TUVALU 2022 CENSUS ON POPULATION AND HOUSING

ANALYTICAL REPORT

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Noumea, New Caledonia

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ABBREVIATIONS AND ACRONYMS

CSD	Central Statistics Division
HH	household
NCD	Non-communicable disease
PHC	Population and Housing Census

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Acknowledgements

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Angus Amasone

Acting Head, Central Statistics Department

Ministry of Finance

Government of Tuvalu

Foreword

The Central Statistics Division (CSD), with the assistance of regional organisations including the Pacific Community (SPC), United Nations Population Fund, Asian Development Bank, World Bank, International Labour Organization, and Food and Agriculture Organization of the United Nations, conducted Tuvalu's 12th national census in December 2022.

Unlike censuses in the past, the 2022 Population and Housing Census (2022 PHC) was combined with the Household Income and Expenditure Survey (HIES), through a Long Form Census. The Long Form Census enabled CSD to collect a range of census and other detailed economic information on the country. The resulting data was used to generate three statistical products: Tuvalu 2022–23 HIES Report; Tuvalu 2023 Monetary Poverty Report; and the current report – the Tuvalu 2022 PHC Analytical Report. This approach – combining a standard census with HIES – was adopted by CSD to address the increasing need for detailed statistical information on a range of areas and to lower the overall cost of data collection. This census analytical report provides information linked to the PHC, such as agriculture, education, environment, fertility, fisheries, health, migration, and other areas of interest to the country.

Like other publications by CSD, the statistics published in this report provide decision-makers and planners with a basis for making policies and budgetary decisions. In most instances, the statistics are disaggregated by age, sex, island of enumeration, home island, and other characteristics.

1. Country context

1.1. Geography

Tuvalu, located north of the Republic of Fiji and south of Kiribati, is a coral atoll nation comprised of nine small islands: Nanumea; Nanumaga; Niutao; Nui; Vaitupu; Nukufetau; Funafuti; Nukulaelae; and Niulakita. Although it has a land area of about 25 square-kilometres, its precise size may differ slightly due to ongoing land reclamation projects since 2015. The land area for Tuvalu sits at an average elevation of less than three metres above sea level, making it vulnerable to adverse climate conditions such as rising sea levels and cyclones (World Bank Group and Asian Development Bank).
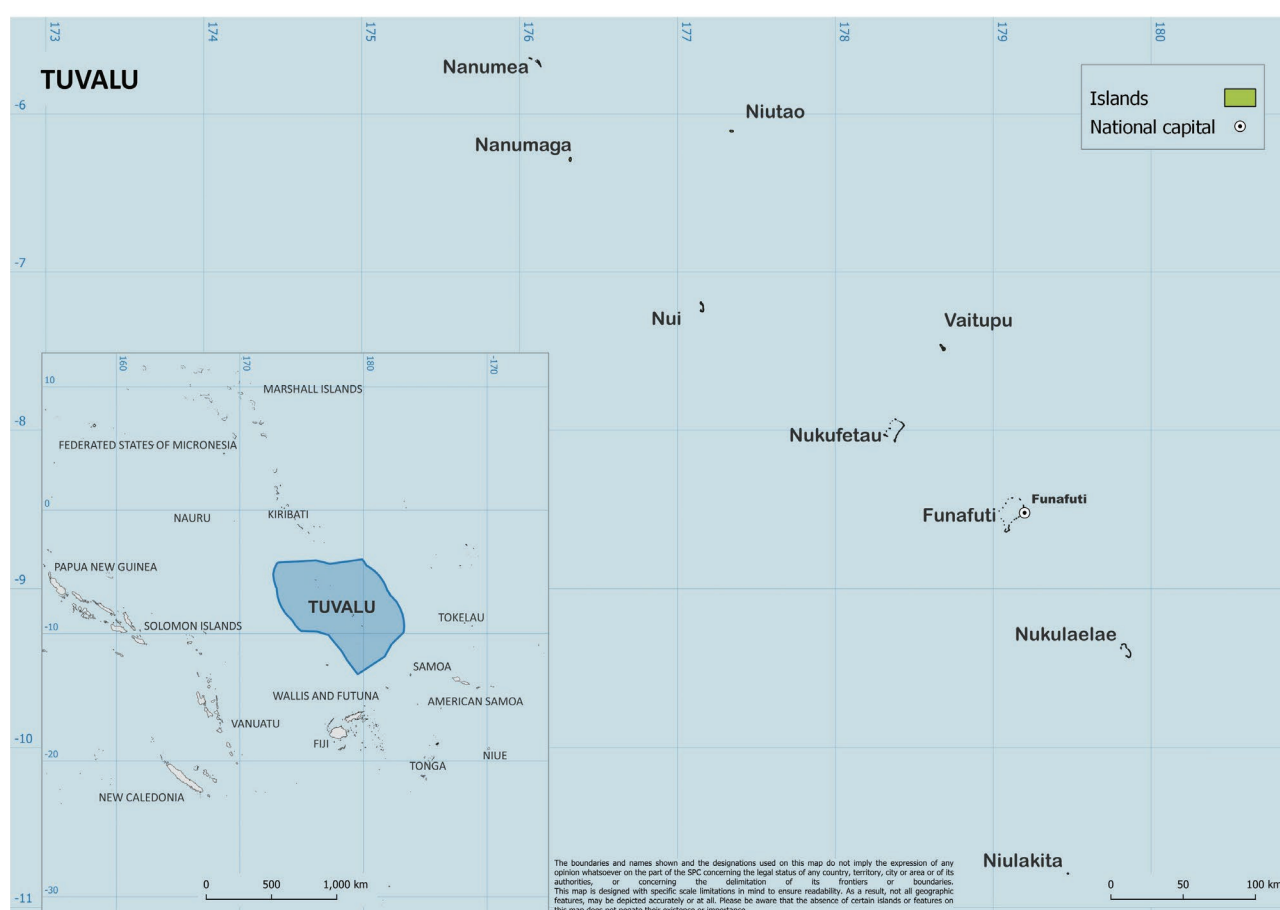
Map of the Pacific region and Tuvalu (inset)

Source: SPC

1.2. Brief history

Tuvalu was settled by Polynesians, mainly from Tonga or Samoa (Bellwood 1987). Following European contact, Tuvalu and Kiribati were integrated into a single British colony known as the Gilbert and Ellice Islands. Tuvalu, formerly known as the Ellice Islands, gained recognition as a sovereign state on 01 October 1978, with Funafuti as its capital (McIntyre 2012).

1.3. Key indicators

Table 1. *Key indicators, 2022*

Indicators	National	Funafuti	Outer Islands
Total population by region of enumeration	**10,643**	**6,613**	**4,030**
Males	5,507	3,447	2,060
Females	5,136	3,166	1,970
Resident population by region of enumeration	10,632	6,602	4,030
Males	5,498	3,438	2,060
Females	5,134	3,164	1,970
Population density[1] (person per km^2)	423	2,590	178
Resident population by home island	10,632	6,602	4,030
Nanumea	1,488	911	577
Nanumaga	1,167	734	433
Niutao	1,500	916	584
Nui	1,016	512	504
Vaitupu	1,844	930	914
Nukufetau	1,348	763	585
Funafuti	1,456	1,413	43
Nukulaelae	578	272	306
Niulakita	6	4	2
Outside Tuvalu	94	58	36
Not stated	135	89	46
Median age of resident population by region of residence	24	24	25
Males	23	23	24
Females	26	25	26
Percentage of resident population by age group and region of residence			
Population aged 0–14 years old	34	33.8	34.2
Population aged 15–59 years old	56	57.7	53.6
Population aged 60 years and over	10	8.5	12.2
Demographic indicators			
Sex ratio by region of residence (per 100 females)	107	109	103
Total fertility rate (per woman)	3.2	3.3	3
Adolescent fertility rate (per 1,000 women)	24.1	28.2	18
Life expectancy at birth (years) – Both sexes	76.3		
Infant mortality (per 1,000 live births) – Males	19.1		
Infant mortality (per 1,000 live births) – Females	16.1		
Under-five mortality (per 1,000 live births) – Males	24.3		
Under-five mortality (per 1,000 live births) – Females	23.2		

1 Population density is calculated using the updated land mass from the LiDAR Survey (Government of Tuvalu 2019).

Indicators	National	Funafuti	Outer Islands
Average intercensal growth rate by region of residence (% per annum)	0.2	0.2	1.3
Dependency ratio (per 100 Working age persons)	78.8	73.6	88
Number of households by Island and region of enumeration	1,799	980	819
Nanumea	126		
Nanumaga	86		
Niutao	122		
Nui	106		
Vaitupu	203		
Nukufetau	107		
Funafuti	980		
Nukulaelae	61		
Niulakita	8		
Average household size (resident population)	6	6.8	5.1
Number of households on Funafuti by region of home island of head of household			
Nanumea		132	
Nanumaga		102	
Niutao		130	
Nui		68	
Vaitupu		134	
Nukufetau		112	
Funafuti		229	
Nukulaelae		39	
Niulakita		2	
Outside Tuvalu		10	
Not stated		21	

1.4. Sustainable Development Goal indicators

Table 2. *Sustainable Development Goal indicators, 2022*

Indicators	National	Urban	Rural	Male	Female	With disability	Without disability
1.4.1 Percentage of the population living in households with access to basic services							
Improved drinking water	>99	>98	>99	>99	>98	>98	>99
Improved sanitation	96.8	96.8	96.7	97.0	96.5	94.7	97.0
Individual ownership of a mobile phone	47.7	51.3	41.9	50.0	45.3	48.5	18.7
Covered by a mobile network, by technology	47.6	48.3	46.6	47.4	48.0	47.7	45.3
3.7.2 Adolescent birth rate (per 1,000 females)	24.1	28.2	18.0				

Indicators	National	Urban	Rural	Male	Female	With disability	Without disability
5.b.1 Percentage of individuals over age 10 years who own a mobile telephone by sex	47.7	-	-	50.0	45.3	-	-
6.1.1 Percentage of the population using safely managed drinking water services	>99	>98	>99	>99	>98	-	-
6.2.1 Percentage of the population using safely managed sanitation services, including a handwashing facility with soap and water	96.8	96.8	96.7	97.0	96.5	-	-
7.1.1 Percentage of population with electricity	87.8	89.1	85.8	-	-	-	-
8.5.2 Unemployment rate by sex, age and persons with disabilities	12.6	8.2	20.4	10.9	15.3	16.7	12.6
9.2.2 Manufacturing employment as a percentage of total employment	0.9	-	-	-	-	-	-
17.8.1 Percentage of individuals over age 10 years using the internet	59.2	60.8	56.6	60.5	57.9	19.1	60.4

2. Demographic characteristics

2.1. Population count

The total population for Tuvalu, as observed on 12 December 2022, was 10,643. This included 10,632 residents and 11 non-residents. However, the count excludes people living outside Tuvalu at the time in which the census was conducted. A total of 54 residents were residing in institutions during the census. Institutions included quarantine centres, workers' barracks, guest houses, correctional centres and other facilities.
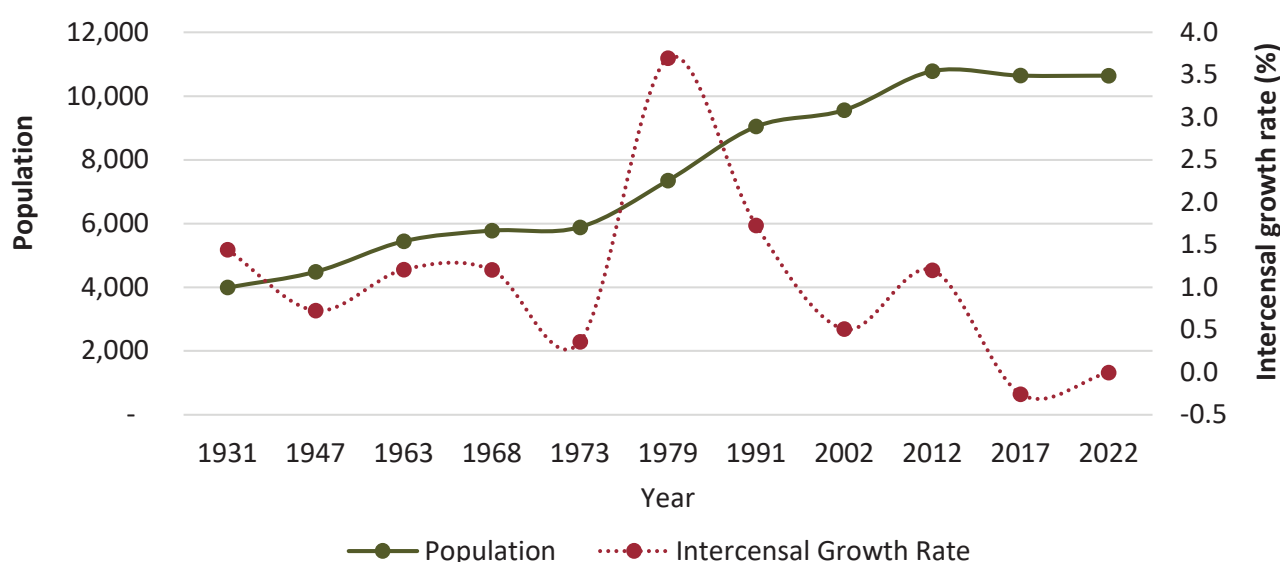
Figure 1. *Total population and annual intercensal growth rate (% per annum), 1921–2022*

Figure 1 shows that the country's population decreased from 10,645 in 2017 to 10,643 in 2022, resulting in an intercensal population growth of -0.004%. The highest population growth rate since the first count was conducted in 1931 was witnessed in 1979.

2.2. Population distribution

In 2022, about 62% of the population was counted in Funafuti with the remaining 38% in the Outer Islands. The percentage of the population living in Funafuti has been increasing, as shown in **Figure 2**. In 1991, about 6 out of 10 people were living in the Outer Islands whereas, in 2022, 6 out of 10 people were living in Funafuti, pointing to a significant population re-distribution in the country.
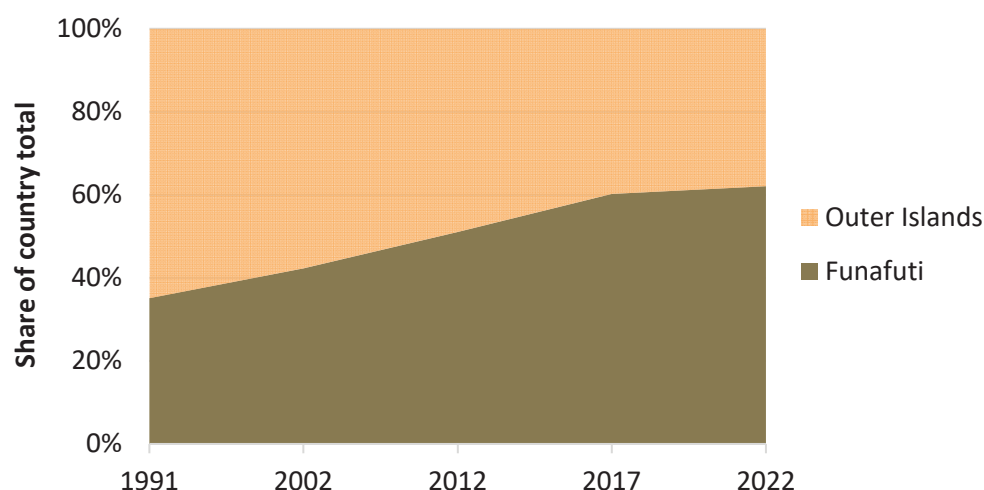
Figure 2. *Population distribution by region (Funafuti vs Outer Islands), 1991–2022*

Table 3. *Distribution and growth rate of resident population by island of enumeration, 2002–2022*

Island of enumeration	Population				Intercensal growth rate (% per annum)		
	2002	2012	2017	2022	2002–2012	2012–2017	2017–2022
Funafuti	3,962	5,436	6,611	6,602	3.2	3.9	0.0
Outer Islands	5,397	5,204	3,896	4,030	-0.4	-5.8	0.7
Nanumea	855	612	495	610	-3.3	-4.2	4.2
Nanumaga	710	551	384	391	-2.5	-7.2	0.4
Niutao	817	694	499	550	-1.6	-6.6	1.9
Nui	610	729	494	514	1.8	-7.8	0.8
Vaitupu	1,310	1,542	1,190	1,007	1.6	-5.2	-3.3
Nukufetau	701	666	531	581	-0.5	-4.5	1.8
Nukulaelae	392	364	260	341	-0.7	-6.7	5.4
Niulakita	2	46	43	36	31.4	-1.3	-3.6
Tuvalu	**9,359**	**10,640**	**10,507**	**10,632**	**1.3**	**1.3**	**0.2**

Overall, Tuval's resident population increased slightly in 2022 compared to 2017, with a small decrease in Funafuti and a slight increase in the Outer Islands.

The Vaitupu community had the largest number of people who considered Vaitupu their home island in 2022, a trend that has continued since 2002. Comparing the proportion of the enumerated population to the home islands of people, Nukulaelae had the highest at 59%. This means that nearly 6 out of every 10 persons who declared Nukulaelae their home island were enumerated on Nukulaelae. Second to Nukulaelae was Vaitupu, followed by Nui. The rest of the Outer Islands had a proportion that was less than half.

Table 4. *Size and growth rate of resident population by home island, 2002–2022*

Home island	Population				Intercensal growth rate (%)		
	2002	2012	2017	2022	2002–2012	2012–2017	2017–2022
Funafuti	1,004	1,166	1,340	1,456	1.5	2.8	1.7
Outer Islands	8,217	9,348	9,049	8,947	1.3	-0.7	-0.2
Nanumea	1,560	1,656	1,603	1,488	0.6	-0.7	-1.5
Nanumaga	1,063	1,222	1,229	1,167	1.4	0.1	-1.0
Niutao	1,453	1,424	1,402	1,500	-0.2	-0.3	1.4
Nui	835	1,034	1,034	1,016	2.1	0.0	-0.4
Vaitupu	1,694	2,068	1,860	1,844	2.0	-2.1	-0.2
Nukufetau	1,149	1,381	1,322	1,348	1.8	-0.9	0.4
Nukulaelae	461	543	568	578	1.6	0.9	0.3
Niulakita	2	20	31	6	23.0	8.8	-32.8
Other[2]	138	126	118	229	-0.9	-0.7	13.3
Tuvalu	**9,359**	**10,640**	**10,507**	**10,632**	**1.3**	**1.3**	**0.2**

2.3. Population density

Funafuti is the most densely populated island in Tuvalu, hosting over 60% of the country's population. In comparison to 2017, the population density in Funafuti increased by about 8% from 2,399 to 2,590 persons per square-kilometre (Central Statistics Division 2017).

Table 5. *Population density by island, 2022*

Islands	Land area (km²), 2019	Total enumerated population, 2022	Population density (persons/km²)
Funafuti	2.553	6,613	2,590
Nanumea	3.316	610	184
Nanumaga	2.909	391	134
Niutao	2.309	550	238
Nui	3.32	514	155
Vaitupu	5.049	1,007	199
Nukufetau	3.25	581	179
Nukulaelae	2.021	341	169
Niulakita	0.413	36	87
Tuvalu	**25.14**	**10,643**	**423**

It should be noted that the land area for Funafuti and the other Islands has decreased over time primarily due to soil erosion on the small islets, exacerbated by a cyclone submerging one islet. The LiDAR survey compared historical island sizes to their measurements at the time of the study in 2019 but did not include the reclaimed lands in Funafuti, as these were added later (Government of Tuvalu 2019).

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2 The "Other" category includes countries outside Tuvalu and non-responses.

2.4. Age and sex composition
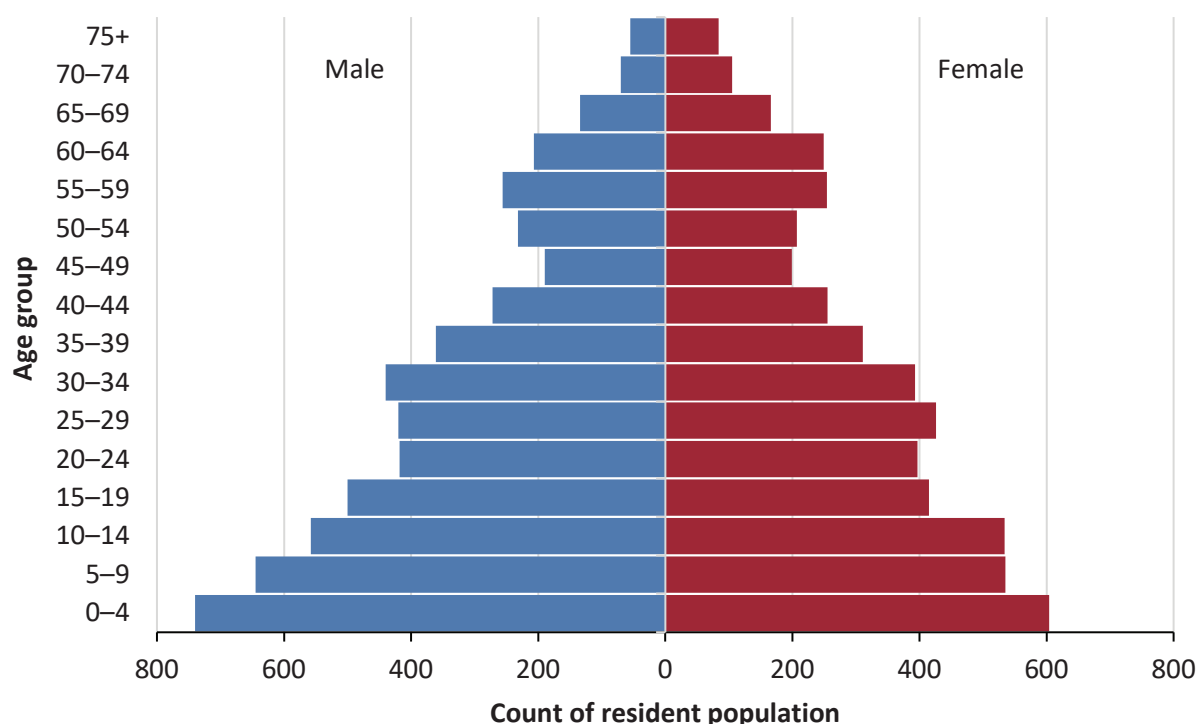
Figure 3. *Resident population distribution by age group and sex, 2022*

About 6 in 10 persons (60%) in Tuvalu are under 30 years of age, as shown in ***Figure 3***. A dent can be seen in the population pyramid between the ages 35–54 years, an indication, in part, of the out-migration of the working-age population. It is also significant to note that about 13% of the population is under 5 years of age.
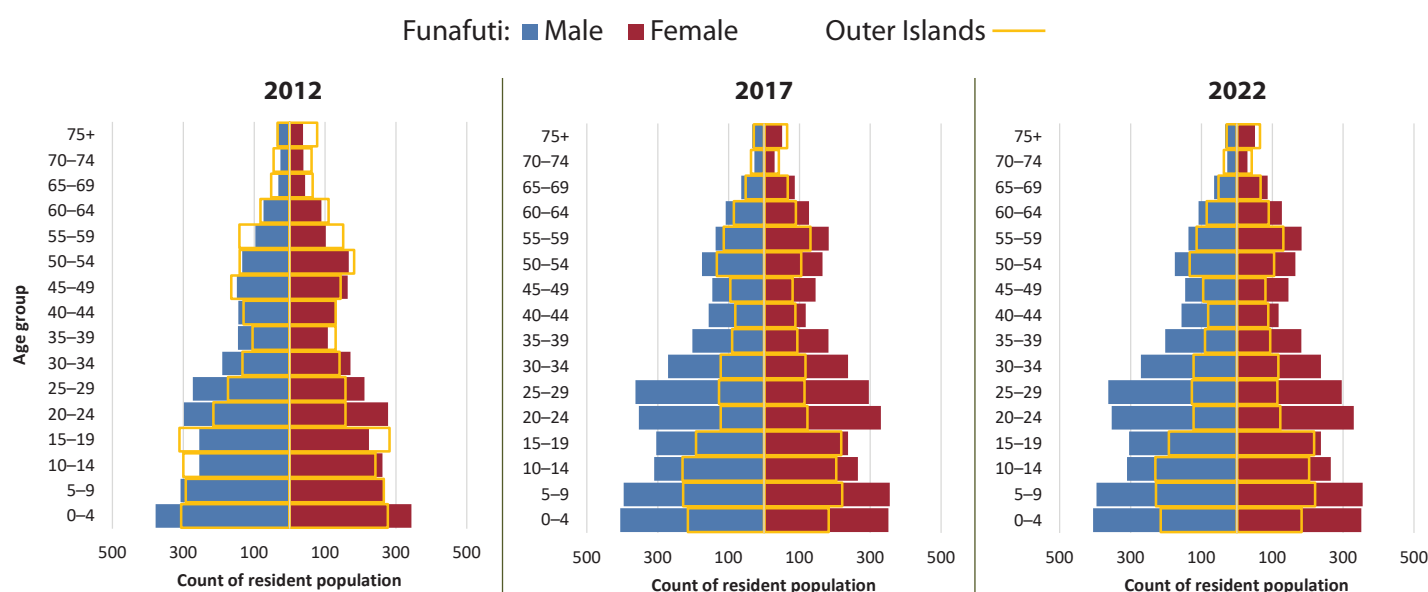
Figure 4. *Population pyramids, 2012–2022*

The age structure of the Outer Islands differed from that of Funafuti (***Figure 4***). The proportion of the working-age population (15–59 years) was higher for Funafuti than that of the Outer Islands.

In contrast, the proportion of children in the Outer Islands is relatively high, which reflects the relatively high fertility in these areas compared to Funafuti. As a result, the dependency ratios of the Outer Islands were considerably higher (86.2 on average) than those of Funafuti (72.9).

Table 6. *Resident population by broad age group, dependency ratio, sex ratio and median age, 2022*

Island	Broad age group (in years)			Dependency ratio	Sex ratio	Median age (in years)		
	0–14	15–59	60+			Total	Male	Female
Funafuti	2,233	3,802	567	74	109	24	23	26
Outer Islands	1,383	2,144	503	88	105	25	24	26
Nanumea	211	323	76	89	108	26	24	28
Nanumaga	132	214	45	83	122	24	22	28
Niutao	184	302	64	82	98	26	23	28
Nui	165	269	80	91	100	26	27	26
Vaitupu	340	538	129	87	108	26	24	28
Nukufetau	210	302	69	92	106	23	22	25
Nukulaelae	126	179	36	91	84	22	28	19
Niulakita	15	17	4	112	125	26	20	31
Total	3,616	5,946	1,070	79	107	24	23	26

For the country as a whole, the dependency ratio shows about 79 dependents for every 100 people of working age (15–59 years of age), representing an increase since the 2012 Census, when the same indicator was 70.6 dependents for every 100 people of working age. The sex ratio has also continued to increase since 1991, suggesting a relatively high female migration out of the country in recent decades. There is also considerable variation in the sex ratio between islands, likely due to differences in migration rates between males and females. It was as low as 84 on Nukulaelae but was about 125 on Niulakita and 122 on Nanumaga (*Table 6*). For the most recent period, the sex ratio shows that, for every 107 males in the country, there are 100 females.

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3. Socio-cultural characteristics

3.1. Household occupants

A household refers to a family or a group of people who usually eat together and share resources. There were 1,799 households in 2022, representing an 11% increase from the 2017 Tuvalu Census. About 55% of the households were enumerated in Funafuti, which is consistent with the proportion of the population living on the island. The average household had about 6 members, similar to the figure published in 2017. However, the average household size in Funafuti decreased from 7.4 members in 2017 to 6.7 members in 2022 while it increased in the Outer Islands from 4.5 members in 2017 to 5.1 members in 2022.

Table 7. *Households and occupants enumerated in private households, 2022*

| Island | Population | Households (HHs) | | |
		Count	Distribution	Average HH size
Funafuti	6,602	980	54.5%	6.8
Outer Islands	4,030	819	45.5%	5.1
Nanumea	610	126	7.0%	4.8
Nanumaga	391	86	4.8%	4.5
Niutao	550	122	6.8%	4.6
Nui	514	106	5.9%	4.9
Vaitupu	1,007	203	11.3%	5.4
Nukufetau	581	107	5.9%	5.7
Nukulaelae	341	61	3.4%	6.0
Niulakita	36	8	0.4%	4.5
Tuvalu	**10,632**	**1,799**	**100.0%**	**6.0**

Table 8. *People in private households and their relationships to the household head, 2022*

| Members | Population | | | Percentage | | |
	2012	2017	2022	2012	2017	2022
Immediate family	5,747	5,565	6,565	56	58	62
Head	1,761	1,626	1,766	17	17	17
Spouse	1,072	1,002	1,229	11	11	12
Children	2,748	2,744	3,386	27	29	32
Parents	166	193	184	2	2	2
Other	4,471	3,977	4,067	44	42	38
Grandchildren	1,229	1,123	1,444	12	12	14
Siblings	235	329	336	2	3	3
Aunt/Uncle	177	336	302	2	4	3
Cousins	314	254	199	3	3	2
Grandparents	10	26	22	0	0	0
Nephews/Nieces	671	484	500	7	5	5
Not related	648	702	565	6	7	5
Other	1,187	723	699	12	8	7
Total	**10,218**	**9,542**	**10,632**	**100**	**100**	**100**

Table 8 shows that about 3 of every 5 household members are immediate family members. The proportion of immediate relatives versus other relatives has risen over the past decade from about 56% in 2012 to 62% in 2022.

3.2. Religion and ethnicity

About 4 in 5 people in Tuvalu are affiliated with the Ekalesia Kelisiano Tuvalu (EKT) religious denomination, making it the largest religious group in the country. The remaining denominations account for about 14%, with the Brethren accounting for the next largest religious group – at 3%.
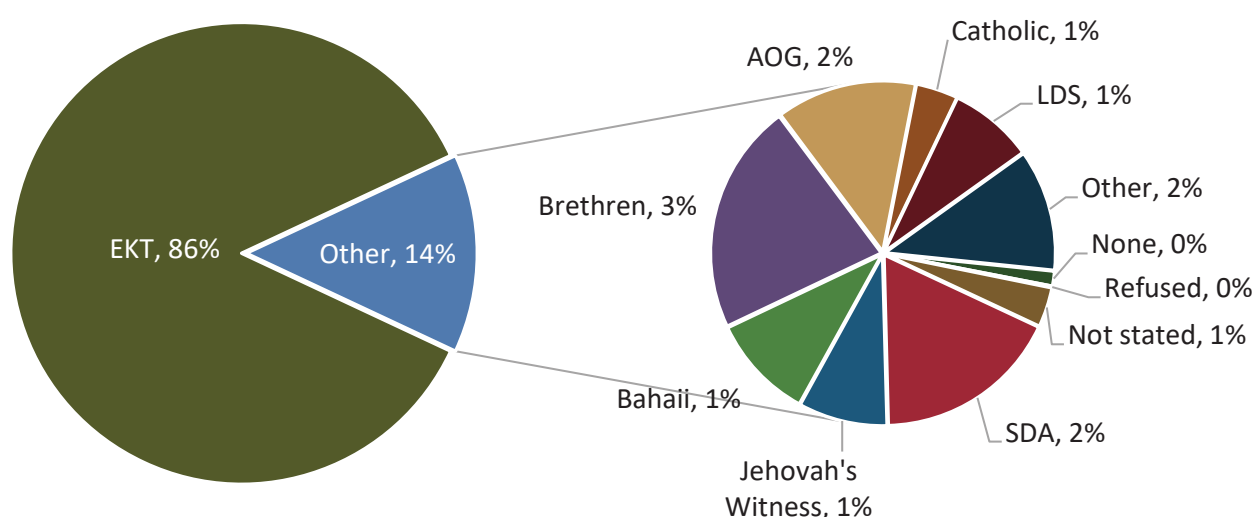
Figure 5. *Distribution of resident population by religious affiliation, 2022*
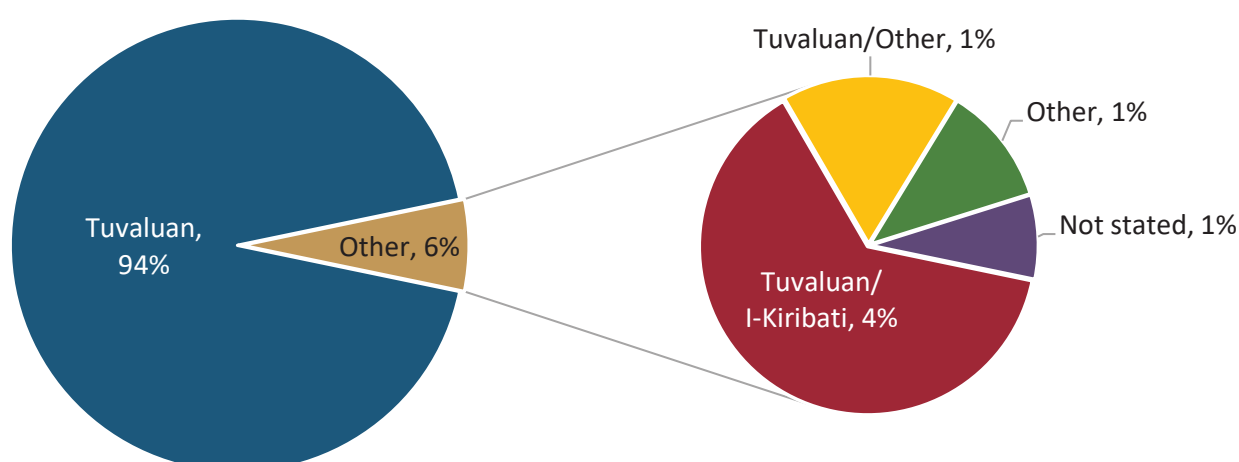
Figure 6. *Distribution of resident population by ethnicity, 2022*

About 9 out of every 10 people (90%) are of Tuvaluan ethnicity. Notably, the proportion of people of only Tuvaluan descent increased from 87% in 2012 to 97% in 2017 before slightly decreasing to 94% in 2022. The slight decrease in Tuvaluan ethnicity during the 2022 Census may be partly attributable to the COVID-19 lockdown, which prevented many Tuvaluans in Fiji from returning home during the count. Additionally, 4% of respondents identified as Tuvaluan/

I-Kiribati, suggesting a possible increase in intermarriages, which could also contribute to the decrease in the percentage of people identifying as having Tuvaluan nationality.

3.3. Place and country of birth and nationality

Most residents were born in Funafuti, where the main hospital is located. More than 1 out of every 3 persons enumerated in the Outer Islands were born in Funafuti. Moreover, more than 17% of the residents were born outside Tuvalu. Of these, 36% were born in Fiji, 34% in Kiribati, 21% in Nauru, and 4% in New Zealand, with the remaining 5% from other countries.

Table 9. *Birthplace of the resident population, 2022*

Island of enumeration	Birthplace										
	Total	Nanumea	Nanumaga	Niutao	Nui	Vaitupu	Nukufetau	Funafuti	Nukulaelae	Niulakita	Outside Tuvalu	Not stated
Nanumea	610	216	6	11	4	6	6	238	3	0	100	20
Nanumaga	391	6	132	4	5	5	2	206	2	0	29	0
Niutao	550	7	10	220	3	6	0	226	6	15	49	8
Nui	514	1	-	8	184	3	2	205	0	0	111	0
Vaitupu	1,007	19	19	6	14	382	17	396	5	2	147	0
Nukufetau	581	6	-	4	2	4	217	284	0	0	64	0
Funafuti	6,602	252	221	240	135	251	250	3,909	66	15	1,235	28
Nukulaelae	341	4	4	5	2	5	6	163	104	0	48	0
Niulakita	36	-	-	8	-	1	0	23	0	0	4	0
Total	**10,632**	**511**	**392**	**506**	**349**	**663**	**500**	**5,650**	**186**	**32**	**1,787**	**56**
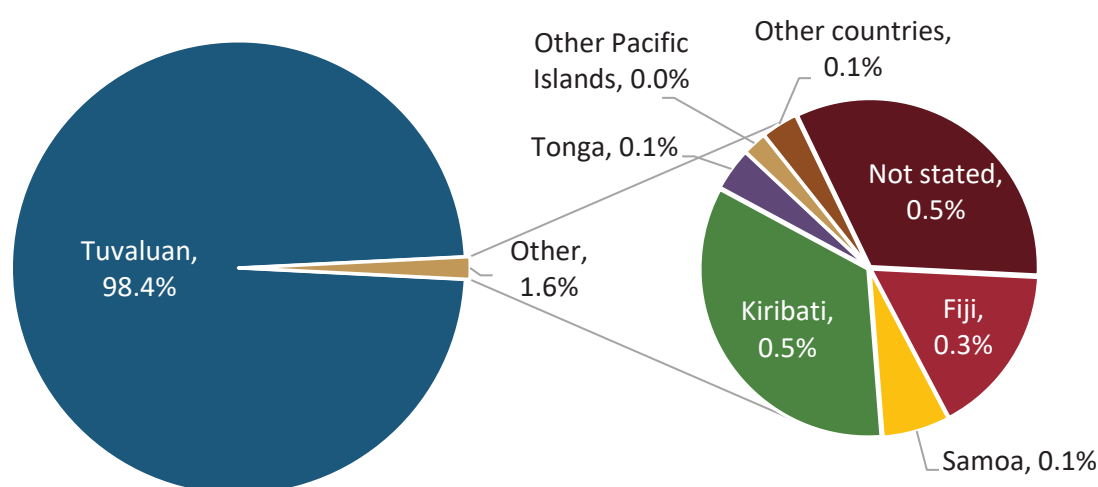
Figure 7. *Resident population by nationality, 2022*

Most of the resident population were Tuvaluan nationals; fewer than 2% were foreign nationals. The proportion of foreign nationals decreased from 1.8% in 2017 to 1.6% in 2022.

3.4. Marital status composition

About 3 in 5 (62%) residents aged 15 years and over were married in 2022, compared to slightly more than half in 2017 (57%). Also, about 3 of every 10 (30%) were single or never married, compared to about 33% in 2017.

The Singulate Mean Age at Marriage is an indirect measure of the average age at first marriage or consensual union based on data on the proportion of persons who remain single at the age of 15–49 years. It discounts the proportion of persons who are still single at the age of 50 years.
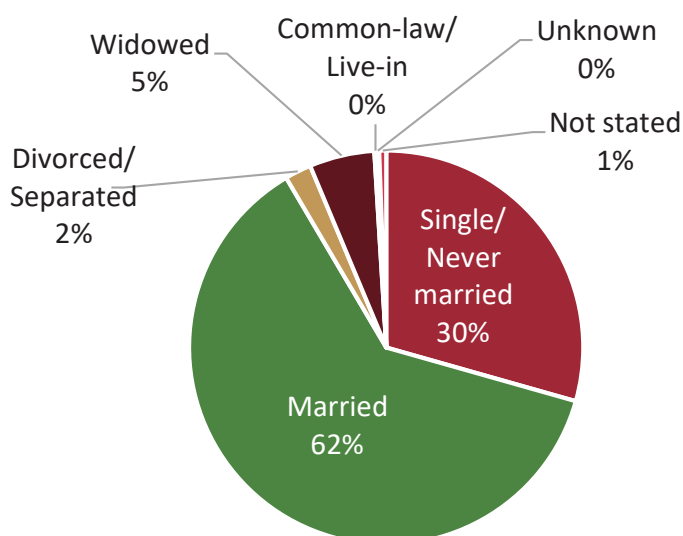
Figure 8. *Distribution of resident population aged 15 years and over by marital status, 2022*

The 2022 Tuvalu Census computed this as 24.6 years: 26.0 years for men and 23.2 years for women. This indicates a difference of almost three years between the typical ages at which men and women marry or start living in a consensual union in Tuvalu.

4. Literacy, education and technology

4.1. Literacy

Almost all residents aged 5 years and over are literate in the Tuvaluan language. About 9 of every 10 residents aged 15 years and over are literate in English. Only 1 of every 5 residents aged 15 years and over is literate in the Nuian language, similar to the Kiribati language. Compared to 2012, literacy in the Tuvaluan and English languages had increased, with literacy in English increasing from 81% in 2012 to 98% in 2022. However, literacy in the Nuian language decreased from 44% in 2012 to 22% in 2022.

Table 10. *Percentage of the resident population aged 5 years and over and 15 years and over by literacy status and language of literacy, 2022*

Language	Population aged 5 years and over			Population aged 15 years and over		
	Total	Male	Female	Total	Male	Female
Tuvaluan	97.1	97.1	97.2	97.9	98.1	97.7
English	89.2	89.3	89.1	91.2	91.8	90.6
Nuian	19.0	17.4	20.6	21.7	20.2	23.3

4.2. School attendance and enrolment

As shown in **Table 11**, the school attendance of children aged 3–19 years improved from 88% in 2017 to 91% in 2022.

Table 11. *Resident population aged 3–19 years attending school in 2022*

Age group (years)	Current attendance							
	2022				2017			
	Total	Yes	No	% Attending	Total	Yes	No	% Attending
3–4	443	437	6	99	461	428	33	93
5–9	1,134	1,062	72	94	1,200	1,174	26	98
10–14	1,050	1,013	37	96	1,009	979	30	97
15–19	865	674	190	78	952	595	357	63
Total	3,492	3,186	305	91	3,622	3,176	446	88

However, the proportion of children aged 5–9 years and 10–14 years attending school decreased. **Figure 9** shows that the proportion of boys aged 15–19 years attending school was lower than that of girls in 2017. An improvement is seen for 2022.
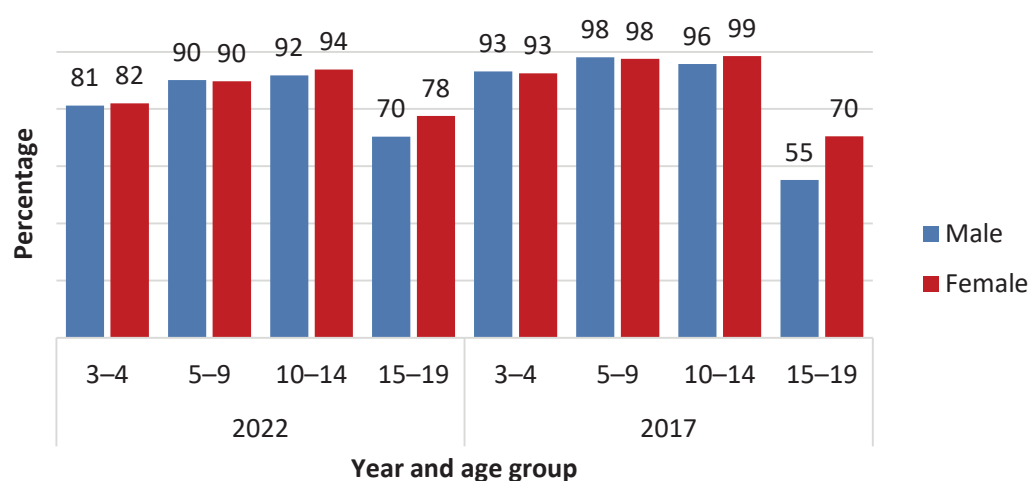
Figure 9. *Percentage of children aged 3–19 years attending school, 2022 and 2017*

4.3. Highest qualification

Figure 10 compares the highest qualifications achieved by sex. The trend for the highest educational attainment is similar to the trends in school attendance observed. As shown in the figure, the proportion of girls who achieved Form 5, 6, and 7 certificates is higher than boys.
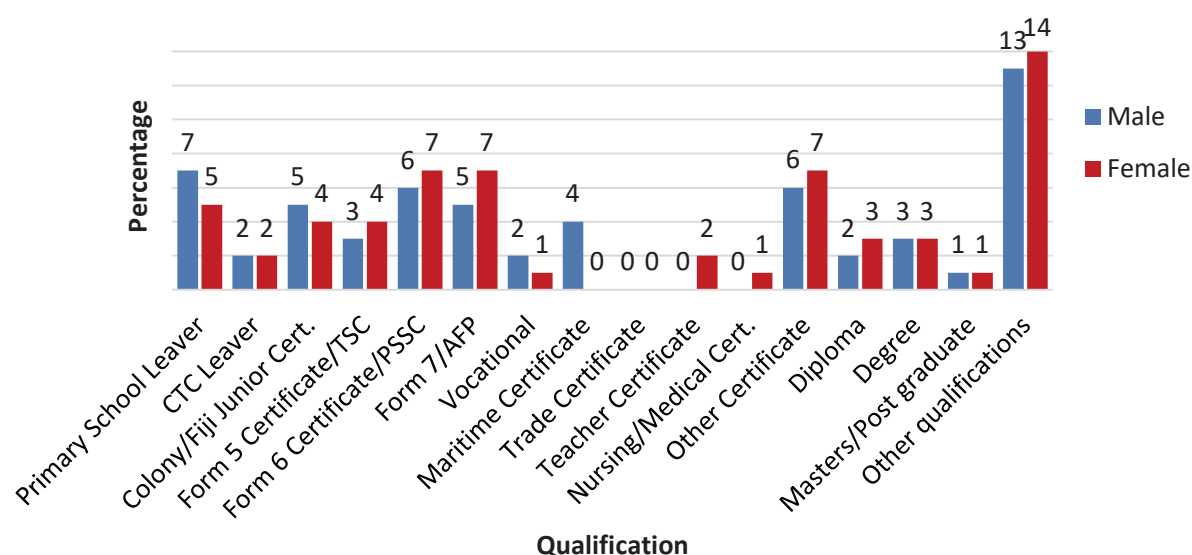
Figure 10. *Distribution of resident population by highest achieved qualification, 2022*

4.4. Access to information and communications technologies

As expected, 6 out of every 10 residents who have internet access live in Funafuti. This is likely because the 4G mobile network is only available in Funafuti, and coverage was only extended to Vaitupu in 2022. Further, the observed difference in internet access could reflect the country's population distribution: About 64% of the enumerated population also live in Funafuti, with the remaining total distributed across the Outer Islands.

Table 12. *Internet access by island and sex, 2022*

Island	Population			Access to the internet			Access to the internet (%)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Funafuti	3,438	3,164	6,602	1,555	1,465	3,020	63	64	64
Outer Islands	2,060	1,970	4,030	902	828	1,730	37	36	36
Nanumea	317	293	610	144	135	279	6	6	6
Nanumaga	215	176	391	114	68	182	5	3	4
Niutao	272	278	550	111	124	235	5	5	5
Nui	257	257	514	100	98	198	4	4	4
Vaitupu	524	483	1,007	241	211	452	10	9	10
Nukufetau	299	282	581	104	96	200	4	4	4
Nukulaelae	156	185	341	81	87	168	3	4	4
Niulakita	20	16	36	7	9	16	0	0	0
Tuvalu	**5,498**	**5,134**	**10,632**	**2,457**	**2,293**	**4,750**	**100**	**100**	**100**

The proportion of females with internet access in the age groups 10–14 years through 40–44 years is generally higher than that of males, except for the age group 30–34 years. However, the reverse is observed in the age groups 45–49 years and 75 years and above. The highest-ranked purpose for using the internet is to access social media, such as Facebook, Instagram, TikTok, etc. The second highest purpose is sending and receiving emails, and the third is downloading media and games. People are more likely to own a mobile telephone compared to tablets or laptops.
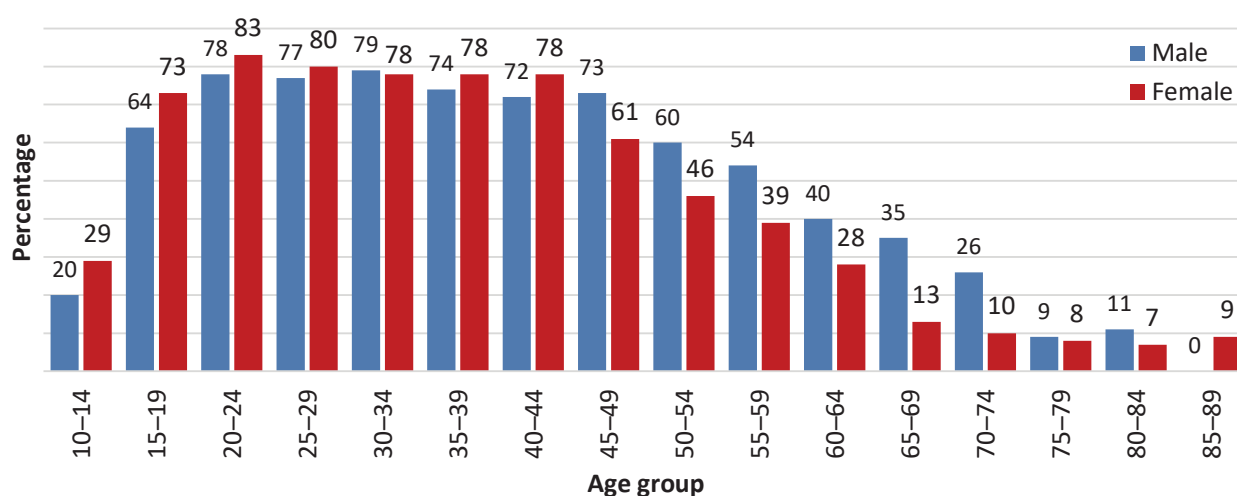
Figure 11. *Percentage of resident population aged 10 years and over with internet access by age group, 2022*
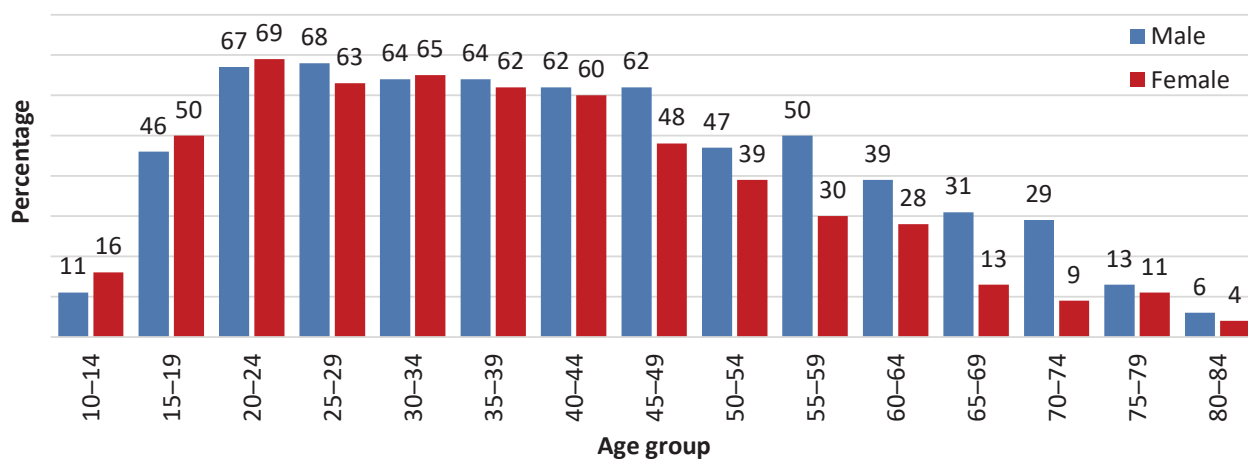
Figure 12. *Percentage of resident population aged 10 years and over with a mobile telephone by age and sex, 2022*

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5. Employment and economic well-being

5.1. Economic activity

The Tuvalu 2022 Census utilised the labour force module designed by the International Labour Organization (ILO). The key indicators produced from the module include the following:

1. **Labour force participation rate** – percentage of the working population who are economically active
2. **Employment-population ratio** – ratio of the working population who are formally employed
3. **Unemployment rate** – percentage of the working population who are classified as unemployed

Unemployed people are defined as those who are actively searching for work and are available to work but have not been employed in the last seven days. **Figure 13** shows the number of residents classified by economic activity status.
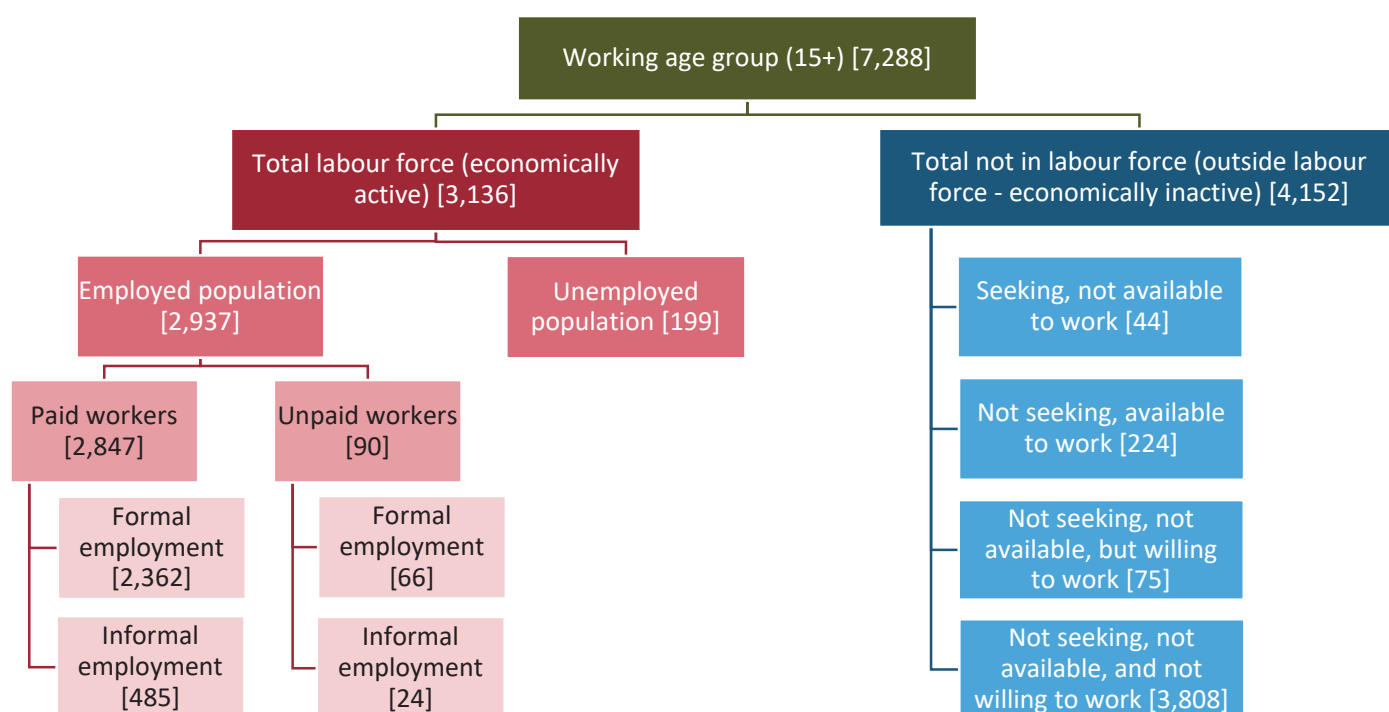
Figure 13. *Labour force status of resident population, 2022*

In 2022, about 6% of the resident population was unemployed. In comparison, the unemployment rate reported for 2017 was significantly higher, likely due to changes in the definition of unemployment.

Table 13. *Labour force indicators*

Indicators	2017	2022
Labour force participation rate	49.3	43.0
Employment-population ratio	35.2	40.3
Unemployment rate	28.5	6.3

Figure 14. *Disparity in labour force indicators by sex, 2022*
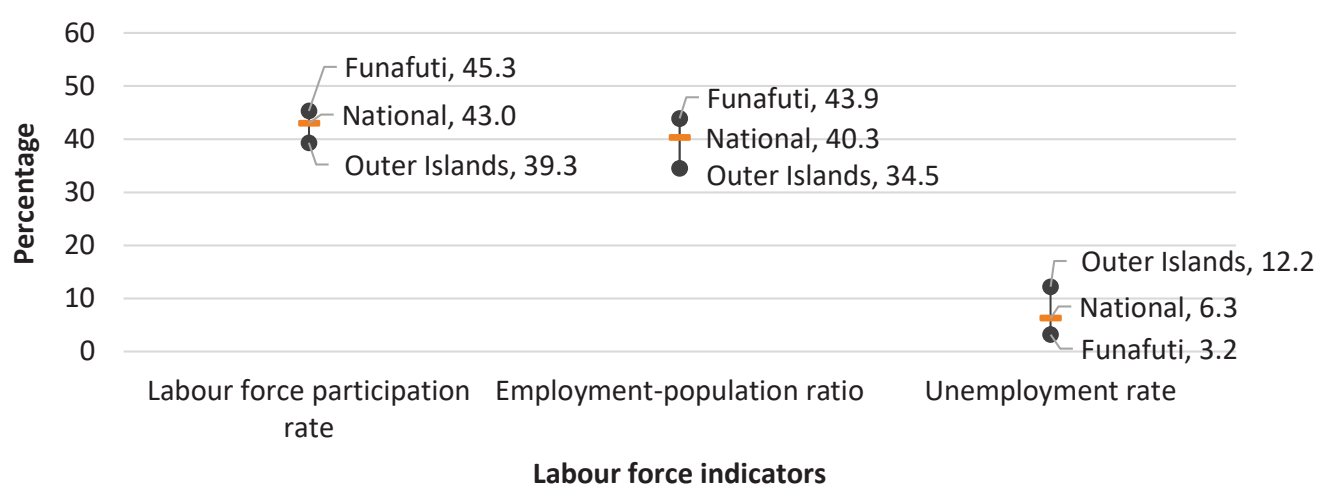
Figure 15. *Disparity in labour force indicators by region, 2022*

Figure 14 shows that the economic activity rates are higher for males than females. However, there is no significant gender disparity in unemployment rates in the country. **Figure 15** shows that disparities exist between the regions when looking at labour force participation and employment-population ratio indicators. The unemployment rate in rural areas appears to be higher in the Outer Islands. This suggests that more people in the Outer Islands are actively searching for work, and available to work, but are not employed.

5.2. Industry of employment

Table 14 shows that a significant proportion of the working population is employed in public service. There is not a significant difference between men and women in the industries of employment across the regions. There is also little disparity in the proportion of the population working in the industries between urban and rural areas.

Table 14. *Percentage of residents aged 15 years and over by type of industry, according to the International Standard Industry Classification (ISIC[3]), 2022*

Type of industry	Region								
	Urban			Rural			Tuvalu		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
A - Agriculture, forestry and fishing	3.3	0.5	1.9	5.1	0.6	2.9	4.0	0.5	2.3
B - Mining and quarrying	0.1	0.0	0.1	0.2	0.0	0.1	0.1	0	0.1
C - Manufacturing	5	2.1	3.6	7	3.5	5.3	5.7	2.7	4.2
D - Electricity, gas, steam, and air conditioning supply	0.6	0.0	0.3	1.3	0.0	0.6	0.9	0.0	0.5
E - Water supply, sewerage, waste management and remediation activities	0.6	0.1	0.4	2.1	0.1	1.1	1.2	0.1	0.7
F - Construction	5.2	0.5	2.9	5.6	0.2	2.9	5.4	0.4	2.9
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	3.2	3.9	3.5	3.5	1.9	2.7	3.3	3.1	3.2
H - Transportation and storage	3.9	0.6	2.3	0.8	0.2	0.5	2.7	0.4	1.6
I - Accommodation and food service activities	0.5	1.0	0.7	0.3	0.5	0.4	0.4	0.8	0.6
J - Information and communications	1.5	1.0	1.3	1.0	0.2	0.6	1.3	0.7	1.0
K - Financial and insurance activities	3	3.4	3.2	0.6	1.1	0.9	2.1	2.6	2.3
M - Professional, scientific, and technical activities	2.1	1.6	1.9	1.0	0.4	0.7	1.7	1.1	1.4
N - Administrative and support service activities	2.9	2.1	2.5	2.3	2.2	2.2	2.6	2.1	2.4
O - Public administration and defence, compulsory social security	15.3	11.1	13.2	8.2	4.4	6.3	12.6	8.6	10.6
P - Education	1.1	3.6	2.3	2.6	8.1	5.3	1.6	5.3	3.4
Q - Human health and social work activities	1.2	3.3	2.2	0.7	1.7	1.2	1.0	2.7	1.8
R - Arts, entertainment, and recreation	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1
S - Other service activities	1.4	0.9	1.2	0.8	0.6	0.7	1.2	0.8	1.0
T - Activities of households as employers, undifferentiated goods- and service-producing activities of households for own use	0.0	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1
U - Activities of extraterritorial organisations and bodies	0.2	0.2	0.2	0.2	0.0	0.1	0.2	0.1	0.1

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3 The ISIC refers to the International Standard Industrial Classification of All Economic Activities, which is the internationally recognised means by which productive activities are categorised for related statistical collection and reporting (UNSD 2008).

5.3. Occupational distribution

Figure 16 shows the occupational distribution of the workforce based on the International Standard Classification of Occupation (ISCO-08) (ILO 2023). The data based on the first-level classification under this classification system shows that managers, professionals and technicians are the most common occupations. It is also very likely that most of the population in this category work in public administration.
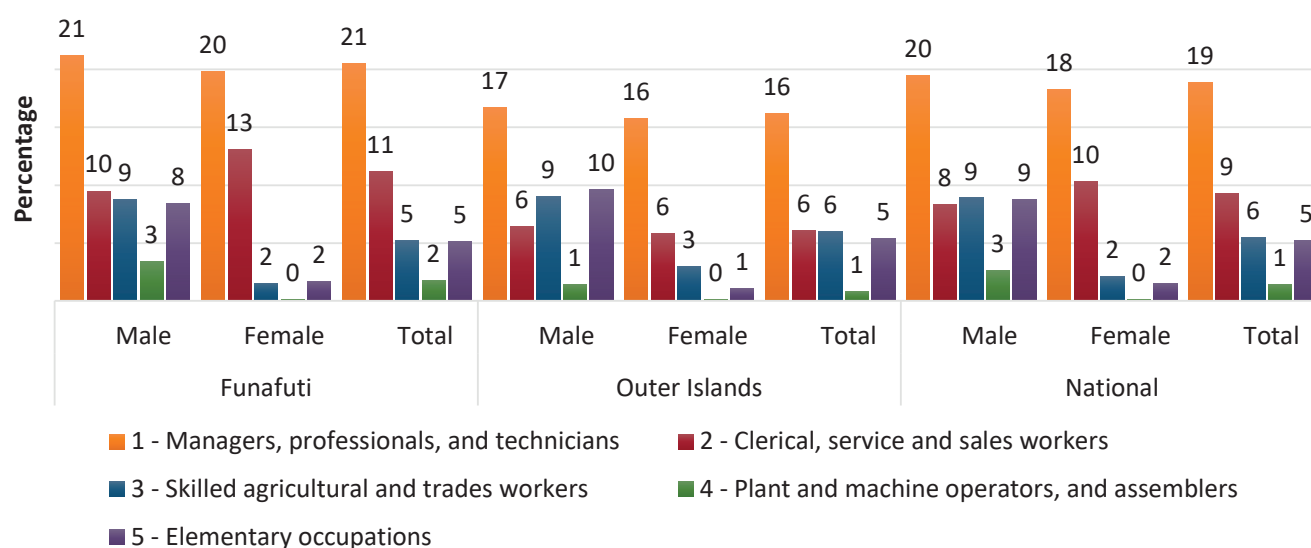
Figure 16. *Proportion of population by occupation, sex and region, 2022*

5.4. Youth unemployment

Figure 17 shows that the unemployment rates for the target age groups are higher in rural areas. There is not a significant difference in the unemployment rates for males and females.
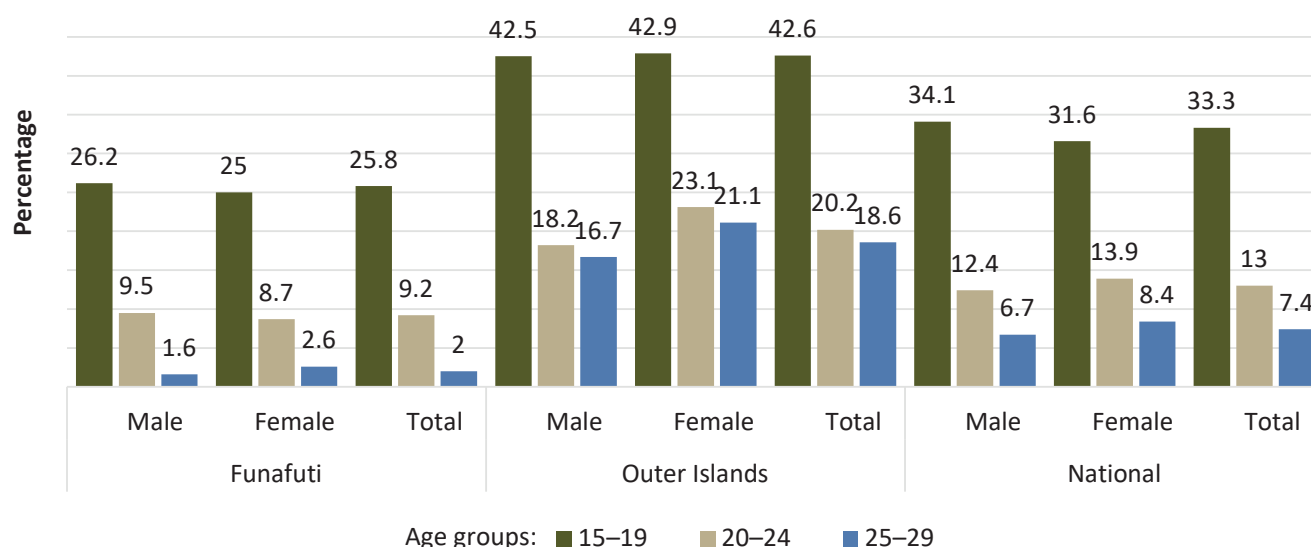
Figure 17. *Unemployment rate of population in age groups 15–19, 20–24, and 25–29 years, by sex and region, 2022*

6. Fisheries, agriculture, livestock and handicrafts

6.1. Fishing

The most commonly used method of fishing is handline, which is mostly done in the lagoon where 1 out of every 2 respondents engaged in fishing indicated using this method all year round and the remaining only used it during certain periods of the year. The most common location for fishing is the lagoon (34%), second is the outer reef (23%) where trawling is mostly used, third is the reef (20%) where fishing rods are mostly used, and fourth is the open water (20%) where trawling is again the primary method used.

Table 15. *Fishing methods used in the last 30 days and location, 2022*

Fishing method	Count			% of all HHs		
	Tuvalu	Funafuti	Outer Is.	Tuvalu	Funafuti	Outer Is.
Handline	101	34	67	5.6	3.5	8.2
Fishing rod	91	24	67	5.1	2.4	8.2
Gillnet	63	15	48	3.5	1.5	5.9
Cast net	47	7	40	2.6	0.7	4.9
Scoop netting	24	5	19	1.3	0.5	2.3
Spearfishing (night)	38	23	15	2.1	2.3	1.8
Spearfishing (day)	11	6	5	0.6	0.6	0.6
Gleaning	2	0	2	0.1	0.0	0.2
Trawling	98	22	76	5.4	2.2	9.3
Fish fence	7	1	6	0.4	0.1	0.7
Other method	3	1	2	0.2	0.1	0.2

6.2. Agriculture

Table 16. *Vegetables harvested in the last 30 days, 2022*

Vegetable	Count			% of all HHs		
	Tuvalu	Funafuti	Outer Is.	Tuvalu	Funafuti	Outer Is.
Cucumber	42	22	20	2.3	2.2	2.4
Chinese cabbage	30	18	12	1.7	1.8	1.5
Bell pepper/Capsicum	12	4	8	0.7	0.4	1.0
Tree spinach/Bele/Pele	5	4	1	0.3	0.4	0.1
Chili pepper	4	1	3	0.2	0.1	0.4
Corn	2	1	1	0.1	0.1	0.1
Eggplant	7	6	1	0.4	0.6	0.1
Lettuce	5	4	1	0.3	0.4	0.1
Spring/Green onion	4	4	0	0.2	0.4	0.0
Tomato	11	6	5	0.6	0.6	0.6
Pumpkin/Squash	11	3	8	0.6	0.3	1.0
Bele	8	7	1	0.4	0.7	0.1

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Around 19% of households in Tuvalu harvested crops, vegetables or fruits from one or more plots of land used for agricultural purposes. Agricultural activities are mostly for subsistence purposes. **Table 16** shows that cucumber was the most common vegetable harvested in the 30 days prior to the interview.

Table 17. *Fruits harvested in the last 30 days, 2022*

Crops	Count			% of all HHs		
	Tuvalu	Funafuti	Outer Is.	Tuvalu	Funafuti	Outer Is.
Young coconuts	19	0	19	1.1	0.0	2.3
Mature coconuts	37	0	37	2.1	0.0	4.5
Banana/Pata/Fuamaulalo	59	7	52	3.3	0.8	6.3
Breadfruit/Mei	41	1	40	2.3	0.1	4.9
Pandanus/Fala	6	1	5	0.3	0.1	0.6
Lime/Lemon	0	0	0	0.0	0.0	0.0
Pawpaw/Papaya/Olesi	49	11	38	2.7	1.2	4.6
Melon (water, rock)/ Meleni	1	0	1	0.1	0.0	0.1
Fresh toddy	8	1	7	0.4	0.1	0.9
Other fruits	2	1	1	0.1	0.1	0.1

Table 17 shows that banana was the most common fruit harvested in the 30 days before the interview. **Table 18** shows that the most common crop harvested 30 days before the interview was the swamp taro, which is more likely to be harvested in the Outer Islands. **Table 16** also shows that there is no major difference in vegetable harvesting between Funafuti and the Outer Islands. However, significant differences are observed in the harvesting of fruits and crops.

Table 18. *Crops harvested in the last 30 days, 2022*

Crops	Count			% of all HHs		
	Tuvalu	Funafuti	Outer Is.	Tuvalu	Funafuti	Outer Is.
Swamp taro/Pulaka	292	15	277	16.2	1.5	33.8
Taro/Pulaka	207	11	196	11.5	1.1	23.9
Cassava/Tapioka	16	5	11	0.9	0.5	1.3
Felo	3	0	3	0.2	0.0	0.4
Laukatafa	28	0	28	1.6	0.0	3.4
Sweet potato/Kumala	59	22	37	3.3	2.2	4.5
Other crops	57	36	21	3.2	3.7	2.6

It is important to note that special consideration should be taken when comparing results on agriculture from the 2017 Mini-census and the 2022 Census since the recall period has changed. The recall period used in 2017 was one year, whereas the recall period used in 2022 was 30 days.

6.3. Livestock

Overall, there is an increase in the number of households raising pigs in both Funafuti and the Outer Islands, while a decrease is seen with respect to chickens. There is an increase in the number of households raising ducks in Funafuti and a decrease in the Outer Islands. The main reason for raising livestock was for subsistence use.

Table 19. *Households raising livestock, 2017–2022*

Region	2017 Tuvalu Census			2022 Tuvalu Census			% Change		
	Pigs	Chicken	Ducks	Pigs	Chicken	Ducks	Pigs	Chicken	Ducks
Count									
Tuvalu	1,242	682	150	1,292	604	147	4.0	-11.4	-2.0
Funafuti	557	93	10	587	54	25	5.4	-41.9	150.0
Outer Islands	685	589	140	705	550	122	2.9	-6.6	-12.9
% of HHs									
Tuvalu	73.6	40.4	8.9	71.8	33.6	8.2			
Funafuti	33.0	5.5	0.6	59.9	5.5	2.6		Not applicable	
Outer Islands	40.6	34.9	8.3	86.1	67.2	14.9			

Table 20. *Population of livestock, 2017–2022*

Region	2017 Tuvalu Census			2022 Tuvalu Census		
	Pigs	Chicken	Ducks	Pigs	Chicken	Ducks
Count						
Tuvalu	10,894	15,443	1,209	11,341	13,986	1,931
Funafuti	3,772	1,735	56	4,451	1,230	264
Outer Islands	7,122	13,708	1,153	6,980	12,756	1,667
% by livestock						
Tuvalu	39.5	56.1	4.4	41.6	51.3	7.1
Funafuti	67.8	31.2	1.0	74.9	20.7	4.4
Outer Islands	32.4	62.4	5.2	32.6	59.6	7.8
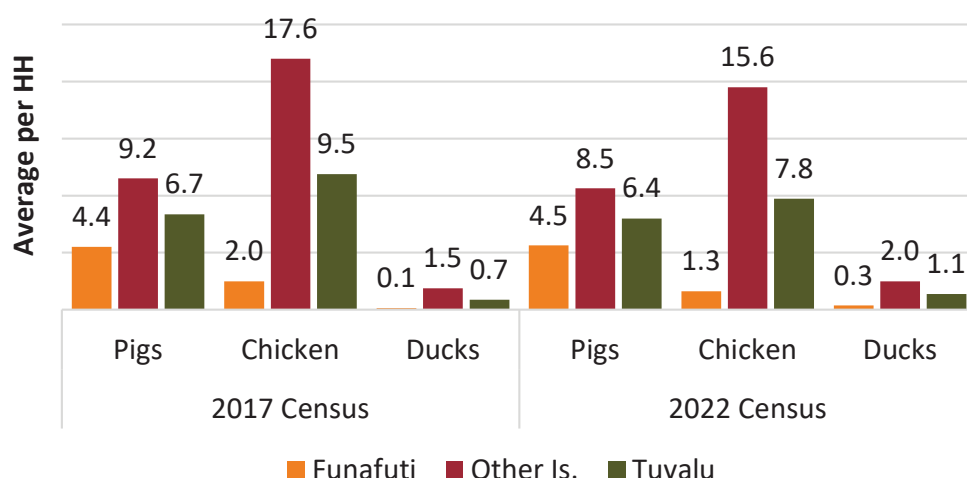
Figure 18. *Average number of livestock per household, 2017–2022*

Regarding the number of livestock, chickens have the highest overall proportion and are most likely to be farmed in the Outer Islands. However, the proportion of pigs is highest in Funafuti but, in terms of absolute numbers, there are more in the Outer Islands. Overall, the population of pigs increased by about 4% due to the increase in the number of pigs in Funafuti. Chickens decreased by 9%, influenced by a decrease in chickens in both Funafuti and the Outer Islands. The duck population increased by almost 60%, driven by a rise in both Funafuti and the Outer Islands.
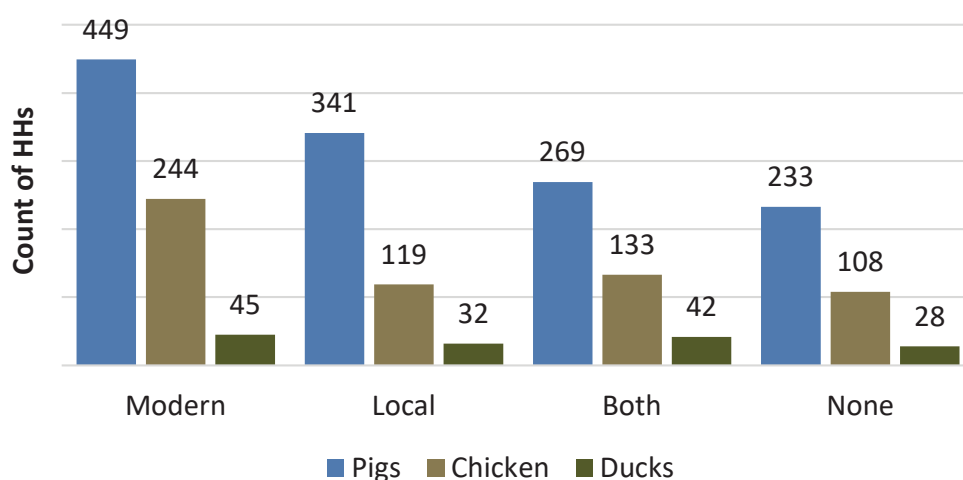
Figure 19. *Housing for livestock, 2022*

The average number of livestock per household appears to be decreasing compared to 2017. However, a detailed look at the graph shows that the average number of ducks and pigs is slightly increasing in Funafuti. This may be due to the increased number of households residing in islets in Funafuti. Although most livestock housing is modern, open flush is still generally used to dispose of livestock waste.

6.4. Handicrafts

The graphs in **Figure 20A** show a significant decrease in the proportion of households producing handicrafts: from about 24% in 2017 to less than 10% in 2022. It should be noted that the same was also observed when comparing the results from the 2017 Mini-PHC to the 2012 PHC. This results in an even greater decrease when comparing the 2022 PHC to the 2012 PHC. The proportion of households producing string, brooms, fans and baskets declined from over 45% in 2017 to about 12% in 2022 (**Figure 20B**). However, there is a significant increase in the proportion of households engaged in producing other handicrafts. The same is observed in Funafuti (urban) and the Outer Islands (rural).
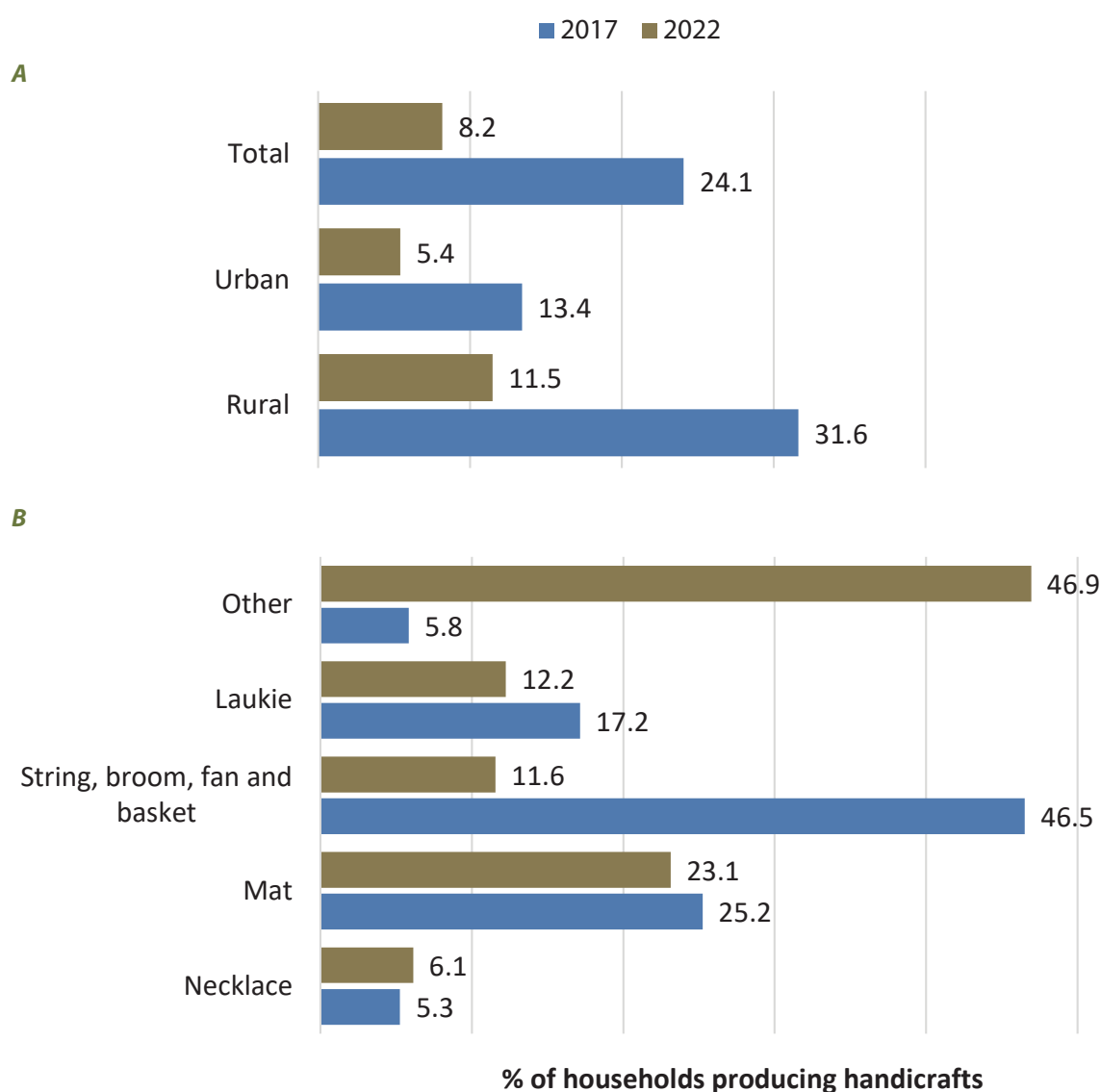
Figure 20. *Proportion of households producing handicrafts a year before the census, 2022*

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7. People with disability

7.1. Method used to collect data on disability

The questionnaire for the Tuvalu 2022 PHC utilised the set of questions from the Washington Group on Disability Statistics to gather data on disability. The questions are designed to capture various disability domains, such as vision, hearing, self-care, cognition and walking, as well as the severity of the disability. The questions, addressed to the population aged 5 years and over, are listed below:

1. Does (name) have difficulty in seeing, even if wearing glasses?
2. Does (name) have difficulty in hearing, even if wearing a hearing aid?
3. Does (name) have difficulty in walking or climbing steps?
4. Does (name) have difficulty in remembering or concentrating?
5. Does (name) have difficulty with self-care, such as washing all over and dressing?
6. Does (name) have difficulty communicating using customary language, such as understanding or being understood?

The corresponding responses are then recorded in one of the following forms:

1. No, no difficulty
2. Yes, some difficulty
3. Yes, a lot of difficulty
4. Cannot do at all

The three disability categories that are possible when applying the Washington Group tools are outlined below.

Table 21. *Disability classification based on the Washington Group on Disability Statistics*

Category	Definition
Grade 1: At least some difficulty	Those who stated that they have "some difficulty" or "a lot of difficulty" or "cannot do at all" in at least one of the domains
Grade 2: At least lots of difficulties	Those who stated that they have "a lot of difficulty" or "cannot do at all" in at least one of the domains
Grade 3: Cannot do at all	Those who stated that they "cannot do at all" in any domains

7.2. Disability prevalence by severity and location

Table 22 presents the number (and percentage) of people aged 5 years and over experiencing any of the six disability domains by level of disability and location. The disability domains used in this analysis include seeing, hearing, walking, remembering, communicating and self-care.

Table 22. *Population aged five years and over by disability classification and location, 2022*

Island	Reported number of persons experiencing			Total population aged five years and over	Prevalence rates		
	Difficulty		Cannot do at all: Grade 3		Grade 1	Grade 2	Grade 3
	Grade 1	Grade 2					
Nanumea	111	16	7	534	20.8	3.0	1.3
Nanumaga	51	15	4	341	15.0	4.4	1.2
Niutao	103	27	9	486	21.2	5.6	1.9
Nui	151	28	14	458	33.0	6.1	3.1
Vaitupu	187	32	13	900	20.8	3.6	1.4
Nukufetau	77	24	7	506	15.2	4.7	1.4
Funafuti	535	89	23	5,733	9.3	1.6	0.4
Nukulaelae	58	8	3	300	19.3	2.7	1.0
Niulakita	5	0	0	30	16.7	0.0	0.0
Total	**1,278**	**239**	**80**	**9,288**	**13.8**	**2.6**	**0.9**

As the table shows, 1,278 individuals experience at least one form of disability, ranging from the inability to do anything to experiencing lots of difficulties and some difficulties performing in at least one of the six functional areas. Nui has the highest disability rate for Grade 1 and it is also home to the largest proportion of persons with the most severe form of disability (cannot do at all [Grade 3]): about 3.0% of Nui's population has a disability that restricts them from performing any function in at least one of the functional areas. About 0.9% of the total population cannot perform any function in at least one of the six domains.

7.3. Disability type and location

Table 23 presents the number of people aged 5 years and over who experience "lots of difficulties" or "cannot function" because of their disability, by disability domain and location.

Table 23. *Population aged five years and over experiencing lots of difficulties (Grade 2) or "cannot do" a task (Grade 3) by type of disability and location, 2022*

Island	Cannot do at all or experience lots of difficulties						Total
	Seeing	Hearing	Walking	Remembering	Self-care	Communicating	
Funafuti	21	18	50	18	27	22	156
Other Islands	26	33	108	26	34	17	244
Total	**47**	**51**	**158**	**44**	**61**	**39**	**400**

Note: Some individuals may report multiple disabilities.

Table 23 shows that the domain with the highest occurrence of disability among those who reported having "lots of difficulties" (Grade 2) or who "cannot perform a function" (Grade 3) is walking, followed by inability or difficulty performing self-care. Nui reported the highest percentage of people with disabilities in the walking domain. About 10% of those with Grade 2 or Grade 3 disabilities cannot remember or have "lots of difficulties" in remembering, while the lowest prevalence is communication-related challenges.

7.4. Disability status and care

Figure 21 shows that the prevalence of disability increases as people grow older. This is understandable, considering the health complications people encounter as they age.
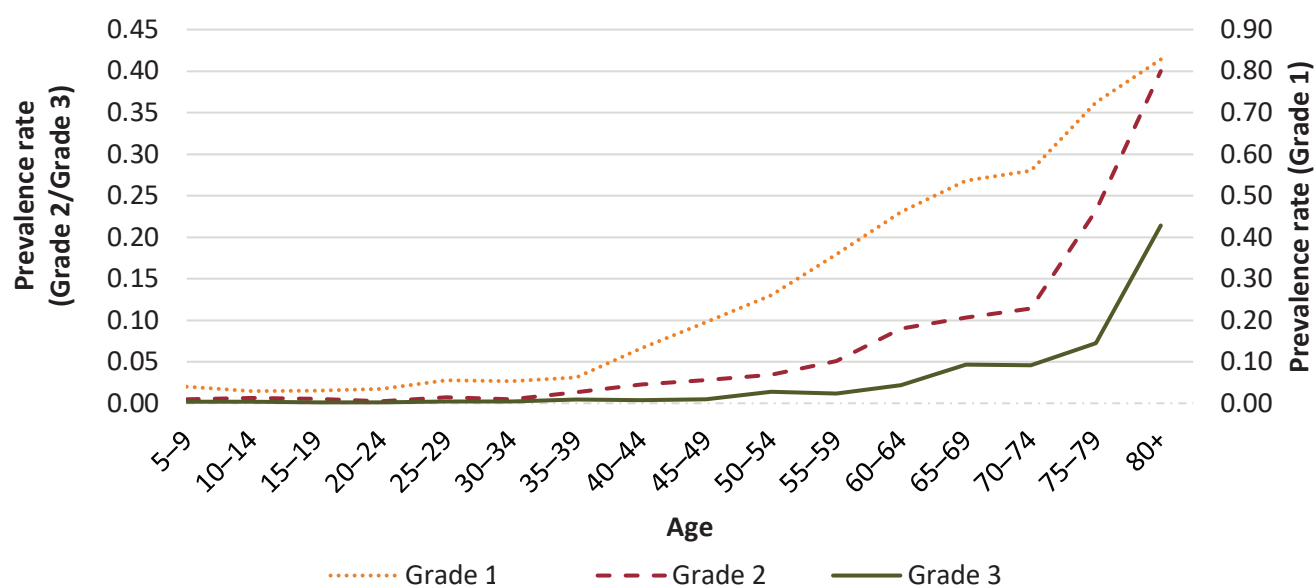
Figure 21. *Prevalence of disability by age and severity status, 2022*

Over 75% of individuals aged 80 years and above reported experiencing some difficulty with daily activities in at least one domain. In the same age group, about a third stated they faced "a lot" of difficulties, while just over 20% indicated they could not perform at least one function in any of the six domains assessed.

Table 24. *Population aged five years and over experiencing lots of difficulties (Grade 2) or "cannot do" a task (Grade 3) by a care provider, 2022*

Caregiver	Grade 2 or Grade 3	
	Number	**%**
Relatives/Friends	169	90.3
Nobody	15	8.1
Other	2	1.1
Total	**186**	**100.0**

Almost all persons with severe disabilities are cared for by relatives. About 8% of those with a Grade 2 or Grade 3 disability care for themselves. However, over half of those experiencing a Grade 2 or Grade 3 disability (52.7%) reported receiving assistance from relatives. Similarly, about 1 of every 10 persons with disabilities in these categories received assistance from the government, 5.0% reported receiving help from the community, and about 9.0% from other organisations.

8. Health status and risk factors

8.1. Reported health conditions

About 7% of the resident population reported suffering from one or more types of illness in the month prior to the census. Of those who reported being ill, about 46 suffered from one condition, 15% suffered from two conditions, and the remaining 7% suffered from three or more conditions.

Table 25. *Distribution of resident population by illness status 30 days before the census, 2022*

Number of cases	Persons with cases	%
0	9,901	93.1
1	495	4.7
2	159	1.5
3	58	0.5
4	12	0.1
5	7	0.1
Total	**10,632**	**100.0**
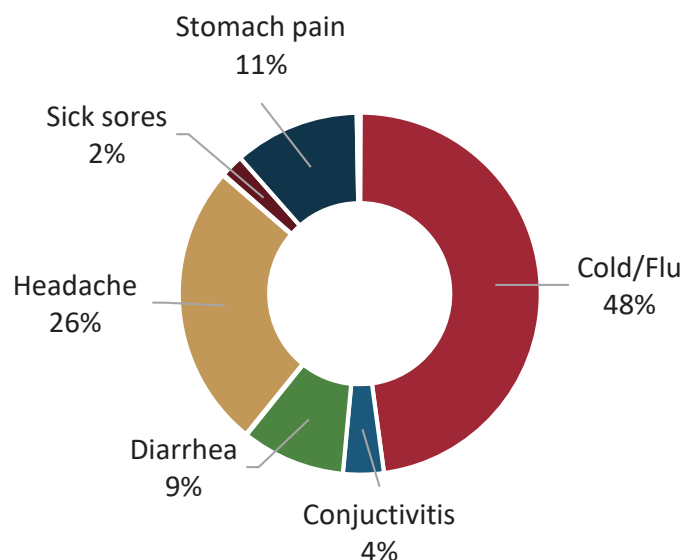
Figure 22. *Reported health conditions in the last 30 days, 2022*

Figure 22 shows that, of those who reported illness, cold/flu was the most commonly reported health condition 30 days before the interview, with a frequency of 511. About 1 of every 5 persons who reported health problems stated that the condition prevented them from undertaking their usual activities, and more than 1 of every 10 persons stated that it resulted in loss of income. Moreover, about 9 of every 10 reported cases sought medical care and, in most cases, at a hospital. The main reason for not seeking health care was that the health condition posed no severe risk (49.6%). It is also important to note that about 3.0% of the cases in which patients sought care reported having visited a traditional healer.

8.2. Non-communicable diseases
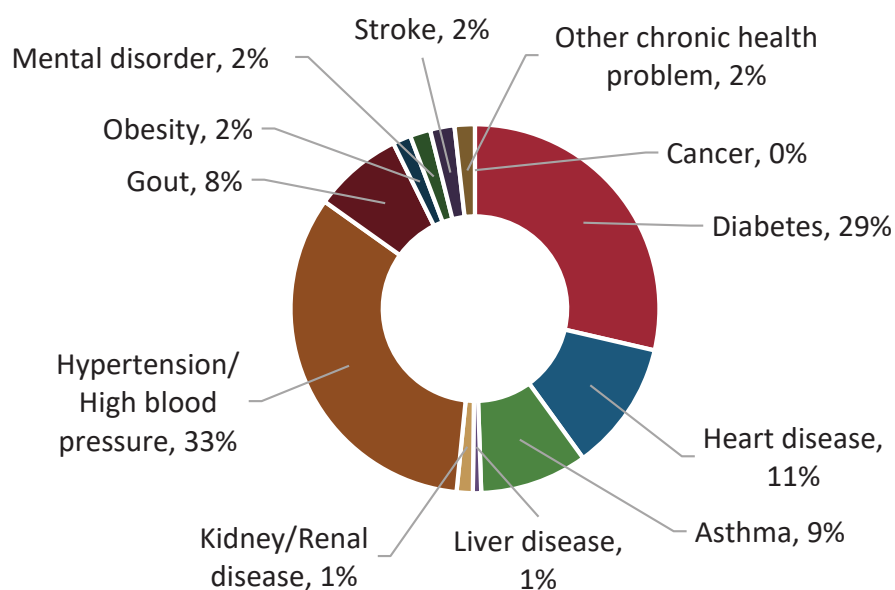
Figure 23. *Percentage of reported non-communicable diseases, 2022*

About 4% of the population reported suffering from non-communicable diseases (NCDs). Of these, 73% had one NCD, 21% had two NCDs and about 5% had three or more NCDs. As shown in **Figure 23**, about 3 out of 10 reported NCDs were hypertension or high blood pressure. About 78% of those living with NCDs reported taking medication, and about 2 out of 10 cases did not visit a health facility in the three months before the interview. About 3 of every 5 cases reported that the NCD did not prevent them from performing their usual activities.

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8.3. Alcohol, kava and tobacco consumption
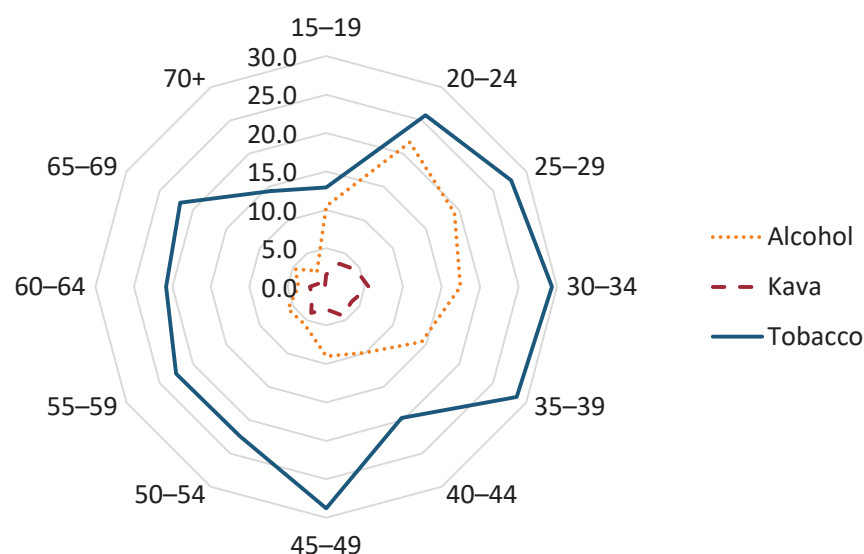
Figure 24. *Alcohol, kava and tobacco consumption among the population aged 15 years and over, 2022*

Figure 24 shows that residents aged 20–34 years and those aged 45 years and over are more likely to consume alcohol and tobacco compared to other age groups. The age group 20–34 years has the highest occurrence of residents consuming kava. Overall, about 24.0% of residents consume alcohol, 24.4% consume tobacco, and 3.3% consume kava.

9. Components of population change

Fertility, mortality and migration, collectively known as the components of population change, determine the size, composition and structure of any population at any given time. Drawing on data primarily obtained through the 2022 PHC, this chapter reports on all three components that contributed to the changes in population size during the intercensal years.

9.1. Fertility and entry into motherhood

9.1.1. Age at first birth: Marker of entry into motherhood

Like other 2020 round censuses conducted globally, the 2022 Tuvalu Census collected information on age at first birth, offering an opportunity to examine patterns of entry into motherhood in the country. **Figure 25** presents the age patterns of first-time mothers and the age at first birth for Tuvalu in 2022. This showed that about three quarters of mothers had their first birth before the age of 25 years, while the average mother had her first child when she was 22.8 years.
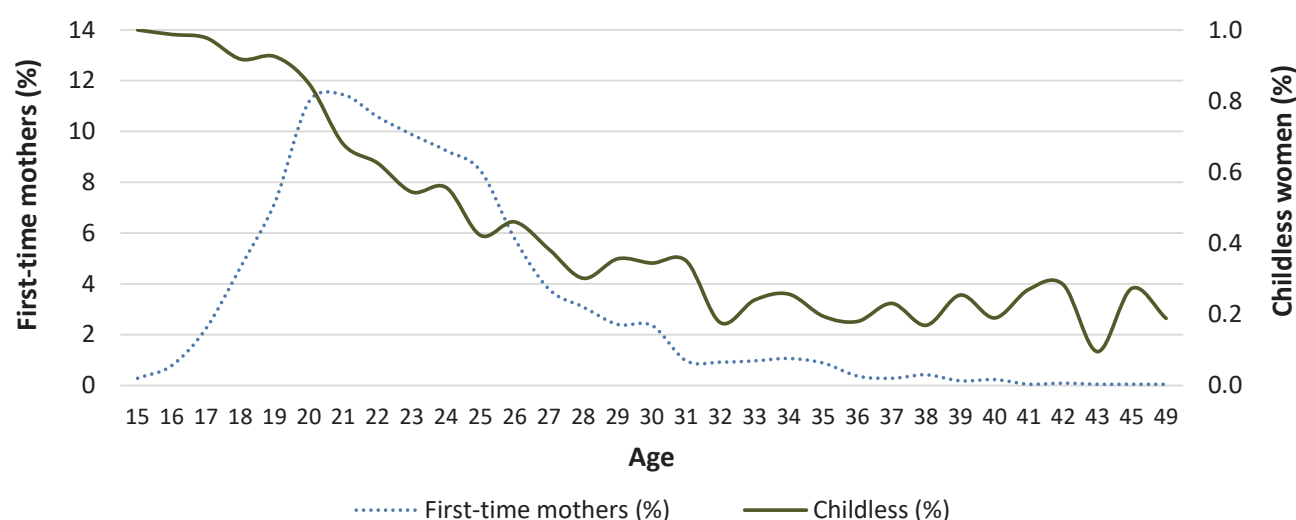
Figure 25. *Distribution of first-time mothers and proportion of women without a live birth, 2022*

Table 26. *Age at first birth and proportion of childless women by age group, 2017–2022*

Age group (years)	2017			2022		
	Number of women	Number of childless women	Percentage of childless women	Number of women	Number of childless women	Percentage of childless women
15–19	454	438	96.5	414	398	96.1
20–24	458	302	65.9	395	254	64.3
25–29	421	131	31.1	424	163	38.4
30–34	362	74	20.4	391	109	27.9
35–39	280	47	16.8	309	63	20.4
40–44	212	38	17.9	255	56	22.0
45–49	227	32	14.1	198	35	17.7
Mean age at first birth	24.6			27.6		

The average age at first birth can also be inferred indirectly from the distribution of childless women by age, shown in **Table 26**. Accordingly, the indirectly estimated age at first birth for 2022 was 27.6 years, significantly higher than the direct estimate presented above for the same year and the comparable indirectly estimated value of 24.6 years for 2017. The difference between the direct and indirect estimates for 2022 is not surprising, given that the indirectly estimated mean age at first birth represents neither the experience of an actual cohort nor adjusted for changing childbearing patterns over time.

9.1.2. Lifetime fertility and completed family size

Like all previous censuses, the 2022 Tuvalu Census also collected data on children born to women of reproductive age. **Table 27** shows the distribution of women by number of children ever born from the 2022 Tuvalu Census. It also shows the average number of children born per woman, also known as the mean parity or achieved fertility rate. It is also known as the lifetime fertility rate because it captures all live births that women have had from when they turned 15 years old until the census date.

Table 27. *Distribution of women by age and total number of children born, 2022*

Age	0	1	2	3	4	5	6+	Not stated	Total mothers	Total women	Total children ever born	Average number of children per woman
15–19	398	12	4	0	0	0	0	1	16	415	20	0.05
20–24	254	71	51	15	3	1	0	2	141	397	235	0.59
25–29	163	96	68	72	19	2	4	2	261	426	559	1.31
30–34	109	51	48	81	58	30	14	2	282	393	860	2.19
35–39	63	33	40	55	50	36	32	2	246	311	876	2.82
40–44	56	18	31	36	43	40	31	0	199	255	774	3.04
45–49	35	22	19	24	24	25	49	1	163	199	695	3.49
50–54	40	14	20	30	32	30	40	1	166	207	713	3.44
55–59	38	17	41	46	34	34	43	1	215	254	835	3.29
60–64	58	23	27	48	42	21	30	0	191	249	691	2.78
65–69	35	20	17	33	24	18	19	0	131	166	467	2.81
70–74	22	9	18	19	19	8	10	0	83	105	287	2.73
75–79	8	7	4	2	4	6	6	0	29	37	110	2.97
80–84	3	2	4	4	3	2	10	0	25	28	113	4.04
85+	2	5	4	0	3	0	5	0	17	19	60	3.16
Total	**1,284**	**400**	**396**	**465**	**358**	**253**	**293**	**12**	**2,165**	**3,461**	**7,295**	**2.11**

About 37% of all women aged 15 years and over had no live births, about 20% had one child, 50% had between three and five children, and about 10% had six or more children. The average number of children per woman for all women aged 15 years and above was 2.11.

Table 28 summarises the average number of children per woman from the 1968–2022 Tuvalu censuses. When the censuses of the past 50 years are combined, the average number of children born to women aged 15–49 years has decreased, from 2.81 in 1968 to less than two children per woman in 2012 and about 1.7 in 2022. Generally, the decline appears pervasive, with all age groups experiencing a decrease in the average number of children per woman. The highest drop was recorded for women in older age groups, with a 40–46% decline between 1968 and 2022.

Table 28. *Mean number of children ever born by age group, 1968–2022*

Age group	1968	1973	1991	2012	2022
15–19	0.07	0.04	0.08	0.03	0.05
20–24	0.83	0.7	0.64	0.66	0.59
25–29	2.27	1.82	1.45	1.77	1.31
30–34	3.62	2.87	1.95	2.66	2.19
35–39	5.11	4.15	2.69	3.55	2.82
40–44	5.66	5.43	3.41	3.79	3.04
45–49	5.9	6.09	3.56	3.65	3.49
All ages	2.81	2.51	1.85	1.96	1.68

One way to capture the fertility experience of an actual cohort is to examine the mean number of children for those aged 45–49 years. This measure is also known as completed family size, as the women in this age group are nearing or have already completed their reproductive period and are no longer expected to have additional children. These values for all of Tuvalu and by island are shown in *Table 29*.

Table 29. *Average completed family size per woman aged 45–49 years by island, 1968–2022*

Island	1968	1973	1991	2012	2022	Absolute change (1968–2022)
Nanumea	5.07	6.86	4.62	5.24	2.62	-2.45
Nanumaga	6.4	5.41	4.11	3.62	2.87	-3.53
Niutao	6.4	7.33	3.21	3.10	2.42	-3.98
Nui	6.17	6.94	4.28	4.27	3.56	-2.61
Vaitupu	5.82	5.15	3.29	3.20	3.37	-2.45
Nukufetau	7.87	6.79	2.60	4.30	4.53	-3.34
Funafuti	5.06	5.19	3.6	3.55	3.67	-1.39
Nukulaelae	4.22	4.14	2.08	3.14	5.33	1.11
Niulakita	NA	5	NA	5	NA	NA
Tuvalu	**5.9**	**6.09**	**3.56**	**3.65**	**3.49**	**-2.41**

Nationally, women who completed their reproductive career in the late 1960s to early 1970s had, on average, about 6 children. However, as shown in *Table 29*, during the same period, in a few islands, the completed family size (i.e. the average number of children per woman among those

aged 45–49 years) exceeded more than 6 children. However, almost all islands experienced a substantial fertility decline starting in the early 1990s, which had continued unabated through 2022. The highest drop in completed family size, nearly 4 children per woman, was observed in Niutao, followed by Nanumaga and Nukufetau, which experienced a decline of over 3 children per woman.

9.1.3. Current or period fertility

Mean children ever born and completed family size are important fertility indicators; however, they have limitations: mean parity data lacks specificity concerning the event's timing, while completed family size reflects not current but historical fertility levels. For these reasons, alternative indicators, such as period or current fertility, are needed to capture recent fertility levels and patterns. These are the kind of data needed to plan maternal and child health services and prepare long-term population projections.
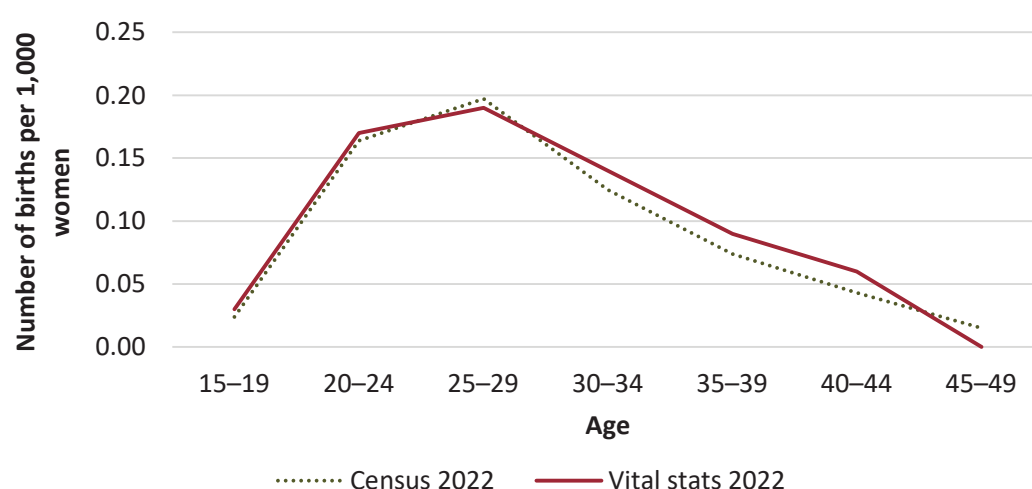
Figure 26. *Age-specific fertility rates, 2022*

One of the main questions on period fertility in the 2022 Tuvalu Census is the date of birth of the last-born child, from which the age-specific and total fertility rates can be calculated for any year before the census. **Figure 26** shows the age-specific fertility rate from the 2022 Tuvalu Census and the same indicator obtained from the civil registry data. Both the census and vital registration data show comparable age patterns of fertility. However, the implied total fertility rate from the registration data, 3.4 children per woman, was slightly higher than 3.2 reported in the 2022 Tuvalu Census.

In some instances, period rates generated from censuses and household surveys are known to underestimate the actual fertility level because of what is known as reference-period error. This issue arises because of the omission of some births, particularly when some women only report children born in the census year rather than the full 12-month period. However, this problem is not expected to be an issue in the Tuvalu 2022 Tuvalu Census for two reasons.

First, in the case of Tuvalu, the 12-month reference period was almost the same as the census year, as the census was conducted in December 2022. Second, the period rates presented in **Figure 26** are based on data on the exact birthdate of the child rather than on a 12-month

reference period, which further minimises any potential misrepresentation of the reference period. For these reasons, no corrections/adjustments for reference period errors were made to the census data. This also means that the most plausible explanation for the slight discrepancy in total and age-specific fertility rates from the census and the registration data is the late registration of births from previous years, particularly among older adults, which led to inflated age-specific and total fertility rates for the year.

9.2. Mortality and life expectancy

Mortality can be estimated directly from vital registration data, when available, or indirectly based on information on surviving household members, often collected in national censuses and surveys. The following subsection discusses results on infant, childhood, overall mortality rates and life expectancy at birth obtained through indirect methods. As the vital registration system in the country also captures deaths through the routine system, some of these data have also been explored to ascertain the consistency of the underlying patterns of mortality in the country.

9.2.1. Infant and under-five mortality rates

Figures 27 and 28 present indirectly estimated infant and under-five mortality rates from data on children ever born and still alive, obtained from women aged 20–49 years in Tuvalu's past six censuses. The estimates corresponding to women aged 15–19 years were excluded as these are often considered less reliable, partly due to the small number of births in this age group and due to typically higher than usual mortality risks among first births and births occurring to very young women.
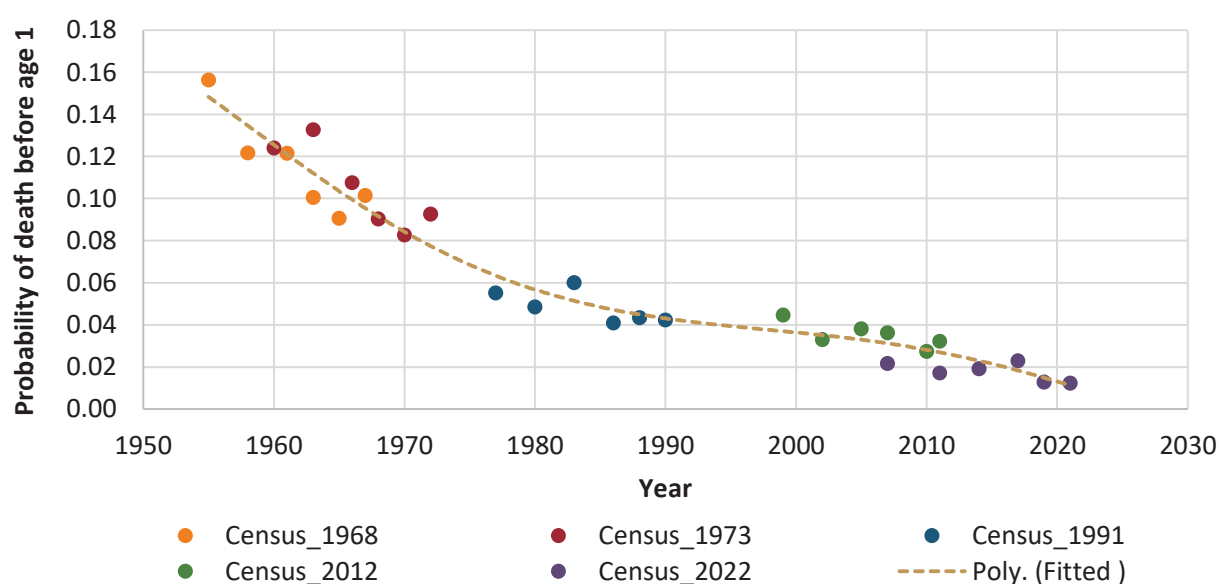

Figure 27. *Indirect estimates of infant mortality rate obtained from various censuses, 1955–2021*

The combined estimates from the five censuses (shown in the predicted lines from polynominal function) suggest a consistent decline in infant and under-five mortality rates over the past five

decades. The infant mortality rate in the country declined from around 142 per 1,000 live births in 1955 to around 100 in the mid-1960s, fewer than 70 per 1,000 in the mid-1970s, and just under 20 per 1,000 in 2015. For the most recent year, 2021, the rate was about 18 per 1,000 live births.
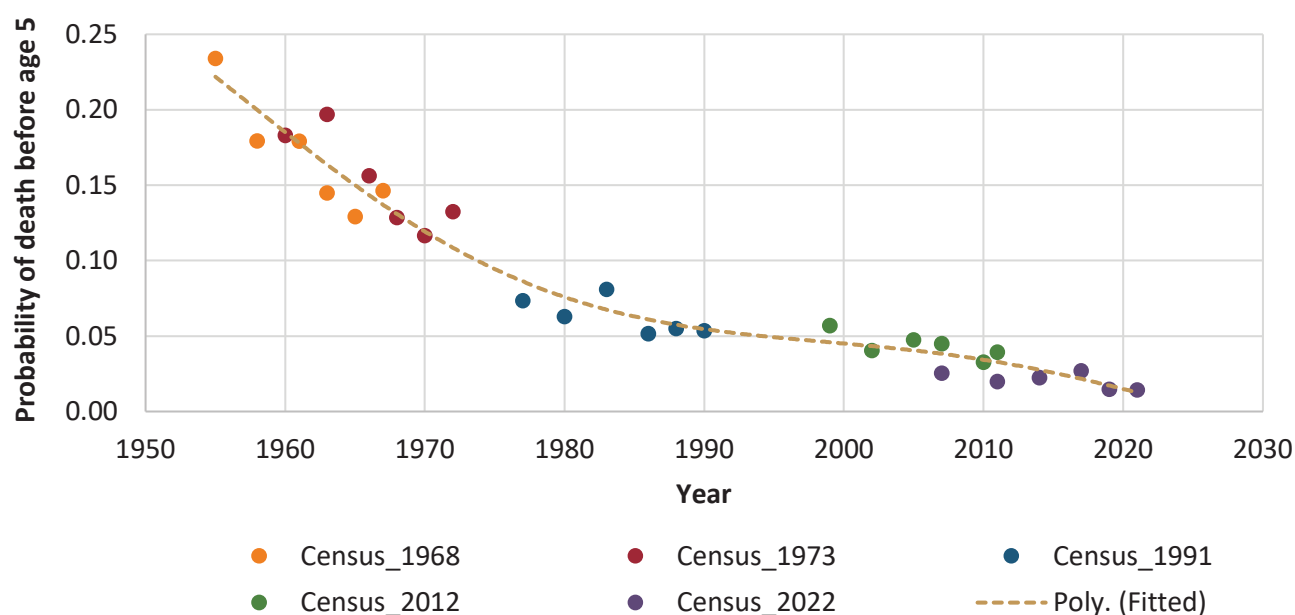
Figure 28. *Indirect estimates of under-five mortality rate obtained from various censuses, 1955–2021*

Similarly, the under-five mortality rate in the country declined from around 223 per 1,000 live births in 1955 to around 150 in the mid-1960s, to about 75 per 1,000 in the early 1980s, and just under 50 per 1,000 in 2015. For the most recent year, 2021, the rate was about 24 per 1,000 live births.

9.2.2. Age patterns of mortality and trends in life expectancy at birth

Table 30 presents the age-specific death rates derived from three alternative sources. These show a typical pattern: relatively high levels at age 0 for infant deaths and very low levels for the population aged 1–4 years through about the age of 19 years when levels slowly increase. From age 55 years, mortality levels rapidly increase as the probability of dying rises with age.

However, the age-specific death rate values derived from vital registration and household deaths show zero values for some age groups, which is due to no deaths being reported in those respective ages, a pattern that is not unexpected in countries and territories with small populations like Tuvalu, but creates an issue for generating mortality indicators from such data. On the other hand, although the age pattern derived from the Orphanhood data shows the expected pattern and has no anomalies observed in the vital statistics and census household deaths data sets, it cannot be used to generate life-table and life expectancy directly as it does not refer to any particular year. Hence, the life expectancy estimates implied by the childhood survivorship data have been used instead.

Table 30. *Age-specific death rates by data collection method, 2020–2022*

Age group (years)	Male			Female		
	HH deaths – Census	Vital statistics	Orphanhood method – Census	HH deaths – Census	Vital statistics	Orphanhood method – Census
0	5.0	12.5	40.9	3.9	15.0	30.0
1–4	0.8	0.9	2.3	2.6	1.1	1.8
5–9	0.4	0.8	0.9	0.5	1.0	0.6
10–14	0.0	1.1	0.7	0.0	1.9	0.5
15–19	0.5	0.0	1.3	0.6	0.3	0.8
20–24	0.6	0.1	1.9	0.0	3.5	1.2
25–29	1.1	1.3	1.9	0.6	5.8	1.4
30–34	3.3	6.1	2.1	1.2	2.8	1.7
35–39	0.7	1.7	2.7	3.1	9.8	2.2
40–44	4.5	4.7	3.9	1.0	14.9	3.0
45–49	8.9	8.7	6.0	1.2	30.9	4.4
50–54	12.7	13.8	9.5	9.1	19.6	6.6
55–59	11.2	26.8	15.0	14.3	33.5	10.0
60–64	14.3	25.1	23.4	14.9	22.7	15.8
65–69	34.9	66.1	36.6	17.5	65.4	26.3
70–74	45.8	93.9	58.0	23.8	84.7	44.9
75+	84.8	175.1	133.9	61.8	85.2	121.3
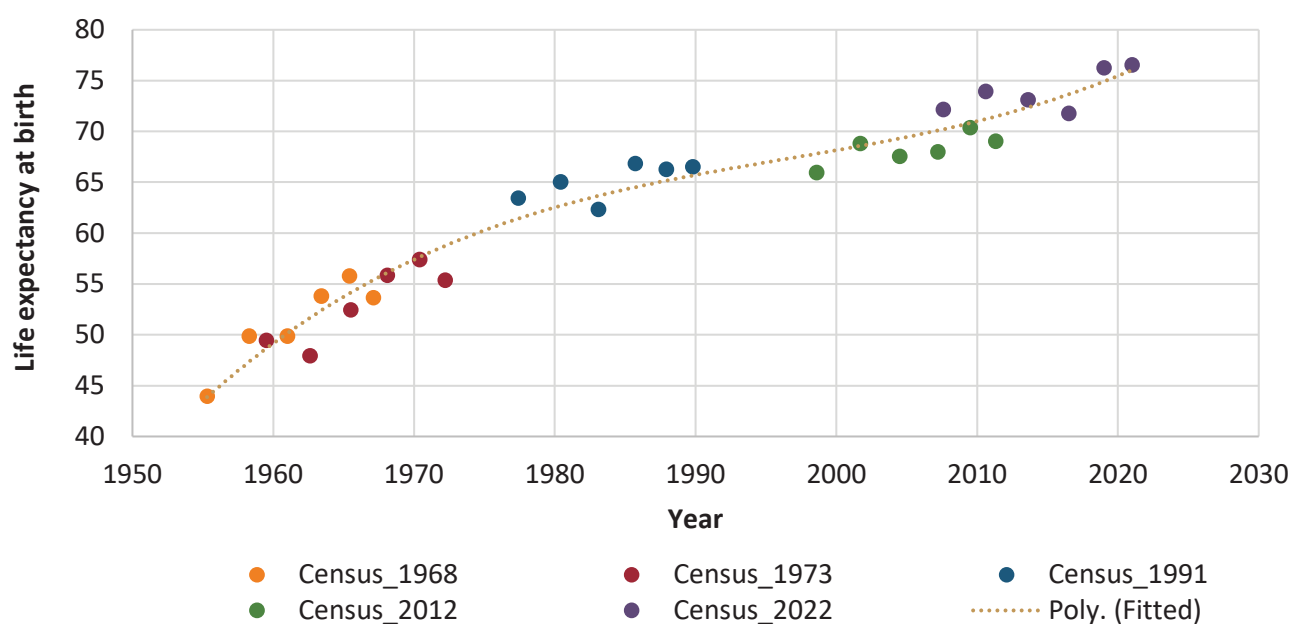
Figure 29. *Indirect estimates of life expectancy at birth obtained from various censuses, 1955–2021*

 The results presented in *Figure 29* show a gradual but steady improvement in life expectancy at birth from around 50 years during the mid-1950s to the early 1960s to 65 years in the 1980s and around 70 years in 2010. For the most recent year, 2019–2021, life expectancy for both sexes was around 76 years.

9.3. Population movement

9.3.1. International migration

The 2022 Tuvalu Census enumerated 1,787 people born overseas, making up 16.8% of the Tuvalu residents in households. Most of these were Tuvaluans, as about 95.0% declared that their "home island" was in Tuvalu. Among those not born in Tuvalu, the most common birthplaces were Kiribati, Fiji and Nauru. The data on residence status three years ago showed that 491 people of Tuvaluan nationality aged 3 years and over lived overseas, of whom about 50.0% declared residing in Fiji. The age-sex structure of those living in Fiji three years before the census suggests that about two thirds were 30 years or younger. This may indicate that many were in school, including tertiary education at the University of the South Pacific and other institutions.

9.3.2. Internal migration

Lifetime migration, migration across generations and recent migration

Overall, about half of the population lived on the same island where they were born, 32.5% were lifetime migrants (i.e. they were enumerated outside the island where they were born), and 17.0% were born abroad. The northern islands of Nanumea, Nanumaga and Niutao had relatively high net migration losses, with most out-migrants residing in Funafuti. Nukufetau was the other island with a significant loss, again mostly to Funafuti. Vaitupu had the largest net migration gain, mainly due to the location of the national high school there and the movement of students from all islands.

Table 31. *Lifetime migration, Tuvalu 2022*

Place of enumeration	Place of birth			Total
	Same as the place of enumeration	Elsewhere in Tuvalu	Overseas	
Nanumea	216	294	100	610
Nanumaga	132	230	29	391
Niutao	220	281	49	550
Nui	184	219	111	514
Vaitupu	382	478	147	1,007
Nukufetau	217	300	64	581
Funafuti	3,909	1,458	1,235	6,602
Nukulaelae	104	189	48	341
Niulakita	0	32	4	36
Total	**5,364**	**3,481**	**1,787**	**10,632**

Table 32 illustrates the analysis based on people's responses to where they mainly lived three years before the census, which reflects more recent migration patterns. The question was only asked to residents aged 3 years and over in the 2012 and the 2022 Tuvalu censuses, and the 2017 Mini-Census, but not in earlier censuses. As expected, most people (84.0%) reported having

resided on the same island three years before the census, which is an increase compared to 2012, when this was 76.0%. Overall, almost 24.0% (2,373 people) of the national population changed their island of residence during the reference period – which is still a high rate of population movement, with over half of this flow departing or going to Funafuti.

Table 32. *Recent migration stream, 2022*

| Place of current residence | Place of residence 3 years ago | | | | Total |
| | Same as current residence | Elsewhere in Tuvalu | | Overseas | |
		Funafuti	Other Islands		
Nanumea	379	119	87	25	610
Nanumaga	319	30	36	6	391
Niutao	446	22	73	9	550
Nui	417	35	54	8	514
Vaitupu	715	161	70	61	1,007
Nukufetau	430	71	71	9	581
Funafuti	5,302	0	948	352	6,602
Nukulaelae	237	42	41	21	341
Niulakita	14	5	17	0	36
Total	**8,259**	**485**	**1,397**	**491**	**10,632**

Looking at movements between Funafuti and the Outer Islands, 14.4% (948 persons) had come from the Outer Islands in the past three years to make a living in Funafuti. This percentage was considerably higher (19.2% or 1,066 people) in the 2012 Census. Both of these indicators suggest diminishing mobility between islands. Notably, the 2022 Tuvalu Census showed more people (485) moving from Funafuti to the Outer Islands than in the opposite direction, a slight decline compared to the 508 noted in the 2012 Census.

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10. Housing characteristics

10.1. Tenure

The majority of households own their dwellings and about 1 in 5 rents. Homeownership rates are higher in the Outer Islands (91%) than in Funafuti (59%). The percentage of home ownership slightly improved when comparing the 2017 results to the Tuvalu 2022 PHC.

Table 33. *Ownership of dwelling, by major region, 2022*

Region	2017 Tuvalu Census					2022 Tuvalu Census				
	Own	Rented	Arranged	Other	Total	Own	Rented	Arranged	Other	Total
Count										
Tuvalu	1,141	407	63	15	1,626	1,323	368	108	0	1,799
Funafuti	458	348	34	9	849	582	326	72	0	980
Outer Islands	683	59	29	6	777	741	42	36	0	819
Percentages										
Tuvalu	70.2	25.0	3.9	0.9	100.0	73.5	20.5	6.0	0.0	100.0
Funafuti	53.9	41.0	4.0	1.1	100.0	59.4	33.3	7.3	0.0	100.0
Outer Islands	87.9	7.6	3.7	0.8	100.0	90.5	5.1	4.4	0.0	100.0

Renting is significantly more common in Funafuti than in the Outer Islands. About 6 of every 10 renting households in Funafuti are renting in government houses. A similar observation can be made for the Outer Islands, but those renting are in Kaupule houses. The proportion of households renting in government houses increased significantly from 32% in 2017 to 56% in 2022. This may be due to the increased number of government houses after the Pacific Islands Forum meeting in 2019.

Table 34. *Ownership of rental dwelling, by major region, 2022*

Region	2017 Tuvalu Census						2022 Tuvalu Census					
	Government	Kaupule	Cooperation	Private	Other	Total	Government	Kaupule	Cooperation	Private	Other [4]	Total
Count												
Tuvalu	130	61	4	191	21	407	206	37	22	95	8	368
Funafuti	113	27	4	186	18	348	200	10	22	87	7	326
Outer Islands	17	34	0	5	3	59	6	27	0	8	1	42
Percentages												
Tuvalu	31.9	15.0	1.0	46.9	5.2	100.0	56.0	10.1	6.0	25.8	2.2	100.0
Funafuti	32.5	7.8	1.1	53.4	5.2	100.0	61.3	3.1	6.7	26.7	2.1	100.0
Outer Islands	28.8	57.6	0.0	8.5	5.1	100.0	14.3	64.3	0.0	19.0	2.4	100.0

4 The "Other" category includes households that did not state their rental arrangements.

10.2. Type of living quarters

The most common type of living quarter is the one-family detached house. Compared to the Outer Islands, households living in a one-family house attached to one or more houses are much more common in Funafuti. Very few households live in apartments, which is expected considering there are very few apartment-type dwellings in Tuvalu. Similarly, very few households live in shared homes and dwellings attached to non-resident buildings.
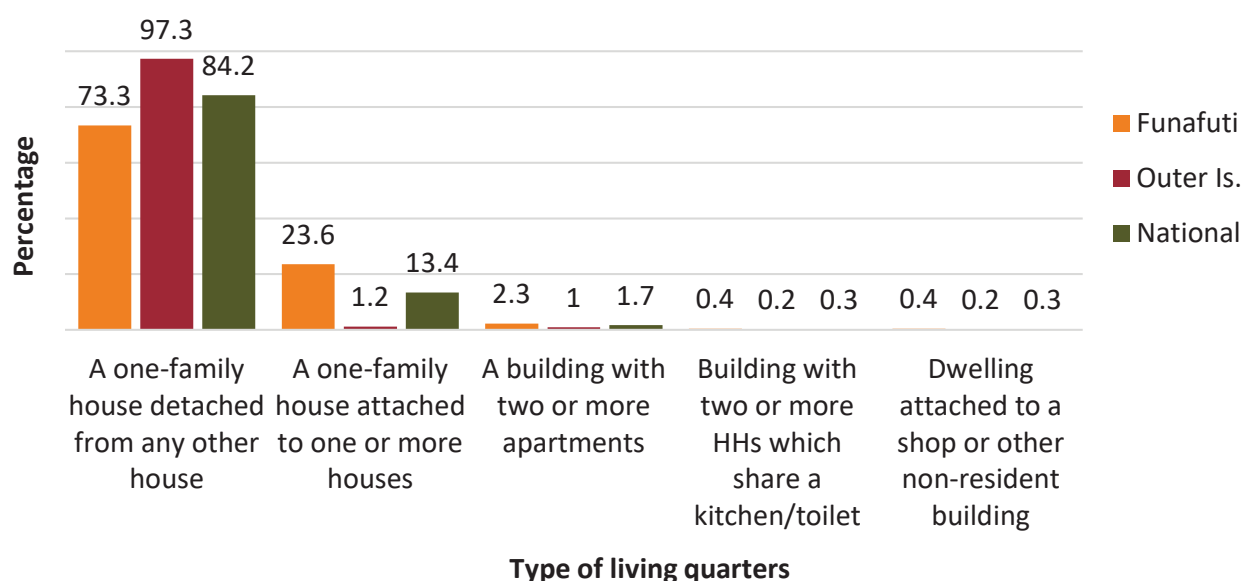

Figure 30. *Percentage of households, by type of living quarter, 2022*

10.3. Housing structure

Information about the main house construction material was not collected in the Tuvalu 2017 Mini-PHC; thus, comparing the Tuvalu 2022 PHC to 2017 results is impossible. However, a comparison can be made to the Tuvalu 2012 PHC. Concrete is the most common material used in main house construction. About half of the houses are made of concrete in Funafuti, and the proportion is higher in the Outer Islands (70.2%). On the other hand, timber houses are more common in Funafuti (27.7%) compared to the Outer Islands (13.1%).

Table 35. *Percentage distribution of material for main house construction, 2022*

Region	Main house construction					Total
	Permanent – concrete	Permanent – timber	Local materials	Combination	Other construction	
2012 Census						
Tuvalu	49.3	29.8	2.7	17.1	1.1	100.0
Funafuti	38.7	47.0	1.1	11.1	2.1	100.0
Outer Islands	59.2	14.0	4.1	22.6	0.1	100.0
2022 Tuvalu Census						
Tuvalu	57.9	21.0	2.7	18.3	0.1	100.0
Funafuti	47.6	27.7	2.2	22.3	0.2	100.0
Outer Islands	70.2	13.1	3.3	13.4	0.0	100.0

The most common roofing material is metal, which is mainly corrugated roofing sheets. Almost all roofs are made of this material. The main wall material varies by region, although cement blocks and plywood are most common in the Outer Islands. The most common floor material is cement, but it is more common in the Outer Islands. Ceramic tiles and wood planks are more common in Funafuti.
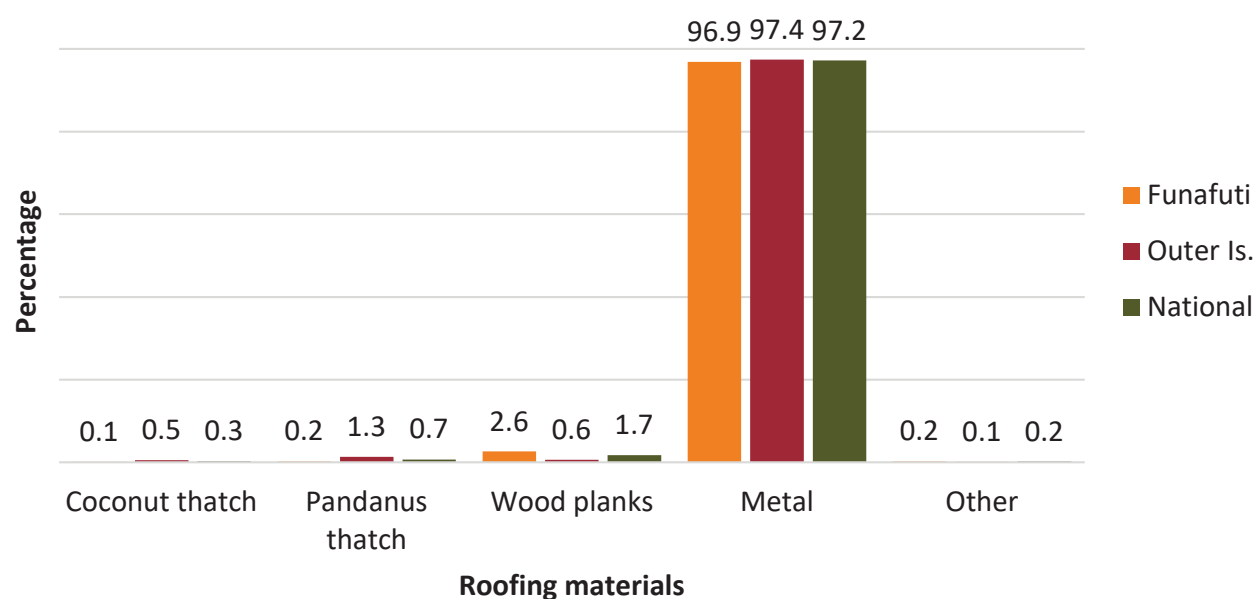

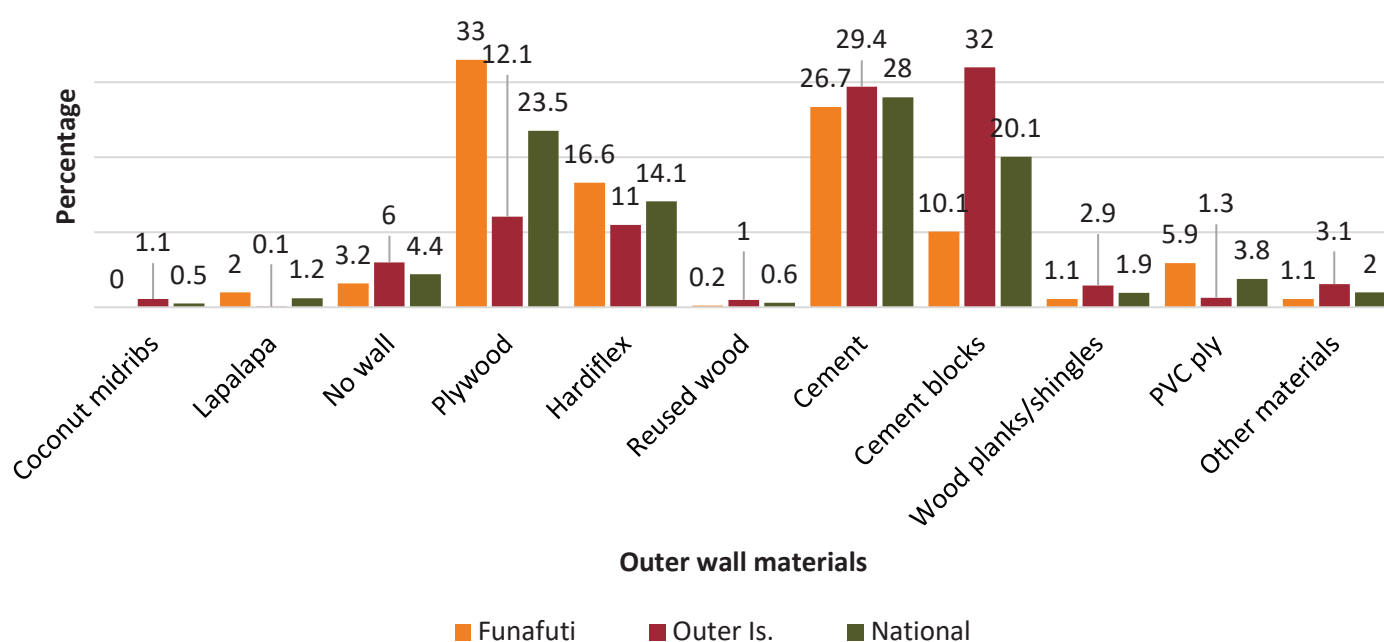**Figure 31.** *Percentage distribution of roofing materials of dwellings, 2022*

Figure 32. *Percentage distribution of materials for outer walls of dwellings, 2022*
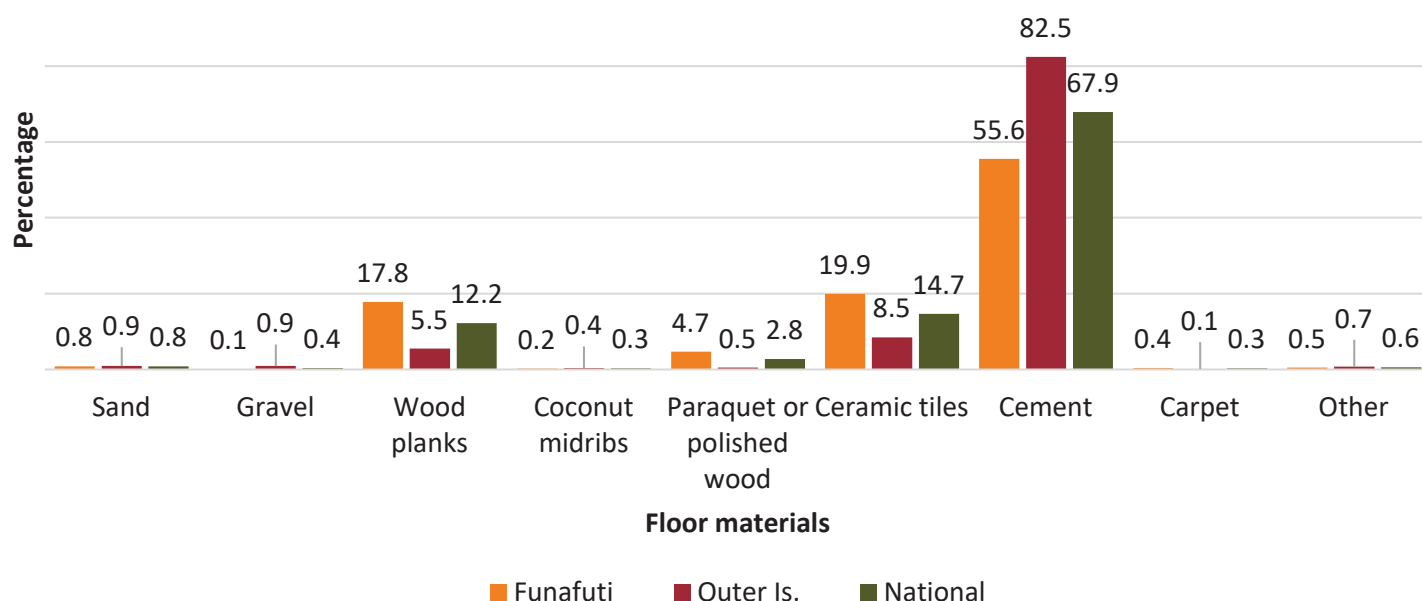
Figure 33. *Percentage distribution of materials for floors of dwellings, 2022*

The median floor area for dwellings is 56 square-metres in Tuvalu, 48 square-metres in Funafuti, and 65 square-metres in the Outer Islands. The average floor area is significantly affected by outliers. The average floor area in the Outer Islands is 74 square-metres compared to 56 square-metres for Funafuti, resulting in an average of 63 square-metres for Tuvalu. The average number of sleeping rooms was: 2 in Tuvalu; 2 in Funafuti; and 2 in the Outer Islands.

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10.4. Energy for cooking and lighting

About 8 out of every 10 households use gas as a source of cooking energy, which is more common in Funafuti. There was a significant increase in the proportion of households relying on gas as a cooking energy source in the Outer Islands. An increase is observed in the use of electricity as a cooking source compared to a decrease in the use of kerosene, wood, and coconut parts in the Outer Islands. Except for coconut parts, the same is observed for Funafuti.

Table 36. Main cooking fuels used by households, 2022

Region	2017 Tuvalu Census							2022 Tuvalu Census						
	Electricity	Gas (LPG/Butane)	Kerosene	Wood	Coconut parts	Other	Total	Electricity	Gas (LPG/Butane)	Kerosene	Wood	Coconut parts	Other	Total
Count														
Tuvalu	39	1,143	151	184	105	4	1,626	148	1,404	87	128	28	4	1,799
Funafuti	19	766	53	6	2	3	849	76	880	12	10	2	0	980
Outer Islands	20	377	98	178	103	1	777	72	524	75	118	26	4	819
Percentages														
Tuvalu	2.4	70.3	9.3	11.3	6.5	0.2	100.0	8.2	78.0	4.8	7.1	1.6	0.2	100.0
Funafuti	2.2	90.2	6.2	0.7	0.2	0.4	100.0	7.8	89.8	1.2	1.0	0.2	0.0	100.0
Outer Islands	2.6	48.5	12.6	22.9	13.3	0.1	100.0	8.8	64.0	9.2	14.4	3.2	0.5	100.0

Similar to the results in 2017, electricity from the grid remains the predominant energy source for lighting. However, it should be noted that there was a slight increase in the use of solar panels as a lighting source in both Funafuti and the Outer Islands. The increase is much more significant in the Outer Islands. It is also interesting to note the decrease in the proportion of households using electricity from the grid as an energy source for lighting.

Table 37. Sources of lighting, 2022

Region	2017 Tuvalu Census						2022 Tuvalu Census					
	Electricity from grid	Solar rooftop panel	Lamp[5]	Private generator	Other	Total	Electricity from grid	Solar rooftop panel	Lamp[5]	Private generator	Other	Total
Count												
Tuvalu	1,580	14	22	4	6	1,626	1,660	68	60	4	7	1,799
Funafuti	835	6	5	1	2	849	930	28	15	4	3	980
Outer Islands	745	8	17	3	4	777	730	40	45	0	4	819
Percentages												
Tuvalu	97.2	0.9	1.4	0.3	0.4	100.0	92.3	3.8	3.3	0.2	0.4	100.0
Funafuti	98.4	0.7	0.6	0.1	0.2	100.0	94.9	2.9	1.5	0.4	0.3	100.0
Outer Islands	95.9	1.0	2.2	0.4	0.5	100.0	89.1	4.9	5.5	0.0	0.5	100.0

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5 Lamps include solar, kerosene and LPG/butane lamps.

10.5. Water and sanitation

The main source of drinking water is piped into the dwelling. It is piped from a water storage tank/concrete cistern that collects rainwater. Compared to 2017, a higher proportion of households now have piped water in their dwellings. Apart from the source "piped into the yard", the same is observed for other sources. There is a significant decrease in water sources piped to the yard. A similar result is observed for the main water source for cooking and handwashing.
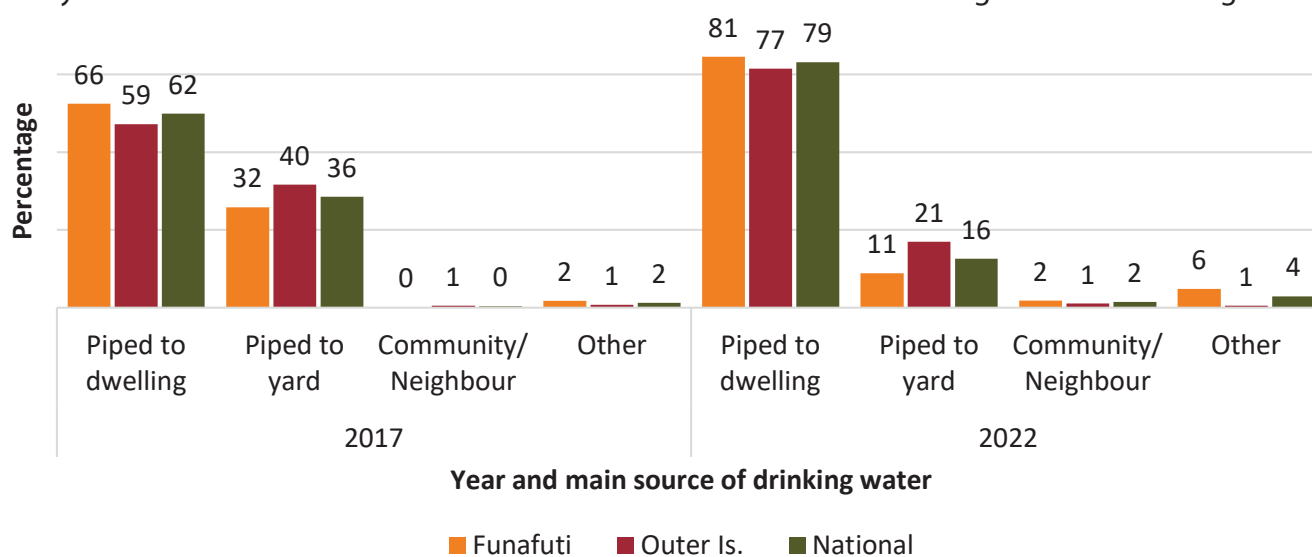
Figure 34. *Main source of drinking water for households, 2022[6]*

Households were asked to indicate the months when they did not have sufficient water, presented in **Figure 35**. The trend appears to be the same for the Outer Islands and Funafuti. As the year progresses, the number of households with insufficient water increases but, towards the end of the year, this number decreases.
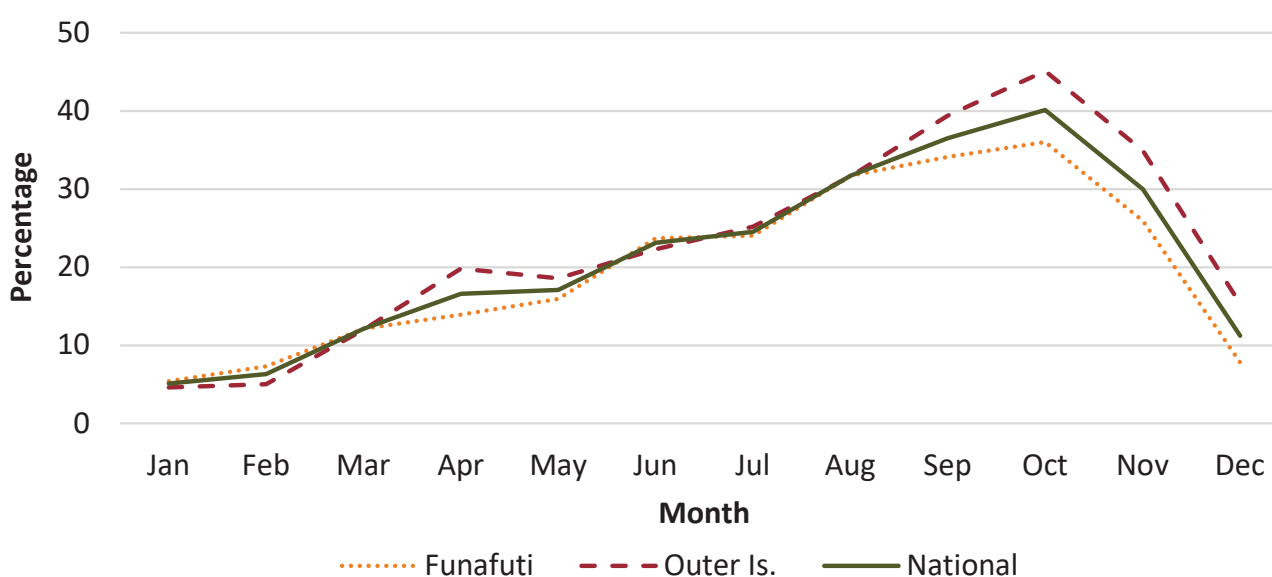
Figure 35. *Percentage of households by month of water shortage, 2022*

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6 *"Other" categories in the 2022 questionnaire include tanker trucks, bottled water, water kiosks and other sources.*
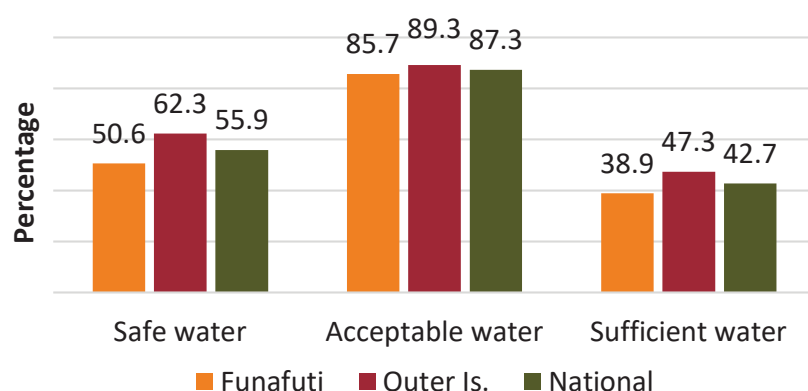
Figure 36. *Water safety, acceptability and sufficiency, 2022*

At a national level, about 56% of households indicated that they do something to the water to make it safe for consumption, about 87% indicated that their drinking water was acceptable, and about 43% indicated that they had sufficient water during the last month.

In 2022, the total volume of water storage tanks/cisterns in households was 33,430,162 litres, which is 6% higher than the results of the 2017 Mini-PHC. The volume increased by about 5% in Funafuti and by 8% in the Outer Islands. However, it is worth noting that there were 138 cases where the volume of the water tank was not available.

Table 38. *Number of private households by toilet type and region, 2022*

Toilet type	Count			Percentage		
	Tuvalu	Funafuti	Outer Is.	Tuvalu	Funafuti	Outer Is.
Flush to septic tank	1,681	784	897	93.4	95.7	91.5
Flush to pit latrine or dug pit	39	2	37	2.2	0.2	3.8
Flush to somewhere else, e.g. sea	13	5	8	0.7	0.6	0.8
Flush, do not know where	6	1	5	0.3	0.1	0.5
Ventilated improved pit latrine	1	0	1	0.1	0.0	0.1
Pit latrine with slab	1	1	0	0.1	0.1	0.0
Pit latrine without slab, open pit	2	0	2	0.1	0.0	0.2
Pit latrine to ocean	1	0	1	0.1	0.0	0.1
Composting toilet	10	0	10	0.6	0.0	1.0
No facility, bush, beach, ocean	38	20	18	2.1	2.4	1.8
Other	7	6	1	0.4	0.7	0.1

The most common toilet type is a flush-to-septic tank. The use of flush-to-pit latrines or dug pits is much more common in Funafuti than in the Outer Islands. Surprisingly, the proportion of flush-to-septic tank-type toilets in Funafuti decreased in 2017.

10.6. Solid waste services

Almost all (95%) of household waste is collected and disposed of by the Island Council or the Department of Waste Management. A handful of households dispose of their waste at authorised collection sites without using the services offered by the Island Councils or the

Department of Waste Management. Households in the Outer Islands (97%) are slightly more likely to depend on the collection services provided by the authorities compared to households in Funafuti (93%). Households in the Outer Islands are also more likely to be fully satisfied with the waste disposal services provided by the authorities. Overall, about 1 in 2 households is fully satisfied with the services. For the households that reported the need to improve the solid waste services, most suggested that the collection times need to be improved. This suggestion was most likely to be made by households in Funafuti. Moreover, about 8 of every 10 households received a rubbish bin from the authorities. Households in the Outer Islands (93%) are more likely to have received a rubbish bin compared to households in Funafuti (76%).
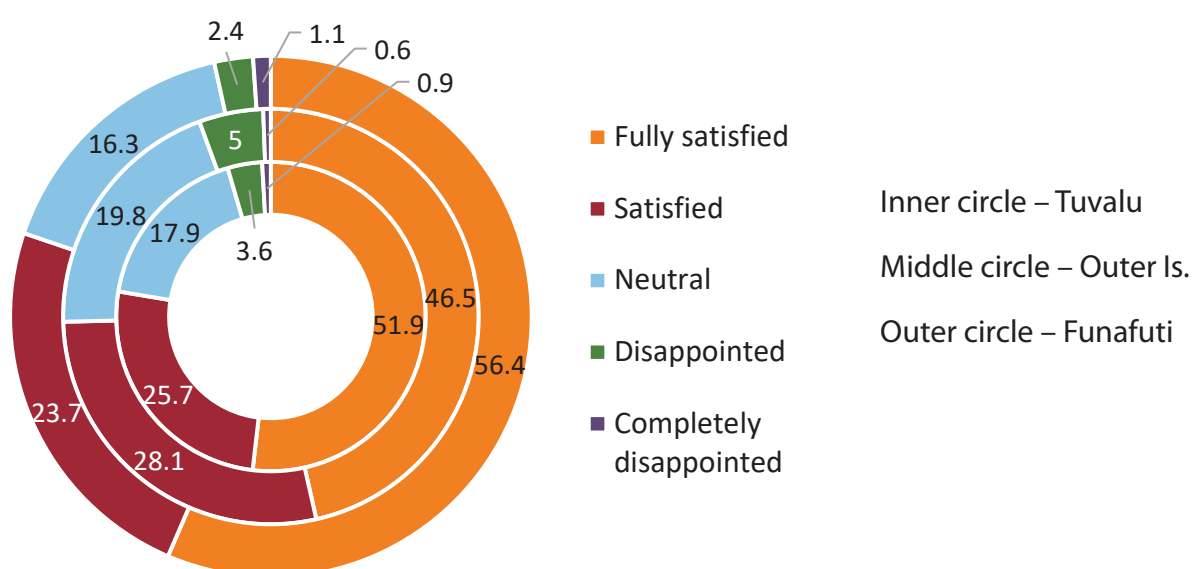

Figure 37. *Rating of satisfaction with solid waste services, as a percentage by household, 2022*

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