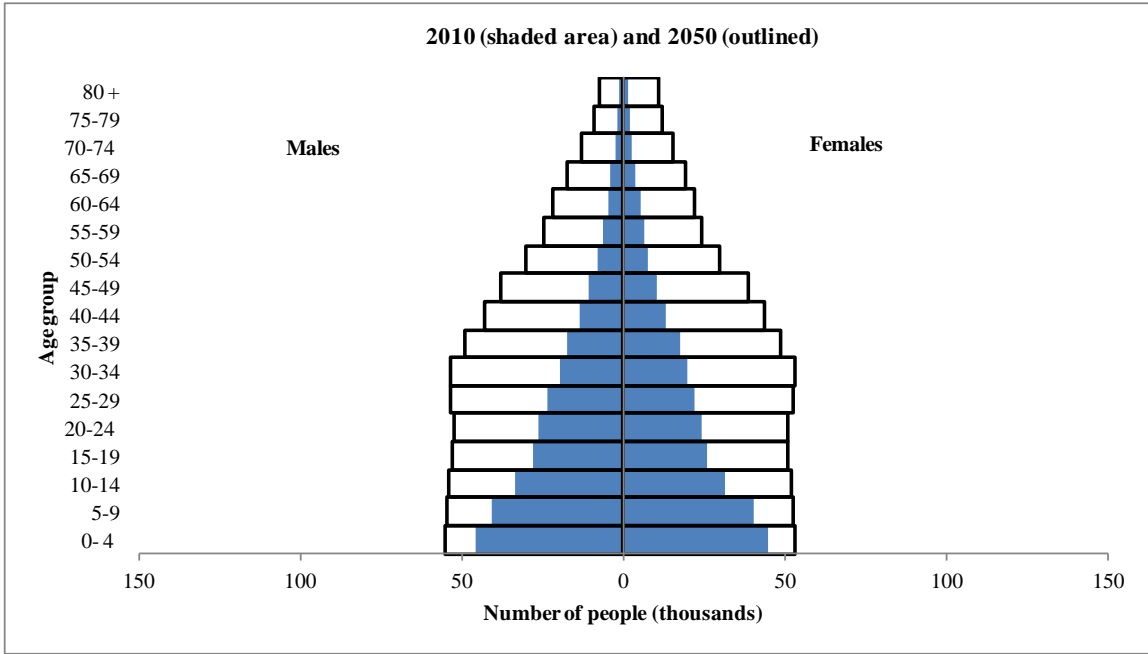
Figure 150: Population pyramid, Low fertility projection, Solomon Islands: 2010 and 2050

2010 (shaded area) and 2050 (outlined)

Males — Females

Age group: 80+, 75-79, 70-74, 65-69, 60-64, 55-59, 50-54, 45-49, 40-44, 35-39, 30-34, 25-29, 20-24, 15-19, 10-14, 5-9, 0-4

Number of people (thousands)
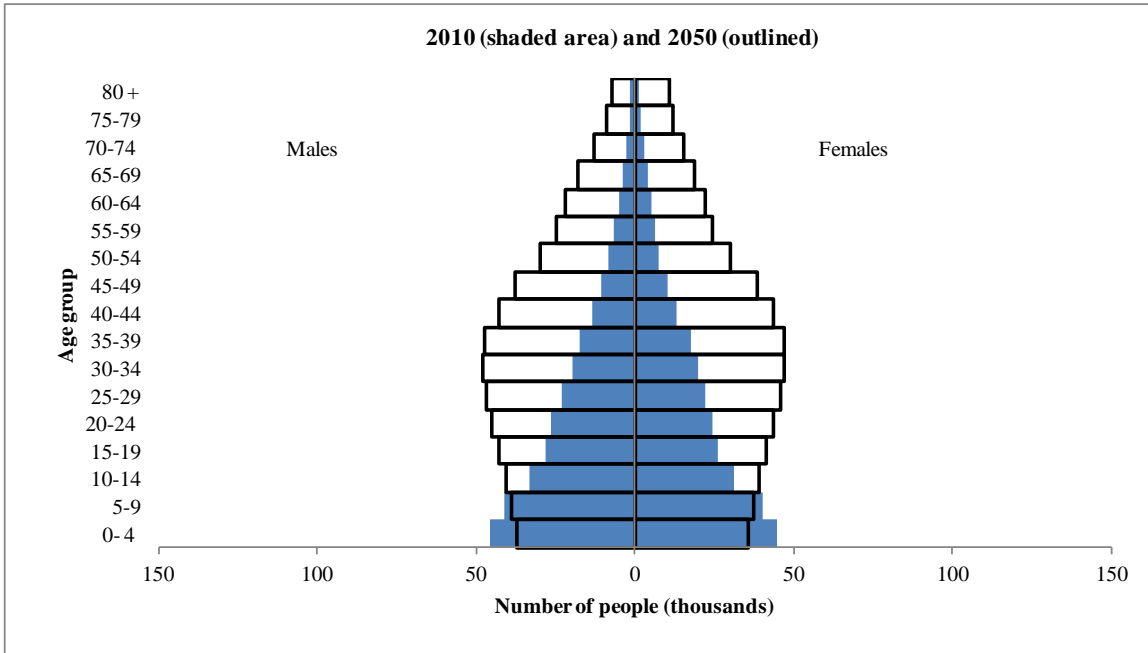
Most likely outcome

Predicting the likelihood of a certain future population size and structure is difficult for any country, and the further into the future the prediction, the more uncertain the outcome.

Therefore, several projection variants need to be produced to allow users to choose from an outcome that seems most probable according to their own views and opinions. Most data users, however, prefer to use a recommended projection scenario that depicts a "most likely outcome". Such a variant is usually called the "medium" projection scenario using the medium assumptions made.

Population changes close to those presented in the *medium population scenario* appears to be the most likely outcome because:

- The current fertility level is expected to decline as it has in the Solomon Islands' recent past, and is furthermore expected to do so based on historical worldwide observations of countries with a similar level of fertility (see also the "theory of demographic transition", App.35). Therefore, the high fertility assumption, with its very slow fertility decline, seems to be a more unlikely outcome, and a constant high level of the current TFR of 4.7 is surely an unrealistic scenario.

- Regarding the low fertility assumption, fertility levels (TFR) have already declined to well below 2 in many parts of the world, and it is therefore a realistic assumption to make. Nevertheless, such rapid fertility decline does not seem likely to occur in the Solomon Islands as it seems "uncharacteristic" for Pacific Islands populations at the moment, and the decline in fertility levels have been relatively moderate in the recent past. In addition, the general assumption was made that the fertility level of the Solomon Islands will eventually reach the present day levels of countries such as Australia, France, New Zealand and the USA.

6.2 Sub-national projections

Population projections for each of Solomon Islands' ten provinces were prepared according to the same principles as the national projection. The cohort-component method was applied, and the fertility and mortality indicators as estimated from the 2009 census were used as inputs for each province.

However, there is one significant difference in the preparation of sub-national projections compared to the national projection, and that is the assumptions of (internal) migration. While no migration assumption was made for the national projections (net international migration is zero), a migration assumption for the provinces had to be included as the demographic pattern of each province is strongly influenced by internal migration.

Base population

The census age distributions of each province as recorded in the census are used and prorated to be consistent with the adjusted base population for the national projections (App.41 and Table 47).

Fertility

The trend of fertility of each province throughout the projection period follows the same pattern as that established for the national projection (medium variant). However, the level of fertility is determined by the estimated level for 2009, and the provincial TFRs will eventually converge (Fig.151); the higher the level in 2009, the higher the level throughout the projection period.

Figure 151: Fertility trend by province, Solomon Islands: 2009-2054
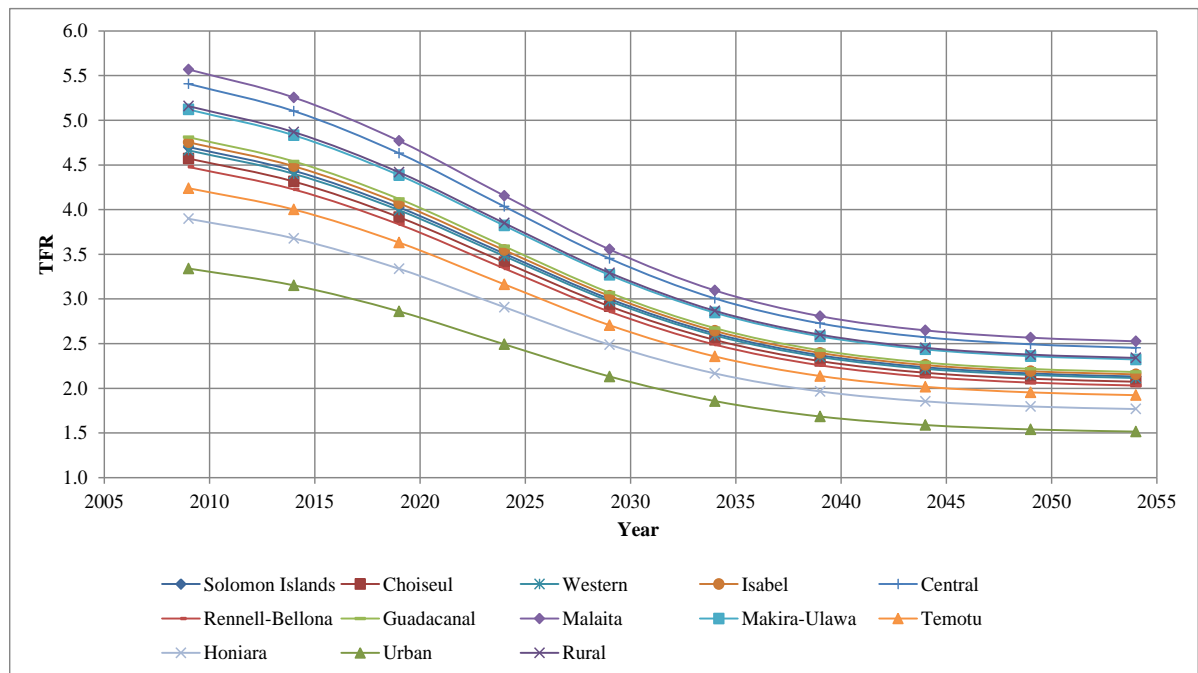
Note: The line showing the fertility level and trend for Guadalcanal and Malaita, the Rural areas and Rennell-Bellona, and Isabel and Central overlap as their TFR in 2009 was the same, and therefore is their future trend

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Mortality

The level of future mortality (life expectancy at birth) of each province is determined by using the UN working models of mortality improvement as described earlier (App.34), applied to the estimated life expectancy at birth of each province as described in section 3.2.2.

Migration

In order to estimate the migration component of each province, the balancing equation was used.

Balancing equation:

Population growth = **Births** minus **Deaths** plus **Migration**

Net migration can be estimated as

Migration = **Population growth** minus **Births** plus **Deaths** or

Migration rate = population growth rate – crude birth rate (CBR) + crude death rate (CDR)

Since the population growth rate and the level of fertility and mortality are known from the census, the migration component can be roughly calculated (see section 3.3).Table 47 shows the levels of fertility, mortality and estimated migration that were used as a starting point for each province .

In addition two variants of migration have been prepared.

1. **Constant migration**: The estimated level in 2009 has been kept constant throughout the projection period
2. **Zero net migration**: Zero net migration is assumed for the entire projection period (only natural growth influences population growth).

The zero migration variant has been prepared in order to illustrate the impact of migration on the population size of the different provinces.

With regard to the age and sex structure of migrants, it is assumed that there will be equal numbers of males and females, and the age structure resembles that of a family type migration pattern (App.37).

Table 47: Demographic components for provincial projections

| Place of residence | Demographic components | | | | | | |
| | Annual growth rate (%) | TFR | E(0) - 2009 | | E(0) - 2055 | | Net Migration (annual) |
			Males	Females	Males	Females	
Urban	5.4	3.3	67.9	74.9	76.3	82.6	3154
Rural	2.3	5.2	65.1	71.9	75.4	81.4	-3154
Choiseul	2.6	4.6	63.5	70.1	74.8	80.8	41
Western	2.3	4.7	65.7	72.5	75.8	81.5	-316
Isabel	2.9	4.8	65.7	72.5	75.8	81.5	41
Central	2.6	5.4	62.0	68.5	74.0	80.2	-153
Rennell-Bellona	2.2	4.5	61.0	69.6	73.6	80.6	20
Guadacanal	5.0	4.8	66.2	73.1	75.9	81.5	1,885
Malaita	2.1	5.6	64.0	70.7	75.1	80.9	-1,802
Makira-Ulawa	3.0	5.1	67.3	74.3	76.4	82.1	-71
Temotu	1.5	4.2	62.2	73.1	74.2	81.5	-174
Honiara	4.0	3.9	67.9	74.9	76.6	82.6	529
Solomon Islands	**3.0**	**4.7**	**66.2**	**73.1**	**75.9**	**81.5**	**0**

*not adjusted for under enumeration

Projection results

Appendix 43 and Figures 152-168 illustrate the impact of migration on the size of the different provinces, and on the population structure (Figs.169-181).

In general, all provinces will increase in size until 2050 regardless of which type of migration assumption was applied, although the rate of increase varies considerably depending on the type of migration assumption used.

With respect to Figures 157-168, if the blue columns grow higher than the red ones in future means that these areas (provinces) gain population though migration such as the urban areas, Guadalcanal and Honiara, while those areas where the red columns grow higher than the blue one lose population through migration such as the rural areas, Western, Central, Malaita and Temotu. Provinces that do not show much difference between the blue and the red columns are not significantly affected by (net) migration.

The most important outcome of the projections is the fact that Guadalcanal will eventually become the province with the largest population size if current estimated

migration levels prevail into the future, and will have the highest number of people of all provinces just after the year 2020 (Fig.152).

The other outcome is that the rural population size will increase rapidly, even if they lose population to the urban areas (Fig.154), but it would increase even faster without rural to urban migration (Fig.155).

The proportion of the urban population will surely increase in future, and according to these projections it will increase from 20% in 2010 to 28% in 2030 and almost one-third of the total Solomon Islands population in 2050 (Fig.156).

Examining the population structures, Figures 169-181 show the population pyramids of the years 2012 (in blue), 2030 (in grey), and 2050 (outlined). The future population structures of all areas in the Solomon Islands are deviating more and more from that of a classical pyramid shape (Fig.15). The younger age groups will 'straighten' while the older age groups are widening. The 'straightening' – or in some cases they even narrow - is a result of the anticipated decreasing fertility rates. The widening of the older age groups is the result of the young population of today growing older over time.

All in all, the populations will be ageing, with a lower proportion of young people, and higher proportions of older people. The urban (Honiara) population structure (pyramid) will be most affected because the fertility level of the urban population will be considerably lower than that of the rural population, and in addition the urban population structure is affected by migration from the rural areas, as the migration numbers will affect the urban population proportionally more than the rural population.

Most likely outcome

Clearly the Solomon Islands' provinces are not and will not be closed to migration, and internal migration (rural-urban) will continue. In view of the currently relative small urban proportion of Solomon Islands, it can be expected to grow substantially in future, as has been the case in most other countries in the world.

The urban growth will not be limited to Honiara, but will most likely include the other provincial urban centers, as has happened in the recent past (1999-2009). Most importantly, the growth of what is described as 'Honiara urban area' will continue, and this will affect the urban areas of Guadalcanal bordering Honiara probably more than Honiara itself. As a result rural to urban migration will cause Guadalcanal's population to increase very rapidly and its urban part in particular.

Figure 152: Population size by province according to the constant migration variant, Solomon Islands: 2009-2050
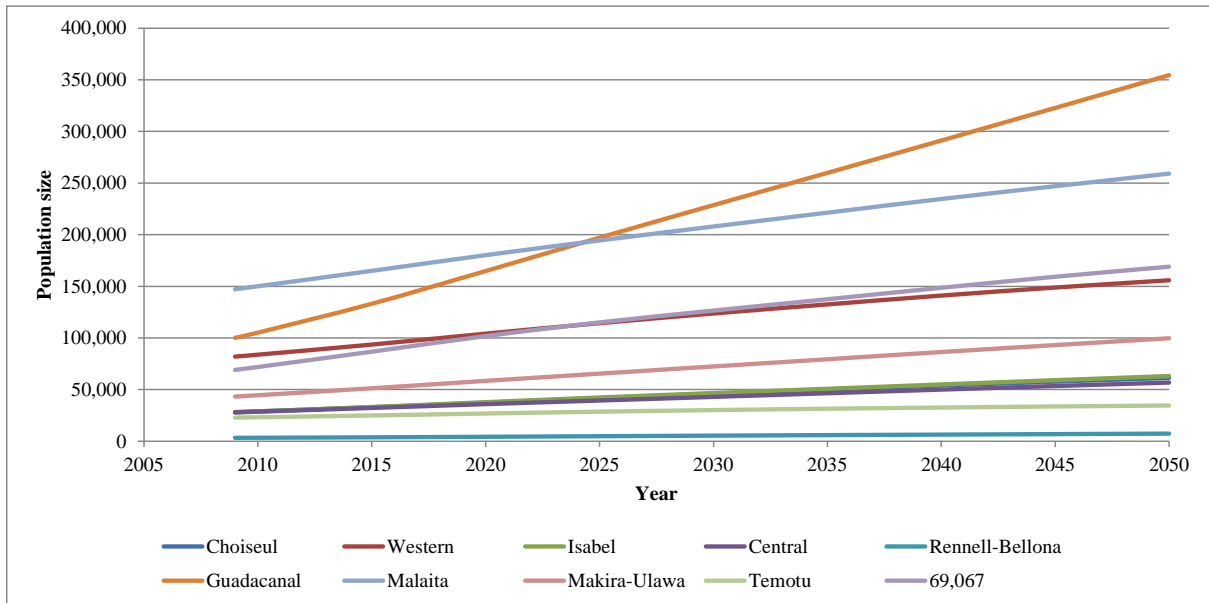
Figure 153: Population size by province according to the zero migration variant, Solomon Islands: 2009-2050
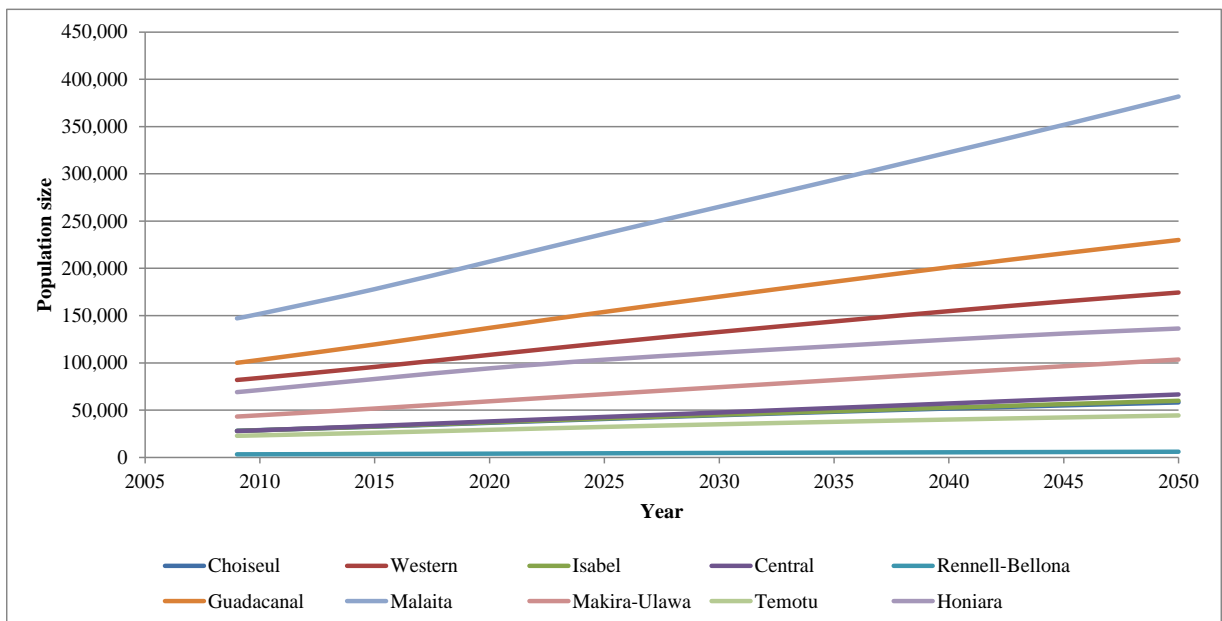
Figure 154: Population size by urban-rural areas according to the constant migration variant, Solomon Islands: 2009-2050
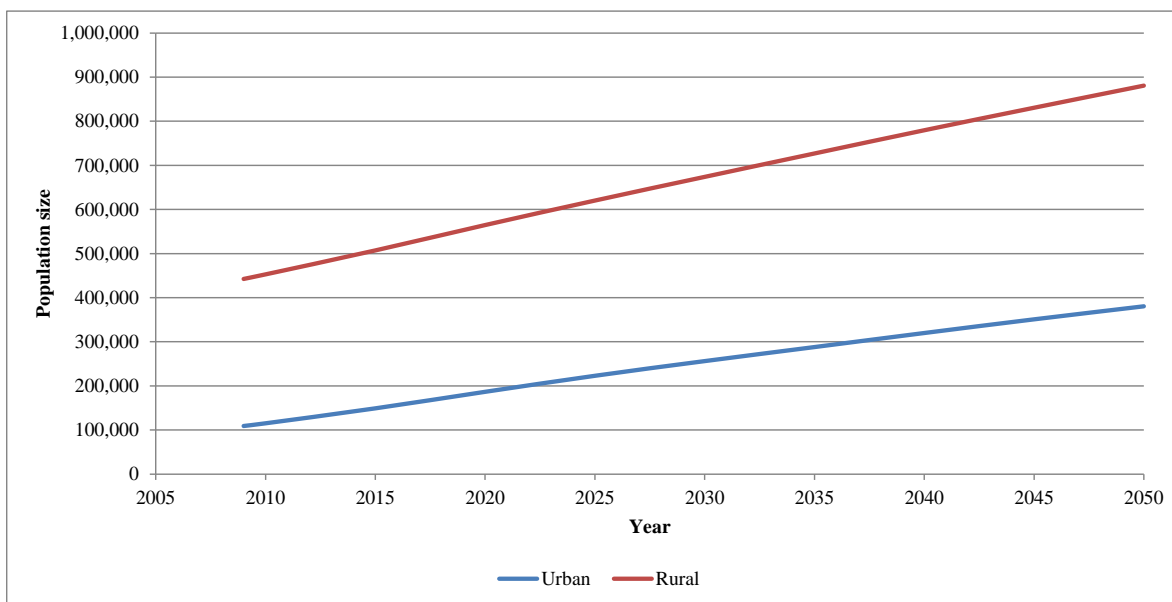
Figure 155: Population size by urban-rural areas according to the zero migration variant, Solomon Islands: 2009-2050
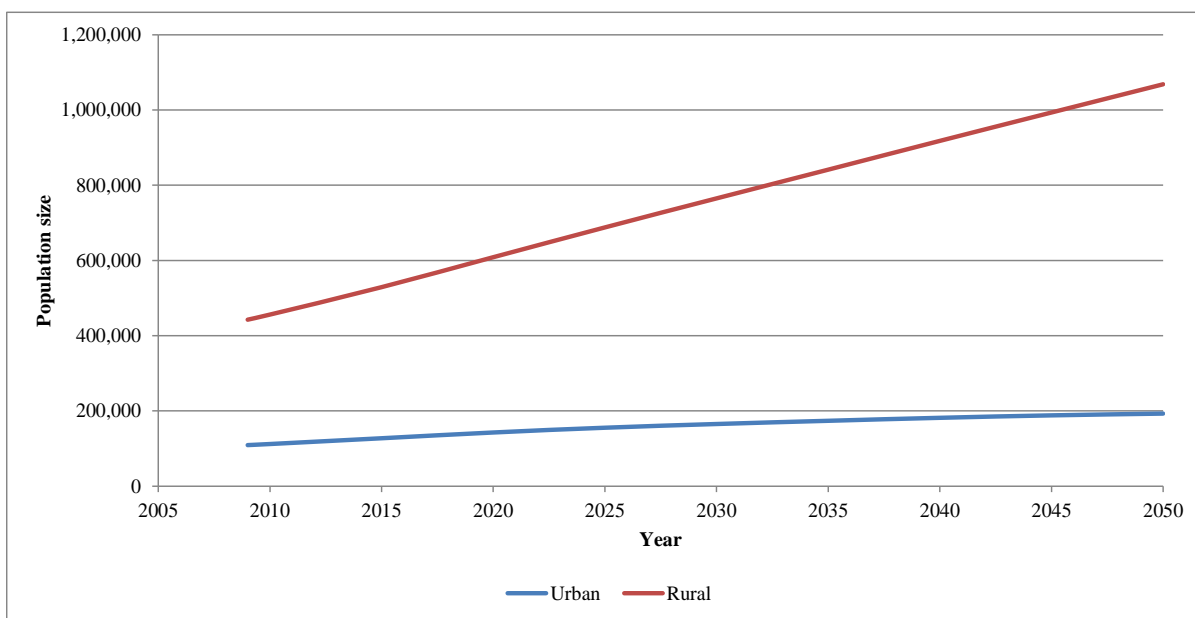
Figure 156: Past and projected population size by urban-rural residence in numbers and percentages, Solomon Islands: 1976-2050
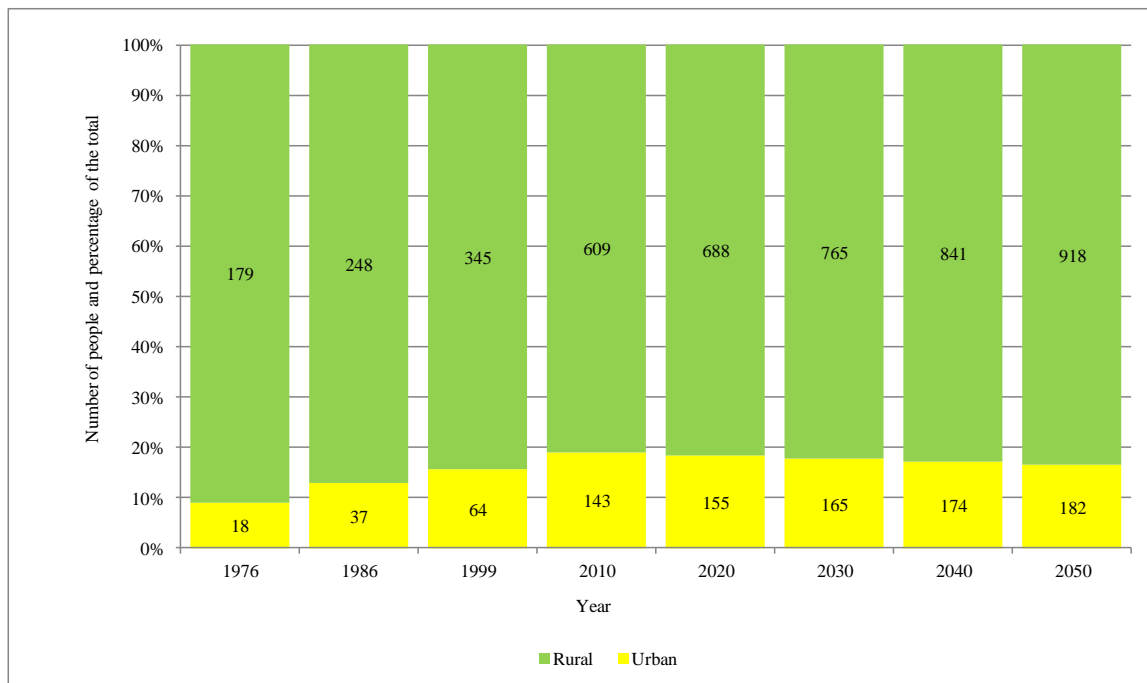
Figure 157: Population size according to two different migration variants, urban areas: 2009-2050
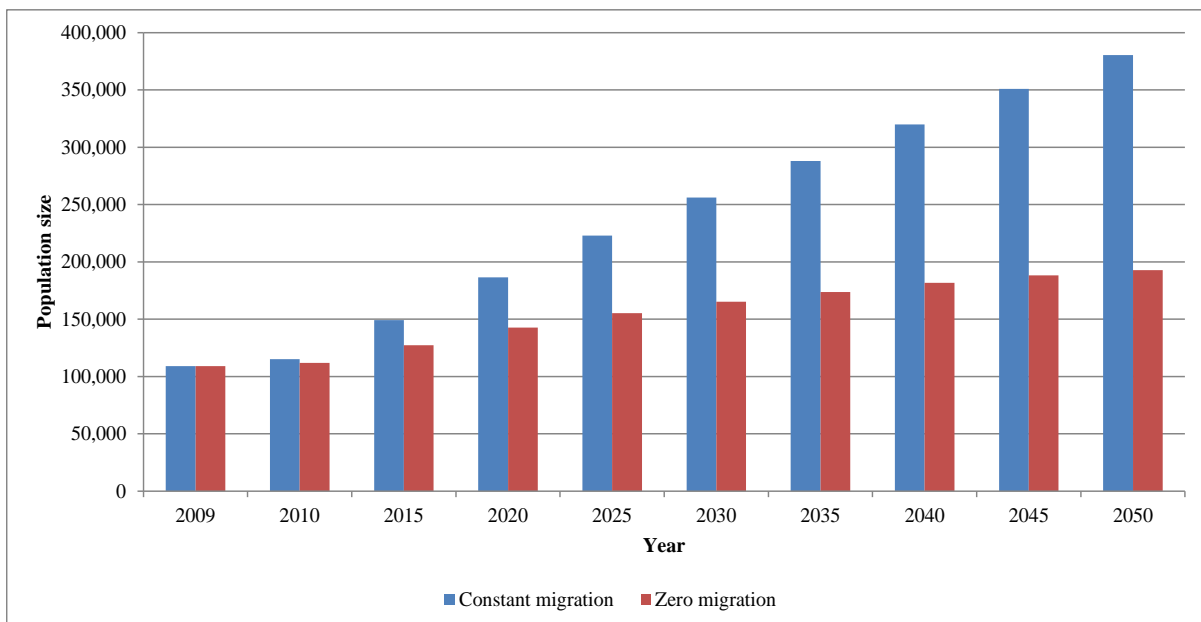
Figure 158: Population size according to two different migration variants, Rural areas: 2009-2050
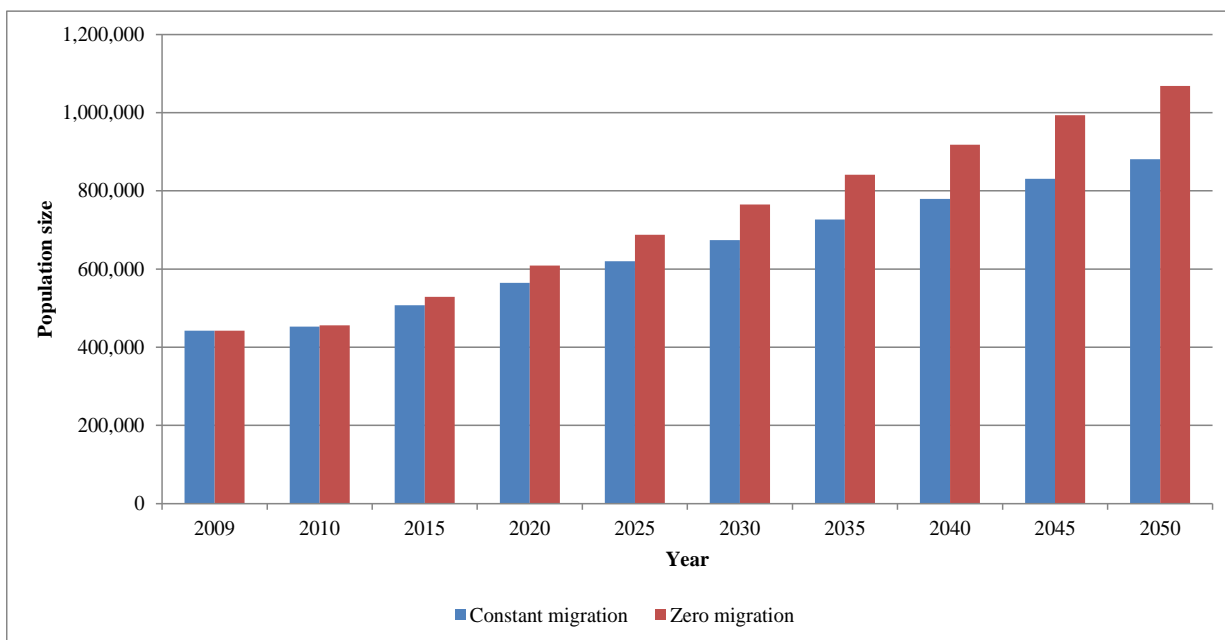
Figure 159: Population size according to two different migration variants, Choiseul: 2009-2050
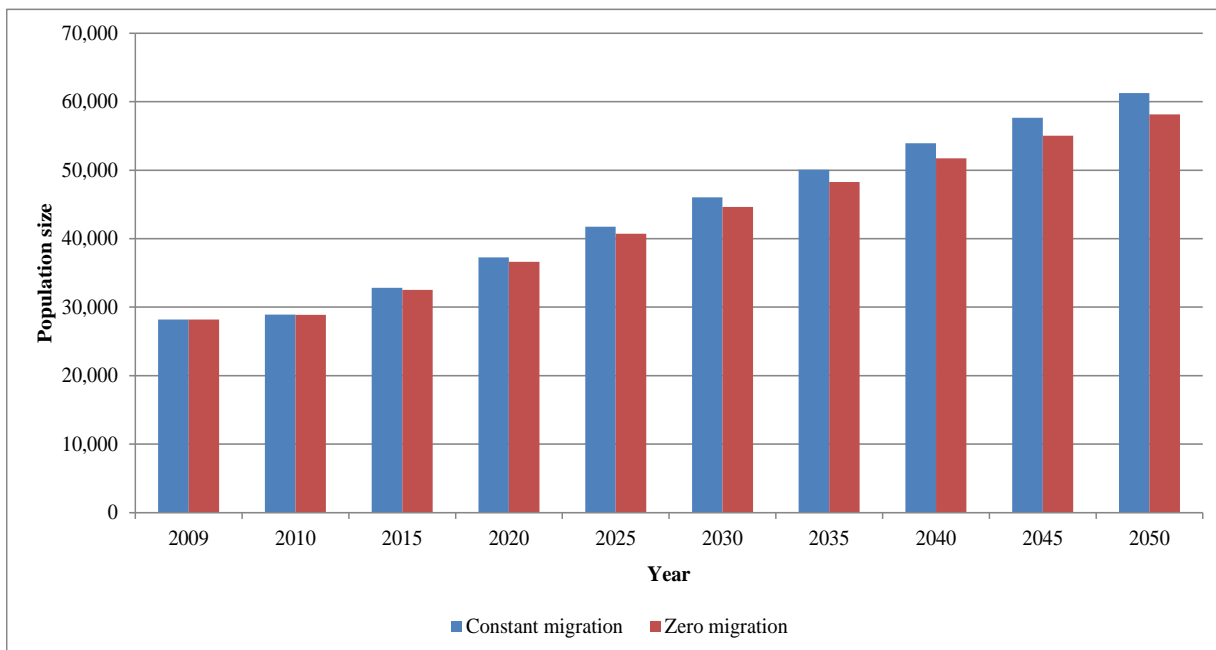
Figure 160: Population size according to two different migration variants, Western: 2009-2050
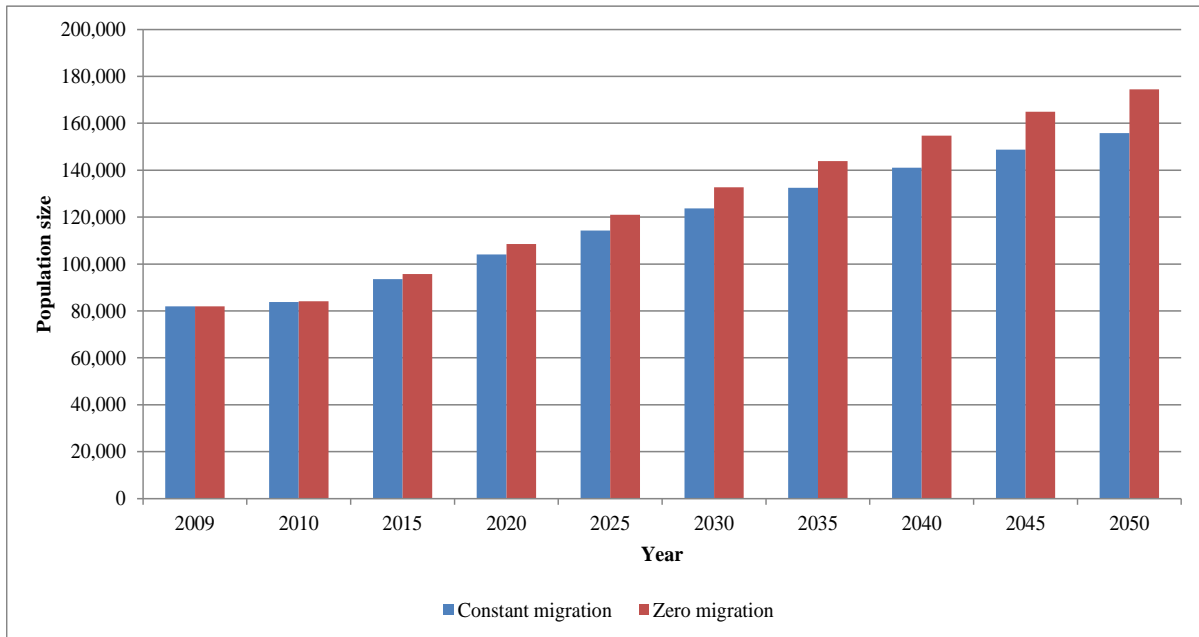
Figure 161: Population size according to two different migration variants, Isabel: 2009-2050
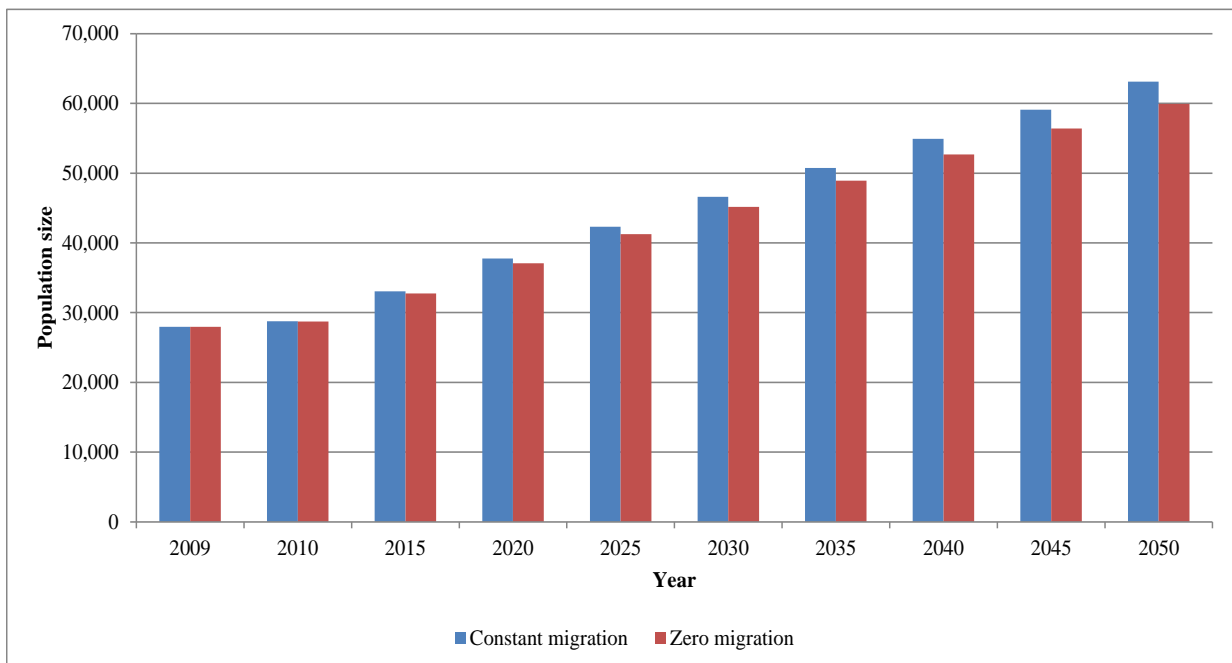
Figure 162: Population size according to two different migration variants, Central: 2009-2050
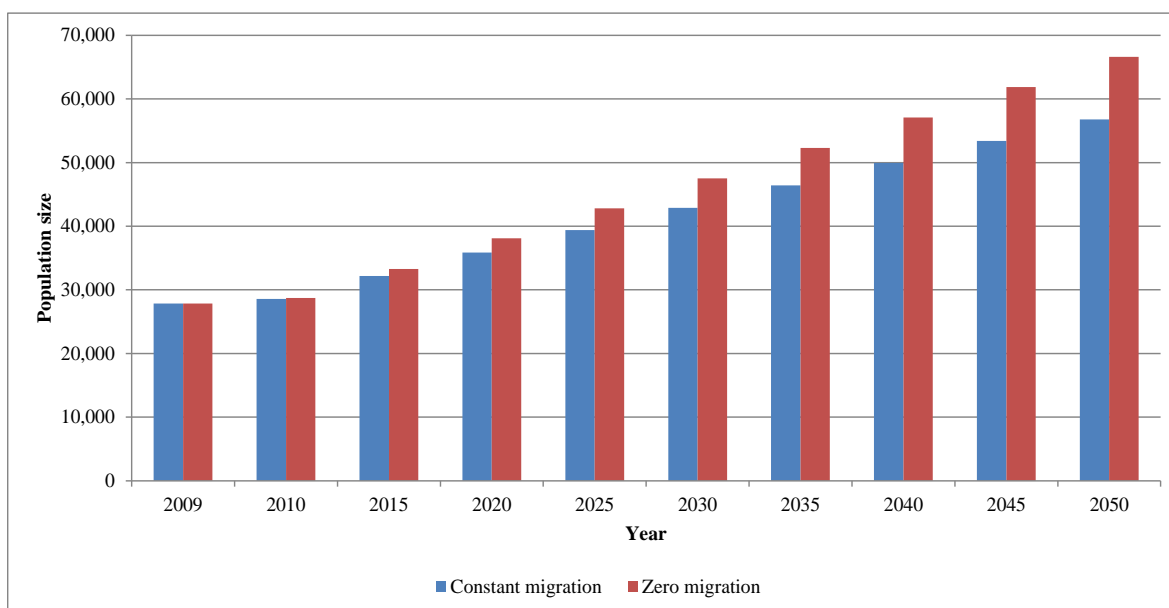
Figure 163: Population size according to two different migration variants, Rennell-Bellona: 2009-2050
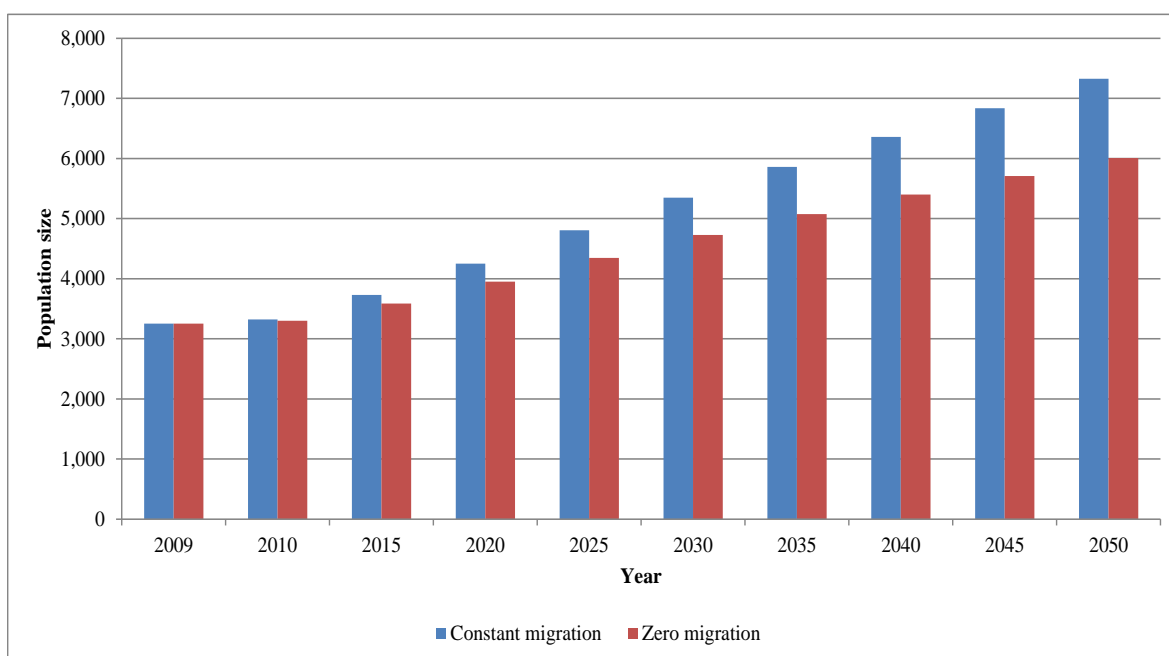
Figure 164: Population size according to two different migration variants, Guadalcanal: 2009-2050
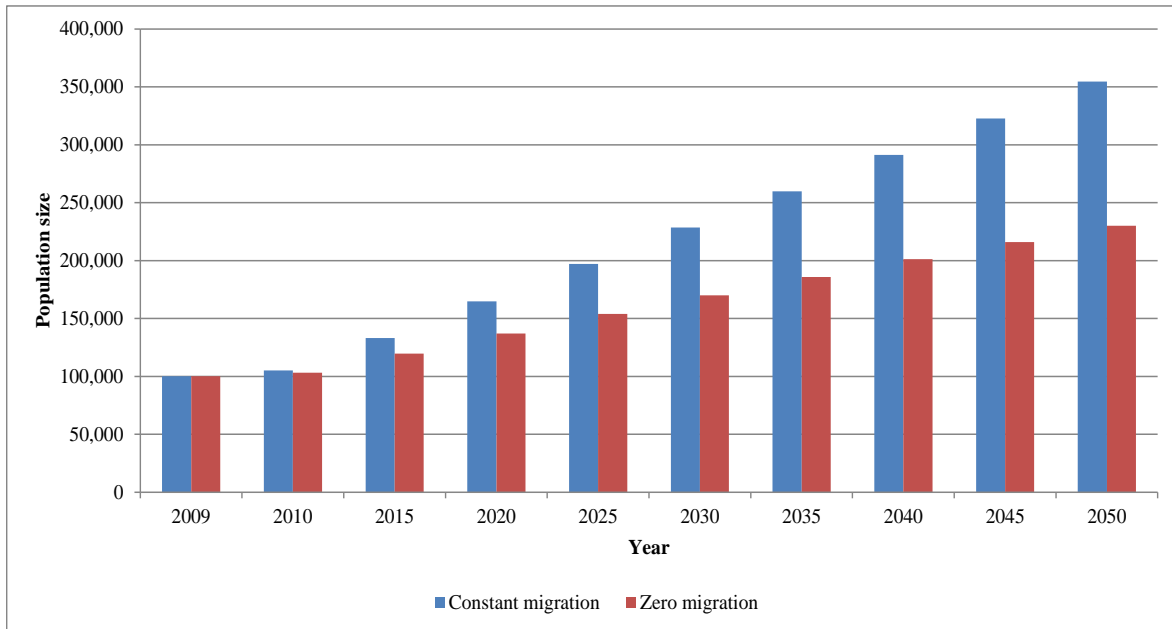
Figure 165: Population size according to two different migration variants, Malaita: 2009-2050
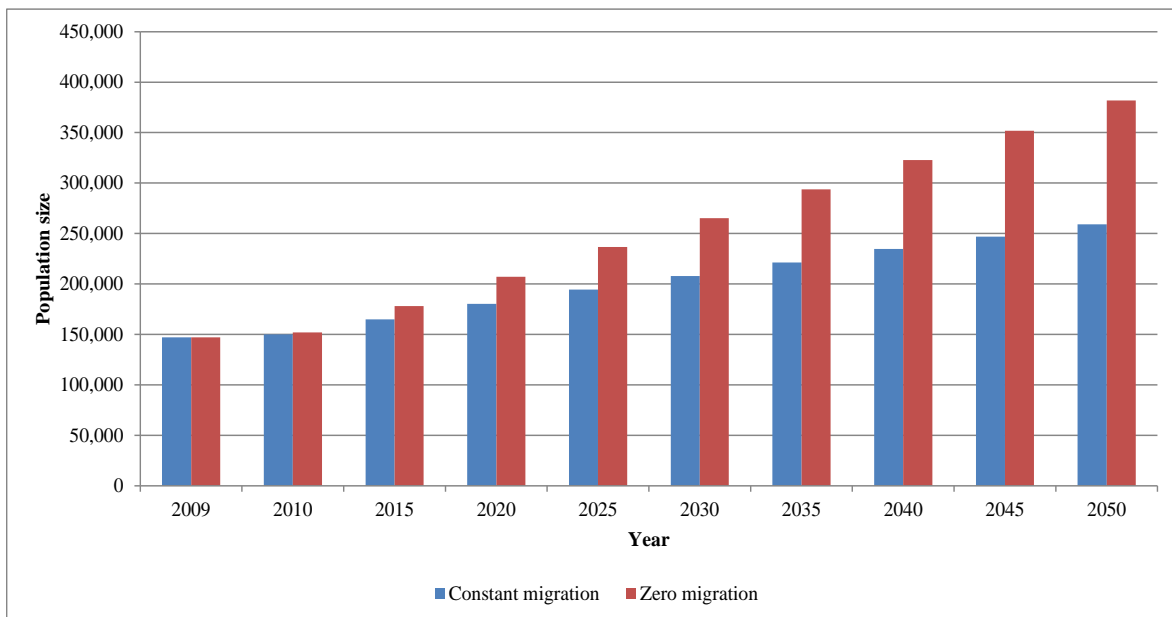
Figure 166: Population size according to two different migration variants, Makira-Ulawa: 2009-2050
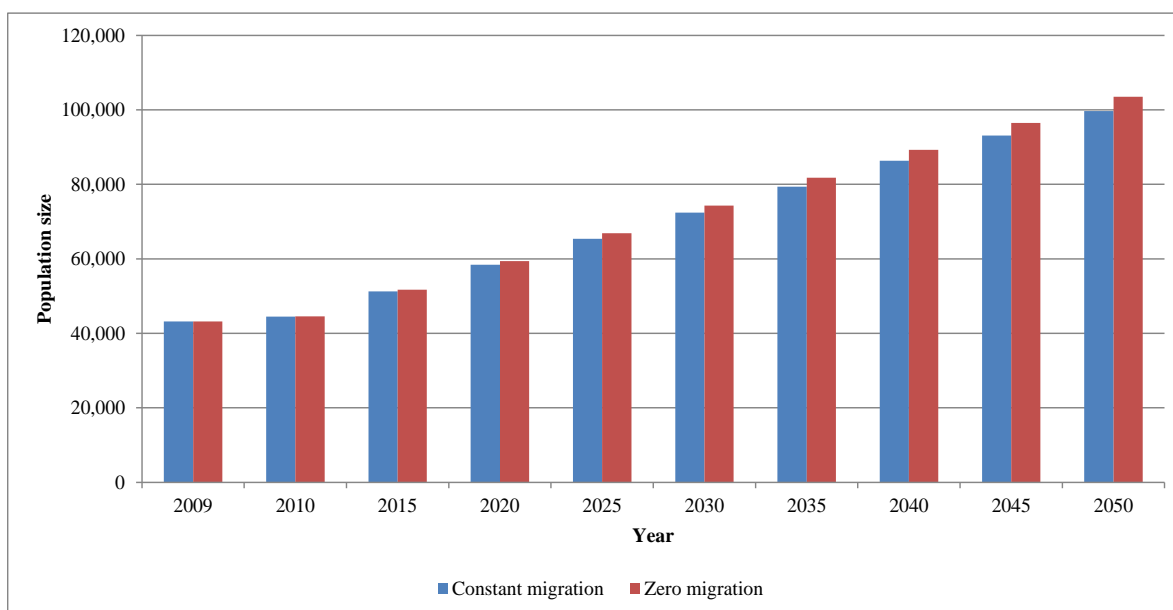
Figure 167: Population size according to two different migration variants, Temotu: 2009-2050
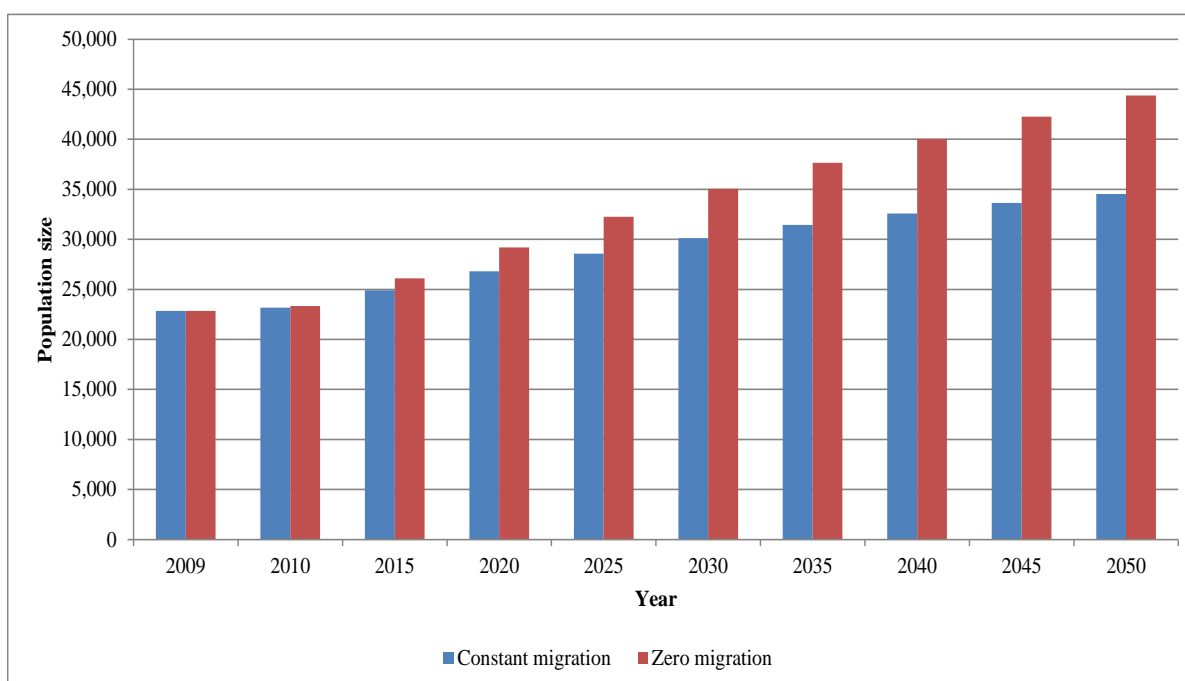
Figure 168: Population size according to two different migration variants, Honiara: 2009-2050
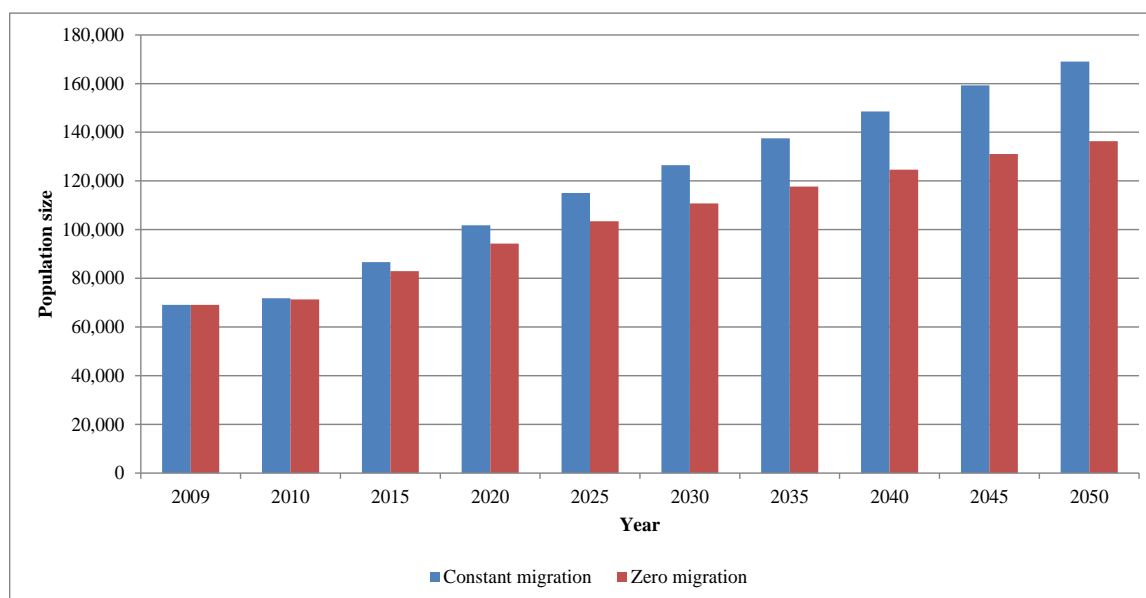
Figure 169: Population pyramid, Solomon Islands: 2010, 2030, and 2050
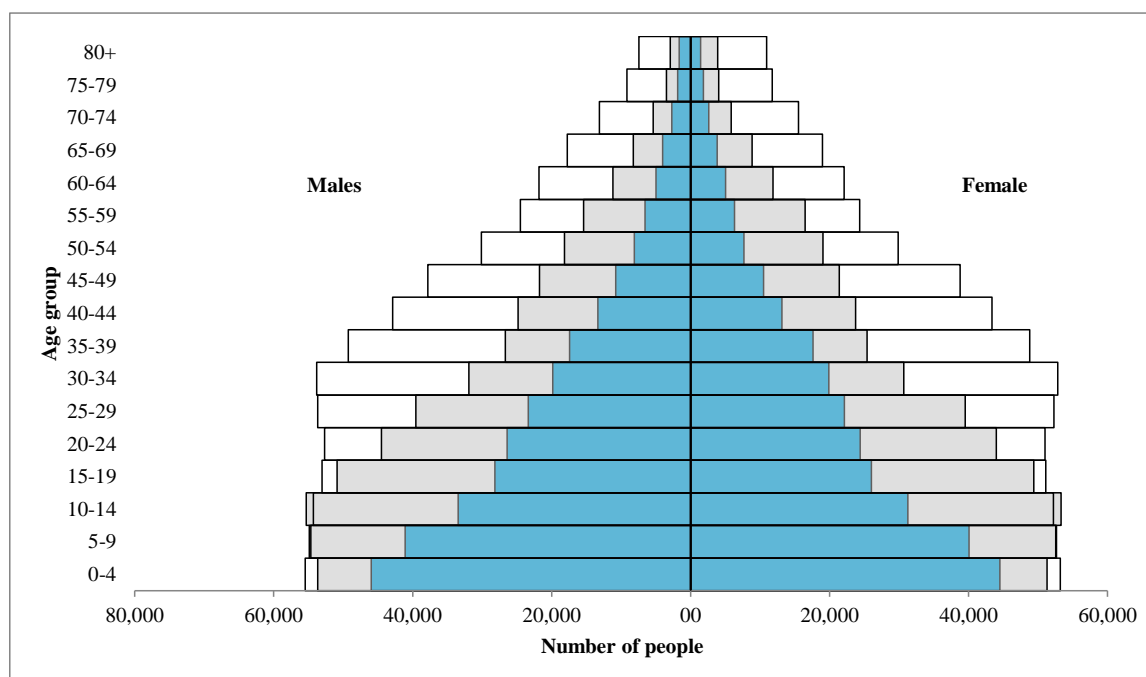
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 170: Population pyramid, urban areas: 2010, 2030, and 2050
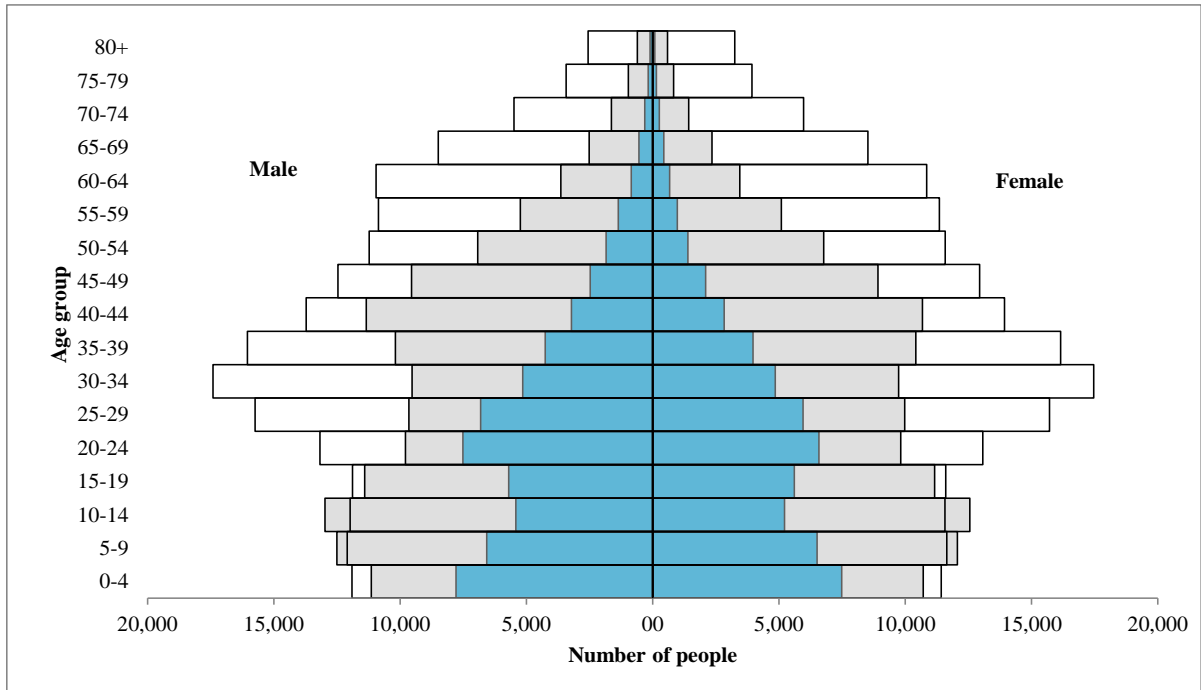
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 171: Population pyramid, Rural areas: 2010, 2030, and 2050
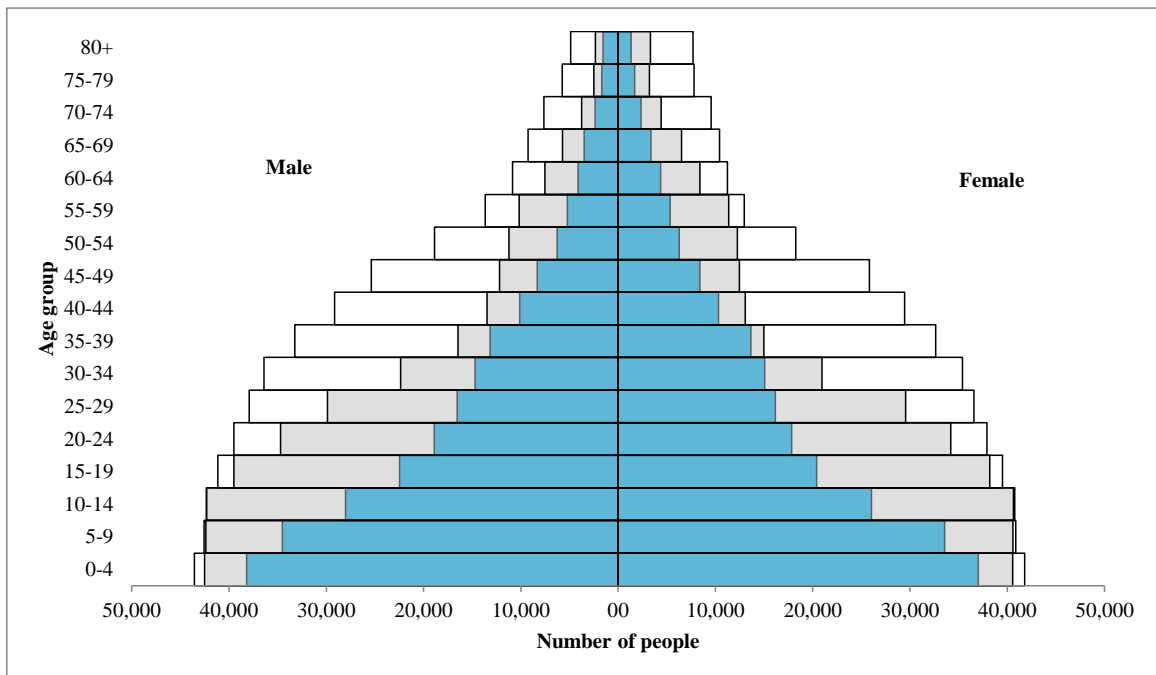
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 172: Population pyramid, Choiseul: 2010, 2030, and 2050
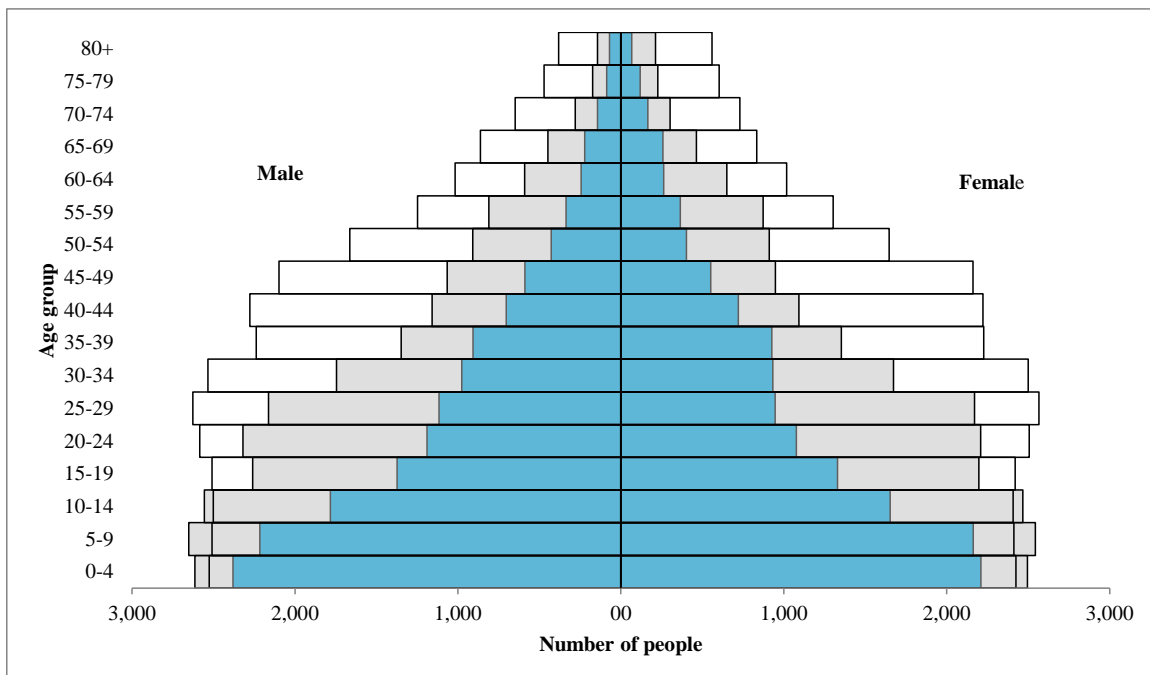
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 173: Population pyramid, Western: 2010, 2030, and 2050
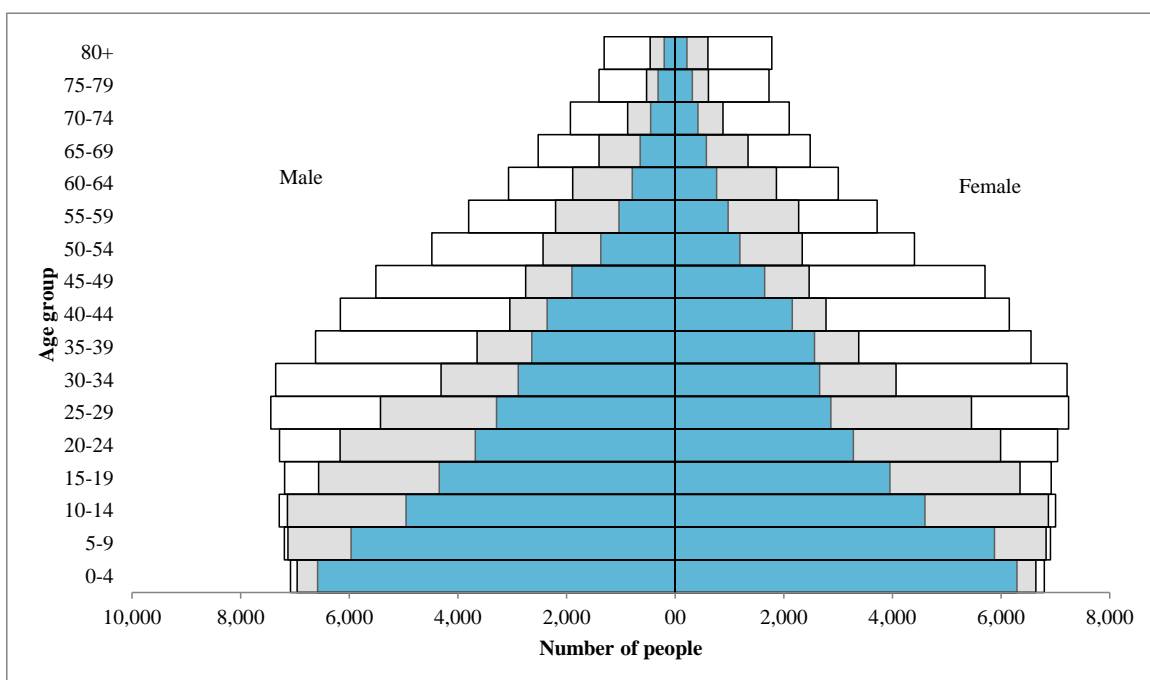
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 174: Population pyramid, Isabel: 2010, 2030, and 2050
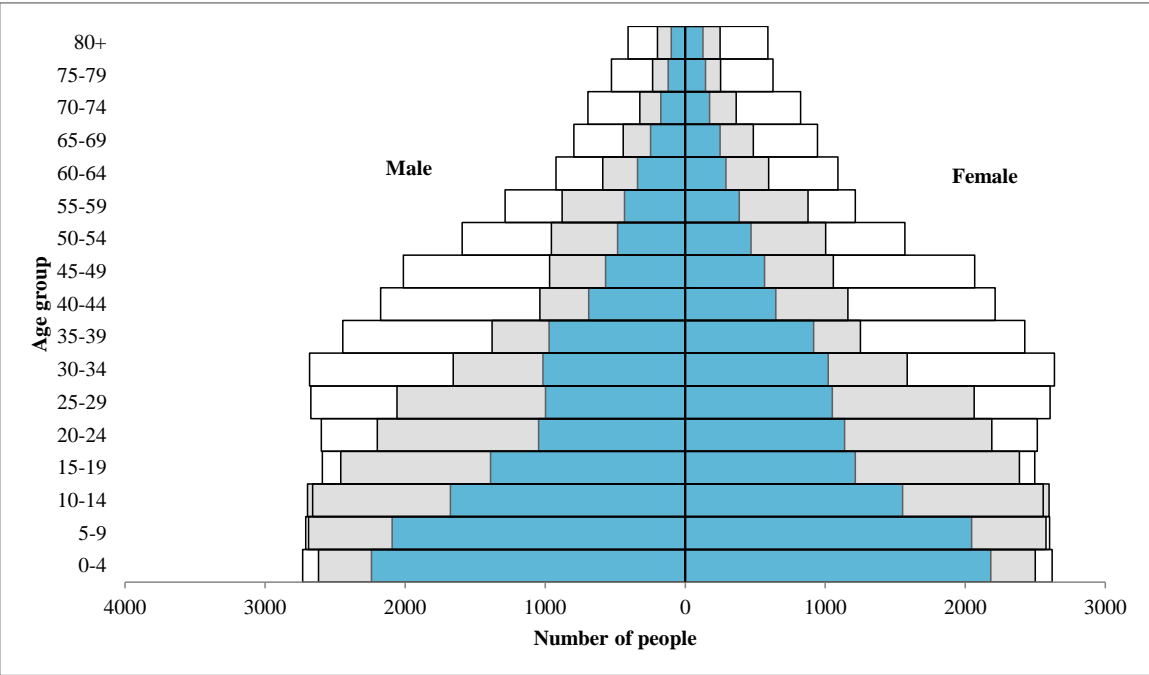
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 175: Population pyramid, Central: 2010, 2030, and 2050
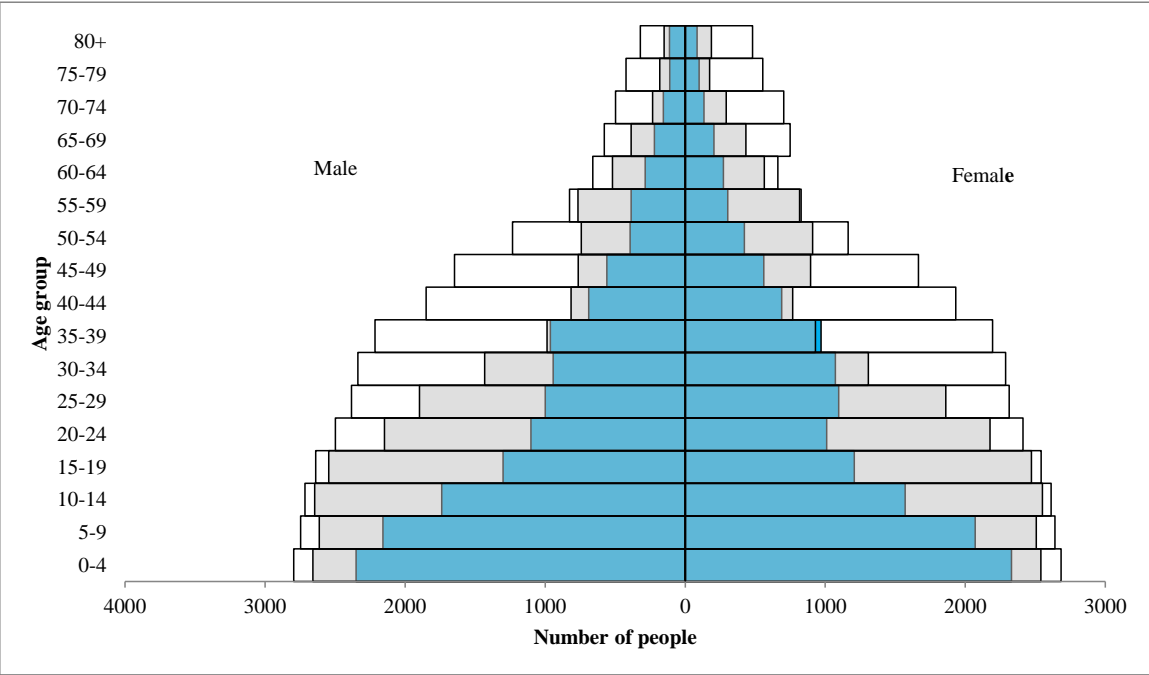
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 176: Population pyramid, Rennell-Bellona: 2010, 2030, and 2050
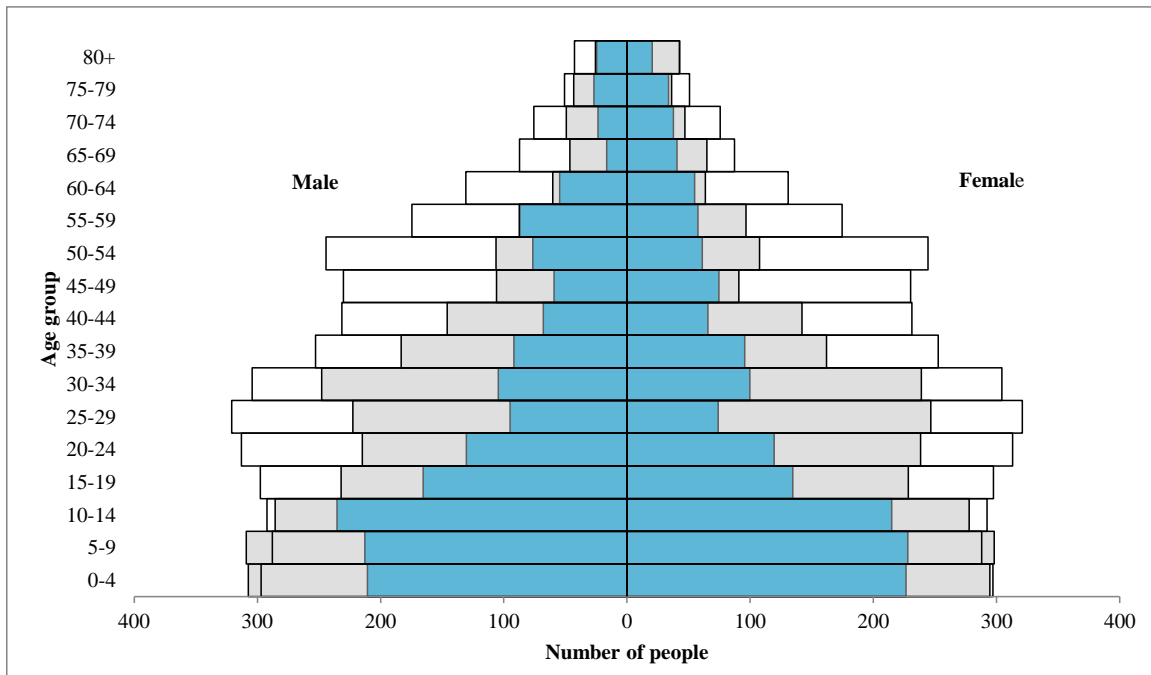
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 177: Population pyramid, Guadalcanal: 2010, 2030, and 2050
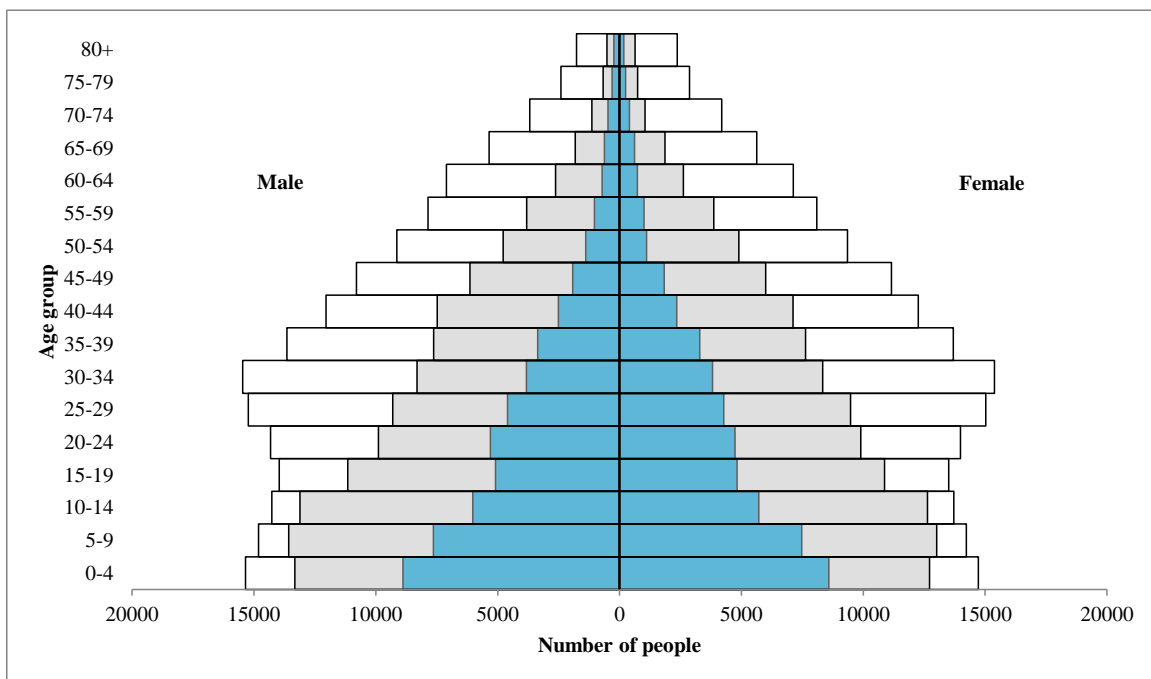
Note: blue = 2010, grey = 2030, outlined = 2050

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Figure 178: Population pyramid, Malaita: 2010, 2030, and 2050
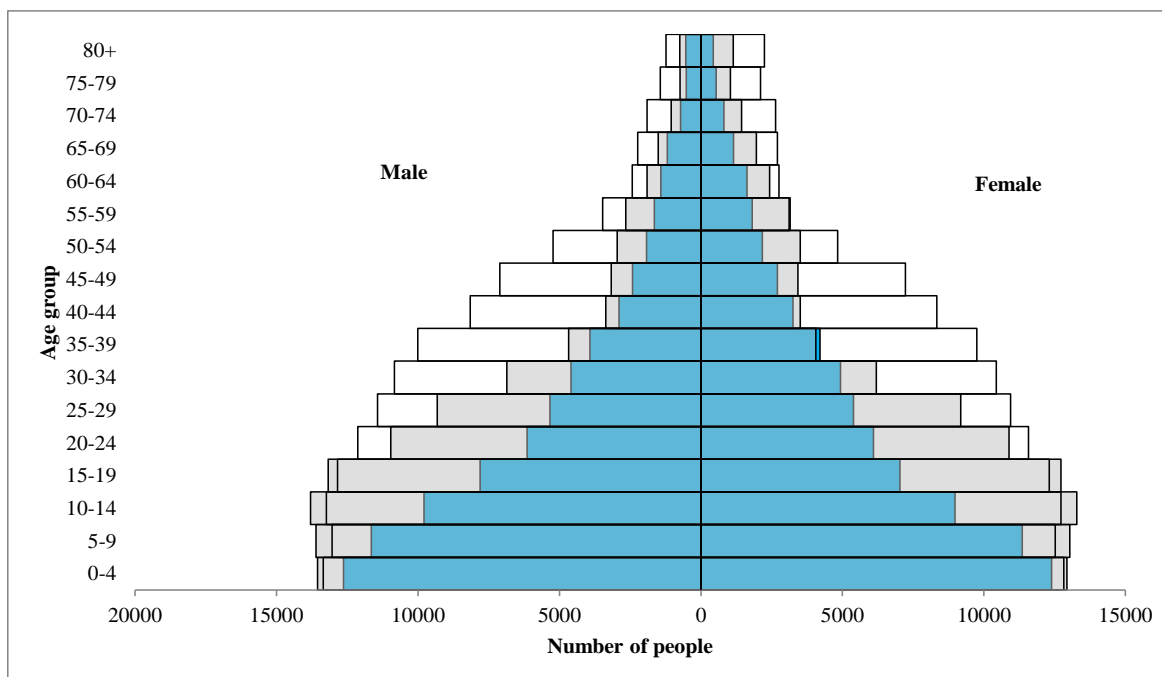
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 179: Population pyramid, Makira-Ulawa: 2010, 2030, and 2050
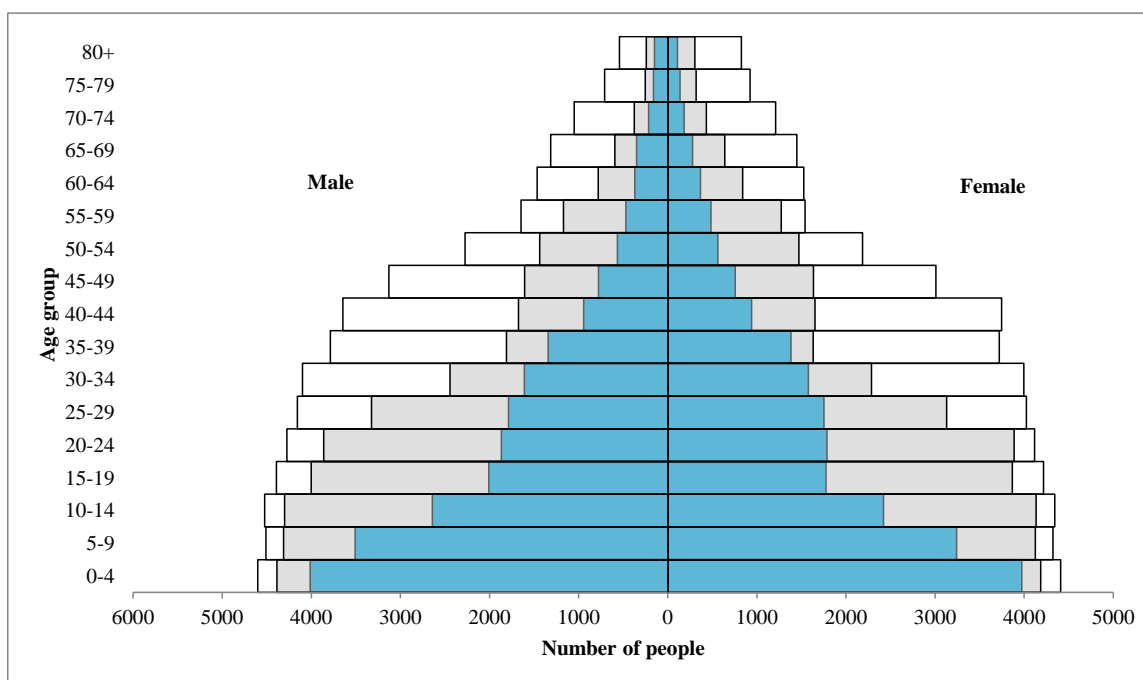
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 180: Population pyramid, Temotu: 2010, 2030, and 2050
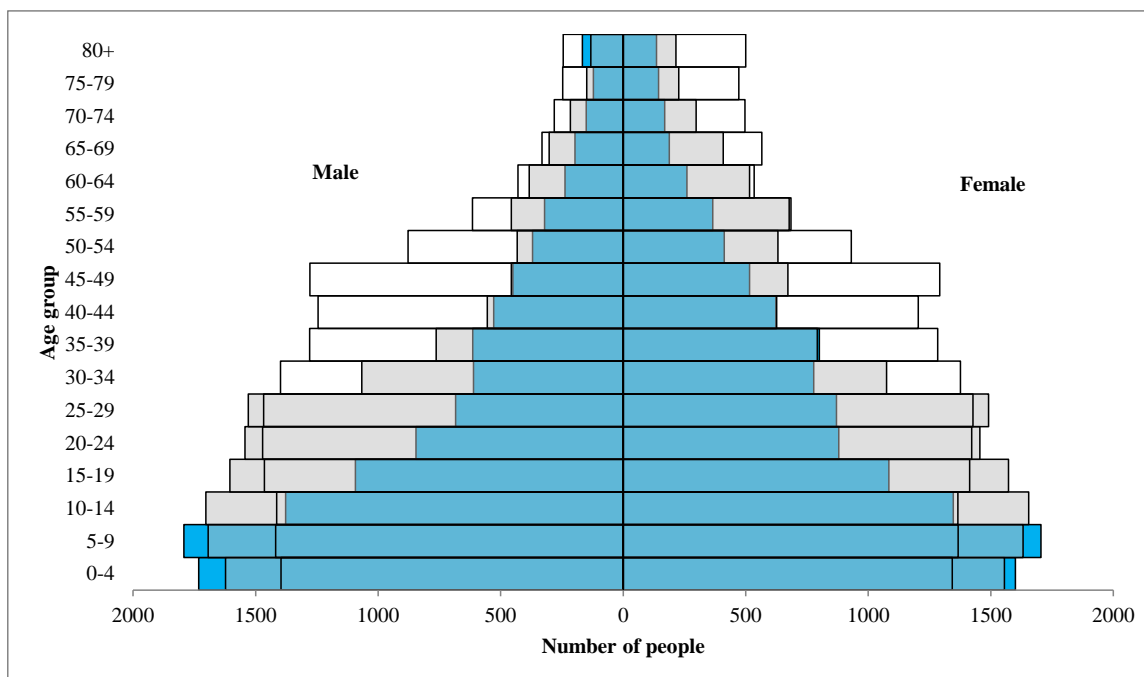
Note: blue = 2010, gray = 2030, outlined = 2050

Figure 181: Population pyramid, Honiara: 2010, 2030, and 2050
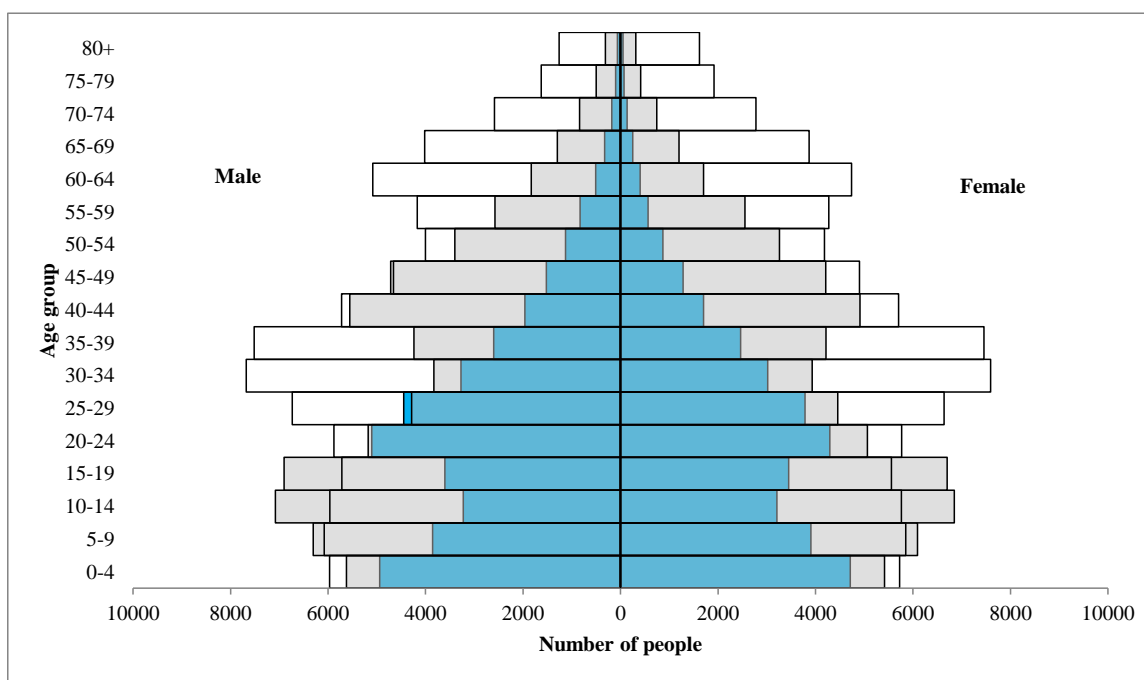
Note: blue = 2010, gray = 2030, outlined = 2050

7. IMPLICATIONS OF DEMOGRAPHIC TRENDS

7.1. Population dynamics

7.1.1 Growth rate

The Solomon Islands annual population growth rate in 2009 is estimated at 3.0% (unadjusted 2.3%); an increase compared to the 1986-1999 intercensal growth rate of 2.8%. While 515,780 people were enumerated during the 2009 census, the enumeration suffered approximately from a 8.3% undercount, and the population size stood more likely at 558 thousand at the time of the census. The country has one of the highest growth rates in the Pacific region.

According to the medium variant projections presented in this report, the population currently (2010-2015) grows at an annual rate of 2.89% which translates into an annual increase of more than 18 thousand people per year – an increase of about 48 people per day, with the population doubling in size in 24 years.

The Solomon Islands' population density of 17 people per sq. km is one of the lowest in the region. However, it is unevenly distributed. Honiara, the capital is the most densely populated area with 2,953 people per sq. km. Central province is a distant second with 42 people per sq. km and with 5 people per sq. km, Rennell-Bellona province is the lowest.

7.1.2 Fertility

In the absence of any significant international migration, the Solomon Islands population growth is determined by its (high) natural growth rate.

The average number of children per woman (TFR) is 4.7. This means that on average every woman has 4 children at the end of her childbearing years. While this represents a decrease from 5.0 in 1999, there are still approximately 18,800 births per year.

The estimated TFR for the Solomon Islands is higher than in Vanuatu (4.1), PNG (4.4), and much higher than Fiji's TFR of about 2.6.

Fertility levels were especially high in Malaita (5.1), and it was much lower in the urban (3.3) than the rural areas (5.2).

An analysis of fertility levels by educational background of women shows a very strong correlation between the two variables: the higher the educational attainment of women, the lower the number of children she has.

The government needs to do more if it wants to influence the fertility levels and ensure the well-being of mothers and her children. Such a move should be directed at policies and programmes that are geared towards the expansion and improving of family-planning services and reproductive health. These services and programmes should be accessible available throughout the country, especially to people in rural and remote areas.

Any government initiatives should include, but not be restricted to, the following. First, is the inclusion of life education in the curriculum of young people providing basic information and support needed before childbearing age. Second, making family planning services for women (and their partners) of all ages available and accessible thus empowering them to make conscious decisions about the number and spacing of their children. Additionally, the provision of such services will help to reduce the number of unwanted pregnancies as well as safeguard partners from risks of being infected by sexually transmitted disease and HIV/AIDS. Rural women and their partners should be targeted since their fertility levels are much higher than their urban counterparts.

The promotion of arranged marriage at an early age, through custom and culture, and the strict role of women as child bearers can also affect fertility. These practices and beliefs must not only be discouraged but controlled. The government and NGOs should discourage early age marriages so that child bearing for women is delayed to older ages.

A teenage pregnancy is not only a social issue but especially a health risk to mothers and child. The most affected are the uneducated and unemployed teens. Most often, children of teenage mothers have lower educational levels, higher rates of poverty, and other poorer "life outcomes". Since teenage pregnancy usually occurs outside of marriage it often carries a social stigma. Therefore, social protection for the solo parents and young mothers which should include the provision of child support and maintenance needs to be provided.

Many stakeholders (government and non-government organizations) are involved in the teenage reproductive health strategies. They work at various levels in the community to reduce teenage pregnancy by increasing the knowledge and practice of family planning, promoting peer education, providing sex education advisory services including contraceptives, involving young people in service design, educating parents of teenagers on effective communication, providing better support for teenage mothers (such as help returning to education, advice and support), working with young fathers, giving better

childcare, and increasing the availability of supported housing. This group must be supported and if possible, provided with financial assistance. All this should align with the country's policy directions.

7.1.3 Mortality

Improved mortality rates mean that healthier people live longer lives.

Based on census data for the number of children ever born and still alive, the infant mortality rate (IMR) was estimated at 22; 24 for males and 20 for females. This estimate is lower than the 1999 levels when the IMR was 29 and 26 for males and females – and is thus an improvement in infant mortality rates. Please note that a re-assessment of the 1999 levels produced much lower rates for 1999 when the IMR was estimated at a much higher level of 66. It should therefore not be concluded that there was a considerable improvement in infant mortality rates (from 66 to 22), as it was only from 29 to 22. However, even this moderate decline implies improvements in health services in the country.

The estimated IMR of 22 based on the 2009 Solomon Islands census is similar to 24 derived from the 2007 Solomon Islands DHS. Otherwise the IMR was 21 in Vanuatu, 17 in Fiji, 58 in PNG, and about 5 in Australia and New Zealand.

In general the IMR of males is higher than that of females and it was particularly high in Central (31), Rennell-Bellona (29), Choiseul (27), and Malaita (26). Infant mortality rates are significantly lower in the urban than the rural areas. One likely important factor is the better availability and accessibility of (reproductive) health services in the urban areas.

Estimates of mortality level presented in this report suggest that females live longer than males, and live on average about 6.9 years longer than males. Life expectancy at birth is estimated at 66.2 and 73.1 for males and females, respectively. Life expectancy increased for females (from 70.2 in 1999) it unfortunately slightly decreased for males from 67 years in 1999. Possible reasons for this trend could be an increase of life style diseases (diabetes, hypertension, etc) caused by unhealthy eating habits, smoking and excessive alcohol consumption, and/or a lack of regular physical exercise etc. Then again, it is very well possible that the violent ethnic unrest of the recent past may have taken its toll, particularly on the male population.

Life expectancies for males and females in the Solomon Islands compare with 78.8 and 82.7 years for males and females in New Zealand and in Australia it is 79.3 and 83.9 years. Therefore an average person in New Zealand or Australia lives more than 10 years

longer than a Solomon Islander. On the other hand, life expectancies at birth for Fiji are estimated at 63.8 and 67.7 years for males and females in 2001, which is considerably shorter than in the Solomon Islands. Vanuatu's levels are very similar to the Solomon Islands with 69.6 years and 72.7 years for males and females.

The directly calculated maternal mortality ratio was 127, and the maternal mortality rate was 0.19, based on the reported number of pregnancy related deaths in the census. However, the reporting of deaths of women aged 15-44 years suffered from an estimated undercount of about 12.5%. Assuming that the reported number of maternal deaths is affected by the same factor of underreporting of deaths of female aged 15-44 would increase the maternal mortality ratio to 143 and the maternal mortality rate to 0.21.

The adjusted Solomon Islands maternal mortality ratio compares to a value of 145 based on reported numbers of maternal deaths and births from vital statistics, and it compares to estimates of 312 for PNG, 178 for Vanuatu, and 85 for Fiji (Lancet article 2011).

It is advised to use the derived maternal mortality indicators with caution as it is not clear whether enumerators and respondents were clear about the concept and definition of what exactly constitutes a '*pregnancy related death*', as it is not further described in the Enumerator Manual. Therefore the values could be either under or overstated.

7.1.4 Internal Migration

Migration is the movement of people from one ward to another, whether inside or across provincial boundaries. Internal migration affects services offered and provided in the areas of people's origin and destination. Therefore community, regional and national planners need timely and accurate information on internal migration flows.

Guadalcanal province had the highest population growth rate of all provinces; a clear sign of internal migration flowing towards Guadalcanal and the capital Honiara. On the other hand, provinces such as Malaita and Temotu with a very low population growth rate lose population to other areas, most likely Guadalcanal and Honiara. The fact that about 36% of the total national population was enumerated in a place other than their place (ward) of birth gives an indication of the magnitude of internal migration flows. Furthermore, more than 11% of the population was enumerated in a place (ward) different from where they lived 5 years ago.

Areas that lose its population through migration is an indication of people's dissatisfaction with local living conditions such as the lack of education opportunities (for tertiary or vocational/technical qualifications), and limited employment opportunities.

The urban centers attract people by offering higher living standards through the availability and accessibility to services such as medical and educational institutions, entertainment facilities, and a wider range of employment opportunities.

If the government wishes to change the trend of people migrating to urban centres, at least some of the disadvantages of living in the remote rural areas and outer islands need to be eased by improving the above-mentioned services and opportunities through:

- ✓ Promotion of policies for employment and livelihood in rural areas;
- ✓ Decentralization of services to all provinces;
- ✓ Support of income generating opportunities in other provinces to retain populations, in particular the youth;
- ✓ Provision of better education in the rural areas;
- ✓ Promotion of better market distribution systems;
- ✓ Provision of better and cheaper transport;
- ✓ Conducting of in depth research into youth migration and their reasons for migrating;
- ✓ Provision of basic services for the growing population in the urban/peri-urban areas.

However, in view of the relatively low proportion of the urban population in the Solomon Islands, it is certain that urbanization will continue and possibly at a higher rate than ever before.

7.1.5 International migration

Data on arrivals and departures remain incomplete for detailed migration analysis. As such the net migration level can only be crudely estimated by comparing intercensal population growth with estimated rates of natural increase for the same time period. While this method provides a reasonably robust indication of net migration, planners and policy-makers require more detailed and timelier information on the demographic makeup of opposing migration streams in order to make and implement realistic policy decisions. Hence, further improvements are needed to collect and process information on age, sex and nationality of all arriving and departing passengers in the Solomon Islands.

If improvements are proved to be impossible, an alternative would be to apply the proper demographic methodologies, by comparing the two nearest censuses, to calculate the desired population data. The disadvantage of this option is that this can only be done after the analysis of the latest census is completed. This exercise could prove more time

consuming and costly than an efficient registration system that would provide regular and timely migration information.

As the national average annual population growth rates are similar to the estimated natural growth, it can be concluded that net migration rates are negligible, and no significant international migration had occurred during the intercensal period 1999-2009.

7.1.6 Population projections

Knowledge about the current size and structure of a country's population is needed for the formulation and implementation of policies and programmes in almost all areas of public life. Because policies are aimed at achieving goals in the future, knowledge about future population trends is required.

The population projection scenarios presented in this report point to a continuously growing population for the Solomon Islands during the next 40 years. The medium-variant scenario of the projections points to a population of about 656 thousand in 2015, a little over a million in the year 2030, and 1.3 million people in 2050.

The needs of this larger population size and its different population subgroups should be considered in development plans in areas as diverse as health, education, employment, social welfare, people with special needs, environment, economic growth, climate change and disaster management to fulfill the aspirations of the Solomon Islands' communities.

Changes in the Solomon Islands' population age structure, as a result of possible declining fertility rates, will have an impact on the proportion of the young population aged 0–14. Changes will be reflected in a smaller proportion of those under the age of 15, and a larger working age population aged 15–59. As a result, the dependency ratio of the Solomon Islands' population will decrease, and the population's median age will increase.

The proportion of the population aged 60 and older will increase from 5% in 2009 to 8% and 14% of the total population in 2030 and 2050.

The working age population is expected to increase considerably, both in proportion and in absolute numbers. According to the medium population scenario, the working age population will be about 543 thousand people in 2030, compared to 294 thousand in 2009.

In general, all provinces will increase in population size until at least 2050, although the rate of increase varies by province. The most important outcome of the projections is the fact that Guadalcanal will eventually become the province with the largest population size if current estimated migration levels prevail into the future, and will have the highest number of people of all provinces just after the year 2020.

The other outcome is that the rural population will increase rapidly, even if they lose population to the urban areas at current rates.

The proportion of the urban population will surely increase in future, and according to these projections it will increase from just below 20% in 2009 to 28% in 2030 and almost one-third of the total Solomon Islands population in 2050.

Since more than 80% of the land in the Solomon Islands is customary owned, expanding the urban areas will have to be carefully negotiated with the rural customary land owners.

7.2 Crosscutting issues

7.2.1 Vital statistics

A well functioning registration system that is able to supply accurate and timely statistics on population development is of fundamental importance to planners and policy makers. To make reliable estimates regarding fertility and mortality levels and trends, a complete registration system needs to be in place; one that records the number of deaths by age and sex, and cause of death, and the number of births by sex and age of mother, date and place of birth and of mothers usual place of residence.

The Ministry of Home Affairs in collaboration with the Ministry of Health and Medical Services are working collaboratively on a civil registration system that will see new births and deaths recorded electronically. Information on vital events of previous years will have to be entered manually from hard copies of birth and death certificates. Currently, a project is being piloted by the two ministries, and a newly established Civil Registration Office is in operation since 2011.

Based on the reported number of births and deaths for the years 2006-2007 of about 14,400 births and 1,100 deaths annually, and the estimated number of births and deaths for those years of about 17,200 births and 3,000 deaths, the completeness of birth registration is approximately 84% while death registration is less than 37% complete. Once the births and deaths for the years after 2007 will be entered into the vital

registration system, it can be established whether there has been improvements in coverage since then.

There are certainly improvements needed with the collection and processing of vital events and it is hoped that the renewed collaboration between the relevant agencies will lead to timely and accurate dissemination of the number of births and deaths, and cause of deaths in future.

7.2.2 The environment

Careful use of terrestrial and marine resources forms the basis of a sustainable and healthy life for all Solomon Islanders. As such, maintaining a healthy and sustainable living environment should be a top priority for the government and its people. Apart from providing a pleasant living environment for the local people, conservation of the environment can foster a vibrant tourism industry in future.

The size and density of the population has a direct impact on water and energy consumption, sewage and waste production, general infrastructure such as roads, health and education facilities, the use of land, and the development of agriculture and marine resources.

High population densities put considerable stress on the environment. Consequently, there is an increasing demand for environmental health services, such as public garbage collection, a well-functioning sewage system, availability of hygienic toilets, and protection of secure and clean water sources.

Economic activities such as the deforestation of timber, and the harvest of marine resources help the national government to raise much needed revenues. However the exploitation of the Solomon Islands natural resources needs to be carefully planned to ensure its sustainability.

7.2.3 Households

Population growth, not only contributes to an increased demand in water and energy supply, waste disposal, sewage connections and general infrastructure, but also to an increase in the number of households due to changes in average household size. Even if the population size remained stable, the number of households would still increase when households and/or family structures break up into smaller units, often described as the transition from extended family type households to nuclear family type living arrangements.

Households and families that are economically incapable of sustaining an acceptable and healthy lifestyle might need extra assistance from the government, since unhealthy living environments affect everyone in the long term. In particular, access to clean water, public electricity, an adequate public sewage system and waste disposal facilities should all be the minimum housing standard for the Solomon Islands' population. Specific areas of assistance include:

- *Dwellings*: More than half of the dwellings are made of traditional materials and they are found mostly in rural areas. While wood is the most commonly used material, tin corrugated iron and concrete cement brick have also been increasingly used. This should be encouraged not only because these housing materials last longer and with dwindling timber supply, cement could be the best alternative. Given that the country is prone to natural disaster, the government needs to improve housing in rural areas using local materials where possible as they are affordable as long as the structures are cyclone proof.

- *Water supply*: Almost 0ne-third of households in the Solomon Islands has no access to safe and clean (improved) drinking water. Guadalcanal and Malaita have a particular high proportion of households without improved drinking water sources, where many use rivers and streams. The development of more community programmes focusing on safe water supply, and providing water tanks, or water pumps is required.

- *Lighting*: 75% of households use kerosene lamps as the main source of light and predominantly in the rural areas. With continued rising prices, kerosene is no longer an affordable source for the home, community, school, or business. Alternatives are needed and 'green power' sources such as solar (currently used by 9% of households), wind, or renewable energy should be researched. In this respect, government could encourage students to enter into engineering or environmental studies.

- *Toilet facilities*: A high percentage of households either do not have proper toilets or none at all. For example, 33% of all households do not have toilets at all while another 24% use types of toilets that are not hygienic. Health awareness programmes and assistance in the introduction and improvement of toilet facilities are needed.

7.2.4 Health services and well-being

The health status of each individual and his/her family members is probably one of the most important concerns people have. Therefore, the availability, accessibility, use and affordability of quality health care and medical services are major issues of concern. Government and health officials need to address the challenges of health services and the health care system.

In the remote areas and outer islands, small population size and isolation inhibit the operation of state-of-the-art health services that require the employment of specialist personnel and the purchase and maintenance of specialised equipment. However resident medical staff needs to be sufficiently qualified to provide basic health care. An efficient referral service to the nearest health facility, together with regular visits by medical specialists is needed to ensure that peoples' health demands are met.

More deaths in Solomon Islands are due to inefficient long referrals. Thus an efficient referral service to the nearest health facility, together with regular visits by medical specialists is required to ensure that peoples' health demands are met, and unnecessary deaths are prevented.

The population projections show that the population aged 60 and older will increase substantially in future. This requires strengthening of special services for the growing number of elderly people, including a pension scheme with retirement benefits, and specialised health care.

In working towards a healthier population, the following efforts should be made:

- ✓ Improve infant, child and maternal health by improving primary health care programmes;
- ✓ Improve emergency obstetric care to decrease neo natal mortality;
- ✓ Expand immunization programmes;
- ✓ Prevent HIV and AIDS, and other STIs by:

  - Increasing awareness and knowledge of safer sexual behaviours and practices by using appropriate language;
  - Targeting priority groups (youth, women and men, particularly aged 10–24);
  - Enhancing education programmes to encourage open discussions (between partners and their children) on issues of sexual behaviours;

- Promoting and disseminating information outlining the advantages and proper use of condoms by men and women, with an emphasis on targeting male organisations;
- Reviewing, developing, implementing and evaluating the effectiveness of appropriate policies;
- Delaying young peoples' initial sexual activity;
- Developing a well-planned media campaign throughout the year based on health promotion with regards to HIV and AIDS;
- Ensuring protection of the rights of people living with HIV and AIDS;
- Ensuring that people living with HIV and AIDS have free and unrestricted access to medical treatment, facilities and support services;
- Ensuring that a reliable HIV and AIDS testing system is in place;
- Establishing a voluntary, confidential system of HIV and AIDS testing with informed consent that includes pre and post test counseling;

✓ Address the increasing occurrence of Non Communicable Diseases (NCDs);
✓ Combat the prevalence of diabetes and heart disease;
✓ Promote healthy eating habits and food nutrition programmes;
✓ Advocate a general healthy life style including regular physical exercise;
✓ Discourage smoking and excessive alcohol consumption;
✓ Provide a hygienic and safe living environment;
✓ Improve the quality of drinking water;
✓ Distribute and promote the use of insecticide treated bednets as a way of combating malaria.

7.2.5 Disabilities

The Solomon Islands is a signatory to a United Nations convention to uphold the rights of people with disabilities; and is therefore obliged to:

"*Promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and to promote respect for their inherent dignity.*"

While only about 5,300 people reported a severe disability in the Solomon Islands, they constitute a vulnerable and disadvantaged group, and they are a target group in need of specialized medical assistance.

Although it is commendable that the government supports and an *inclusive education policy*, which includes three specialized schools currently in operation, the government

needs to do more in order to meet its obligation as stated above. Further special facilities and resources in schools and work places are required to cater for the special needs of people with disabilities, and specialized education facilities are needed in the different provinces.

7.2.6 Education

Educational level is a key indicator of development and quality of life in a country. Education plays an important role in development through its links with demographic, as well as economic and social factors. In general, there is a close and complex relationship between education, fertility, morbidity, mortality and mobility: when couples are better educated, they tend to have fewer children, their children's health status improves, and their survival rates tend to increase. Higher levels of educational attainment also contribute to a better qualified workforce, higher wages, and better economic performance than for people who have little or no formal education and training.

The goal of the Ministry of Education and Human Resources Development (MEHRD) is to provide universal access to quality basic education for all children in 2015 and improved access to relevant and demand oriented community, technical, vocational, and tertiary education and training. To achieve this, the cooperation of everyone in the community is paramount.

The Sector Wide Approach (SWAP) which was adopted in 2004 has been developed to encourage the involvement of people in all levels of education and community to be part of the process. It resulted in the development of a three year National Education Action Plan (NEAP) for the period 2010-2012. Together with the Education Strategic Framework 2007-2015, NEAP 2010-2012 provides the basis for course of action that should be taken to achieve the set goals of which two of the most important is to

- Provide full enrolment opportunity to all children of the age of 6 up to 15 years on equitable basis;
- Achieve 100% enrolment rate for primary education by 2015

Through the concerted efforts of development partners, 'fee free' primary level education up to Year 9 in all Primary, Community High, Provincial and National Secondary schools began in 2009. In the arrangement, compulsory primary school contributions were supposed to have been phased out and replaced by grants paid directly to schools. The initiative was made in direct response to the (MDGs) of universal education and subsequent research which highlighted rising parental contributions (school fees) as one of the main reasons why many children do not go to school. While preliminary findings

of the survey carried out do not show a drastic increase in enrolments, it highlighted that for most parents this initiative eases the burden of school contributions they are paying each year. It is also important to note that many schools are still charging parents school contributions.

Other options that the government can take could consider is increasing school budgets (for materials and teachers) to reduce year 6 and 9 drop-outs and phasing out entrance exams in these two years. The Ministry of Education and Human Resources Development's move to adopt a new curriculum (Outcome Based Approach) to replace the old one is moving in this direction. In addition, the building of vocational centres in the provinces featuring youth development programmes could provide life skills (including family planning). The programmes may reduce teenage delinquency, and teenage pregnancy, while providing the youth with skills they need to be part of the work force and community. Last but not least an effort needs to be made to encourage young girls who have given birth to continue their education as mothers.

Sustainability is the main constraint for universal primary and secondary education in the country. With part of the funds for *Fee Free Basic Education strategy* externally funded there is fear that the program will cease to operate if the government is not economically viable to fully support it. Also, the provision of school materials to schools cannot continue annually because of the government's limited resources. This means that alternative plans must be put in place.

School attendance, educational attainment, and literacy rates are much lower in the rural than in the urban areas, which is the result of the disparities of the educational systems in the urban and rural areas where schools lack resources and qualified teachers. This disparity surely is one of the important causes of rural to urban migration.

7.2.7 Economic activity and labour market

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

Although a high proportion (63%) of the population aged 12 and older was economically active (in the labour force), only a relatively small proportion (24%) was engaged in paid employment. These relatively few people (81 thousand) supported the rest of the population with respect to paid income, meaning that one paid person supports, on average, about 5 other people financially.

The Solomon Islands enjoys the benefits of migrant labour with Government agreements with New Zealand. The New Zealand's Recognized Seasonal Employer (RSE) programme officially began in 2008 with a pilot programme, and larger numbers followed thereafter. However, some Solomon Islanders went to work in New Zealand even before the scheme was officially signed.

During the seasons 2007 to 2012, and total of 1,374 Solomon Islands workers went to work temporarily in New Zealand. These were 888 males and 486 females. The workers are mostly unskilled and are mainly involved in agricultural work.

In view of the success of the New Zealand programme, the Solomon Islands government should vigorously pursue an arrangement with Australia as well.

According to projection results presented in this report, the working age population will increase substantially during the next years. The private and public sector needs to absorb an increasing number of job seekers in future and are encouraged to collaborate in developing innovative strategies that will promote economic diversification and growth.

7.2.8 Communication and internet use

The access and use of telecommunications has increased a lot since liberalization in the mid 2008. Existing research in telecommunications suggests that access can increase economic growth, attract foreign investment, improve market efficiencies, increase accessibility to health and education and empower women and others. The telecommunication sector is presumed to provide new opportunities and frontiers across businesses, social, economic and the political arena. An improvement in the infrastructure and facilities of telecommunications will have a direct effect on the well being of individuals in the country.

Examples where assistance is needed include:

- *Telephone and Mobile phone access*: Only 21% of all households have a mobile phone available, mainly in Honiara; this may be due to both coverage issues and the expensive nature of the service. The number however could increase with the introduction of other service providers providing competition thus reducing prices and hopefully will widen the area of phone coverage to reach more people. Work to expand and improve coverage to all the islands is progressing, and the mobile phone service providers in the country are obligated to ensure that this is achieved.

- *Radio availability*: Only 44% of all households have a radio. The reason for this relatively low percentage of radio owners does not seems to be problems with reception rather than affordability and/or how radios and radio programmes are valued by the communities. One way to improve reception in remote areas is through the establishment of provincial radio stations devoting air time not only to music but topics such as culture, sport, education, and health awareness programmes. In addition government should assist existing radio stations by improving radio transmitters to reach out to a wider community. Radios are crucial in disaster management for transmitting important information to affected communities.

- *Internet access*: although Internet is a significant mode of communication in modern day society and business operations, hardly any households in the Solomon Islands are connected to the Internet; less than 1% of all households, and even in Honiara it was a mere 4% of households. The main reason is the costs it involves: paying for the very expensive Internet is one, being able to afford a computer another. The government must encourage competition by inviting different internet providers to provide Internet access at affordable prices. A well functioning Internet system

  - offers online educational/learning opportunities (through for example the "one laptop per child programme").
  - makes medical advice available to medical staff in remote areas;
  - provides information, news and entertainment to the general public;
  - facilitates tourism operators and businesses.

7.2.9 Good governance

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

In this regard it is important that policy-makers, planners, politicians and community leaders are aware of the needs and aspirations of their country's people in order to effectively provide for the specific needs of the population, and the different population sub-groups in the country. The government needs to know about its country's population structure, population processes and socioeconomic characteristics in order to plan for an adequate standard of living, and for a proper provision and distribution of goods and services.

GLOSSARY

Indicator	Definition
Adult mortality (45q15)	Probability of death between the ages of 15 years and 60 years
Age–dependency ratio	Number of people in the "dependent" age category (population <15 plus population 60+) per 100 in the "economically productive ages" 15–59 years
Average age at (first) marriage (SMAM)	Approximation of average age at marriage, based on proportion of population never married (single)
Balance equation	Population growth = births – deaths + net migration
Births — estimated number for 2009	Estimated age-specific fertility rates (ASFR) multiplied by enumerated number of women by age in 2009
Child-woman ratio (CWR)	Number of children under age 5 per 1,000 women aged 15-49
Child mortality rate (1q5)	The probability of dying between age 1 and age 5
Crude birth rate (CBR)	Estimated number of births per 1,000 population (7,335/234,023 X 1,000)
Crude death rate (CDR)	Estimated number of deaths per 1,000 population (1,260/234,023 X 1,000)
Crude net migration rate	Rate of growth minus rate of natural increase
Deaths — estimated number for 2009	Estimated age-specific death rates [m(x)] by sex (from life multiplied by enumerated population by age and sex in 2009
Employment–population ratio	Proportion of employed people in cash work (by a given age and sex), as part of the corresponding total number of people of the same age and sex
General fertility rate	Annual number of births per 1,000 women of childbearing age (15-49)
Infant mortality rate (IMR)	Number of infant deaths (children younger than 1 year) per 1,000 births

Institutions	Boarding schools, prisons, hospitals, hotels/hostels/guesthouses
Intercensal period	Time period between two censuses
Labour force	People employed (cash work plus village work) and unemployed (excludes those not seeking employment)
Labour force participation rate	Proportion of people in the labour force (by a given age and sex), as part of the corresponding total number of people of the same age and sex
Language ability	see Literacy rate
Life expectancy at birth	Number of years a newborn baby can expect to live on average
Life expectancy at age 20	Number of additional years a 20 year old can expect to live on average
LTR, lifetime risk of maternal death	The chances of a woman dying from maternal causes over the course of her 35-year reproductive life span = 35 x maternal mortality rate
Literacy rate	Proportion of the population aged 15 years and older or 15-24 years, who are able to read and write a simple sentence in any language
Maternal mortality rate	Number of maternal deaths per 1,000 women
Maternal mortality ratio	Number of maternal deaths per 100,000 live births
Mean age at childbearing	Average age of women when giving birth
Median age	The age at which exactly half the population is older and half is younger
Parity (average)	Average number of children per woman
PMFD, proportion of deaths due to maternal causes	Ratio between numbers of reported female deaths and maternal deaths.
Rate of growth (%)	Average annual growth rate during 1999–2009 ln(TotPop2009/TotPop1999)/10 X 100

Rate of natural increase	Crude birth rate (CBR) minus crude death rate (CDR)
Sex ratio	Number of males per 100 females
Teenage fertility rate	Number of births by women aged 15–19 per 1,000
Total fertility rate (TFR)	Average number of children per woman
Under 5 mortality (q5)	The probability of dying between birth and age 5

APPENDICES

Appendix 1: Accuracy of age reporting - Indexes of age heaping

The 2009 Solomon Islands census population shows the following distinct age patterns (Fig.A):

1. Age heaping at ages ending with '0, '5' and to a lesser degree with '7' and'9', and avoidance of ages ending in '1' and '8', and to lesser degrees with '2', '3', '4', and '6'.
2. Relatively high number of people aged 75 years and older, and of those more males than females.

Figure A: Population pyramid, Solomon Islands: 2009
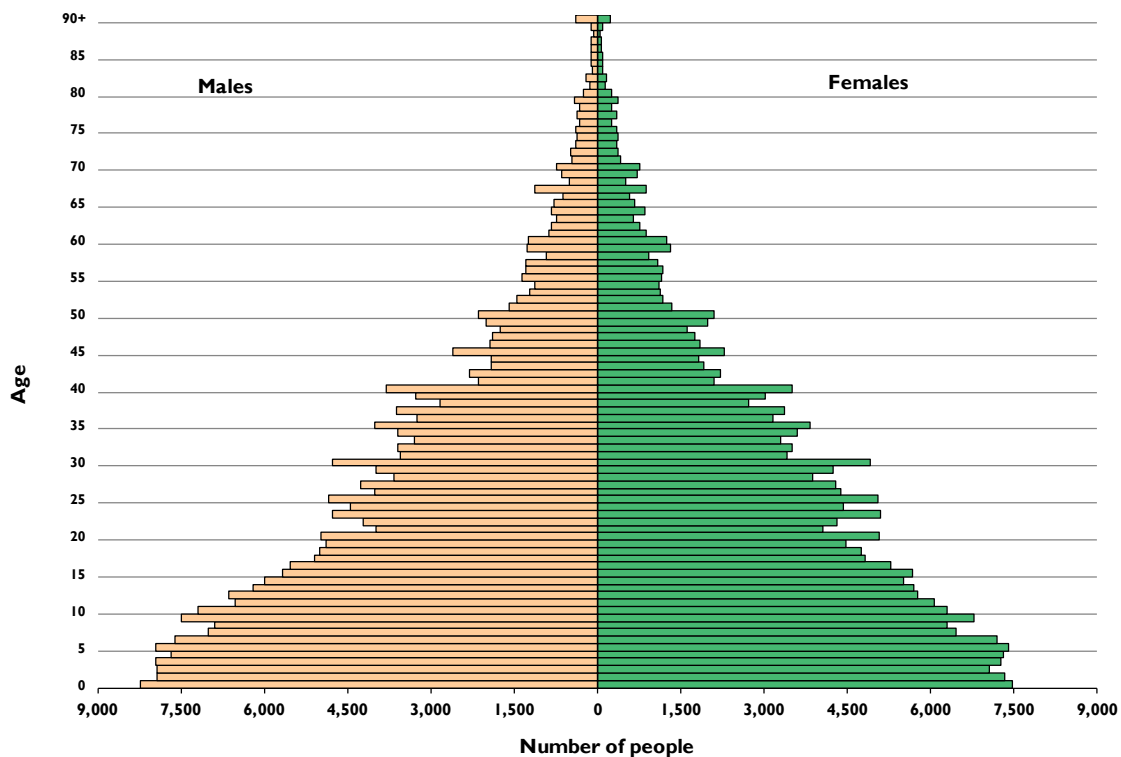
The occurrence of age heaping is expressed by the calculated Whipple, Myers, Bachi, and the United Nations age-sex accuracy indexes (Table A).

Table A: Age accuracy indices, Solomon Islands: 1999 and 2009

Census year	Myers'		Bachi		Whipples		UN Secretariat
	Males	Females	Males	Females	Males	Females	
1999	6.6	5.3	4.7	3.8	109	106	19.5
2009	7.6	7.1	5.3	5.0	119	117	20.2

Figure B1: Myers Preference by digit, Solomon Islands: 1999
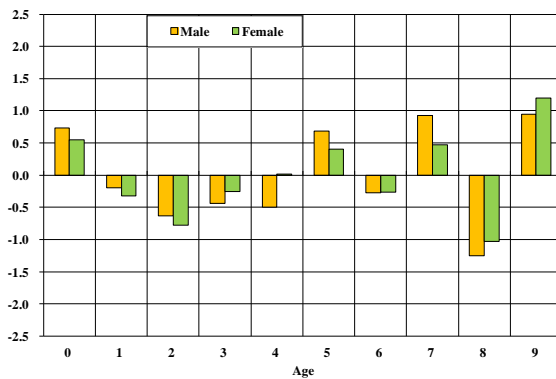
Figure B2: Myers Preference by digit, Solomon Islands: 2009
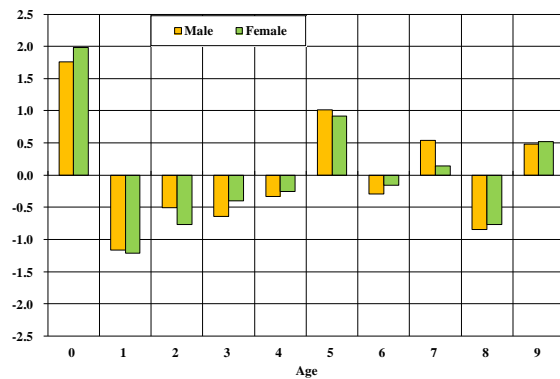
Figure C1: Bachi Preference by digit, Solomon Islands: 1999
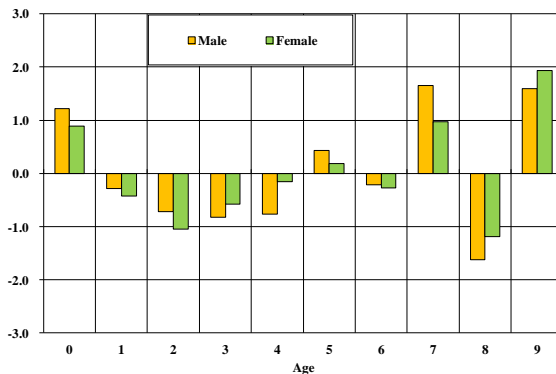
Figure C2: Bachi Preference by digit, Solomon Islands: 2009
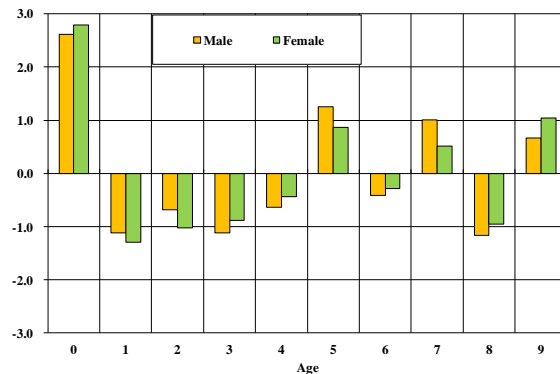
Software used: US Census Bureau, Population Analysis Spreadsheets (PAS), procedure SINGAGE

With respect to the interpretation of these indices (Table A and Figs. B and C):

A. **Myers** – the higher the index, the greater the concentration on the age examined. Positive values show a preference for the digit, and negative values avoidance of the digit (Figs.2a and b). The index calculated for males is **7.6** and for females **7.1.** As a comparison, the index for the 1999 Solomon Islands census population was 6.6 and 5.3 for males and females respectively. The theoretical range of Myer's index is 0, representing no heaping, to 90, which would result if all ages were reported at a single digit.

B. **Bachi** – the higher the index, the greater the concentration on the age examined. Positive values show a preference for the digit, and negative values avoidance of the digit. The index calculated for Males is **5.3**; Females **5.0**, which compares to 4.7 and 3.8 for males and females for the 1999 census (Figs.3a and b). The Bachi index as indicator of the general extend of heaping differs little from Myers'. The theoretical range of Bach's index is also 0, representing no heaping, to 90, which would result if all ages were reported at a single digit, say zero.

C. **Whipple**: Males and Females was 119 and 117 respectively. This measure means that the Solomon Islands population overstated ages ending in 0 or 5 by 19% and 17% for males and females. As a comparison, the index for 1999 Solomon Islands census population was 109 for males and 106 for females.

The slight increase of the different indices is an indication that age reporting in the 2009 census is slightly more inaccurate compared to the 1999 census, but certainly in an acceptable range. It is worth noting that female age reporting was a little better than that of males.

In general it is not possible to measure digit preference precisely, because an accurate distinction between the error due to digit preference, other errors, and real fluctuations cannot be made. Therefore none of the above indexes provides a critical value of age heaping/misreporting because of each country-specific effect of past trends of births, deaths and migration on a population's age distribution. The genuine fluctuations become the more pronounced the smaller the population (sample) size. Nonetheless, the fluctuations observed suggest some faulty reporting.

Depending on extend of the observed digit preference/avoidance, the population age distribution needs *smoothing*. One smoothing-procedure is described in *Manual X, Indirect Techniques for Demographic Estimation, United Nations, 1983, p.241*. Others are available using USCB PAS procedure *AGESMTH*. However, smoothing procedures remove some true fluctuations implicit in the original single-year-of-age figures, and it needs to be decided on a case by case basis whether smoothing of an observed age distribution is warranted (whether it doesn't cause more damage than good).

Finally, the *United Nations age-sex accuracy index* for the Solomon Islands 2009 census population is calculated in the PAS[18] procedure *AGESEX*. It shows a (corrected) index of

20.2. Census age-sex data are described by the United Nations as "accurate", "inaccurate", or "highly inaccurate" depending on whether the UN index is under 20, 20-40, or over 40. However, this procedure as a measurement of age-sex accuracy is labeled as *questionable* due to its problematic underlying assumptions made[19].

The occurrence of higher number of males than females at older ages has to be regarded as suspect, because life expectancy of females is higher than males (more females survive to older ages than males). However, countries where the status of women is low, male life expectancy can be higher than female.

The fact that there was such a relatively high count of old people (60+), and a higher number of older males than older females is a very important observation, as it either points to

1. Under-enumeration of (older) females;
2. (Sex-selective) age misreporting - old people (particularly males) reported to be even older than they really were.

Without the availability of reliable vital statistics (registered number of deaths by age and sex), it is difficult to verify the census count of higher number of males than females at older ages (and consequently lower mortality rates of males than females).

Nevertheless, child mortality rates by sex were estimated using data on children ever born by age of mother and number of children still alive by age of mother. An analysis of childhood mortality is presented in chapter 3.2, and shows that child mortality rates for males are higher than females.

Another data source to verify sex-differential survival rates is to study the reported number of widows/widowers collected from data on marital status. An analysis of data on marital status is presented in section 4.1 and it shows that the proportion of widowed females at older ages was significantly higher than males. The number of widows increases (much) faster than widowers at older ages. This is explained by the higher death rates among men. Thus there are more widows than widowers among the old.

Furthermore a question was included asking respondents whether their father and/or mother is still alive; the so-called *orphanhood* question (chapter 4). It shows that a considerable higher proportion of respondent's mothers than fathers was still alive, and therefore survived to older ages.

These findings contradicts the access count of older males versus females, and point to both, an undercount of (older) females, and to age misreporting of males (reporting to be older than they really are).

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[18] Population Analysis Spreadsheets, US Census Bureau
[19] Methods and Materials of Demography, Second Edition, Jacob S. Siegel/David A. Swanson, p.150

Appendix 2: Arriaga's approach for estimation of ASFR for one point in time (1999) and the age pattern of fertility (Brass)

Arriaga's approach for estimation of ASFR for one point in time and age pattern of fertility (Brass)

Month　　　　　November
Year　　　　　**1999**
Fertility pattern is tabulated by age of woman at enumeration

Age Group of Woman	Children Ever Born	Age Specific Fertility Pattern (A.S.F.P.)	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date	Fertility Pattern by Age at Birth of Child	Cumulation of A.S.F.R.	Cumulation of Fertility Pattern by Age at Birth	Adjustment Factors	20 - 25	25 - 30	30 - 35
				Recorded	Calculated						
November 1999											
15 - 20	0.102	0.048	0.081	0.048	0.060	0.081	0.060	1.349	0.071	0.073	0.072
20 - 25	0.940	0.186	0.223	0.186	0.196	0.304	0.256	1.186	0.233	0.238	0.235
25 - 30	2.150	0.216	0.268	0.216	0.215	0.572	0.471	1.214	0.255	0.261	0.258
30 - 35	3.580	0.184	0.267	0.184	0.178	0.839	0.649	1.293	0.211	0.216	0.214
35 - 40	4.650	0.118	0.164	0.118	0.111	1.003	0.760	1.320	0.132	0.135	0.133
40 - 45	5.410	0.046	0.103	0.046	0.042	1.107	0.802	1.380	0.050	0.051	0.050
45 - 50	5.820	0.018	0.037	0.018	0.014	1.144	0.816	1.402	0.017	0.017	0.017
Mean Age of Childbearing:			28.58		27.59						
Total Fertility Rate:			5.72		4.08				**4.8**	5.0	4.9

Software: MORTPAK for Windows (4.1), application FERTPF, Population Division, United Nations Secretariat

[19]Methods and Materials of Demography, Second Edition, Jacob S. Siegel/David A. Swanson, p.150

Appendix 3: Arriaga's approach for estimation of ASFR for one point (2009) in time and the age pattern of fertility (Brass)

Arriaga's approach for estimation of ASFR for one point in time and age pattern of fertility (Brass)

Month   November
Year   **2009**
Fertility pattern is tabulated by age of woman at enumeration

Age Group of Woman	Children Ever Born	Age Specific Fertility Pattern (A.S.F.P.)	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date	Fertility Pattern by Age at Birth of Child	Cumulation of A.S.F.R.	Cumulation of Fertility Pattern by Age at Birth	Adjustment Factors	Age Specific Fertility Rates Based on Adjustment Factor for the Age Group 20 - 25	25 - 30	30 - 35
November 2009											
				Recorded	Calculated						
15 - 20	0.102	0.042	0.075	0.042	0.053	0.075	0.053	1.431	0.058	0.058	0.058
20 - 25	0.841	0.178	0.191	0.178	0.188	0.266	0.241	1.105	0.208	0.208	0.208
25 - 30	1.866	0.206	0.228	0.206	0.205	0.494	0.446	1.107	0.227	0.227	0.227
30 - 35	3.075	0.178	0.223	0.178	0.173	0.717	0.619	1.158	0.191	0.191	0.191
35 - 40	3.959	0.120	0.141	0.120	0.114	0.857	0.733	1.170	0.126	0.126	0.126
40 - 45	4.676	0.053	0.096	0.053	0.048	0.953	0.781	1.220	0.053	0.053	0.053
45 - 50	5.118	0.019	0.035	0.019	0.015	0.988	0.796	1.241	0.017	0.017	0.017
Mean Age of Childbearing:			28.54		27.86						
Total Fertility Rate:			4.94		3.98				4.40	4.40	4.40

Software: MORTPAK for Windows (4.1), application FERTPF, Population Division, United Nations Secretariat

Appendix 4: Arriaga's approach for estimation of ASFR for two points in time (1999 and 2009) and the age patterns of fertility (Arriaga-Brass)

First enumeration, November 1999

Fertility pattern is tabulated by age of woman at enumeration

November 1999 to November 2000

Age Group of Woman	Children Ever Born	Age Specific Fertility Pattern (A.S.F.P.)	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date (Recorded)	Fertility Pattern by Age at Birth of Child (Calculated)	Cumulation of A.S.F.R.	Cumulation Fertility Pattern by Age at Birth	Adjustment Factors	20 - 25	25 - 30	30 - 35
15 - 20	0.102	0.048	0.080	0.048	0.060	0.080	0.060	1.344	0.068	0.067	0.068
20 - 25	0.940	0.186	0.211	0.186	0.196	0.292	0.256	1.139	0.223	0.220	0.222
25 - 30	2.150	0.216	0.238	0.216	0.215	0.529	0.471	1.123	0.245	0.242	0.243
30 - 35	3.580	0.184	0.215	0.184	0.178	0.744	0.649	1.146	0.203	0.200	0.201
35 - 40	4.650	0.118	0.095	0.118	0.111	0.839	0.760	1.104	0.126	0.125	0.125
40 - 45	5.410	0.046	0.052	0.046	0.042	0.890	0.802	1.110	0.048	0.047	0.047
45 - 50	5.820	0.018	0.019	0.018	0.014	0.909	0.816	1.114	0.016	0.016	0.016
Mean Age of Childbearing:			27.37		27.59						
Total Fertility Rate:			4.55		4.08				4.65	4.58	4.62

Second enumeration, November 2009

Fertility pattern is tabulated by age of woman at enumeration

November 2008 to November 2009

Age Group of Woman	Children Ever Born	Age Specific Fertility Pattern (A.S.F.P.)	Fertility Consistent with C.E.B. (A.S.F.R.)	Fertility Pattern by Age at Survey Date (Recorded)	Fertility Pattern by Age at Birth of Child (Calculated)	Cumulation of A.S.F.R.	Cumulation Fertility Pattern by Age at Birth	Adjustment Factors	20 - 25	25 - 30	30 - 35
15 - 20	0.102	0.042	0.076	0.042	0.053	0.076	0.053	1.435	0.056	0.054	0.055
20 - 25	0.841	0.178	0.182	0.178	0.188	0.258	0.241	1.071	0.201	0.193	0.197
25 - 30	1.866	0.206	0.201	0.206	0.205	0.459	0.446	1.028	0.220	0.211	0.216
30 - 35	3.075	0.178	0.175	0.178	0.173	0.634	0.619	1.024	0.185	0.178	0.181
35 - 40	3.959	0.120	0.073	0.120	0.114	0.707	0.733	0.965	0.122	0.117	0.119
40 - 45	4.676	0.053	0.045	0.053	0.048	0.752	0.781	0.962	0.052	0.050	0.051
45 - 50	5.118	0.019	0.017	0.019	0.015	0.768	0.796	0.965	0.016	0.015	0.016
Mean Age of Childbearing:			27.12		27.86						
Total Fertility Rate:			3.84		3.98				4.26	4.09	4.18

Software: MORTPAK for Windows (4.1), application FERTPF, Population Division, United Nations Secretariat

Appendix 5: Fertility estimates using the Trussell P/F Ratio Technique, Solomon Islands: 1999

Age	Reported ASFR f(i)	Average CEB P(i)	Cumulative fertility Phi(i)	F(i)	P/F ratio
15-19	0.048	0.120	0.240	0.096	1.246
20-24	0.186	0.940	1.170	0.761	1.236
25-29	0.216	2.150	2.250	1.819	1.182
30-34	0.184	3.580	3.170	2.829	1.266
35-39	0.118	4.650	3.760	3.552	1.309
40-44	0.046	5.410	3.990	3.893	1.390
45-49	0.018	5.820	4.080	4.059	1.434
Age code *	0				
TFR	4.08				

* Age code: ASFR based on age of mother at:

  0   census/survey

  1   birth of child

		Adjusted ASFR's			
		P2/F2	P3/F3	P4/F4	Avg(P3/F3,P4/F4)
Age	ASFR *	1.236	1.182	1.266	1.224
15-19	0.060	0.074	0.071	0.076	0.073
20-24	0.196	0.242	0.232	0.248	0.240
25-29	0.215	0.266	0.254	0.272	0.263
30-34	0.178	0.220	0.210	0.225	0.218
35-39	0.111	0.137	0.131	0.140	0.136
40-44	0.042	0.052	0.050	0.053	0.051
45-49	0.014	0.017	0.017	0.018	0.017
TFR	4.08	5.04	4.82	5.16	4.99

*Pattern corrected for one-half year between birth and reporting

ASFR   Age-specific fertility rate

CEB   Average number of children ever born

Software: Population Analysis spreadsheet, procedure PFRATIO, US Census Bureau, Washington, USA

Appendix 6: Fertility estimates using the Trussell P/F Ratio Technique, Solomon Islands: 2009

Age	Reported ASFR f(i)	Average CEB P(i)	Cumulative fertility Phi(i)	F(i)	P/F ratio
15-19	0.042	0.102	0.209	0.082	1.245
20-24	0.178	0.841	1.100	0.710	1.185
25-29	0.206	1.866	2.128	1.717	1.087
30-34	0.178	3.075	3.018	2.684	1.146
35-39	0.120	3.959	3.617	3.402	1.164
40-44	0.053	4.676	3.880	3.773	1.240
45-49	0.019	5.118	3.976	3.954	1.295
Age code *	0				
TFR	3.98				

* Age code: ASFR based on age of mother at:

0   census/survey

1   birth of child

		Adjusted ASFR's			
		P2/F2	P3/F3	P4/F4	Avg(P3/F3,P4/F4)
Age	ASFR *	1.185	1.087	1.146	1.116
15-19	0.052	0.062	0.057	0.060	0.059
20-24	0.188	0.223	0.205	0.216	0.210
25-29	0.205	0.243	0.223	0.235	0.229
30-34	0.173	0.205	0.188	0.198	0.193
35-39	0.114	0.135	0.124	0.130	0.127
40-44	0.048	0.057	0.052	0.055	0.053
45-49	0.015	0.018	0.016	0.017	0.017
TFR	3.98	4.71	4.32	4.55	4.44

*Pattern corrected for one-half year between birth and reporting

ASFR   Age-specific fertility rate

CEB   Average number of children ever born

Software: Population Analysis spreadsheet, procedure PFRATIO, US Census Bureau, Washington, USA

Appendix 7: Fertility estimates using the Relational Gompertz method, Solomon Islands: 1999 and 2009

Summary Estimates of the Total Fertility Rate - 1999

Age	Based on CEB only		Based on ASFR and CEB	
	2+2 points	3+3 points	2+2 points	3+3 points
15-19	5.359	5.886	6.263	5.674
20-24	5.803	6.347	4.990	5.435
25-29	5.621	6.017	4.735	5.214
30-34	5.840	6.117	5.121	5.505
35-39	5.720	5.870	5.299	5.519
40-44	5.693	5.745	5.549	5.621
45-49	5.844	5.850	5.828	5.835
Average	5.70	5.98	5.40	5.54
Average 20-44	5.75	6.09	5.14	5.42

2+2 points based on the age groups 15-19 to 35-39

3+3 points based on the age groups 15-19 to 45-49

CEB   Children ever born.

ASFR Age-specific fertility rate.

Summary Estimates of the Total Fertility Rate - 2009

Age	Based on CEB only		Based on ASFR and CEB	
	2+2 points	3+3 points	2+2 points	3+3 points
15-19	4.366	4.754	5.952	5.139
20-24	4.992	5.857	4.733	5.188
25-29	4.732	5.448	4.240	4.745
30-34	4.916	5.451	4.471	4.878
35-39	4.815	5.121	4.542	4.777
40-44	4.902	5.015	4.804	4.884
45-49	5.136	5.152	5.125	5.134
Average	4.84	5.26	4.84	4.96
Average 20-44	4.86	5.47	4.56	4.90

2+2 points based on the age groups 15-19 to 35-39

3+3 points based on the age groups 15-19 to 45-49

CEB   Children ever born.

ASFR Age-specific fertility rate.

Software: Population Analysis spreadsheet, procedure REL-GMPZ, US Census Bureau, Washington, USA

Appendix 8: Comparison of empirical mortality rates to those from model life tables for males
(MORTPAK procedure COMPAR)

Age Group	Empirical m(x,n)	United Nations Models						Coale-Demeny Models		
		Latin Am.	Chilean	So. Asian	Far East	General	West	North	East	South
0 - 1	0.0294	73.8	73.5	74.5	66.5	71.7	69.3	70.2	70.1	75.8
1 - 5	0.0021	73.0	66.5	74.0	65.0	69.9	67.0	69.5	65.7	70.9
5 - 10	0.0009	69.0	61.7	68.6	62.9	66.6	66.7	70.5	64.5	65.0
10 - 15	0.0008	65.6	61.3	62.0	63.2	64.5	65.8	69.1	63.9	63.9
15 - 20	0.0008	69.9	67.6	64.6	67.4	68.9	70.9	75.6	70.2	67.5
20 - 25	0.0015	67.9	65.7	58.6	65.4	66.4	68.5	73.4	67.9	64.9
25 - 30	0.0021	66.1	64.9	56.7	63.8	64.4	65.6	70.4	64.5	62.1
30 - 35	0.0020	68.1	67.9	60.7	66.0	66.8	67.2	71.8	66.2	65.3
35 - 40	0.0018	72.0	71.8	66.8	70.0	70.9	70.1	74.1	69.4	68.4
40 - 45	0.0027	71.4	71.9	67.4	70.8	70.9	70.2	72.7	69.3	68.4
45 - 50	0.0037	72.5	73.2	70.0	72.6	72.4	72.2	72.8	71.6	69.8
50 - 55	0.0081	67.3	69.3	66.7	71.0	69.0	69.1	67.8	69.3	65.2
55 - 60	0.0079	75.0	76.2	75.1	76.7	75.9	76.0	73.8	76.6	73.0
60 - 65	0.0128	74.9	76.7	76.6	78.3	76.7	76.6	74.3	77.0	72.6
65 - 70	0.0152	79.5	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	79.3	80.0	76.8
70 - 75	0.0241	79.9	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	80.0	e(0) > 80.0	78.9
75 - 80	0.0318	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0
Average absolute deviation from the median										
Ages 0 to 10		1.6	3.9	2.0	1.2	1.7	0.9	0.3	1.9	3.6
Ages 10 and over		4.1	5.0	6.6	5.1	4.6	4.2	2.8	4.6	4.4
Ages 0 and over		3.7	5.1	6.3	5.2	4.2	3.9	**2.8**	4.4	4.4
Medn(0-10)-Medn(10+)		1.3	-5.4	6.9	-5.9	-1.0	-3.5	-3.4	-4.1	2.6

Software: MORTPAK for Windows (4.1), application COMPAR, Population Division, United Nations Secretariat

Appendix 9: Comparison of empirical mortality rates to those from model life tables for females
(MORTPAK procedure COMPAR)

Age Group	Empirical m(x,n)	Implied Life Expectancy at Birth								
		United Nations Models						Coale-Demeny Models		
		Latin Am.	Chilean	So. Asian	Far East	General	West	North	East	South
0 - 1	0.0254	77.9	79.7	78.9	73.4	76.3	72.0	72.7	74.0	79.6
1 - 5	0.0019	77.2	72.2	76.7	70.4	74.5	70.3	72.6	70.1	75.1
5 - 10	0.0010	70.3	63.4	68.6	63.7	68.3	67.7	71.1	66.5	66.4
10 - 15	0.0007	67.7	64.8	64.0	64.8	67.2	68.4	71.7	66.8	66.3
15 - 20	0.0008	68.9	68.1	65.8	69.4	69.2	70.8	73.5	69.1	68.4
20 - 25	0.0010	69.9	69.2	65.4	70.2	69.9	71.5	74.3	70.0	69.4
25 - 30	0.0014	69.3	68.6	63.5	69.9	69.1	70.6	73.4	68.7	67.9
30 - 35	0.0021	67.7	67.1	61.3	68.4	67.5	69.1	70.6	66.7	65.3
35 - 40	0.0017	72.9	72.1	67.0	73.0	72.2	72.7	73.9	71.3	69.4
40 - 45	0.0023	73.2	73.0	67.9	74.1	72.9	73.2	74.7	71.6	69.5
45 - 50	0.0038	71.5	71.8	66.6	73.9	71.7	72.6	72.1	70.7	66.6
50 - 55	0.0057	70.8	71.5	68.5	74.5	72.0	72.8	72.5	70.8	66.4
55 - 60	0.0062	75.9	76.6	75.1	78.7	76.7	76.8	75.9	75.2	71.2
60 - 65	0.0030	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0
65 - 70	0.0120	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	80.0	76.9
70 - 75	0.0126	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0
75 - 80	0.0235	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0	e(0) > 80.0
Average absolute deviation from the median										
Ages 0 to 10		2.6	5.4	3.4	3.2	2.7	1.4	0.5	2.5	4.4
Ages 10 and over		4.0	4.3	5.6	4.1	3.9	3.4	2.7	3.9	4.1
Ages 0 and over		4.0	4.5	5.7	4.2	3.8	3.3	**2.5**	3.7	4.4
Medn(0-10)-Medn(10+)		5.0	0.2	9.3	-3.6	2.4	-2.5	-1.5	-1.0	5.7

Software: MORTPAK for Windows (4.1), application COMPAR, Population Division, United Nations Secretariat

Appendix 10: Indirect estimation of infant and childhood mortality from data on children ever born children surviving-Males

Age Group of women	Reference Date	Latin Am.	Chilean	So. Asian	Far East	General	Reference Date	West	North	East	South
			United Nations Models (Palloni-Helligman Equations)						Coale-Demeny Models (Trussell Equations)		
Infant Mortality											
15 - 20	Oct 2008	< .028	< .031	< .032	0.027	0.027	Jan 2009	0.029	0.029	0.029	< .036
20 - 25	Sep 2007	< .028	< .031	< .032	0.025	0.025	Oct 2007	0.026	**0.025**	0.027	< .036
25 - 30	Feb 2006	< .028	< .031	< .032	0.028	0.028	Oct 2005	0.028	0.025	0.029	< .036
30 - 35	Nov 2003	< .028	< .031	< .032	0.027	0.027	Jun 2003	0.027	0.025	0.029	< .036
35 - 40	Mar 2001	0.029	0.033	< .032	0.029	0.029	Oct 2000	0.028	0.026	0.031	< .036
40 - 45	Mar 1998	0.031	0.037	0.033	0.032	0.032	Dec 1997	0.03	0.027	0.034	0.036
45 - 50	Sep 1994	0.034	0.041	0.036	0.034	0.035	Dec 1994	0.032	0.028	0.036	0.04
Probability of dying between ages 1 and 5											
15 - 20	Oct 2008	< .008	< .004	< .008	0.006	0.006	Jan 2009	0.007	0.01	0.004	< .005
20 - 25	Sep 2007	< .008	< .004	< .008	0.005	0.006	Oct 2007	0.006	**0.007**	0.003	< .005
25 - 30	Feb 2006	< .008	< .004	< .008	0.006	0.006	Oct 2005	0.006	0.008	0.004	< .005
30 - 35	Nov 2003	< .008	< .004	< .008	0.006	0.006	Jun 2003	0.006	0.007	0.004	< .005
35 - 40	Mar 2001	0.008	0.004	< .008	0.007	0.007	Oct 2000	0.006	0.008	0.004	< .005
40 - 45	Mar 1998	0.009	0.005	0.009	0.008	0.008	Dec 1997	0.007	0.009	0.005	0.005
45 - 50	Sep 1994	0.011	0.005	0.011	0.009	0.01	Dec 1994	0.008	0.009	0.006	0.005

Software: MORTPAK for Windows (4.1), application CEBCS, Population Division, United Nations Secretariat

Appendix 11: Indirect estimation of infant and childhood mortality from data on children ever born children surviving-Females

Age Group of women	Reference Date	Corresponding Mortality Indices United Nations Models (Palloni-Helligman Equations)					Reference Date	Coale-Demeny Models (Trussell Equations)			
		Latin Am.	Chilean	So. Asian	Far East	General		West	**North**	East	South
Infant Mortality											
15 - 20	Oct 2008	<.028	<.031	<.032	0.026	0.026	Dec 2008	0.028	0.027	0.028	<.036
20 - 25	Sep 2007	<.028	<.031	<.032	0.022	<.024	Sep 2007	0.022	**0.021**	0.023	<.036
25 - 30	Feb 2006	<.028	<.031	<.032	0.024	0.024	Nov 2005	0.024	0.022	0.025	<.036
30 - 35	Nov 2003	<.028	<.031	<.032	0.025	0.025	Jul 2003	0.025	0.023	0.027	<.036
35 - 40	Apr 2001	<.028	<.031	<.032	0.026	0.026	Nov 2000	0.025	0.024	0.028	<.036
40 - 45	May 1998	0.029	0.035	<.032	0.03	0.03	Feb 1998	0.028	0.026	0.032	<.036
45 - 50	Dec 1994	0.031	0.037	0.033	0.03	0.031	Feb 1995	0.028	0.025	0.032	0.036
Probability of dying between ages 1 and 5											
15 - 20	Oct 2008	<.008	<.004	<.008	0.005	0.006	Dec 2008	0.006	0.009	0.003	<.005
20 - 25	Sep 2007	<.008	<.004	<.008	0.004	<.005	Sep 2007	0.004	**0.005**	0.002	<.005
25 - 30	Feb 2006	<.008	<.004	<.008	0.005	0.005	Nov 2005	0.005	0.006	0.003	<.005
30 - 35	Nov 2003	<.008	<.004	<.008	0.005	0.006	Jul 2003	0.005	0.006	0.003	<.005
35 - 40	Apr 2001	<.008	<.004	<.008	0.006	0.006	Nov 2000	0.005	0.007	0.004	<.005
40 - 45	May 1998	0.008	0.004	<.008	0.007	0.007	Feb 1998	0.006	0.008	0.005	<.005
45 - 50	Dec 1994	0.009	0.004	0.009	0.007	0.008	Feb 1995	0.006	0.008	0.005	0.005

Software: MORTPAK for Windows (4.1), application CEBCS, Population Division, United Nations Secretariat

Appendix 12: Indirect estimation of male adult mortality from orphanhood data

Age Group of	Reference Date		United Nations Models						Coale-Demeny Models		
Respondent	Mon/Year	Decimal	Latin Am.	Chilean	So. Asian	Far East	General	West	**North**	East	South
Life Expectancy at Age Twenty											
15- 20	Jul 1999	1999.5	51.7	52.0	49.8	52.8	51.2	50.4	51.7	49.7	50.5
20- 25	Nov 1996	1996.9	49.9	50.6	49.0	51.7	50.0	49.2	**50.2**	48.5	48.9
25- 30	Nov 1994	1994.9	49.1	49.8	48.8	51.1	49.6	48.5	49.1	47.7	47.8
30- 35	Aug 1994	1994.6	48.2	48.9	48.8	50.2	48.8	47.8	48.0	47.0	46.7
35- 40	Dec 1993	1993.9	48.1	48.5	49.4	49.3	48.6	47.6	47.4	47.1	46.6
40- 45	Nov 1995	1995.9	46.9	47.3	48.6	47.3	47.3	46.4	46.1	46.5	45.8
45- 50	XXXX	XXXX	47.6	47.7	49.6	47.2	47.8	47.2	46.8	47.9	47.2

Software: MORTPAK for Windows (version 4.1), application ORPHAN, Population Division, United Nations Secretariat

Appendix 13: Indirect estimation of female adult mortality from orphanhood data

Age Group of	Reference Date		United Nations Models						Coale-Demeny Models		
Respondent	Mon/Year	Decimal	Latin Am.	Chilean	So. Asian	Far East	General	West	**North**	East	South
Life Expectancy at Age Twenty											
15- 20	Mar 2001	2001.2	57.7	57.8	55.6	58.5	56.8	54.8	56.6	54.3	55.5
20- 25	Feb 1999	1999.1	56.0	56.6	54.8	57.4	55.7	54.2	**55.5**	53.6	54.4
25- 30	Apr 1997	1997.3	55.8	56.4	54.8	57.1	56.0	54.2	55.3	53.6	54.0
30- 35	Mar 1996	1996.2	54.6	55.0	54.2	55.7	54.7	53.5	54.2	52.9	52.9
35- 40	Jul 1994	1994.6	54.2	54.4	54.4	54.6	54.3	53.5	53.7	52.9	52.7
40- 45	Jun 1994	1994.5	52.1	52.4	52.8	52.1	52.2	51.9	51.7	51.7	51.1
45- 50	XXXX	XXXX	51.6	51.7	52.7	51.2	51.6	51.9	51.3	52.1	51.4

Software: MORTPAK for Windows (version 4.1), application ORPHAN, Population Division, United Nations Secretariat

Appendix 14: Abridged life table - Males, Urban: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0214	0.0210	100,000	2,100	98,116	0.9764	6,789,718	**67.9**
1	0.0016	0.0065	97,900	637	390,065	0.9917	6,691,602	68.4
5	0.0018	0.0091	97,263	884	484,105	0.9923	6,301,538	64.8
10	0.0013	0.0063	96,379	607	480,378	0.9912	5,817,433	60.4
15	0.0024	0.0120	95,772	1,153	476,172	0.9865	5,337,055	55.7
20	0.0029	0.0144	94,619	1,367	469,730	0.9852	4,860,883	51.4
25	0.0030	0.0149	93,252	1,393	462,801	0.9845	4,391,153	47.1
30	0.0033	0.0161	91,859	1,481	455,646	0.9829	3,928,352	42.8
35	0.0037	0.0183	90,378	1,653	447,862	0.9797	3,472,706	38.4
40	0.0046	0.0227	88,725	2,012	438,775	0.9743	3,024,843	34.1
45	0.0060	0.0294	86,713	2,548	427,514	0.9640	2,586,069	29.8
50	0.0089	0.0435	84,165	3,663	412,139	0.9495	2,158,554	25.6
55	0.0121	0.0587	80,502	4,724	391,319	0.9272	1,746,415	21.7
60	0.0188	0.0901	75,778	6,824	362,829	0.8882	1,355,096	17.9
65	0.0295	0.1377	68,954	9,495	322,253	0.8293	992,267	14.4
70	0.0469	0.2106	59,459	12,522	267,243	0.7395	670,014	11.3
75	0.0762	0.3207	46,936	15,054	197,636	0.5093	402,771	8.6
80	0.1554	...	31,882	31,882	205,135	...	205,135	6.4

Appendix 15: Abridged life table - Females, Urban: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0173	0.0170	100,000	1,700	98,472	0.9819	7,490,547	**74.9**
1	0.0008	0.0030	98,300	296	392,458	0.9970	7,392,075	75.2
5	0.0005	0.0023	98,004	221	489,467	0.9980	6,999,616	71.4
10	0.0004	0.0018	97,783	177	488,472	0.9973	6,510,149	66.6
15	0.0008	0.0040	97,606	394	487,138	0.9950	6,021,678	61.7
20	0.0012	0.0058	97,212	565	484,690	0.9940	5,534,540	56.9
25	0.0012	0.0060	96,646	579	481,801	0.9937	5,049,850	52.3
30	0.0014	0.0068	96,067	651	478,746	0.9927	4,568,049	47.6
35	0.0016	0.0080	95,416	764	475,241	0.9908	4,089,302	42.9
40	0.0021	0.0107	94,652	1,009	470,871	0.9874	3,614,061	38.2
45	0.0031	0.0152	93,644	1,420	464,921	0.9799	3,143,190	33.6
50	0.0052	0.0257	92,223	2,369	455,595	0.9697	2,678,270	29.0
55	0.0073	0.0357	89,854	3,205	441,780	0.9538	2,222,674	24.7
60	0.0122	0.0593	86,650	5,135	421,378	0.9236	1,780,895	20.6
65	0.0203	0.0968	81,514	7,888	389,164	0.8774	1,359,517	16.7
70	0.0332	0.1539	73,626	11,328	341,448	0.8032	970,353	13.2
75	0.0565	0.2486	62,299	15,487	274,261	0.5639	628,905	10.1
80	0.1320	...	46,812	46,812	354,644	...	354,644	7.6

Appendix 16: Abridged life table - Males, Rural: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0266	0.0260	100,000	2,600	97,705	0.9703	6,510,942	**65.1**
1	0.0023	0.0091	97,400	882	387,461	0.9886	6,413,238	65.8
5	0.0025	0.0123	96,518	1,191	479,613	0.9897	6,025,777	62.4
10	0.0017	0.0083	95,327	794	474,652	0.9885	5,546,164	58.2
15	0.0032	0.0157	94,533	1,482	469,204	0.9824	5,071,512	53.6
20	0.0038	0.0187	93,052	1,744	460,959	0.9809	4,602,308	49.5
25	0.0039	0.0192	91,307	1,757	452,168	0.9801	4,141,349	45.4
30	0.0042	0.0208	89,550	1,862	443,153	0.9782	3,689,181	41.2
35	0.0047	0.0232	87,689	2,031	433,475	0.9746	3,246,028	37.0
40	0.0057	0.0280	85,658	2,403	422,469	0.9687	2,812,553	32.8
45	0.0072	0.0354	83,255	2,945	409,241	0.9574	2,390,084	28.7
50	0.0104	0.0509	80,310	4,088	391,797	0.9417	1,980,843	24.7
55	0.0138	0.0669	76,222	5,099	368,964	0.9180	1,589,046	20.8
60	0.0211	0.1006	71,123	7,153	338,700	0.8761	1,220,082	17.2
65	0.0327	0.1517	63,970	9,703	296,731	0.8134	881,381	13.8
70	0.0514	0.2287	54,267	12,412	241,364	0.7200	584,650	10.8
75	0.0824	0.3421	41,855	14,318	173,776	0.4938	343,286	8.2
80	0.1624	...	27,536	27,536	169,511	...	169,511	6.2

Appendix 17: Abridged life table - Females, Rural: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0224	0.0220	100,000	2,200	98,055	0.9762	7,186,468	**71.9**
1	0.0012	0.0047	97,800	462	390,039	0.9954	7,088,413	72.5
5	0.0007	0.0035	97,338	346	485,826	0.9968	6,698,374	68.8
10	0.0006	0.0028	96,992	274	484,276	0.9957	6,212,548	64.1
15	0.0013	0.0064	96,718	620	482,193	0.9920	5,728,271	59.2
20	0.0019	0.0093	96,098	890	478,332	0.9906	5,246,078	54.6
25	0.0019	0.0093	95,208	885	473,843	0.9903	4,767,746	50.1
30	0.0021	0.0103	94,323	967	469,237	0.9892	4,293,903	45.5
35	0.0023	0.0116	93,356	1,081	464,151	0.9871	3,824,666	41.0
40	0.0029	0.0146	92,275	1,348	458,150	0.9831	3,360,515	36.4
45	0.0040	0.0199	90,927	1,810	450,403	0.9741	2,902,365	31.9
50	0.0066	0.0327	89,117	2,912	438,758	0.9619	2,451,962	27.5
55	0.0091	0.0443	86,205	3,820	422,044	0.9434	2,013,204	23.4
60	0.0149	0.0718	82,385	5,916	398,159	0.9088	1,591,160	19.3
65	0.0241	0.1140	76,469	8,714	361,863	0.8574	1,193,001	15.6
70	0.0387	0.1773	67,755	12,012	310,265	0.7757	831,138	12.3
75	0.0651	0.2810	55,743	15,664	240,677	0.5379	520,873	9.3
80	0.1430	...	40,080	40,080	280,196	...	280,196	7.0

Appendix 18: Abridged life table - Males, Choiseul: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0298	0.0290	100,000	2,900	97,465	0.9667	6,352,993	**63.5**
1	0.0027	0.0107	97,100	1,042	385,864	0.9865	6,255,528	64.4
5	0.0029	0.0144	96,058	1,386	476,828	0.9880	5,869,663	61.1
10	0.0019	0.0096	94,673	910	471,089	0.9868	5,392,835	57.0
15	0.0036	0.0179	93,763	1,682	464,878	0.9799	4,921,746	52.5
20	0.0043	0.0214	92,081	1,972	455,539	0.9783	4,456,868	48.4
25	0.0044	0.0219	90,109	1,975	445,631	0.9773	4,001,329	44.4
30	0.0048	0.0237	88,134	2,086	435,513	0.9752	3,555,697	40.3
35	0.0053	0.0261	86,048	2,248	424,728	0.9715	3,120,185	36.3
40	0.0064	0.0313	83,800	2,620	412,635	0.9653	2,695,457	32.2
45	0.0079	0.0389	81,180	3,158	398,332	0.9535	2,282,822	28.1
50	0.0113	0.0551	78,022	4,302	379,813	0.9373	1,884,490	24.2
55	0.0148	0.0715	73,720	5,273	356,005	0.9128	1,504,677	20.4
60	0.0224	0.1064	68,447	7,281	324,976	0.8695	1,148,672	16.8
65	0.0345	0.1593	61,166	9,744	282,553	0.8048	823,696	13.5
70	0.0539	0.2385	51,422	12,262	227,407	0.7096	541,143	10.5
75	0.0857	0.3533	39,161	13,837	161,365	0.4857	313,736	8.0
80	0.1662	...	25,324	25,324	152,371	...	152,371	6.0

Appendix 19: Abridged life table - Females, Choiseul: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0256	0.0250	100,000	2,500	97,812	0.9727	7,014,345	**70.1**
1	0.0015	0.0059	97,500	576	388,550	0.9942	6,916,532	70.9
5	0.0009	0.0045	96,924	431	483,541	0.9960	6,527,982	67.4
10	0.0007	0.0035	96,493	340	481,612	0.9946	6,044,440	62.6
15	0.0016	0.0081	96,152	775	479,015	0.9899	5,562,828	57.9
20	0.0023	0.0117	95,377	1,113	474,181	0.9882	5,083,813	53.3
25	0.0023	0.0116	94,264	1,090	468,606	0.9880	4,609,633	48.9
30	0.0025	0.0126	93,174	1,174	462,975	0.9868	4,141,026	44.4
35	0.0028	0.0139	92,000	1,279	456,877	0.9847	3,678,052	40.0
40	0.0034	0.0171	90,721	1,549	449,881	0.9805	3,221,175	35.5
45	0.0046	0.0228	89,172	2,031	441,091	0.9707	2,771,294	31.1
50	0.0075	0.0368	87,141	3,208	428,159	0.9574	2,330,203	26.7
55	0.0101	0.0493	83,933	4,141	409,900	0.9374	1,902,044	22.7
60	0.0164	0.0789	79,792	6,297	384,253	0.9006	1,492,145	18.7
65	0.0262	0.1235	73,495	9,074	346,060	0.8465	1,107,892	15.1
70	0.0418	0.1900	64,420	12,237	292,938	0.7611	761,832	11.8
75	0.0698	0.2981	52,183	15,554	222,941	0.5245	468,894	9.0
80	0.1489	...	36,629	36,629	245,953	...	245,953	6.7

Appendix 20: Abridged life table - Males, Western: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0256	0.0250	100,000	2,500	97,786	0.9715	6,565,026	**65.7**
1	0.0021	0.0085	97,500	831	387,987	0.9892	6,467,240	66.3
5	0.0023	0.0117	96,669	1,127	480,527	0.9902	6,079,253	62.9
10	0.0016	0.0079	95,542	756	475,819	0.9891	5,598,726	58.6
15	0.0030	0.0149	94,786	1,415	470,623	0.9833	5,122,907	54.0
20	0.0036	0.0179	93,370	1,668	462,741	0.9818	4,652,284	49.8
25	0.0037	0.0184	91,702	1,685	454,323	0.9810	4,189,543	45.7
30	0.0040	0.0198	90,017	1,786	445,678	0.9791	3,735,220	41.5
35	0.0045	0.0222	88,231	1,957	436,374	0.9756	3,289,542	37.3
40	0.0055	0.0270	86,275	2,327	425,742	0.9698	2,853,168	33.1
45	0.0070	0.0342	83,948	2,870	412,889	0.9587	2,427,426	28.9
50	0.0101	0.0495	81,077	4,010	395,830	0.9432	2,014,537	24.8
55	0.0135	0.0653	77,067	5,034	373,359	0.9197	1,618,707	21.0
60	0.0207	0.0986	72,034	7,099	343,397	0.8784	1,245,348	17.3
65	0.0321	0.1490	64,934	9,677	301,636	0.8164	901,951	13.9
70	0.0506	0.2253	55,258	12,450	246,261	0.7236	600,315	10.9
75	0.0812	0.3381	42,807	14,474	178,204	0.4967	354,054	8.3
80	0.1611	...	28,333	28,333	175,849	...	175,849	6.2

Appendix 21: Abridged life table - Females, Western: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0214	0.0210	100,000	2,100	98,137	0.9773	7,245,319	**72.5**
1	0.0011	0.0044	97,900	426	390,530	0.9957	7,147,181	73.0
5	0.0007	0.0033	97,474	319	486,571	0.9971	6,756,652	69.3
10	0.0005	0.0026	97,155	254	485,140	0.9960	6,270,080	64.5
15	0.0012	0.0059	96,901	571	483,218	0.9926	5,784,940	59.7
20	0.0017	0.0085	96,330	821	479,661	0.9914	5,301,722	55.0
25	0.0017	0.0086	95,510	820	475,514	0.9910	4,822,061	50.5
30	0.0019	0.0095	94,690	901	471,235	0.9899	4,346,547	45.9
35	0.0022	0.0108	93,788	1,016	466,476	0.9878	3,875,313	41.3
40	0.0028	0.0138	92,772	1,280	460,805	0.9840	3,408,836	36.7
45	0.0038	0.0190	91,492	1,734	453,412	0.9753	2,948,031	32.2
50	0.0064	0.0313	89,759	2,809	442,215	0.9634	2,494,619	27.8
55	0.0087	0.0426	86,950	3,705	426,047	0.9454	2,052,404	23.6
60	0.0143	0.0694	83,245	5,775	402,802	0.9117	1,626,357	19.5
65	0.0233	0.1107	77,470	8,573	367,225	0.8612	1,223,556	15.8
70	0.0377	0.1729	68,897	11,909	316,259	0.7809	856,331	12.4
75	0.0634	0.2749	56,988	15,669	246,961	0.5427	540,072	9.5
80	0.1410	...	41,319	41,319	293,111	...	293,111	7.1

Appendix 22: Abridged life table - Males, Isabel: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0256	0.0250	100,000	2,500	97,786	0.9715	6,565,026	**65.7**
1	0.0021	0.0085	97,500	831	387,987	0.9892	6,467,240	66.3
5	0.0023	0.0117	96,669	1,127	480,527	0.9902	6,079,253	62.9
10	0.0016	0.0079	95,542	756	475,819	0.9891	5,598,726	58.6
15	0.0030	0.0149	94,786	1,415	470,623	0.9833	5,122,907	54.0
20	0.0036	0.0179	93,370	1,668	462,741	0.9818	4,652,284	49.8
25	0.0037	0.0184	91,702	1,685	454,323	0.9810	4,189,543	45.7
30	0.0040	0.0198	90,017	1,786	445,678	0.9791	3,735,220	41.5
35	0.0045	0.0222	88,231	1,957	436,374	0.9756	3,289,542	37.3
40	0.0055	0.0270	86,275	2,327	425,742	0.9698	2,853,168	33.1
45	0.0070	0.0342	83,948	2,870	412,889	0.9587	2,427,426	28.9
50	0.0101	0.0495	81,077	4,010	395,830	0.9432	2,014,537	24.8
55	0.0135	0.0653	77,067	5,034	373,359	0.9197	1,618,707	21.0
60	0.0207	0.0986	72,034	7,099	343,397	0.8784	1,245,348	17.3
65	0.0321	0.1490	64,934	9,677	301,636	0.8164	901,951	13.9
70	0.0506	0.2253	55,258	12,450	246,261	0.7236	600,315	10.9
75	0.0812	0.3381	42,807	14,474	178,204	0.4967	354,054	8.3
80	0.1611	...	28,333	28,333	175,849	...	175,849	6.2

Appendix 23: Abridged life table - Females, Isabel: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0214	0.0210	100,000	2,100	98,137	0.9773	7,245,319	**72.5**
1	0.0011	0.0044	97,900	426	390,530	0.9957	7,147,181	73.0
5	0.0007	0.0033	97,474	319	486,571	0.9971	6,756,652	69.3
10	0.0005	0.0026	97,155	254	485,140	0.9960	6,270,080	64.5
15	0.0012	0.0059	96,901	571	483,218	0.9926	5,784,940	59.7
20	0.0017	0.0085	96,330	821	479,661	0.9914	5,301,722	55.0
25	0.0017	0.0086	95,510	820	475,514	0.9910	4,822,061	50.5
30	0.0019	0.0095	94,690	901	471,235	0.9899	4,346,547	45.9
35	0.0022	0.0108	93,788	1,016	466,476	0.9878	3,875,313	41.3
40	0.0028	0.0138	92,772	1,280	460,805	0.9840	3,408,836	36.7
45	0.0038	0.0190	91,492	1,734	453,412	0.9753	2,948,031	32.2
50	0.0064	0.0313	89,759	2,809	442,215	0.9634	2,494,619	27.8
55	0.0087	0.0426	86,950	3,705	426,047	0.9454	2,052,404	23.6
60	0.0143	0.0694	83,245	5,775	402,802	0.9117	1,626,357	19.5
65	0.0233	0.1107	77,470	8,573	367,225	0.8612	1,223,556	15.8
70	0.0377	0.1729	68,897	11,909	316,259	0.7809	856,331	12.4
75	0.0634	0.2749	56,988	15,669	246,961	0.5427	540,072	9.5
80	0.1410	...	41,319	41,319	293,111	...	293,111	7.1

Appendix 24: Abridged life table - Males, Central: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0329	0.0320	100,000	3,200	97,230	0.9629	6,200,810	**62.0**
1	0.0031	0.0125	96,800	1,210	384,244	0.9844	6,103,579	63.1
5	0.0033	0.0166	95,590	1,588	473,981	0.9862	5,719,336	59.8
10	0.0022	0.0109	94,002	1,029	467,439	0.9851	5,245,354	55.8
15	0.0041	0.0203	92,973	1,883	460,455	0.9773	4,777,915	51.4
20	0.0049	0.0241	91,090	2,200	450,019	0.9755	4,317,460	47.4
25	0.0050	0.0246	88,890	2,190	439,000	0.9745	3,867,440	43.5
30	0.0054	0.0266	86,701	2,307	427,791	0.9723	3,428,440	39.5
35	0.0059	0.0291	84,393	2,458	415,927	0.9684	3,000,649	35.6
40	0.0070	0.0345	81,935	2,826	402,796	0.9620	2,584,723	31.5
45	0.0087	0.0424	79,110	3,352	387,494	0.9497	2,181,927	27.6
50	0.0122	0.0592	75,758	4,489	368,014	0.9331	1,794,432	23.7
55	0.0158	0.0760	71,269	5,413	343,381	0.9079	1,426,419	20.0
60	0.0236	0.1119	65,856	7,368	311,771	0.8632	1,083,038	16.4
65	0.0362	0.1665	58,488	9,736	269,125	0.7968	771,267	13.2
70	0.0563	0.2475	48,752	12,065	214,442	0.7000	502,142	10.3
75	0.0889	0.3636	36,687	13,340	150,111	0.4782	287,700	7.8
80	0.1697	...	23,346	23,346	137,589	...	137,589	5.9

Appendix 25: Abridged life table - Females, Central: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0287	0.0280	100,000	2,800	97,575	0.9692	6,847,603	**68.5**
1	0.0018	0.0072	97,200	700	387,034	0.9929	6,750,028	69.4
5	0.0011	0.0054	96,500	525	481,185	0.9951	6,362,994	65.9
10	0.0009	0.0043	95,975	412	478,843	0.9934	5,881,809	61.3
15	0.0020	0.0099	95,563	945	475,686	0.9876	5,402,966	56.5
20	0.0029	0.0143	94,618	1,356	469,792	0.9856	4,927,280	52.1
25	0.0028	0.0140	93,262	1,308	463,047	0.9855	4,457,488	47.8
30	0.0030	0.0151	91,954	1,390	456,330	0.9843	3,994,440	43.4
35	0.0033	0.0164	90,564	1,482	449,186	0.9822	3,538,110	39.1
40	0.0040	0.0196	89,082	1,747	441,193	0.9778	3,088,925	34.7
45	0.0052	0.0257	87,335	2,241	431,393	0.9672	2,647,732	30.3
50	0.0083	0.0409	85,093	3,481	417,255	0.9529	2,216,339	26.0
55	0.0111	0.0542	81,612	4,427	397,591	0.9316	1,799,084	22.0
60	0.0179	0.0858	77,185	6,622	370,408	0.8927	1,401,492	18.2
65	0.0283	0.1325	70,563	9,349	330,675	0.8362	1,031,084	14.6
70	0.0447	0.2018	61,214	12,353	276,518	0.7475	700,409	11.4
75	0.0742	0.3137	48,861	15,329	206,693	0.5124	423,891	8.7
80	0.1544	...	33,532	33,532	217,198	...	217,198	6.5

Appendix 26: Abridged life table - Males, Rennell/Bellona: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0350	0.0340	100,000	3,400	97,077	0.9605	6,102,215	**61.0**
1	0.0035	0.0137	96,600	1,327	383,150	0.9830	6,005,138	62.2
5	0.0037	0.0181	95,273	1,726	472,051	0.9850	5,621,988	59.0
10	0.0024	0.0119	93,547	1,109	464,962	0.9839	5,149,937	55.1
15	0.0044	0.0218	92,438	2,018	457,458	0.9756	4,684,975	50.7
20	0.0053	0.0260	90,420	2,351	446,290	0.9737	4,227,517	46.8
25	0.0054	0.0265	88,068	2,332	434,534	0.9726	3,781,228	42.9
30	0.0058	0.0286	85,737	2,452	422,608	0.9703	3,346,694	39.0
35	0.0063	0.0311	83,285	2,594	410,040	0.9664	2,924,086	35.1
40	0.0075	0.0366	80,691	2,956	396,245	0.9598	2,514,046	31.2
45	0.0091	0.0447	77,735	3,472	380,319	0.9472	2,117,801	27.2
50	0.0128	0.0619	74,263	4,599	360,256	0.9303	1,737,482	23.4
55	0.0164	0.0788	69,664	5,490	335,149	0.9048	1,377,226	19.8
60	0.0244	0.1154	64,174	7,406	303,243	0.8592	1,042,078	16.2
65	0.0373	0.1710	56,767	9,707	260,556	0.7917	738,834	13.0
70	0.0578	0.2532	47,060	11,914	206,293	0.6940	478,279	10.2
75	0.0908	0.3700	35,146	13,006	143,168	0.4736	271,985	7.7
80	0.1719	...	22,140	22,140	128,817	...	128,817	5.8

Appendix 27: Abridged life table - Females, Rennell/Bellona: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0266	0.0260	100,000	2,600	97,733	0.9716	6,958,232	**69.6**
1	0.0016	0.0063	97,400	616	388,048	0.9938	6,860,500	70.4
5	0.0010	0.0048	96,784	462	482,764	0.9957	6,472,452	66.9
10	0.0008	0.0038	96,322	364	480,701	0.9942	5,989,688	62.2
15	0.0017	0.0087	95,958	830	477,922	0.9892	5,508,987	57.4
20	0.0025	0.0125	95,128	1,192	472,744	0.9874	5,031,066	52.9
25	0.0025	0.0124	93,936	1,161	466,788	0.9872	4,558,322	48.5
30	0.0027	0.0134	92,775	1,245	460,801	0.9860	4,091,534	44.1
35	0.0030	0.0147	91,530	1,346	454,358	0.9839	3,630,733	39.7
40	0.0036	0.0179	90,184	1,616	447,029	0.9796	3,176,375	35.2
45	0.0048	0.0237	88,568	2,102	437,899	0.9695	2,729,346	30.8
50	0.0078	0.0382	86,466	3,302	424,555	0.9559	2,291,448	26.5
55	0.0104	0.0510	83,164	4,240	405,813	0.9355	1,866,892	22.4
60	0.0169	0.0812	78,924	6,412	379,629	0.8979	1,461,079	18.5
65	0.0269	0.1265	72,512	9,175	340,886	0.8430	1,081,450	14.9
70	0.0428	0.1940	63,337	12,287	287,368	0.7564	740,564	11.7
75	0.0713	0.3034	51,050	15,490	217,370	0.5204	453,196	8.9
80	0.1508	...	35,561	35,561	235,826	...	235,826	6.6

Appendix 28: Abridged life table - Males, Guadalcanal: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9728	6,619,898	**66.2**
1	0.0020	0.0080	97,600	781	388,511	0.9898	6,522,031	66.8
5	0.0022	0.0110	96,819	1,065	481,433	0.9907	6,133,520	63.4
10	0.0015	0.0075	95,754	718	476,976	0.9896	5,652,086	59.0
15	0.0029	0.0142	95,036	1,350	472,030	0.9841	5,175,111	54.5
20	0.0034	0.0170	93,687	1,593	464,510	0.9827	4,703,081	50.2
25	0.0035	0.0175	92,094	1,612	456,464	0.9819	4,238,571	46.0
30	0.0038	0.0189	90,482	1,710	448,191	0.9801	3,782,107	41.8
35	0.0043	0.0212	88,772	1,882	439,264	0.9767	3,333,916	37.6
40	0.0052	0.0259	86,890	2,250	429,010	0.9709	2,894,653	33.3
45	0.0067	0.0330	84,640	2,793	416,542	0.9600	2,465,643	29.1
50	0.0098	0.0480	81,847	3,929	399,881	0.9448	2,049,101	25.0
55	0.0131	0.0637	77,918	4,963	377,792	0.9216	1,649,220	21.2
60	0.0202	0.0965	72,955	7,040	348,156	0.8807	1,271,428	17.4
65	0.0314	0.1463	65,914	9,643	306,638	0.8195	923,272	14.0
70	0.0497	0.2218	56,271	12,481	251,290	0.7274	616,634	11.0
75	0.0800	0.3340	43,790	14,626	182,794	0.4997	365,344	8.3
80	0.1598	...	29,164	29,164	182,550	...	182,550	6.3

Appendix 29: Abridged life table - Females, Guadalcanal: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0204	0.0200	100,000	2,000	98,220	0.9785	7,305,041	**73.1**
1	0.0010	0.0040	98,000	392	391,017	0.9961	7,206,821	73.5
5	0.0006	0.0030	97,608	293	487,308	0.9973	6,815,804	69.8
10	0.0005	0.0024	97,315	234	485,992	0.9964	6,328,496	65.0
15	0.0011	0.0054	97,082	524	484,225	0.9933	5,842,504	60.2
20	0.0016	0.0078	96,557	753	480,962	0.9921	5,358,279	55.5
25	0.0016	0.0079	95,804	757	477,146	0.9917	4,877,317	50.9
30	0.0018	0.0088	95,047	836	473,186	0.9906	4,400,172	46.3
35	0.0020	0.0101	94,211	952	468,750	0.9886	3,926,986	41.7
40	0.0026	0.0130	93,259	1,212	463,407	0.9848	3,458,236	37.1
45	0.0036	0.0180	92,047	1,657	456,371	0.9765	2,994,830	32.5
50	0.0061	0.0299	90,390	2,703	445,629	0.9650	2,538,459	28.1
55	0.0083	0.0409	87,688	3,586	430,024	0.9475	2,092,830	23.9
60	0.0138	0.0669	84,101	5,626	407,446	0.9146	1,662,806	19.8
65	0.0226	0.1073	78,475	8,420	372,635	0.8651	1,255,359	16.0
70	0.0366	0.1683	70,054	11,790	322,369	0.7862	882,724	12.6
75	0.0618	0.2687	58,264	15,656	253,448	0.5477	560,355	9.6
80	0.1388	...	42,609	42,609	306,908	...	306,908	7.2

Appendix 30: Abridged life table - Males, Malaita: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0287	0.0280	100,000	2,800	97,544	0.9679	6,404,962	**64.0**
1	0.0026	0.0102	97,200	987	386,399	0.9872	6,307,417	64.9
5	0.0028	0.0137	96,213	1,320	477,764	0.9885	5,921,018	61.5
10	0.0018	0.0092	94,893	871	472,286	0.9874	5,443,254	57.4
15	0.0035	0.0172	94,022	1,615	466,331	0.9808	4,970,968	52.9
20	0.0041	0.0205	92,407	1,896	457,358	0.9791	4,504,637	48.7
25	0.0042	0.0210	90,511	1,902	447,822	0.9782	4,047,279	44.7
30	0.0046	0.0227	88,608	2,012	438,069	0.9762	3,599,458	40.6
35	0.0051	0.0251	86,597	2,176	427,650	0.9726	3,161,388	36.5
40	0.0061	0.0302	84,420	2,549	415,915	0.9665	2,733,738	32.4
45	0.0077	0.0377	81,871	3,089	401,962	0.9548	2,317,823	28.3
50	0.0110	0.0537	78,782	4,234	383,788	0.9388	1,915,861	24.3
55	0.0145	0.0700	74,548	5,219	360,288	0.9145	1,532,073	20.6
60	0.0220	0.1045	69,330	7,243	329,491	0.8716	1,171,786	16.9
65	0.0339	0.1568	62,086	9,736	287,192	0.8076	842,295	13.6
70	0.0531	0.2353	52,350	12,318	231,942	0.7130	555,102	10.6
75	0.0847	0.3497	40,033	13,999	165,364	0.4883	323,160	8.1
80	0.1650	...	26,033	26,033	157,796	...	157,796	6.1

Appendix 31: Abridged life table - Females, Malaita: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,893	0.9739	7,071,050	**70.7**
1	0.0014	0.0055	97,600	537	389,050	0.9946	6,973,157	71.4
5	0.0008	0.0041	97,063	402	484,311	0.9963	6,584,108	67.8
10	0.0007	0.0033	96,661	318	482,512	0.9950	6,099,797	63.1
15	0.0015	0.0075	96,344	722	480,091	0.9906	5,617,285	58.3
20	0.0022	0.0108	95,622	1,037	475,591	0.9891	5,137,193	53.7
25	0.0022	0.0108	94,585	1,020	470,389	0.9888	4,661,602	49.3
30	0.0024	0.0118	93,565	1,104	465,106	0.9876	4,191,213	44.8
35	0.0026	0.0131	92,461	1,213	459,350	0.9855	3,726,107	40.3
40	0.0033	0.0162	91,249	1,482	452,686	0.9813	3,266,757	35.8
45	0.0044	0.0218	89,766	1,958	444,240	0.9718	2,814,071	31.3
50	0.0072	0.0354	87,808	3,112	431,729	0.9589	2,369,831	27.0
55	0.0098	0.0477	84,696	4,038	413,968	0.9394	1,938,103	22.9
60	0.0159	0.0766	80,658	6,177	388,883	0.9033	1,524,134	18.9
65	0.0255	0.1204	74,482	8,964	351,281	0.8501	1,135,251	15.2
70	0.0408	0.1858	65,517	12,175	298,608	0.7658	783,971	12.0
75	0.0682	0.2925	53,342	15,605	228,677	0.5289	485,362	9.1
80	0.1470	...	37,737	37,737	256,686	...	256,686	6.8

Appendix 32: Abridged life table - Males, Makira: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0224	0.0220	100,000	2,200	98,033	0.9752	6,732,183	**67.3**
1	0.0018	0.0070	97,800	684	389,550	0.9911	6,634,150	67.8
5	0.0020	0.0097	97,116	943	483,223	0.9918	6,244,601	64.3
10	0.0013	0.0067	96,173	644	479,255	0.9907	5,761,378	59.9
15	0.0026	0.0128	95,529	1,218	474,805	0.9857	5,282,122	55.3
20	0.0031	0.0153	94,311	1,442	468,005	0.9844	4,807,318	51.0
25	0.0032	0.0158	92,869	1,466	460,704	0.9837	4,339,313	46.7
30	0.0034	0.0170	91,403	1,558	453,176	0.9820	3,878,609	42.4
35	0.0039	0.0193	89,846	1,730	445,009	0.9787	3,425,433	38.1
40	0.0048	0.0238	88,115	2,093	435,528	0.9732	2,980,424	33.8
45	0.0062	0.0306	86,022	2,632	423,855	0.9627	2,544,896	29.6
50	0.0092	0.0450	83,391	3,755	408,037	0.9479	2,121,041	25.4
55	0.0124	0.0604	79,635	4,809	386,771	0.9253	1,713,004	21.5
60	0.0193	0.0923	74,826	6,903	357,870	0.8856	1,326,233	17.7
65	0.0301	0.1406	67,923	9,553	316,942	0.8259	968,362	14.3
70	0.0478	0.2145	58,370	12,518	261,773	0.7354	651,421	11.2
75	0.0775	0.3253	45,853	14,917	192,497	0.5060	389,648	8.5
80	0.1569	...	30,936	30,936	197,150	...	197,150	6.4

Appendix 33: Abridged life table - Females, Makira: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0183	0.0180	100,000	1,800	98,387	0.9807	7,427,524	**74.3**
1	0.0008	0.0033	98,200	327	391,981	0.9967	7,329,137	74.6
5	0.0005	0.0025	97,873	244	488,756	0.9978	6,937,156	70.9
10	0.0004	0.0020	97,629	195	487,658	0.9970	6,448,400	66.0
15	0.0009	0.0045	97,434	436	486,186	0.9944	5,960,742	61.2
20	0.0013	0.0064	96,998	626	483,477	0.9934	5,474,557	56.4
25	0.0013	0.0066	96,373	636	480,290	0.9930	4,991,080	51.8
30	0.0015	0.0074	95,737	711	476,943	0.9920	4,510,790	47.1
35	0.0017	0.0087	95,025	825	473,134	0.9901	4,033,847	42.5
40	0.0023	0.0114	94,200	1,077	468,441	0.9865	3,560,713	37.8
45	0.0032	0.0161	93,123	1,500	462,127	0.9788	3,092,272	33.2
50	0.0055	0.0271	91,623	2,483	452,321	0.9681	2,630,144	28.7
55	0.0076	0.0374	89,140	3,336	437,893	0.9517	2,177,823	24.4
60	0.0127	0.0619	85,804	5,307	416,736	0.9205	1,739,930	20.3
65	0.0211	0.1004	80,497	8,078	383,604	0.8732	1,323,194	16.4
70	0.0343	0.1588	72,419	11,501	334,957	0.7974	939,591	13.0
75	0.0583	0.2555	60,918	15,567	267,083	0.5583	604,633	9.9
80	0.1344	...	45,351	45,351	337,550	...	337,550	7.4

Appendix 34: Abridged life table - Males, Temotu: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0245	0.0240	100,000	2,400	97,868	0.9728	6,619,898	**66.2**
1	0.0020	0.0080	97,600	781	388,511	0.9898	6,522,031	66.8
5	0.0022	0.0110	96,819	1,065	481,433	0.9907	6,133,520	63.4
10	0.0015	0.0075	95,754	718	476,976	0.9896	5,652,086	59.0
15	0.0029	0.0142	95,036	1,350	472,030	0.9841	5,175,111	54.5
20	0.0034	0.0170	93,687	1,593	464,510	0.9827	4,703,081	50.2
25	0.0035	0.0175	92,094	1,612	456,464	0.9819	4,238,571	46.0
30	0.0038	0.0189	90,482	1,710	448,191	0.9801	3,782,107	41.8
35	0.0043	0.0212	88,772	1,882	439,264	0.9767	3,333,916	37.6
40	0.0052	0.0259	86,890	2,250	429,010	0.9709	2,894,653	33.3
45	0.0067	0.0330	84,640	2,793	416,542	0.9600	2,465,643	29.1
50	0.0098	0.0480	81,847	3,929	399,881	0.9448	2,049,101	25.0
55	0.0131	0.0637	77,918	4,963	377,792	0.9216	1,649,220	21.2
60	0.0202	0.0965	72,955	7,040	348,156	0.8807	1,271,428	17.4
65	0.0314	0.1463	65,914	9,643	306,638	0.8195	923,272	14.0
70	0.0497	0.2218	56,271	12,481	251,290	0.7274	616,634	11.0
75	0.0800	0.3340	43,790	14,626	182,794	0.4997	365,344	8.3
80	0.1598	...	29,164	29,164	182,550	...	182,550	6.3

Appendix 35: Abridged life table - Females, Temotu: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0204	0.0200	100,000	2,000	98,220	0.9785	7,305,041	**73.1**
1	0.0010	0.0040	98,000	392	391,017	0.9961	7,206,821	73.5
5	0.0006	0.0030	97,608	293	487,308	0.9973	6,815,804	69.8
10	0.0005	0.0024	97,315	234	485,992	0.9964	6,328,496	65.0
15	0.0011	0.0054	97,082	524	484,225	0.9933	5,842,504	60.2
20	0.0016	0.0078	96,557	753	480,962	0.9921	5,358,279	55.5
25	0.0016	0.0079	95,804	757	477,146	0.9917	4,877,317	50.9
30	0.0018	0.0088	95,047	836	473,186	0.9906	4,400,172	46.3
35	0.0020	0.0101	94,211	952	468,750	0.9886	3,926,986	41.7
40	0.0026	0.0130	93,259	1,212	463,407	0.9848	3,458,236	37.1
45	0.0036	0.0180	92,047	1,657	456,371	0.9765	2,994,830	32.5
50	0.0061	0.0299	90,390	2,703	445,629	0.9650	2,538,459	28.1
55	0.0083	0.0409	87,688	3,586	430,024	0.9475	2,092,830	23.9
60	0.0138	0.0669	84,101	5,626	407,446	0.9146	1,662,806	19.8
65	0.0226	0.1073	78,475	8,420	372,635	0.8651	1,255,359	16.0
70	0.0366	0.1683	70,054	11,790	322,369	0.7862	882,724	12.6
75	0.0618	0.2687	58,264	15,656	253,448	0.5477	560,355	9.6
80	0.1388	...	42,609	42,609	306,908	...	306,908	7.2

Appendix 36: Abridged life table - Males, Honiara: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0214	0.0210	100,000	2,100	98,116	0.9764	6,789,718	**67.9**
1	0.0016	0.0065	97,900	637	390,065	0.9917	6,691,602	68.4
5	0.0018	0.0091	97,263	884	484,105	0.9923	6,301,538	64.8
10	0.0013	0.0063	96,379	607	480,378	0.9912	5,817,433	60.4
15	0.0024	0.0120	95,772	1,153	476,172	0.9865	5,337,055	55.7
20	0.0029	0.0144	94,619	1,367	469,730	0.9852	4,860,883	51.4
25	0.0030	0.0149	93,252	1,393	462,801	0.9845	4,391,153	47.1
30	0.0033	0.0161	91,859	1,481	455,646	0.9829	3,928,352	42.8
35	0.0037	0.0183	90,378	1,653	447,862	0.9797	3,472,706	38.4
40	0.0046	0.0227	88,725	2,012	438,775	0.9743	3,024,843	34.1
45	0.0060	0.0294	86,713	2,548	427,514	0.9640	2,586,069	29.8
50	0.0089	0.0435	84,165	3,663	412,139	0.9495	2,158,554	25.6
55	0.0121	0.0587	80,502	4,724	391,319	0.9272	1,746,415	21.7
60	0.0188	0.0901	75,778	6,824	362,829	0.8882	1,355,096	17.9
65	0.0295	0.1377	68,954	9,495	322,253	0.8293	992,267	14.4
70	0.0469	0.2106	59,459	12,522	267,243	0.7395	670,014	11.3
75	0.0762	0.3207	46,936	15,054	197,636	0.5093	402,771	8.6
80	0.1554	...	31,882	31,882	205,135	...	205,135	6.4

Appendix 37: Abridged life table - Females, Honiara: 2009

Age	m(x,n)	q(x,n)	l(x)	d(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	0.0173	0.0170	100,000	1,700	98,472	0.9819	7,490,547	**74.9**
1	0.0008	0.0030	98,300	296	392,458	0.9970	7,392,075	75.2
5	0.0005	0.0023	98,004	221	489,467	0.9980	6,999,616	71.4
10	0.0004	0.0018	97,783	177	488,472	0.9973	6,510,149	66.6
15	0.0008	0.0040	97,606	394	487,138	0.9950	6,021,678	61.7
20	0.0012	0.0058	97,212	565	484,690	0.9940	5,534,540	56.9
25	0.0012	0.0060	96,646	579	481,801	0.9937	5,049,850	52.3
30	0.0014	0.0068	96,067	651	478,746	0.9927	4,568,049	47.6
35	0.0016	0.0080	95,416	764	475,241	0.9908	4,089,302	42.9
40	0.0021	0.0107	94,652	1,009	470,871	0.9874	3,614,061	38.2
45	0.0031	0.0152	93,644	1,420	464,921	0.9799	3,143,190	33.6
50	0.0052	0.0257	92,223	2,369	455,595	0.9697	2,678,270	29.0
55	0.0073	0.0357	89,854	3,205	441,780	0.9538	2,222,674	24.7
60	0.0122	0.0593	86,650	5,135	421,378	0.9236	1,780,895	20.6
65	0.0203	0.0968	81,514	7,888	389,164	0.8774	1,359,517	16.7
70	0.0332	0.1539	73,626	11,328	341,448	0.8032	970,353	13.2
75	0.0565	0.2486	62,299	15,487	274,261	0.5639	628,905	10.1
80	0.1320	...	46,812	46,812	354,644	...	354,644	7.6

Total Fertility rate (TFR)

Appendix 39: Models for mortality improvement. Quinquennial gains in life expectancy at birth according to initial level of life expectancy

Initial life expectancy level (years)	pace of mortality improvement									
	Very fast		Fast		Medium		Slow		Very slow	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
40.0 - 42.5	2.5	2.6	2.1	2.3	1.9	2.0	1.3	1.4	1.1	1.1
42.5 - 45.0	2.8	3.0	2.4	2.5	2.0	2.1	1.4	1.5	1.1	1.2
45.0 - 47.5	3.0	3.1	2.5	2.6	2.1	2.2	1.8	1.9	1.2	1.3
47.5 - 50.0	3.0	3.2	2.6	2.7	2.2	2.3	1.8	1.9	1.3	1.4
50.0 - 52.5	3.2	3.4	2.7	2.9	2.3	2.4	1.9	2.0	1.4	1.5
52.5 - 55.0	3.6	3.7	2.7	3.0	2.4	2.6	2.0	2.0	1.5	1.7
55.0 - 57.5	3.7	3.7	2.6	3.0	2.4	2.6	2.0	2.0	1.5	1.8
57.5 - 60.0	3.8	4.0	2.6	3.0	2.4	2.6	2.0	2.0	1.5	1.8
60.0 - 62.5	3.4	3.8	2.5	3.0	2.2	2.6	1.7	2.0	1.0	1.7
62.5 - 65.0	3.2	3.6	2.3	2.8	1.9	2.4	1.5	2.0	0.9	1.5
65.0 -67.5	3.2	3.5	2.0	2.6	1.6	2.3	1.0	1.8	0.7	1.0
67.5 - 70.0	2.0	3.3	1.5	2.6	1.2	2.1	1.0	1.5	0.6	1.0
70.0 - 72.5	1.5	3.0	1.2	2.0	1.0	1.8	0.8	1.2	0.5	0.8
72.5 - 75.0	1.3	2.0	1.0	1.5	0.9	1.2	0.8	0.9	0.5	0.8
75.0 - 77.5	1.1	1.8	0.8	1.2	0.6	1.0	0.5	0.8	0.5	0.7
77.5 - 80.0	1.0	1.6	0.5	1.0	0.5	0.9	0.4	0.7	0.4	0.5
80.0 - 82.5	0.9	1.4	0.5	0.8	0.5	0.6	0.4	0.5	0.4	0.5
82.5 - 85.0	0.8	1.3	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4
85.0 - 87.5	0.7	1.3	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2
87.5 - 90.0	0.6	1.2	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2
90.0 - 92.5	0.6	0.8	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2

Source: *Table Vi.6. Models for mortality improvement: Quinquennial gains in Life Expectancy at Birth according to initial level of Life Expectancy* (1995. United Nations. World Population Prospects. NewYork: United Nations. 886 p

Appendix 40: The demographic transition

According to the theory of demographic transition, over time all countries will undergo change from high rates of births and deaths to low rates of births and deaths. This transition process is usually closely associated with economic, social and scientific developments. This is assumed to happen in four distinct stages:

Stage 1: High birth rate, high death rate   → little or no population growth
Stage 2: High birth rate, falling death rate   → high growth
Stage 3: Declining birth rate, relatively low death rate   → slowed growth
Stage 4: Low birth rate, low death rate   → very low growth

Historically, high levels of births and deaths kept most populations from growing rapidly through time. In fact, many populations not only failed to grow but also completely died out when birth rates did not compensate for high death rates (**stage 1**). There are few populations/communities left today at stage 1.

Death rates eventually fell as living conditions, nutrition and public health improved. The decline in mortality usually preceded the decline in fertility, resulting in population growth during the transition period (**stage 2**). In Europe and other industrialised countries, death rates fell slowly. With the added benefit of medical advances, death rates fell more rapidly in the countries that began the transition in the 20th century. These are/were primarily developing countries. Their death rates often fell much faster than in European countries because they benefited from Western inventions and innovations.

In general, fertility rates fell neither as quickly nor as dramatically as death rates, and thus populations grew rapidly.

Stage 3 is characterized by falling birth rates, which occur for many reasons and vary from country to country and population to population. A decrease in birth rates may result from: a transition from a non-monetary to a monetary economy, urbanization, a change in values from a community emphasis to individualism, increasing emphasis on consumerism, improved education, availability of (modern) family planning methods (i.e. contraceptives), greater involvement of women in the workplace, rising cost of living, rising cost of raising children, and preferences in how people want to spend their time.

The demographic transition is regarded as completed when both birth and death rates have reached a low and stable level (**stage 4**). As a result, population growth is very low.

Originally, the theory of demographic transition included only the four stages described above. There is now another stage, the **post-transition period** (although it is uncertain whether all countries will reach this stage).

Post-transition period: Very low birth rate, low death rate → negative growth

When fertility falls to very low levels and stays there for a protracted period, a slow rate of population growth can turn into a negative one, resulting in a population decrease. Many countries in Europe and some in Asia now have TFRs well below two children per woman. The TFRs of the Republic of Korea, Ukraine, Czech Republic, Slovakia, Slovenia, Republic of

Moldova, Bulgaria, and Belarus — all about 1.2 — are among the world's lowest, and those of several other countries were not far behind. The TFRs of Macao and Hong Kong were even less than 1 child per woman on average. Many of the factors that lowered fertility in the first place — greater involvement of women in the workplace, rising cost of living, and preferences in how people want to spend their time — appear to be keeping fertility rates very low.

While the theory of demographic transition describes the population history of western Europe quite well, for many reasons developing countries do not always exhibit the same patterns of change. In some cases early contact with outside societies resulted in local epidemics, as groups succumbed to diseases against which they had no natural immunity, resulting in increased death rates. When health conditions improved as a result of the application of new and efficient disease control technologies, death rates declined, while birth rates sometimes increased. This combination of factors produced population growth rates in today's developing countries that are much higher than ever experienced in pre-industrial western Europe.

Stylised graph of the European demographic transition
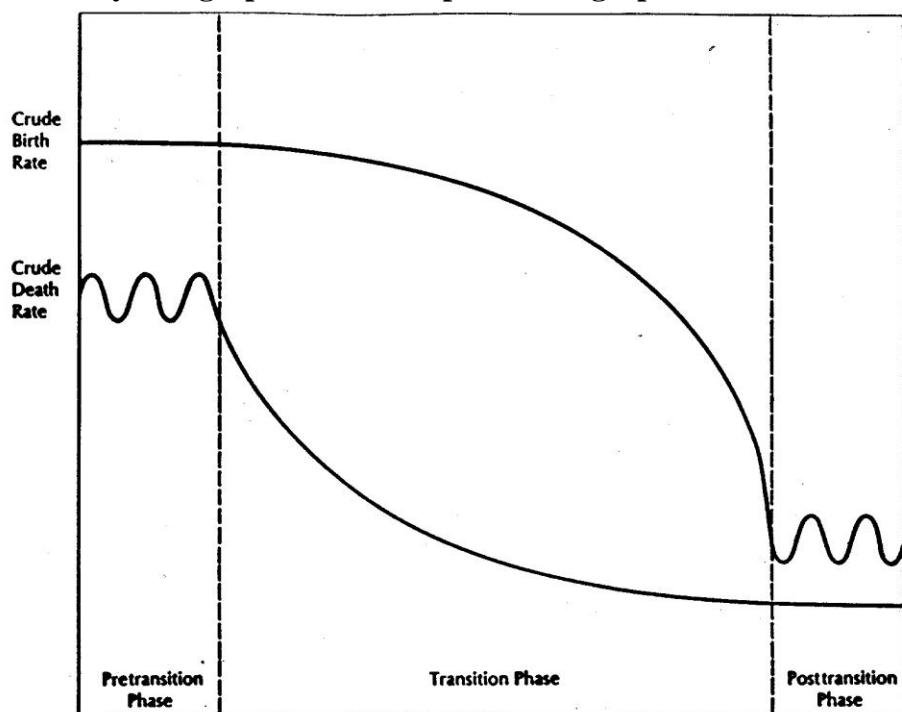
Figure 3–2 A SIMPLIFIED DIAGRAM OF THE EUROPEAN DEMOGRAPHIC TRANSITION
Source: Ansley J. Coale, 1974, p. 49.

Appendix 41: Base population for projections for each province, 1 July 2009

Age group	Choiseul Male	Choiseul Female	Choiseul Total	Western Male	Western Female	Western Total	Isabel Male	Isabel Female	Isabel Total	Central Male	Central Female	Central Total	Rennell-Bellona Male	Rennell-Bellona Female	Rennell-Bellona Total	Guadacanal Male	Guadacanal Female	Guadacanal Total
0-4	2,432	2,255	4,687	6,565	6,300	12,865	2,210	2,165	4,376	2,281	2,271	4,551	213	235	448	8,680	8,412	17,092
5-9	2,144	2,092	4,236	5,804	5,694	11,498	2,035	1,971	4,006	2,100	1,993	4,093	215	224	439	7,311	7,136	14,448
10-14	1,696	1,556	3,252	4,794	4,385	9,179	1,599	1,457	3,056	1,650	1,477	3,127	232	206	438	5,734	5,400	11,133
15-19	1,318	1,282	2,600	4,263	3,881	8,144	1,336	1,182	2,517	1,251	1,169	2,420	150	121	271	4,955	4,644	9,598
20-24	1,173	1,035	2,208	3,609	3,196	6,805	1,000	1,127	2,127	1,099	1,021	2,120	125	115	240	5,131	4,524	9,656
25-29	1,098	937	2,035	3,264	2,851	6,115	1,009	1,036	2,044	1,002	1,129	2,132	90	68	158	4,248	4,008	8,256
30-34	954	934	1,888	2,854	2,661	5,514	1,013	1,010	2,023	957	1,066	2,023	106	105	210	3,598	3,606	7,204
35-39	887	905	1,792	2,621	2,541	5,163	940	875	1,815	953	940	1,893	86	89	175	3,155	3,061	6,217
40-44	667	677	1,343	2,303	2,066	4,370	641	607	1,248	644	647	1,290	65	63	127	2,298	2,134	4,433
45-49	571	526	1,096	1,814	1,562	3,376	561	559	1,120	548	549	1,097	61	76	137	1,806	1,699	3,505
50-54	402	386	788	1,295	1,137	2,432	471	450	922	379	398	777	81	58	139	1,277	999	2,276
55-59	326	359	686	1,001	951	1,951	427	373	800	392	296	688	86	59	144	965	981	1,946
60-64	236	252	488	770	731	1,501	327	280	607	270	272	543	47	54	101	682	679	1,361
65-69	223	261	483	635	555	1,190	240	246	485	219	194	413	14	40	54	619	601	1,221
70-74	134	151	285	436	407	842	170	168	337	154	128	283	28	39	67	448	372	820
75-79	82	120	202	317	319	637	124	153	277	111	107	218	29	35	64	282	239	522
80 +	70	55	126	177	184	361	93	114	206	113	72	186	22	16	38	233	163	396
Total	14,412	13,783	28,194	42,522	39,420	81,942	14,194	13,772	27,966	14,123	13,729	27,853	1,650	1,602	3,251	51,422	48,659	100,081

Age group	Malaita Male	Malaita Female	Malaita Total	Makira-Ulawa Male	Makira-Ulawa Female	Makira-Ulawa Total	Temotu Male	Temotu Female	Temotu Total	Honiara Male	Honiara Female	Honiara Total	Urban Male	Urban Female	Urban Total	Rural Male	Rural Female	Rural Total
0-4	12,319	12,156	24,474	3,995	3,948	7,943	1,774	1,629	3,402	4,503	4,322	8,824	7,420	7,150	14,570	37,551	36,541	74,092
5-9	11,408	11,017	22,425	3,355	3,067	6,422	1,752	1,672	3,423	3,705	3,773	7,477	6,288	6,242	12,530	33,540	32,397	65,937
10-14	9,406	8,523	17,929	2,484	2,277	4,762	1,298	1,272	2,570	3,199	3,147	6,347	5,290	5,067	10,357	26,803	24,633	51,436
15-19	7,569	6,903	14,472	1,949	1,721	3,671	1,062	1,058	2,120	3,818	3,575	7,393	5,823	5,622	11,445	21,847	19,913	41,760
20-24	6,106	6,150	12,256	1,875	1,820	3,695	822	876	1,698	5,197	4,296	9,493	7,404	6,323	13,727	18,733	17,836	36,569
25-29	5,396	5,446	10,842	1,770	1,731	3,500	682	884	1,567	4,132	3,557	7,689	6,201	5,443	11,644	16,490	16,204	32,694
30-34	4,591	4,958	9,548	1,572	1,545	3,117	621	778	1,400	3,072	2,862	5,935	4,685	4,448	9,133	14,652	15,077	29,729
35-39	3,867	4,105	7,971	1,280	1,322	2,602	620	801	1,421	2,469	2,317	4,786	3,959	3,647	7,607	12,919	13,309	26,227
40-44	2,799	3,157	5,956	887	872	1,759	516	590	1,106	1,845	1,562	3,407	2,939	2,536	5,475	9,725	9,839	19,564
45-49	2,405	2,655	5,060	756	737	1,493	443	506	948	1,448	1,210	2,657	2,309	1,918	4,227	8,103	8,160	16,263
50-54	1,882	2,104	3,986	533	534	1,067	363	399	763	1,057	788	1,844	1,699	1,248	2,947	6,040	6,006	12,046
55-59	1,657	1,804	3,461	464	475	939	316	358	673	776	521	1,297	1,253	892	2,145	5,156	5,284	10,439
60-64	1,411	1,596	3,007	363	347	711	229	243	472	463	375	837	766	607	1,373	4,032	4,221	8,253
65-69	1,168	1,092	2,260	349	267	616	199	187	385	306	225	531	500	395	895	3,472	3,270	6,742
70-74	687	788	1,474	200	173	372	151	173	324	162	120	281	276	242	518	2,293	2,275	4,568
75-79	560	541	1,100	170	141	311	127	144	271	96	74	170	170	142	311	1,728	1,733	3,461
80 +	505	391	896	139	95	234	172	128	300	57	41	98	99	69	168	1,483	1,190	2,673
Total	73,733	73,384	147,117	22,140	21,071	43,212	11,147	11,696	22,843	36,305	32,761	69,067	57,081	51,991	109,071	224,567	217,886	442,454

Appendix 42: UN migration model: Family migration
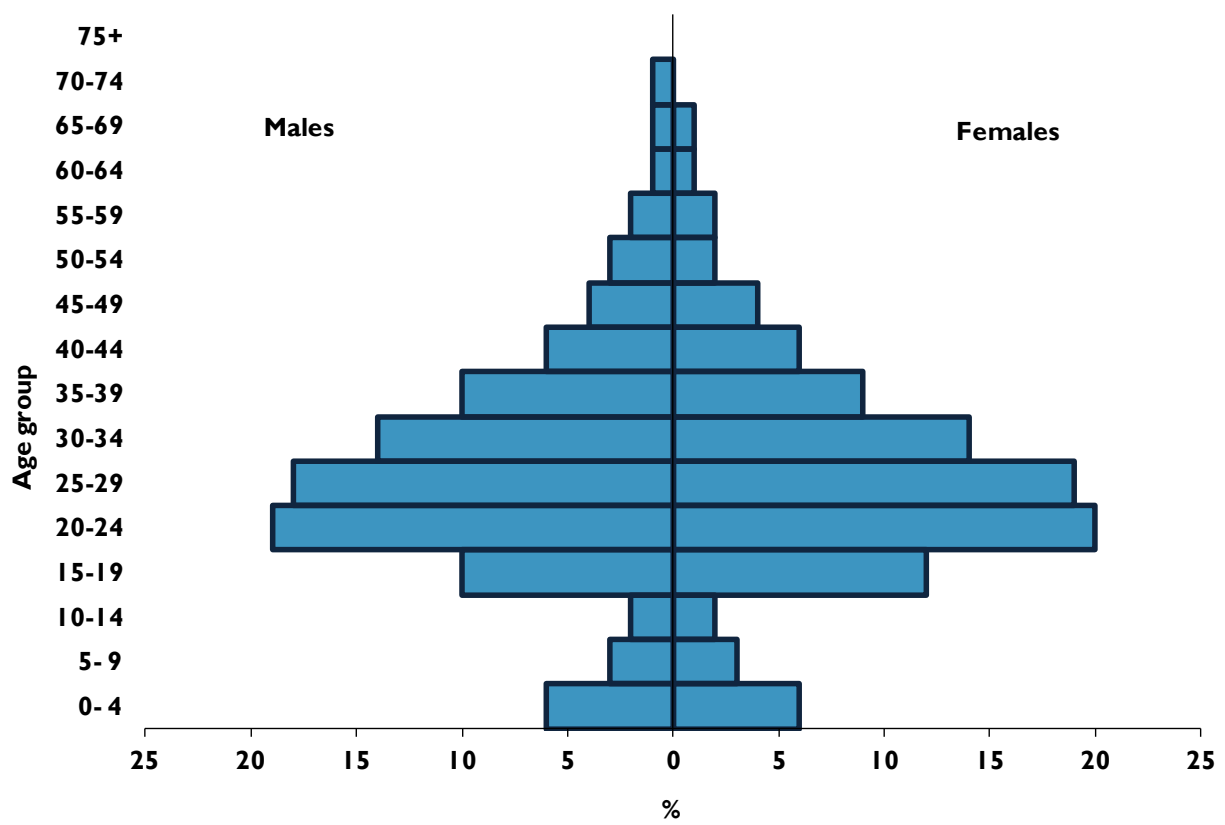
Source: UN Population Division, New York, USA

Appendix 43: Population size by province according to different migration variants, Solomon Islands: 2009-2050

Migration variant and year	Solomon Islands	Urban	Rural	Choiseul	Western	Isabel	Central	Rennell-Bellona	Guadacanal	Malaita	Makira-Ulawa	Temotu	Honiara
2009	551,524	109,071	442,454	28,194	81,942	27,966	27,853	3,251	100,081	147,117	43,212	22,843	69,067
Constant migration													
2010	568,035	115,180	452,856	28,915	83,777	28,773	28,567	3,322	105,115	150,055	44,506	23,167	71,841
2015	656,243	149,088	507,155	32,837	93,552	33,067	32,181	3,731	133,082	164,952	51,246	24,911	86,684
2020	751,194	186,544	564,650	37,263	104,132	37,750	35,869	4,249	164,793	180,164	58,407	26,796	101,773
2025	843,066	222,883	620,183	41,742	114,284	42,299	39,388	4,805	197,121	194,419	65,406	28,571	115,031
2030	930,102	256,206	673,896	46,029	123,677	46,587	42,880	5,350	228,656	207,943	72,383	30,105	126,492
2035	1,014,968	288,026	726,942	50,047	132,473	50,750	46,430	5,861	259,838	221,314	79,348	31,440	137,467
2040	1,099,463	319,878	779,584	53,922	141,014	54,934	49,961	6,357	291,200	234,587	86,351	32,575	148,562
2045	1,181,450	350,859	830,591	57,654	148,814	59,078	53,406	6,837	322,779	246,933	93,073	33,634	159,242
2050	1,261,167	380,424	880,743	61,238	155,852	63,107	56,777	7,325	354,513	259,127	99,682	34,543	169,003
Zero migration													
2010	568,035	111,948	456,087	28,872	84,100	28,730	28,725	3,301	103,168	151,921	44,579	23,344	71,297
2015	656,243	127,283	528,960	32,527	95,732	32,753	33,269	3,585	119,550	178,035	51,726	26,105	82,962
2020	751,194	142,599	608,595	36,609	108,512	37,084	38,089	3,951	137,017	207,159	59,358	29,191	94,224
2025	843,066	155,276	687,790	40,710	121,013	41,248	42,824	4,344	153,919	236,519	66,853	32,248	103,389
2030	930,102	165,145	764,957	44,620	132,734	45,151	47,532	4,725	170,049	265,134	74,319	35,051	110,786
2035	1,014,968	173,680	841,288	48,262	143,840	48,927	52,296	5,074	185,827	293,613	81,764	37,645	117,721
2040	1,099,463	181,633	917,829	51,732	154,739	52,692	57,076	5,401	201,195	322,695	89,241	40,051	124,640
2045	1,181,450	188,138	993,312	55,033	164,974	56,387	61,850	5,706	215,958	351,814	96,453	42,251	131,022
2050	1,261,167	192,839	1,068,327	58,141	174,424	59,915	66,596	6,009	230,010	381,809	103,525	44,387	136,350

The provincial and the urban-rural projections were adjusted to match the national projection (medium variant)

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SOLOMON ISLANDS

Population trend: 1970–2009
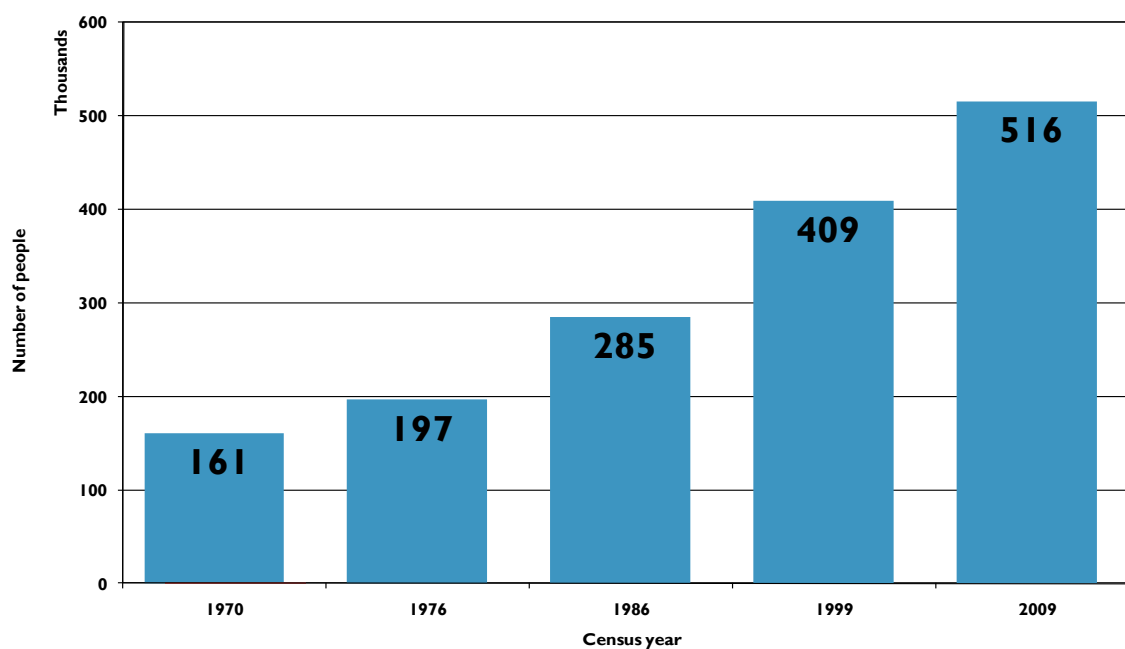
Population pyramid by five-year age group and sex, 1999 and 2009
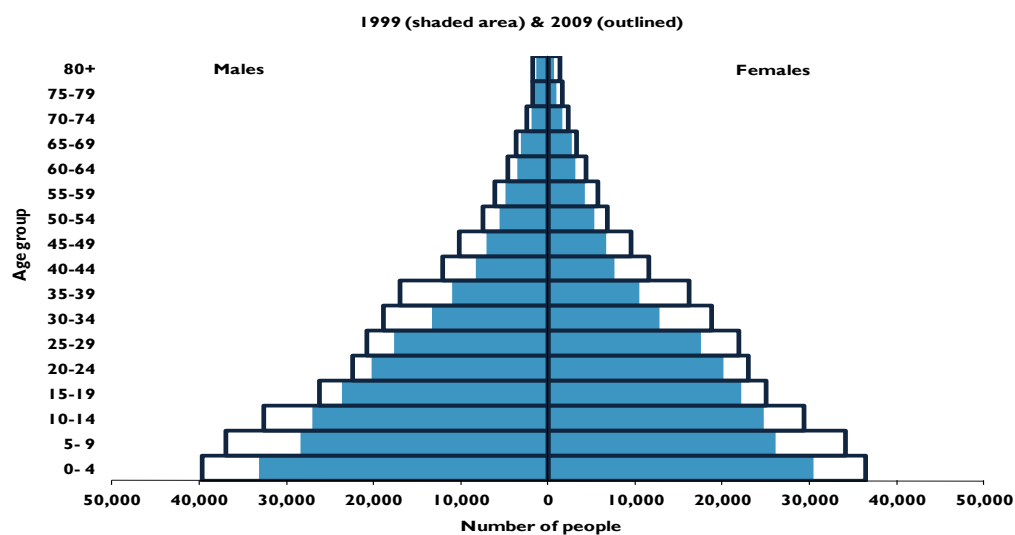
SOLOMON ISLANDS

	1999				2009		
Age	Males	Females	Total	Age	Males	Females	Total
Population by 5-year age groups and sex							
0-4	33,150	30,482	63,632	0-4	39,881	36,619	76,500
5-9	28,402	26,074	54,476	5-9	36,945	34,126	71,071
10-14	26,970	24,723	51,693	10-14	32,540	29,352	61,892
15-19	23,592	22,229	45,821	15-19	26,168	25,003	51,171
20-24	20,196	20,114	40,310	20-24	22,369	23,002	45,371
25-29	17,656	17,517	35,173	25-29	20,774	21,872	42,646
30-34	13,282	12,829	26,111	30-34	18,795	18,777	37,572
35-39	11,001	10,508	21,509	35-39	17,005	16,136	33,141
40-44	8,301	7,640	15,941	40-44	12,070	11,564	23,634
45-49	7,059	6,622	13,681	45-49	10,186	9,523	19,709
50-54	5,520	5,340	10,860	50-54	7,494	6,836	14,330
55-59	4,893	4,273	9,166	55-59	6,110	5,674	11,784
60-64	3,521	3,210	6,731	60-64	4,532	4,379	8,911
65-69	3,068	2,767	5,835	65-69	3,691	3,325	7,016
70-74	1,941	1,609	3,550	70-74	2,402	2,295	4,697
75-79	1,437	971	2,408	75-79	1,784	1,590	3,374
80+	1,392	753	2,145	80+	1,709	1,342	3,051
Total	211,381	197,661	**409,042**	Total	264,455	251,415	**515,870**
Population by broad age groups (in numbers)							
0-14	88,522	81,279	169,801	**0-14**	109,366	100,097	209,463
15-24	43,788	42,343	86,131	**15-24**	48,537	48,005	96,542
25-59	67,712	64,729	132,441	**25-59**	92,434	90,382	182,816
25-64	71,233	67,939	139,172	**25-64**	96,966	94,761	191,727
60+	11,359	9,310	20,669	**60+**	14,118	12,931	27,049
65+	7,838	6,100	13,938	**65+**	9,586	8,552	18,138
Population by broad age groups (in percentages)							
0-14	42	41	42	**0-14**	41	40	41
15-24	21	21	21	**15-24**	18	19	19
25-59	32	33	32	**25-59**	35	36	35
25-64	34	34	34	**25-64**	37	38	37
60+	5	5	5	**60+**	5	5	5
65+	4	3	3	**65+**	4	3	4
Age dependency ratio							
15-59			87	**15-59**			85
15-64			82	**15-64**			79
Sex ratio (males per 100 females)							
			107				105
Median age (years)							
Total	**18.6**	**18.9**	**18.8**	**Total**	**19.4**	**20.1**	**19.7**
Population change 1999-2009							
					Males	Females	Total
Total difference					53,074	53,754	**106,828**
Average annual change (in numbers)					5,307	5,375	**10,683**
Percentage difference (%)					25.1	27.2	**26.1**
Average annual growth rate (%)					2.2	2.4	**2.3**

CHOISEUL

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
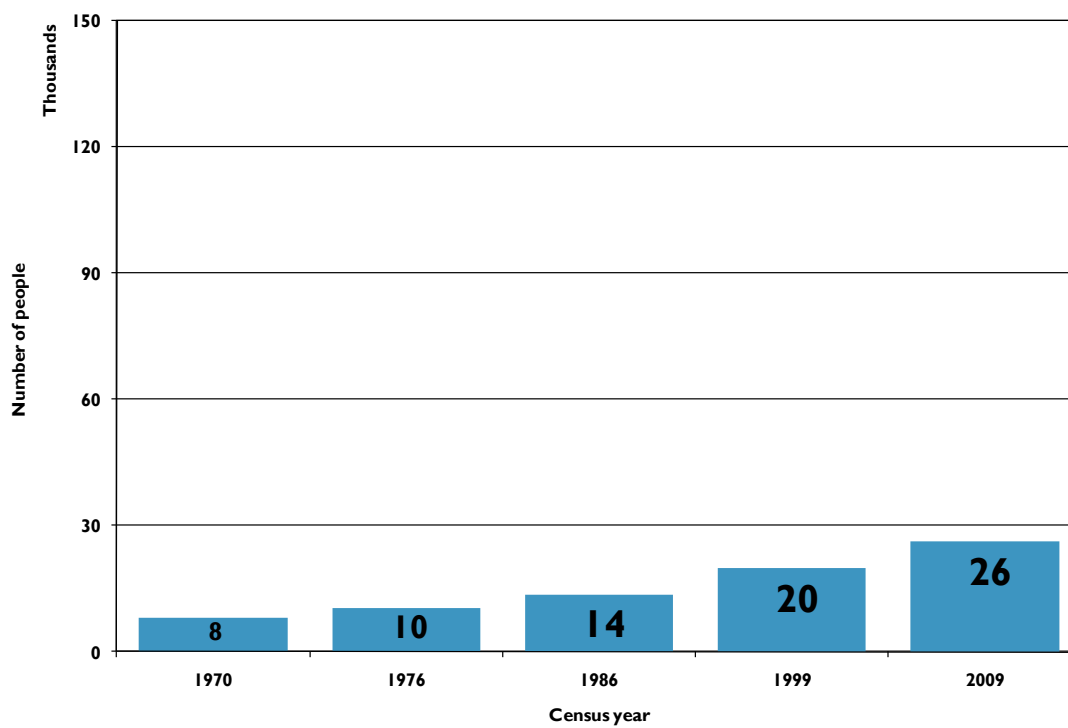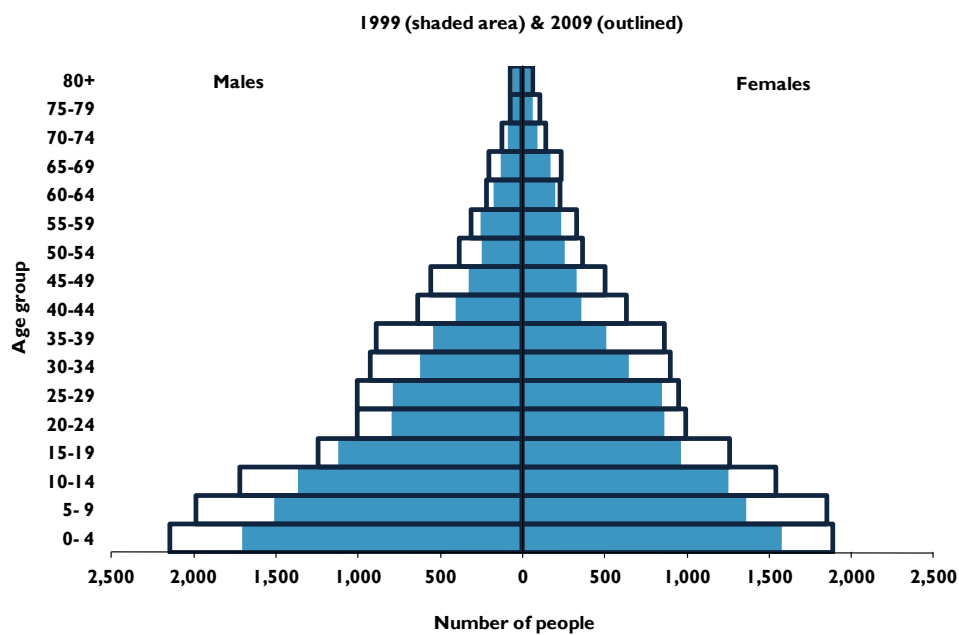
Choiseul

	1999				2009		
Age	Males	Females	Total	Age	Males	Females	Total
Population by 5-year age groups and sex							
0-4	1,705	1,579	3,284	0-4	2,150	1,892	4,042
5-9	1,513	1,362	2,875	5-9	1,989	1,851	3,840
10-14	1,364	1,255	2,619	10-14	1,720	1,541	3,261
15-19	1,119	961	2,080	15-19	1,246	1,260	2,506
20-24	800	864	1,664	20-24	1,003	989	1,992
25-29	791	850	1,641	25-29	1,004	950	1,954
30-34	626	649	1,275	30-34	927	901	1,828
35-39	544	512	1,056	35-39	893	864	1,757
40-44	411	356	767	40-44	635	634	1,269
45-49	325	326	651	45-49	558	498	1,056
50-54	246	258	504	50-54	389	365	754
55-59	259	232	491	55-59	311	330	641
60-64	179	197	376	60-64	222	229	451
65-69	137	167	304	65-69	207	237	444
70-74	91	93	184	70-74	125	138	263
75-79	65	63	128	75-79	77	102	179
80+	61	48	109	80+	76	59	135
Total	10,236	9,772	**20,008**	Total	13,532	12,840	**26,372**
Population by broad age groups (in numbers)							
0-14	4,582	4,196	8,778	**0-14**	5,859	5,284	11,143
15-24	1,919	1,825	3,744	**15-24**	2,249	2,249	4,498
25-59	3,202	3,183	6,385	**25-59**	4,717	4,542	9,259
25-64	3,381	3,380	6,761	**25-64**	4,939	4,771	9,710
60+	533	568	1,101	**60+**	707	765	1,472
65+	354	371	725	**65+**	485	536	1,021
Population by broad age groups (in percentages)							
0-14	45	43	44	**0-14**	43	41	42
15-24	19	19	19	**15-24**	17	18	17
25-59	31	33	32	**25-59**	35	35	35
25-64	33	35	34	**25-64**	36	37	37
60+	5	6	6	**60+**	5	6	6
65+	3	4	4	**65+**	4	4	4
Age dependency ratio							
15-59			98	**15-59**			92
15-64			90	**15-64**			86
Sex ratio (males per 100 females)							
			105				105
Median age (years)							
Total	17.4	18.6	17.9	**Total**	18.6	19.5	19.1
Population change 1999-2009							
					Males	Females	Total
Total difference					3,296	3,068	**6,364**
Average annual change (in numbers)					330	307	**636**
Percentage difference (%)					32.2	31.4	**31.8**
Average annual growth rate (%)					2.8	2.7	**2.8**

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
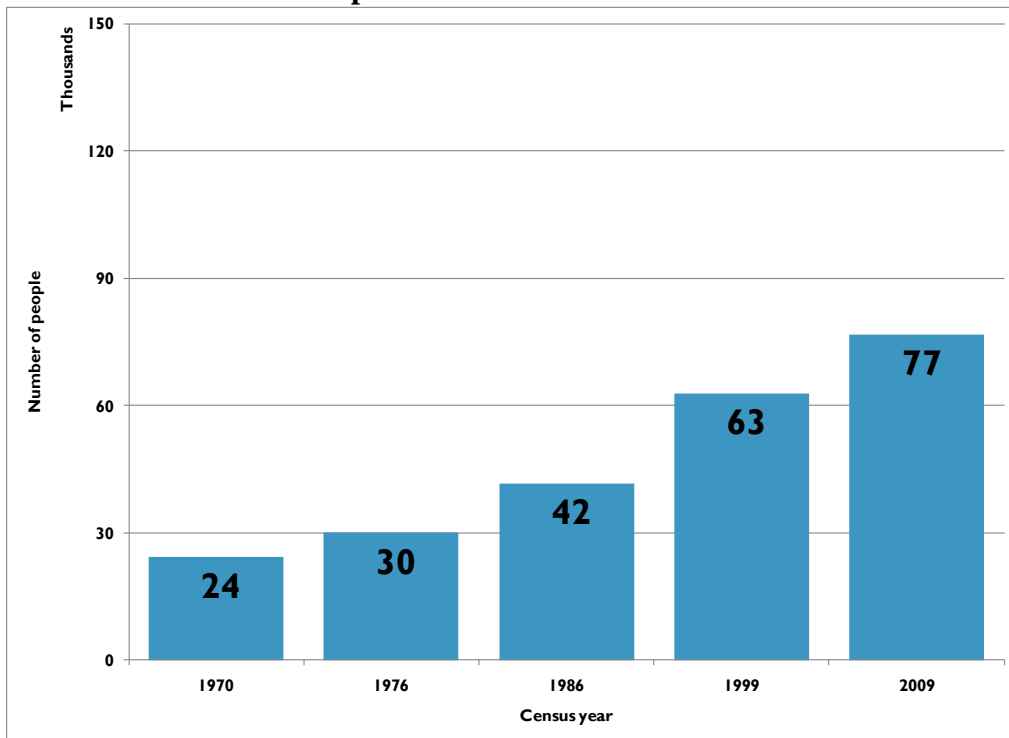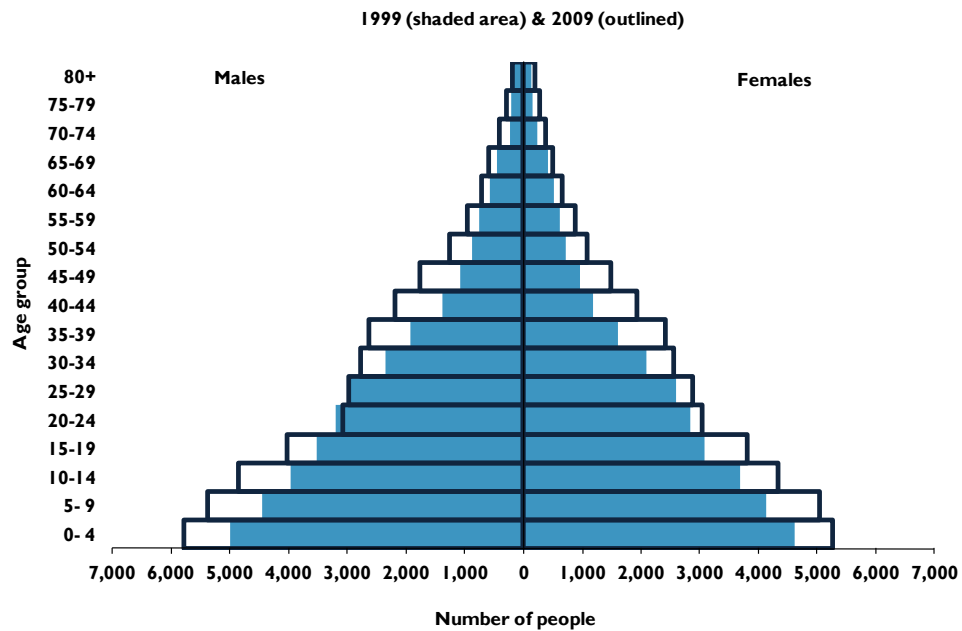
Western							
1999				**2009**			
Age	Males	Females	Total	Age	Males	Females	Total
Population by 5-year age groups and sex							
0-4	5,003	4,617	9,620	0-4	5,807	5,275	11,082
5-9	4,453	4,135	8,588	5-9	5,378	5,030	10,408
10-14	3,967	3,695	7,662	10-14	4,857	4,336	9,193
15-19	3,535	3,073	6,608	15-19	4,024	3,805	7,829
20-24	3,198	2,829	6,027	20-24	3,085	3,048	6,133
25-29	2,988	2,588	5,576	25-29	2,986	2,885	5,871
30-34	2,348	2,086	4,434	30-34	2,770	2,562	5,332
35-39	1,920	1,603	3,523	35-39	2,638	2,421	5,059
40-44	1,380	1,174	2,554	40-44	2,192	1,933	4,125
45-49	1,086	957	2,043	45-49	1,773	1,477	3,250
50-54	880	711	1,591	50-54	1,251	1,072	2,323
55-59	748	625	1,373	55-59	953	874	1,827
60-64	585	515	1,100	60-64	726	663	1,389
65-69	456	424	880	65-69	590	504	1,094
70-74	242	234	476	70-74	407	371	778
75-79	211	153	364	75-79	298	271	569
80+	190	130	320	80+	191	196	387
Total	33,190	29,549	**62,739**	Total	39,926	36,723	**76,649**
Population by broad age groups (in numbers)							
0-14	13,423	12,447	25,870	**0-14**	16,042	14,641	30,683
15-24	6,733	5,902	12,635	**15-24**	7,109	6,853	13,962
25-59	11,350	9,744	21,094	**25-59**	14,563	13,224	27,787
25-64	11,935	10,259	22,194	**25-64**	15,289	13,887	29,176
60+	1,684	1,456	3,140	**60+**	2,212	2,005	4,217
65+	1,099	941	2,040	**65+**	1,486	1,342	2,828
Population by broad age groups (in percentages)							
0-14	40	42	41	**0-14**	40	40	40
15-24	20	20	20	**15-24**	18	19	18
25-59	34	33	34	**25-59**	36	36	36
25-64	36	35	35	**25-64**	38	38	38
60+	5	5	5	**60+**	6	5	6
65+	3	3	3	**65+**	4	4	4
Age dependency ratio							
15-59			86	**15-59**			84
15-64			80	**15-64**			78
Sex ratio (males per 100 females)							
			112				109
Median age (years)							
Total	**19.5**	**18.8**	**19.2**	**Total**	**19.9**	**19.9**	**19.9**
Population change 1999-2009							
					Males	Females	Total
Total difference					6,736	7,174	**13,910**
Average annual change (in numbers)					674	717	**1,391**
Percentage difference (%)					20.3	24.3	**22.2**
Average annual growth rate (%)					1.8	2.2	**2.0**

ISABEL

Population trend: 1970–2009
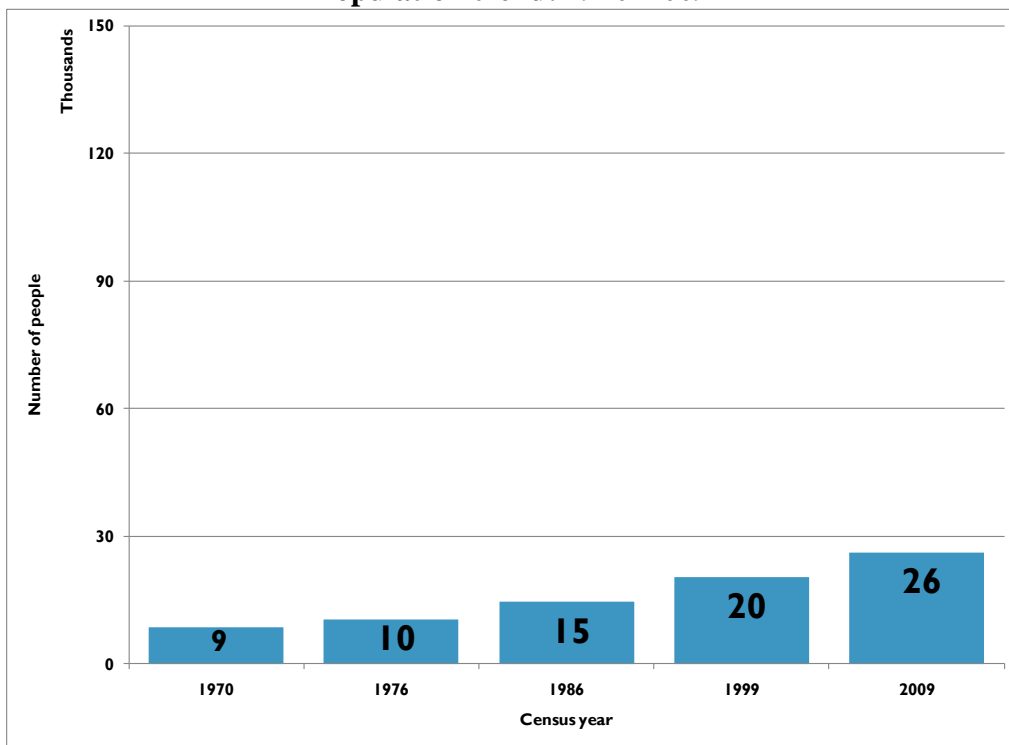
Population pyramid by five-year age group and sex, 1999 and 2009
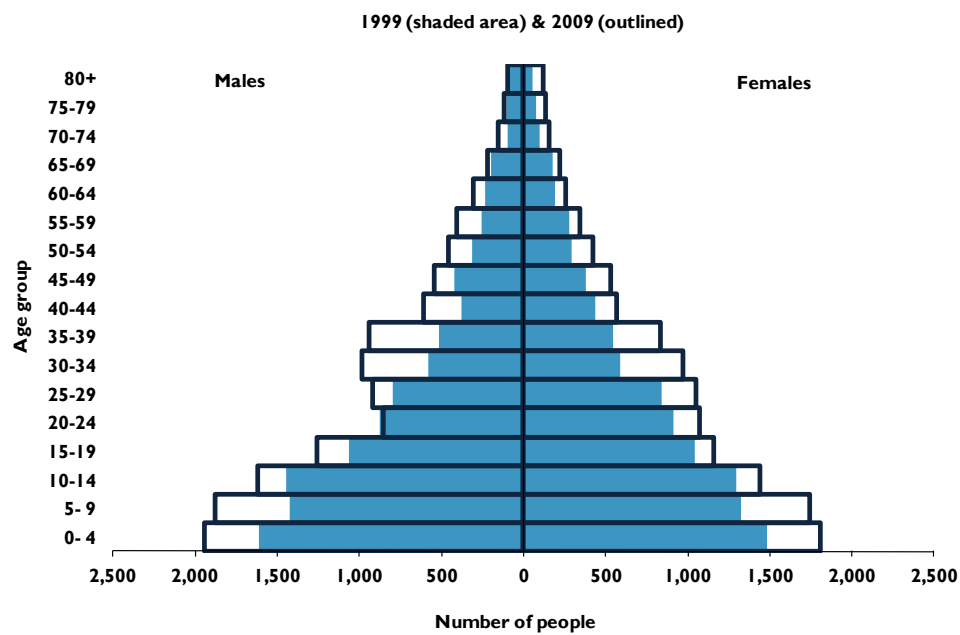
Isabel

	1999				2009		
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	1,613	1,482	3,095	0-4	1,949	1,815	3,764
5-9	1,426	1,321	2,747	5-9	1,882	1,743	3,625
10-14	1,450	1,292	2,742	10-14	1,616	1,441	3,057
15-19	1,065	1,046	2,111	15-19	1,260	1,159	2,419
20-24	876	910	1,786	20-24	854	1,074	1,928
25-29	794	839	1,633	25-29	920	1,048	1,968
30-34	584	585	1,169	30-34	982	973	1,955
35-39	514	544	1,058	35-39	944	834	1,778
40-44	380	438	818	40-44	609	567	1,176
45-49	422	378	800	45-49	547	529	1,076
50-54	313	293	606	50-54	455	424	879
55-59	256	279	535	55-59	406	343	749
60-64	237	189	426	60-64	308	254	562
65-69	197	174	371	65-69	222	222	444
70-74	94	98	192	70-74	158	153	311
75-79	103	76	179	75-79	116	130	246
80+	100	53	153	80+	100	121	221
Total	10,424	9,997	**20,421**	Total	13,328	12,830	**26,158**
Population by broad age groups (in numbers)							
0-14	4,489	4,095	8,584	**0-14**	5,447	4,999	10,446
15-24	1,941	1,956	3,897	**15-24**	2,114	2,233	4,347
25-59	3,263	3,356	6,619	**25-59**	4,863	4,718	9,581
25-64	3,500	3,545	7,045	**25-64**	5,171	4,972	10,143
60+	731	590	1,321	**60+**	904	880	1,784
65+	494	401	895	**65+**	596	626	1,222
Population by broad age groups (in percentages)							
0-14	43	41	42	**0-14**	41	39	40
15-24	19	20	19	**15-24**	16	17	17
25-59	31	34	32	**25-59**	36	37	37
25-64	34	35	34	**25-64**	39	39	39
60+	7	6	6	**60+**	7	7	7
65+	5	4	4	**65+**	4	5	5
Age dependency ratio							
15-59			94	**15-59**			88
15-64			87	**15-64**			81
Sex ratio (males per 100 females)							
			104				104
Median age (years)							
Total	**18.4**	**19.3**	**18.9**	**Total**	**19.8**	**21.2**	**20.6**
					Males	Females	Total
Total difference					2,904	2,833	**5,737**
Average annual change (in numbers)					290	283	**574**
Percentage difference (%)					27.9	28.3	**28.1**
Average annual growth rate (%)					2.5	2.5	**2.5**

CENTRAL

Population trend: 1970–2009

Thousands

Number of people

Census year	
1970	9
1976	12
1986	17
1999	22
2009	26

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)

Males   Females

Age group

Number of people
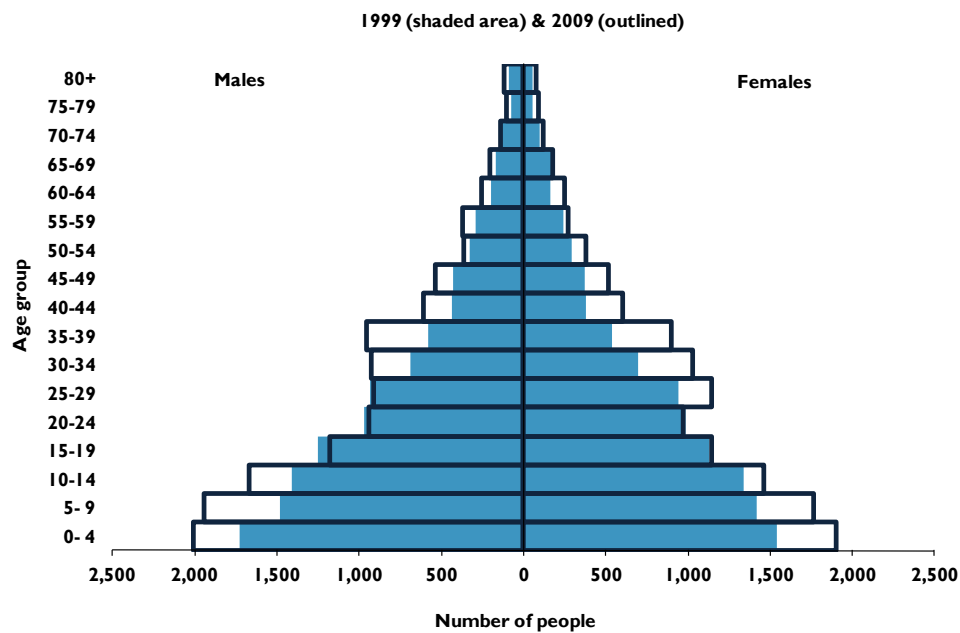
Central

	1999				2009		
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	1,730	1,538	3,268	0-4	2,010	1,898	3,908
5-9	1,482	1,418	2,900	5-9	1,945	1,763	3,708
10-14	1,410	1,337	2,747	10-14	1,670	1,462	3,132
15-19	1,252	1,128	2,380	15-19	1,181	1,147	2,328
20-24	967	982	1,949	20-24	939	974	1,913
25-29	936	939	1,875	25-29	916	1,143	2,059
30-34	691	695	1,386	30-34	928	1,027	1,955
35-39	581	541	1,122	35-39	958	896	1,854
40-44	435	377	812	40-44	612	605	1,217
45-49	426	368	794	45-49	535	519	1,054
50-54	330	290	620	50-54	366	376	742
55-59	292	239	531	55-59	373	272	645
60-64	197	159	356	60-64	255	247	502
65-69	172	171	343	65-69	203	176	379
70-74	130	96	226	70-74	144	117	261
75-79	73	52	125	75-79	104	91	195
80+	89	54	143	80+	122	77	199
Total	11,193	10,384	**21,577**	Total	13,261	12,790	**26,051**
Population by broad age groups (in numbers)							
0-14	4,622	4,293	8,915	**0-14**	5,625	5,123	10,748
15-24	2,219	2,110	4,329	**15-24**	2,120	2,121	4,241
25-59	3,691	3,449	7,140	**25-59**	4,688	4,838	9,526
25-64	3,888	3,608	7,496	**25-64**	4,943	5,085	10,028
60+	661	532	1,193	**60+**	828	708	1,536
65+	464	373	837	**65+**	573	461	1,034
Population by broad age groups (in percentages)							
0-14	41	41	41	**0-14**	42	40	41
15-24	20	20	20	**15-24**	16	17	16
25-59	33	33	33	**25-59**	35	38	37
25-64	35	35	35	**25-64**	37	40	38
60+	6	5	6	**60+**	6	6	6
65+	4	4	4	**65+**	4	4	4
Age dependency ratio							
15-59			**88**	**15-59**			**89**
15-64			**82**	**15-64**			**83**
Sex ratio (males per 100 females)							
			108				**104**
Median age (years)							
Total	**18.9**	**19.0**	**18.9**	**Total**	**19.3**	**20.6**	**19.9**
Population change 1999-2009							
					Males	Females	Total
Total difference					2,068	2,406	**4,474**
Average annual change (in numbers)					207	241	**447**
Percentage difference (%)					18.5	23.2	**20.7**
Average annual growth rate (%)					1.7	2.1	**1.9**

RENNELL-BELLONA

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
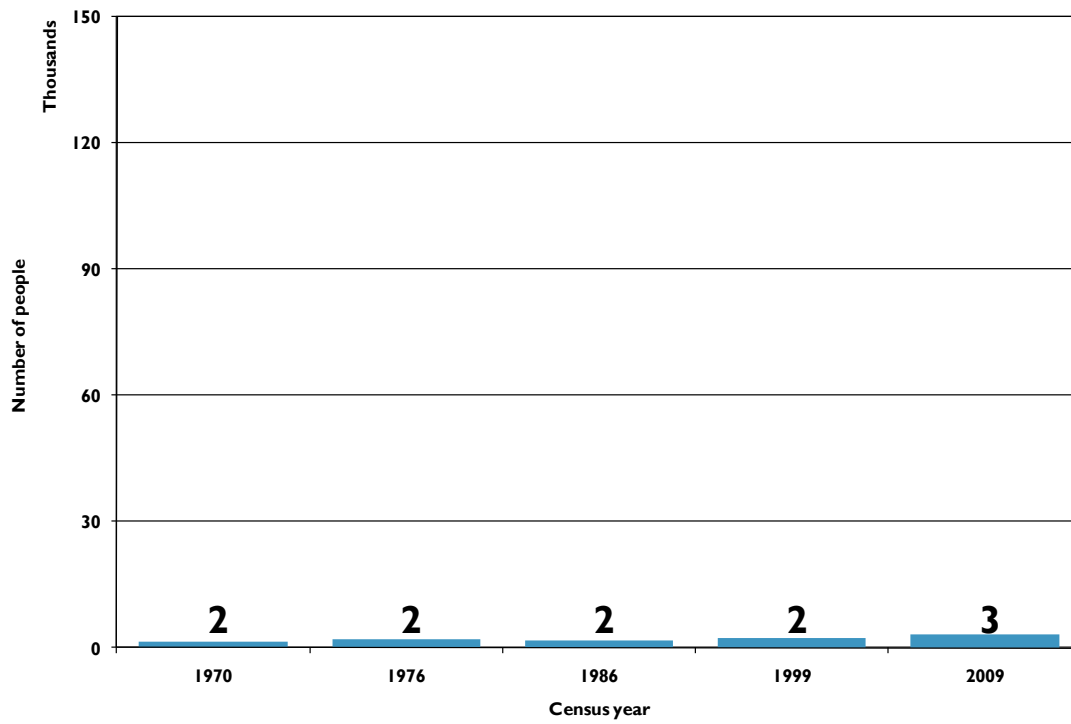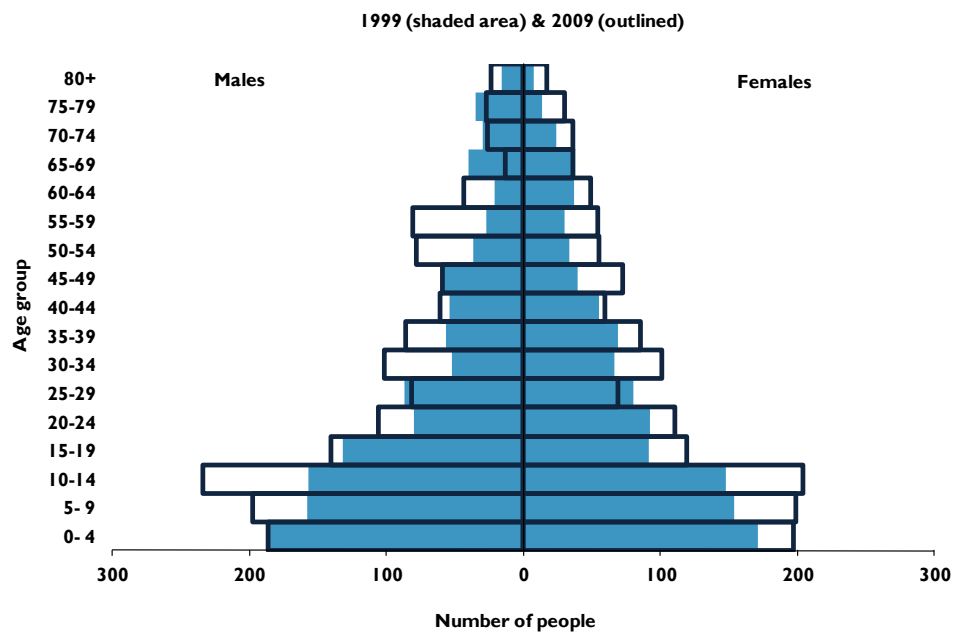
Rennell-Bellona

1999				2009			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	187	171	358	0-4	187	197	384
5-9	158	154	312	5-9	198	199	397
10-14	157	148	305	10-14	234	204	438
15-19	132	91	223	15-19	141	119	260
20-24	80	92	172	20-24	106	110	216
25-29	87	80	167	25-29	82	69	151
30-34	52	66	118	30-34	102	101	203
35-39	57	69	126	35-39	86	85	171
40-44	54	55	109	40-44	61	59	120
45-49	60	39	99	45-49	59	72	131
50-54	37	33	70	50-54	78	55	133
55-59	27	30	57	55-59	81	54	135
60-64	21	37	58	60-64	44	49	93
65-69	40	38	78	65-69	13	36	49
70-74	30	24	54	70-74	26	36	62
75-79	35	13	48	75-79	27	30	57
80+	16	7	23	80+	24	17	41
Total	1,230	1,147	**2,377**	Total	1,549	1,492	**3,041**
Population by broad age groups (in numbers)							
0-14	502	473	975	**0-14**	619	600	1,219
15-24	212	183	395	**15-24**	247	229	476
25-59	374	372	746	**25-59**	549	495	1,044
25-64	395	409	804	**25-64**	593	544	1,137
60+	142	119	261	**60+**	134	168	302
65+	121	82	203	**65+**	90	119	209
Population by broad age groups (in percentages)							
0-14	41	41	41	**0-14**	40	40	40
15-24	17	16	17	**15-24**	16	15	16
25-59	30	32	31	**25-59**	35	33	34
25-64	32	36	34	**25-64**	38	36	37
60+	12	10	11	**60+**	9	11	10
65+	10	7	9	**65+**	6	8	7
Age dependency ratio							
15-59			108	**15-59**			100
15-64			98	**15-64**			89
Sex ratio (males per 100 females)							
			107				104
Median age (years)							
Total	**19.3**	**20.5**	**19.8**	**Total**	**20.7**	**21.3**	**21.0**
Population change 1999-2009							
					Males	Females	Total
Total difference					319	345	**664**
Average annual change (in numbers)					32	35	**66**
Percentage difference (%)					25.9	30.1	**27.9**
Average annual growth rate (%)					2.3	2.6	**2.5**

GUADALCANAL

Population trend: 1970–2009

Thousands

Number of people

24	32	50	60	94
1970	1976	1986	1999	2009

Census year

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)

Males   Females

Age group

80+
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5- 9
0- 4

10,000   8,000   6,000   4,000   2,000   0   2,000   4,000   6,000   8,000   10,000

Number of people
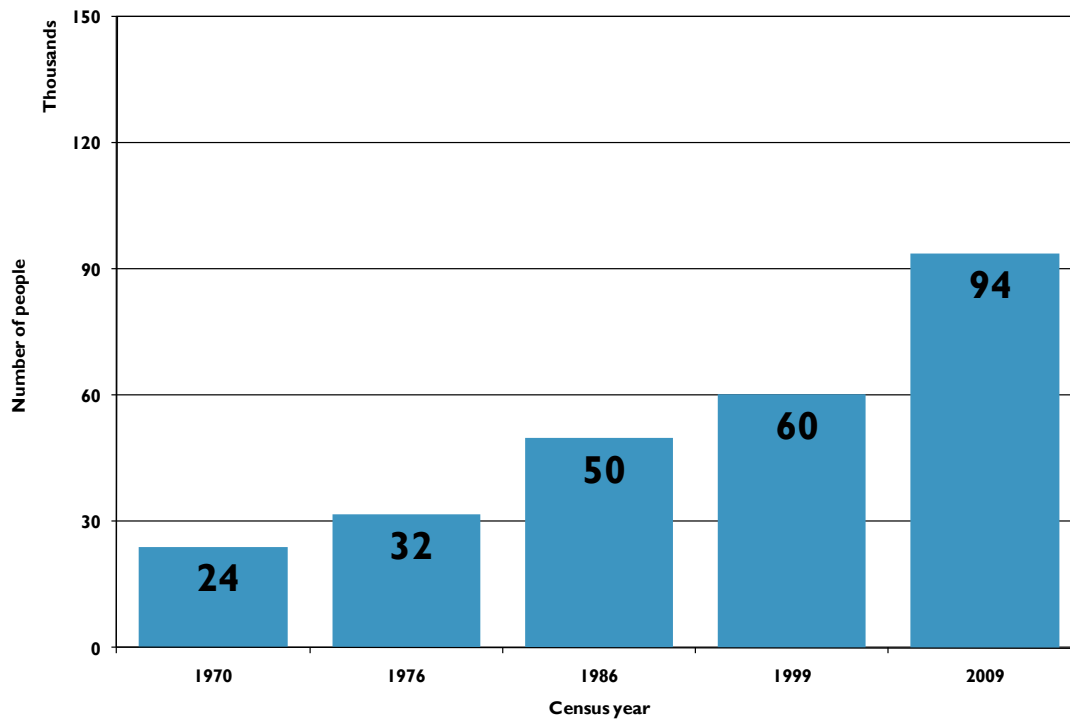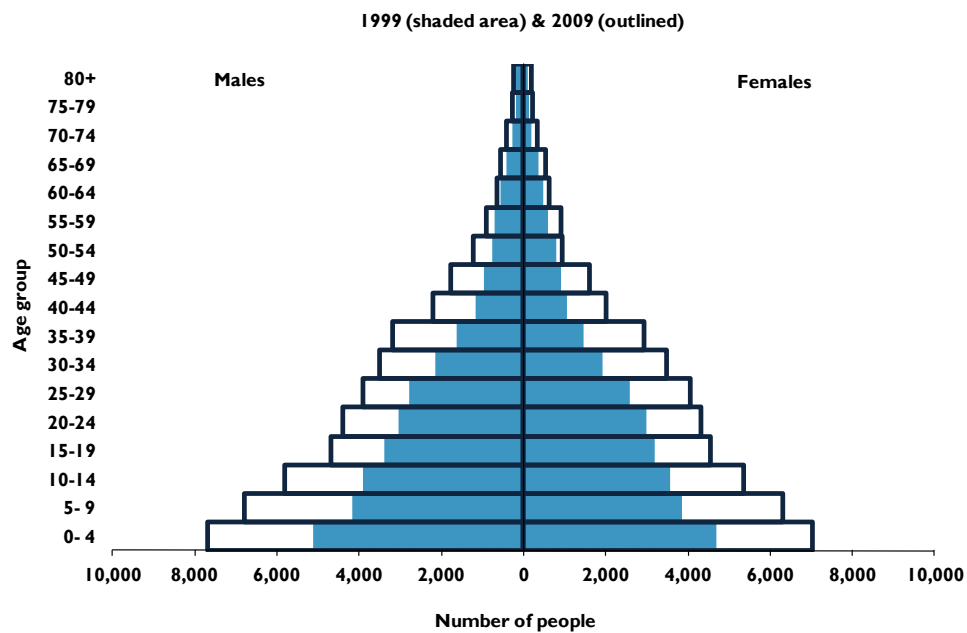
Guadalcanal							
1999				**2009**			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	5,131	4,682	9,813	0-4	7,706	7,058	14,764
5-9	4,164	3,854	8,018	5-9	6,795	6,307	13,102
10-14	3,900	3,571	7,471	10-14	5,823	5,336	11,159
15-19	3,393	3,195	6,588	15-19	4,695	4,549	9,244
20-24	3,039	2,977	6,016	20-24	4,399	4,316	8,715
25-29	2,773	2,591	5,364	25-29	3,895	4,055	7,950
30-34	2,136	1,918	4,054	30-34	3,503	3,470	6,973
35-39	1,622	1,468	3,090	35-39	3,184	2,915	6,099
40-44	1,176	1,043	2,219	40-44	2,194	1,997	4,191
45-49	955	911	1,866	45-49	1,770	1,607	3,377
50-54	774	797	1,571	50-54	1,238	943	2,181
55-59	717	605	1,322	55-59	921	902	1,823
60-64	557	471	1,028	60-64	645	615	1,260
65-69	423	356	779	65-69	577	545	1,122
70-74	273	197	470	70-74	420	338	758
75-79	200	126	326	75-79	266	203	469
80+	190	90	280	80+	252	174	426
Total	31,423	28,852	**60,275**	Total	48,283	45,330	**93,613**
Population by broad age groups (in numbers)							
0-14	13,195	12,107	25,302	**0-14**	20,324	18,701	39,025
15-24	6,432	6,172	12,604	**15-24**	9,094	8,865	17,959
25-59	10,153	9,333	19,486	**25-59**	16,705	15,889	32,594
25-64	10,710	9,804	20,514	**25-64**	17,350	16,504	33,854
60+	1,643	1,240	2,883	**60+**	2,160	1,875	4,035
65+	1,086	769	1,855	**65+**	1,515	1,260	2,775
Population by broad age groups (in percentages)							
0-14	42	42	42	**0-14**	42	41	42
15-24	20	21	21	**15-24**	19	20	19
25-59	32	32	32	**25-59**	35	35	35
25-64	34	34	34	**25-64**	36	36	36
60+	5	4	5	**60+**	4	4	4
65+	3	3	3	**65+**	3	3	3
Age dependency ratio							
15-59			**88**	**15-59**			**85**
15-64			**82**	**15-64**			**81**
Sex ratio (males per 100 females)							
			109				**107**
Median age (years)							
Total	**18.7**	**18.6**	**18.7**	**Total**	**19.1**	**19.4**	**19.2**
Population change 1999-2009							
					Males	Females	Total
Total difference					16,860	16,478	**33,338**
Average annual change (in numbers)					1,686	1,648	**3,334**
Percentage difference (%)					53.7	57.1	**55.3**
Average annual growth rate (%)					4.3	4.5	**4.4**

MALAITA

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
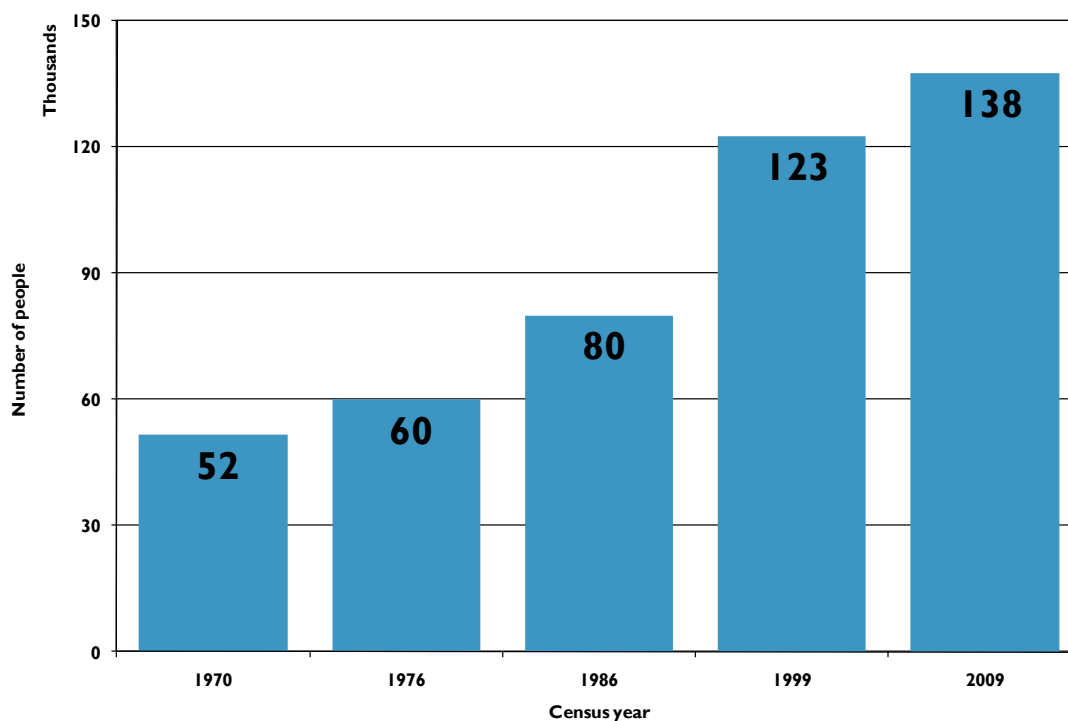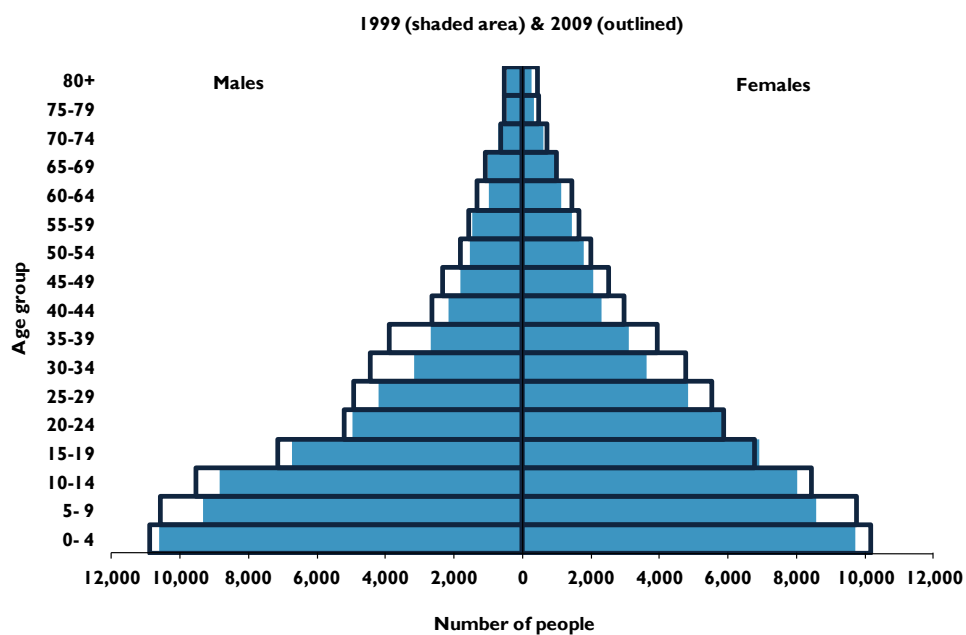
Malaita							
1999				**2009**			
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	10,613	9,707	20,320	0-4	10,892	10,180	21,072
5-9	9,349	8,567	17,916	5-9	10,578	9,748	20,326
10-14	8,843	8,011	16,854	10-14	9,538	8,438	17,976
15-19	6,742	6,923	13,665	15-19	7,158	6,772	13,930
20-24	4,980	5,848	10,828	20-24	5,225	5,870	11,095
25-29	4,215	4,840	9,055	25-29	4,938	5,514	10,452
30-34	3,165	3,627	6,792	30-34	4,459	4,777	9,236
35-39	2,694	3,086	5,780	35-39	3,894	3,913	7,807
40-44	2,149	2,302	4,451	40-44	2,666	2,956	5,622
45-49	1,807	2,055	3,862	45-49	2,351	2,513	4,864
50-54	1,541	1,781	3,322	50-54	1,822	1,987	3,809
55-59	1,465	1,436	2,901	55-59	1,579	1,660	3,239
60-64	988	1,110	2,098	60-64	1,333	1,449	2,782
65-69	1,016	957	1,973	65-69	1,086	992	2,078
70-74	726	594	1,320	70-74	642	719	1,361
75-79	456	323	779	75-79	526	459	985
80+	460	244	704	80+	545	417	962
Total	61,209	61,411	**122,620**	Total	69,232	68,364	**137,596**
Population by broad age groups (in numbers)							
0-14	28,805	26,285	55,090	**0-14**	31,008	28,366	59,374
15-24	11,722	12,771	24,493	**15-24**	12,383	12,642	25,025
25-59	17,036	19,127	36,163	**25-59**	21,709	23,320	45,029
25-64	18,024	20,237	38,261	**25-64**	23,042	24,769	47,811
60+	3,646	3,228	6,874	**60+**	4,132	4,036	8,168
65+	2,658	2,118	4,776	**65+**	2,799	2,587	5,386
Population by broad age groups (in percentages)							
0-14	47	43	45	**0-14**	45	41	43
15-24	19	21	20	**15-24**	18	18	18
25-59	28	31	29	**25-59**	31	34	33
25-64	29	33	31	**25-64**	33	36	35
60+	6	5	6	**60+**	6	6	6
65+	4	3	4	**65+**	4	4	4
Age dependency ratio							
15-59			102	**15-59**			96
15-64			95	**15-64**			89
Sex ratio (males per 100 females)							
			100				101
Median age (years)							
Total	**16.3**	**18.2**	**17.3**	**Total**	**17.5**	**19.3**	**18.4**
Population change 1999-2009							
					Males	Females	Total
Total difference					8,023	6,953	**14,976**
Average annual change (in numbers)					802	695	**1,498**
Percentage difference (%)					13.1	11.3	**12.2**
Average annual growth rate (%)					1.2	1.1	**1.2**

MAKIRA-ULAWA

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
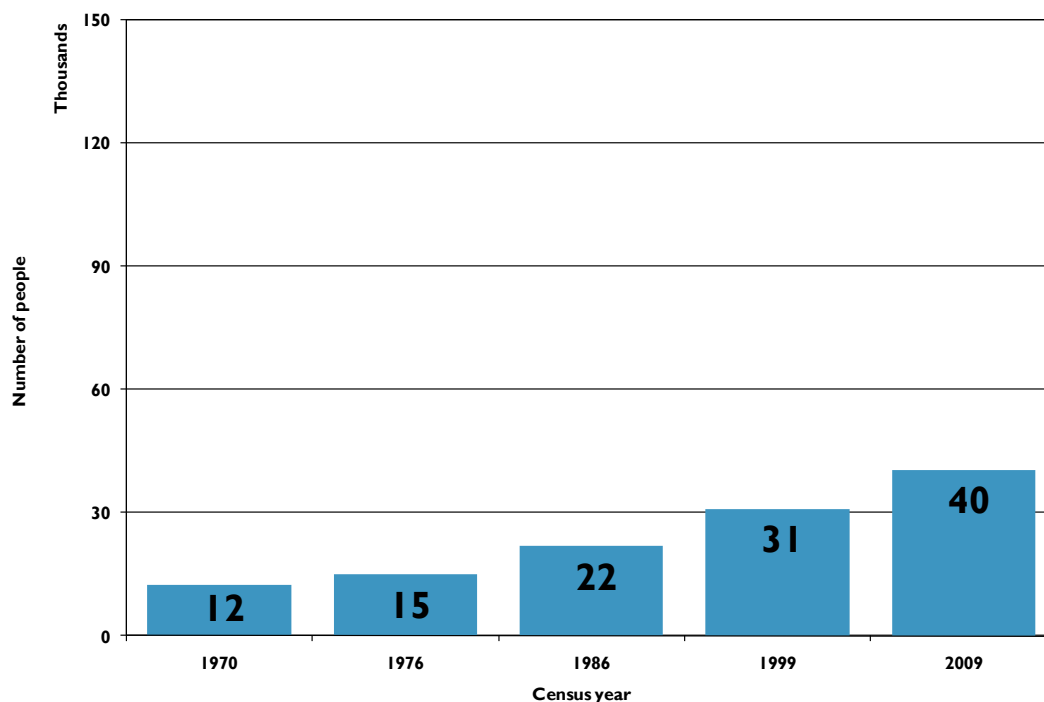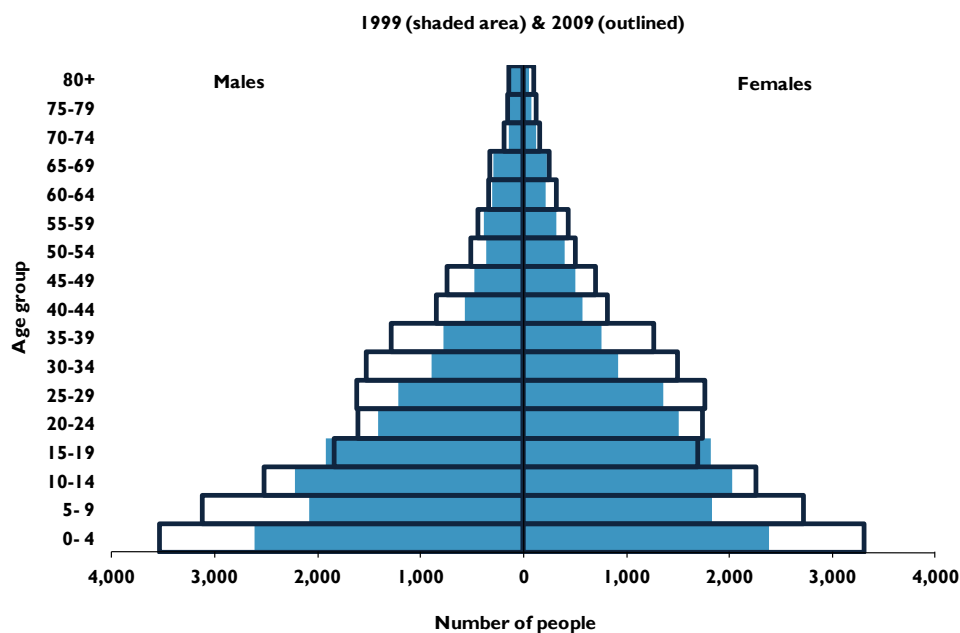
Makira-Ulawa

	1999				2009		
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	2,611	2,387	4,998	0-4	3,545	3,322	6,867
5-9	2,081	1,825	3,906	5-9	3,118	2,716	5,834
10-14	2,217	2,024	4,241	10-14	2,523	2,259	4,782
15-19	1,917	1,819	3,736	15-19	1,845	1,692	3,537
20-24	1,411	1,504	2,915	20-24	1,604	1,738	3,342
25-29	1,223	1,360	2,583	25-29	1,621	1,754	3,375
30-34	899	914	1,813	30-34	1,530	1,492	3,022
35-39	781	754	1,535	35-39	1,291	1,262	2,553
40-44	571	577	1,148	40-44	846	816	1,662
45-49	481	504	985	45-49	741	698	1,439
50-54	361	399	760	50-54	517	504	1,021
55-59	392	315	707	55-59	443	438	881
60-64	307	211	518	60-64	344	316	660
65-69	291	220	511	65-69	324	243	567
70-74	140	122	262	70-74	187	158	345
75-79	132	74	206	75-79	160	120	280
80+	128	54	182	80+	150	102	252
Total	15,943	15,063	**31,006**	Total	20,789	19,630	**40,419**
Population by broad age groups (in numbers)							
0-14	6,909	6,236	13,145	**0-14**	9,186	8,297	17,483
15-24	3,328	3,323	6,651	**15-24**	3,449	3,430	6,879
25-59	4,708	4,823	9,531	**25-59**	6,989	6,964	13,953
25-64	5,015	5,034	10,049	**25-64**	7,333	7,280	14,613
60+	998	681	1,679	**60+**	1,165	939	2,104
65+	691	470	1,161	**65+**	821	623	1,444
Population by broad age groups (in percentages)							
0-14	43	41	42	**0-14**	44	42	43
15-24	21	22	21	**15-24**	17	17	17
25-59	30	32	31	**25-59**	34	35	35
25-64	31	33	32	**25-64**	35	37	36
60+	6	5	5	**60+**	6	5	5
65+	4	3	4	**65+**	4	3	4
Age dependency ratio							
15-59			92	**15-59**			94
15-64			86	**15-64**			88
Sex ratio (males per 100 females)							
			106				106
Median age (years)							
Total	17.8	18.6	18.2	**Total**	18.3	19.5	18.9
Population change 1999-2009							
					Males	Females	Total
Total difference					4,846	4,567	**9,413**
Average annual change (in numbers)					485	457	**941**
Percentage difference (%)					30.4	30.3	**30.4**
Average annual growth rate (%)					2.7	2.6	**2.7**

TEMOTU

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
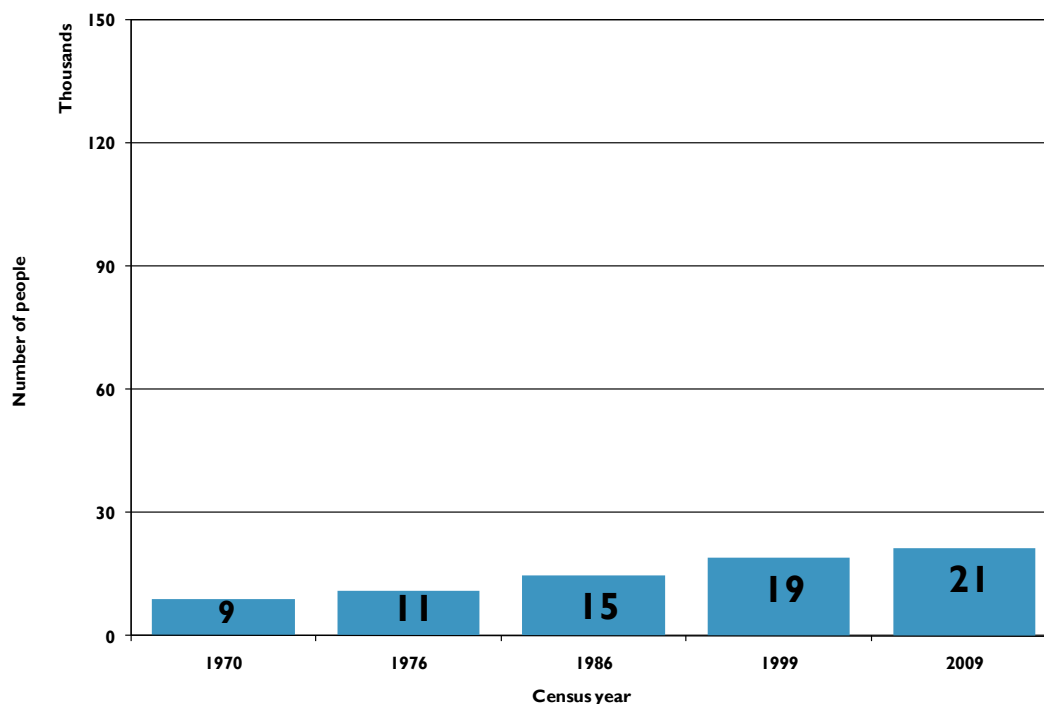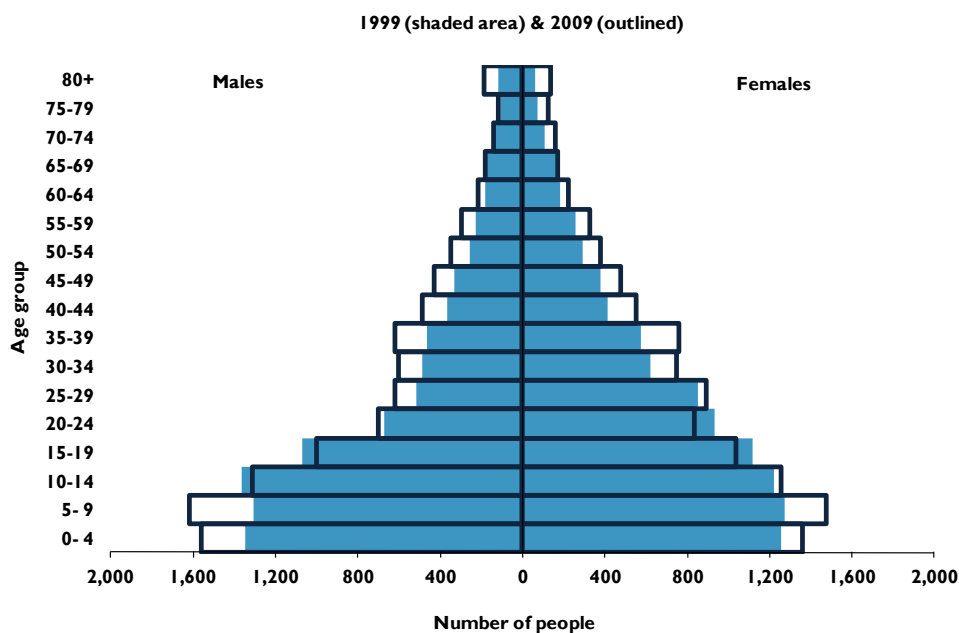
Temotu

	1999				2009		
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	1,350	1,256	2,606	0-4	1,564	1,359	2,923
5-9	1,306	1,273	2,579	5-9	1,621	1,475	3,096
10-14	1,367	1,223	2,590	10-14	1,312	1,255	2,567
15-19	1,069	1,119	2,188	15-19	1,002	1,035	2,037
20-24	675	932	1,607	20-24	701	834	1,535
25-29	515	850	1,365	25-29	623	893	1,516
30-34	485	621	1,106	30-34	602	748	1,350
35-39	462	575	1,037	35-39	623	761	1,384
40-44	368	410	778	40-44	490	551	1,041
45-49	334	378	712	45-49	432	477	909
50-54	258	290	548	50-54	351	376	727
55-59	226	257	483	55-59	300	328	628
60-64	182	179	361	60-64	216	220	436
65-69	184	164	348	65-69	184	169	353
70-74	139	106	245	70-74	141	157	298
75-79	109	72	181	75-79	119	122	241
80+	117	61	178	80+	185	136	321
Total	9,146	9,766	**18,912**	Total	10,466	10,896	**21,362**
Population by broad age groups (in numbers)							
0-14	4,023	3,752	7,775	**0-14**	4,497	4,089	8,586
15-24	1,744	2,051	3,795	**15-24**	1,703	1,869	3,572
25-59	2,648	3,381	6,029	**25-59**	3,421	4,134	7,555
25-64	2,830	3,560	6,390	**25-64**	3,637	4,354	7,991
60+	731	582	1,313	**60+**	845	804	1,649
65+	549	403	952	**65+**	629	584	1,213
Population by broad age groups (in percentages)							
0-14	44	38	41	**0-14**	43	38	40
15-24	19	21	20	**15-24**	16	17	17
25-59	29	35	32	**25-59**	33	38	35
25-64	31	36	34	**25-64**	35	40	37
60+	8	6	7	**60+**	8	7	8
65+	6	4	5	**65+**	6	5	6
Age dependency ratio							
15-59			93	**15-59**			92
15-64			86	**15-64**			85
Sex ratio (males per 100 females)							
			94				96
Median age (years)							
Total	**17.6**	**20.1**	**18.8**	**Total**	**18.7**	**21.9**	**20.2**
Population change 1999-2009							
					Males	Females	Total
Total difference					1,320	1,130	**2,450**
Average annual change (in numbers)					132	113	**245**
Percentage difference (%)					14.4	11.6	**13.0**
Average annual growth rate (%)					1.3	1.1	**1.2**

HONIARA

Population trend: 1970–2009

Population pyramid by five-year age group and sex, 1999 and 2009

1999 (shaded area) & 2009 (outlined)
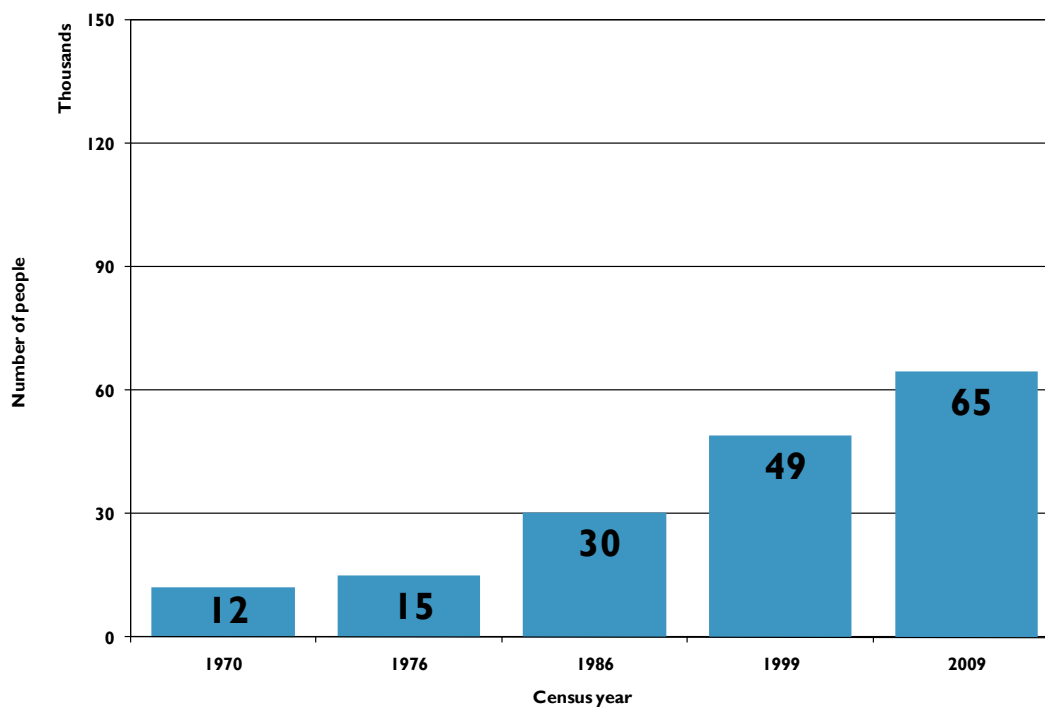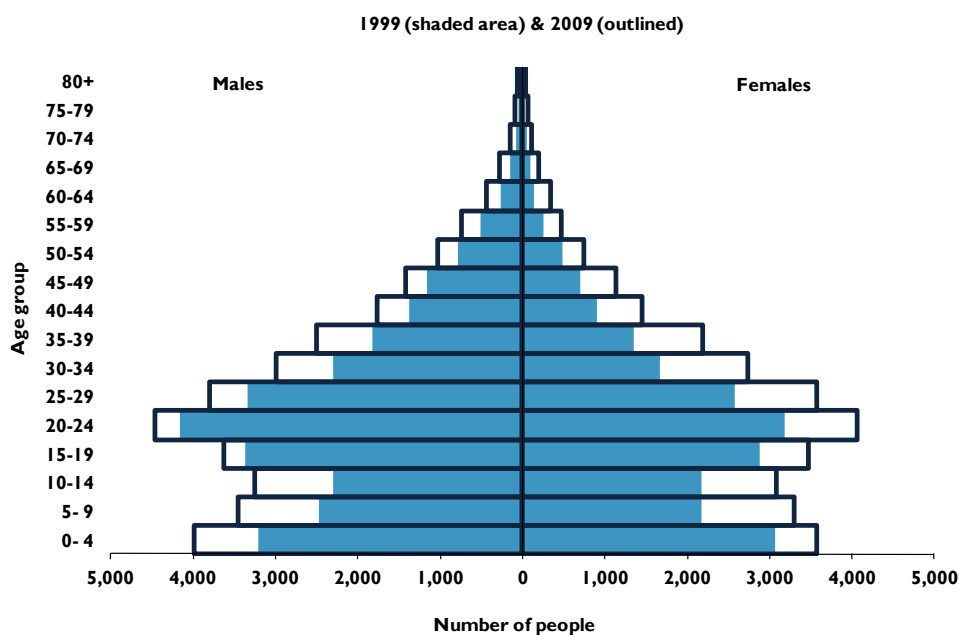
Honiara

	1999				2009		
Age	**Males**	**Females**	**Total**	**Age**	**Males**	**Females**	**Total**
Population by 5-year age groups and sex							
0-4	3,207	3,063	6,270	0-4	4,071	3,623	7,694
5-9	2,470	2,165	4,635	5-9	3,441	3,294	6,735
10-14	2,295	2,167	4,462	10-14	3,247	3,080	6,327
15-19	3,368	2,874	6,242	15-19	3,616	3,465	7,081
20-24	4,170	3,176	7,346	20-24	4,453	4,049	8,502
25-29	3,334	2,580	5,914	25-29	3,789	3,561	7,350
30-34	2,296	1,668	3,964	30-34	2,992	2,726	5,718
35-39	1,826	1,356	3,182	35-39	2,494	2,185	4,679
40-44	1,377	908	2,285	40-44	1,765	1,446	3,211
45-49	1,163	706	1,869	45-49	1,420	1,133	2,553
50-54	780	488	1,268	50-54	1,027	734	1,761
55-59	511	255	766	55-59	743	473	1,216
60-64	268	142	410	60-64	439	337	776
65-69	152	96	248	65-69	285	201	486
70-74	76	45	121	70-74	152	108	260
75-79	53	19	72	75-79	91	62	153
80+	41	12	53	80+	64	43	107
Total	27,387	21,720	**49,107**	Total	34,089	30,520	**64,609**
Population by broad age groups (in numbers)							
0-14	7,972	7,395	15,367	**0-14**	10,759	9,997	20,756
15-24	7,538	6,050	13,588	**15-24**	8,069	7,514	15,583
25-59	11,287	7,961	19,248	**25-59**	14,230	12,258	26,488
25-64	11,555	8,103	19,658	**25-64**	14,669	12,595	27,264
60+	590	314	904	**60+**	1,031	751	1,782
65+	322	172	494	**65+**	592	414	1,006
Population by broad age groups (in percentages)							
0-14	29	34	31	**0-14**	32	33	32
15-24	28	28	28	**15-24**	24	25	24
25-59	41	37	39	**25-59**	42	40	41
25-64	42	37	40	**25-64**	43	41	42
60+	2	1	2	**60+**	3	2	3
65+	1	1	1	**65+**	2	1	2
Age dependency ratio							
15-59			50	**15-59**			54
15-64			48	**15-64**			51
Sex ratio (males per 100 females)							
			126				112
Median age (years)							
Total	**22.8**	**20.9**	**22.0**	**Total**	**23.0**	**22.2**	**22.6**
Population change 1999-2009							
					Males	Females	Total
Total difference					6,702	8,800	15,502
Average annual change (in numbers)					670	880	1,550
Percentage difference (%)					24.5	40.5	31.6
Average annual growth rate (%)					2.2	3.4	2.7