



# **TUVALU 2012**

## **Population and Housing Census Volume 1 – Analytical Report**

© Copyright Central Statistics Division (CSD) of the Government of Tuvalu

This report remains the property of the CSD. Any part of this report cannot be reproduced without authorization from the CSD. All rights for commercial / for profit reproduction or translation, in any form, reserved. CSD authorises the partial reproduction or translation of this material for scientific, educational or research purposes, provided that CSD and the source document are properly acknowledged. Permission to reproduce the document and/or translate in whole, in any form, whether for commercial / for profit or non-profit purposes, must be requested in writing.

Original text: English

This publication may be cited as:

Central Statistics Division of the Government of Tuvalu. 2013. Tuvalu 2012: Population and Housing Census Volume 1 Analytical Report.  
Funafuti, Tuvalu:

Central Statistics Division  
Floor 2  
Government Building  
Government of Tuvalu  
Tel: 688 20107  
email: [statistics@gov.tv](mailto:statistics@gov.tv)  
website: <http://www.spc.int/prism/tuvalu>

Printed at United Nations Population Fund  
Suva, Fiji

# CONTENTS

<b>1 PREFACE</b>	<b>14</b>
<b>2 TAKING TO 2012 CENSUS OF TUVALU</b>	<b>15</b>
<b>3 POPULATION STRUCTURE</b>	
3.1 Population trend	23
3.2 Population composition	23
3.3 Population size, change, distribution and density	24
3.4 Population by age and sex	26
<b>4 SOCIAL CHARACTERISTICS</b>	
4.1 Migration	29
4.2 Ethnicity	30
4.3 Religion	31
4.4 Marital Status	31
<b>5 EDUCATIONAL CHARACTERISTICS</b>	
5.1 School enrolment	33
5.2 Educational qualifications of adults aged 15 years and older	34
5.3 Literacy status of adults aged 15 years and older	35
<b>6 ECONOMIC CHARACTERISTICS</b>	
6.1 Economic activity status	36
6.2 Labour Force indicators	37
6.3 Economic inactivity population	39
6.4 Occupation	39
6.5 Industry	41
6.6 Secondary Economic Activities	43
<b>7 HEALTH CHARACTERISTICS</b>	
7.1 Smoking	44
7.2 Drinking alcohol	45
7.3 Drinking kava	45

<b>8 DWELLING AND HOUSEHOLD CHARACTERISTICS</b>	
8.1 Introduction	46
8.2 Household composition	46
8.3 Type of living quarters	48
8.4 Dwelling ownership	49
8.5 Land ownership	51
8.6 Housing structure	52
8.7 Household appliances and amenities	54
8.8 Source, supply and storage of water	59
8.9 Means of waste disposal	60
8.10 Information and Communication Technologies	61
8.11 Household income	64
8.12 Fishing activities of households	66
<b>9 CIGUATERA FISH POISONING IN TUVALU</b>	
9.1 Introduction	72
9.2 Affected population by ciguatera	72
9.3 Number of times infected by ciguatera	74
9.4 Marine species transmitting ciguatera	74
9.5 Symptoms of ciguatera fish poisoning	75
<b>10 AGRICULTURE AND LIVESTOCK</b>	
10.1 Crops	76
10.2 Toddy	78
10.3 Home garden	80
10.4 Livestock	83
<b>11 DISABILITY AND THE ELDERLY POPULATION</b>	
11.1 Persons with disabilities	85
11.2 The elderly population	89

## **12 CULTURAL CHARACTERISTICS**

<b>A. Architecture</b>	<b>90</b>
<b>B. Traditional Food Items &amp; Culinary</b>	<b>92</b>
<b>C. Handicraft</b>	<b>97</b>
<b>D. Possession of Other Traditional Skills</b>	<b>98</b>
<b>E. Literacy</b>	<b>99</b>

## **13 GENDER**

<b>13.1 Gender and education</b>	<b>100</b>
<b>13.2 Gender and economic participation</b>	<b>102</b>
<b>13.3 Social characteristics and wellbeing</b>	<b>102</b>
<b>13.4 Conclusion</b>	<b>105</b>

## List of Tables

<b>Table 1</b>	Total enumerated population size, change, distribution and density by island, 2002- 2012	<b>24</b>
<b>Table 2</b>	Resident enumerated population size, change, distribution and density by island, 2002-2012	<b>25</b>
<b>Table 3</b>	Resident enumerated population by broad age groups, median age, dependency and sex ratio, 2012	<b>27</b>
<b>Table 4</b>	Resident population 3 years and older, by usual residence 3 years before the 2012 census (2009)	<b>29</b>
<b>Table 5</b>	Distribution of resident population aged 3 years and older, place of residence 3 years before the census (2009)	<b>29</b>
<b>Table 6</b>	Resident population by place of birth	<b>30</b>
<b>Table 7</b>	Resident population, by ethnic origin	<b>30</b>
<b>Table 8</b>	Highest level of education completed among adults aged 15 years and older by sex and place of residence	<b>34</b>
<b>Table 9</b>	Literacy status of adults aged 15 years and older by language	<b>35</b>
<b>Table 10</b>	Main economic activity in the week before the census for people aged 15 and older by region and sex	<b>37</b>
<b>Table 11</b>	Labour force indicators for resident population aged 15 and older by region and sex	<b>38</b>
<b>Table 12</b>	Percent distribution of resident population 15 years and older working in each type of industry by region and sex	<b>42</b>
<b>Table 13</b>	Secondary paid and unpaid economic activities among adults aged 15 years and older	<b>43</b>
<b>Table 14</b>	Proportion of resident population 15 years and older who smoke cigarettes, drink alcohol, or drink kava	<b>44</b>
<b>Table 15</b>	The dwellings, the occupants and average household size	<b>46</b>
<b>Table 16</b>	Population in private dwellings and their relationship status to household head	<b>47</b>
<b>Table 17</b>	Ownership of all privately occupied dwellings, Tuvalu 2012	<b>50</b>
<b>Table 18</b>	Types of main house construction (%)	<b>52</b>
<b>Table 19</b>	Type of roofs, walls and floors (in percentage) of the dwellings by region	<b>52</b>
<b>Table 20</b>	Floor size of occupied dwellings by region	<b>53</b>
<b>Table 21</b>	Total and average number of sleeping rooms	<b>53</b>
<b>Table 22</b>	Types of kitchen (%) by region	<b>54</b>
<b>Table 23</b>	Main cooking fuel of households (%), Tuvalu 2002 and 2012 censuses	<b>55</b>
<b>Table 24</b>	Proportions of occupied dwellings by source of lighting	<b>56</b>
<b>Table 25</b>	Purpose (% of dwellings stated in Table 25) of main source of lighting	<b>56</b>
<b>Table 26</b>	Opinions on the supply of electricity (% of all occupied dwellings)	<b>56</b>
<b>Table 27</b>	Cooking appliances owned (% of all occupied dwellings), Tuvalu 2002 and 2012	<b>57</b>
<b>Table 28</b>	Household appliances owned, Tuvalu 2002 and 2012 censuses (% of all households)	<b>58</b>
<b>Table 29</b>	Volumes of water storages of households	<b>60</b>
<b>Table 30</b>	Number of households that have selected ICT devices by island	<b>61</b>

<b>Table 31</b>	Percent of households receiving types of income by region	<b>64</b>
<b>Table 32</b>	Frequency of type of income received by households	<b>64</b>
<b>Table 33</b>	Percent distribution of frequency of remittances by region	<b>66</b>
<b>Table 34</b>	Households with members engaged in fishing activities by region	<b>66</b>
<b>Table 35</b>	Purpose households engaged in fishing activities (%)	<b>68</b>
<b>Table 36</b>	Proportion of households with fishing activities by region, type of fishing activities and purpose of fishing	<b>69</b>
<b>Table 37</b>	Number and percent of households growing traditional crops by region	<b>77</b>
<b>Table 38</b>	Number and percent of households growing introduced crops by region	<b>77</b>
<b>Table 39</b>	Weights of harvested vegetables per week among households with home gardens	<b>82</b>
<b>Table 40</b>	Number of annual plantings for each crop per households by region	<b>82</b>
<b>Table 41</b>	Average number of livestock and pets per households by region	<b>83</b>
<b>Table 42</b>	Activities involved 1 week before census by region	<b>89</b>
<b>Table 43</b>	Households involvement in cultivation and harvest of major traditional crops and island	<b>93</b>
<b>Table 44</b>	Toddy collected per day among households cutting toddy by island and region	<b>96</b>
<b>Table 45</b>	Percentage distribution of household main cooking methods by island and region	<b>96</b>
<b>Table 46</b>	Percentage enrolled in school for resident population aged 6-29 years by sex and region	<b>100</b>
<b>Table 47</b>	Percentage of the population 5 years and over that have never attended school by sex and age group	<b>101</b>
<b>Table 48</b>	Percent distribution of religious denominations by sex	<b>104</b>

## Figures

<b>Figure 1</b>	Tuvalu total population from 1921 to 2012	<b>23</b>
<b>Figure 2</b>	Population composition	<b>24</b>
<b>Figure 3</b>	Tuvalu population pyramid, total population, 2012	<b>26</b>
<b>Figure 4</b>	Population pyramid, Funafuti resident population by number enumerated and usual place of residence	<b>28</b>
<b>Figure 5</b>	Population pyramid, Outer Island's resident population by number enumerated and usual place of residence	<b>28</b>
<b>Figure 6</b>	Resident population, by ethnic origin	<b>30</b>
<b>Figure 7</b>	Distribution of the resident population among the religious denominations	<b>31</b>
<b>Figure 8</b>	Marital status of the resident population 15 years and older by sex	<b>32</b>
<b>Figure 9</b>	Resident population 15 years and older, by sex and proportion married	<b>32</b>
<b>Figure 10</b>	Resident population aged 3-29 years attending school full time by sex and age	<b>33</b>
<b>Figure 11</b>	Adults who completed secondary education or higher by sex and 5-year age group	<b>35</b>
<b>Figure 12</b>	Tuvalu labor force framework	<b>36</b>
<b>Figure 13</b>	Labour force participation rates by age and sex for adults aged 15+	<b>38</b>
<b>Figure 14</b>	Reasons why adults aged 15+ who were not working did not look for work in the week before the census	<b>39</b>
<b>Figure 15</b>	Occupational group (%) of adults aged 15 and above	<b>40</b>
<b>Figure 16</b>	Occupational group of adults aged 15 and above by sex	<b>40</b>
<b>Figure 17</b>	Percent of the resident population 15 years and older who smoke cigarettes or use tobacco	<b>44</b>
<b>Figure 18</b>	Percent of the resident population 15 years and older who drink alcohol	<b>45</b>
<b>Figure 19</b>	Percent of the resident population 15 years and older who drink kava	<b>45</b>
<b>Figure 20</b>	Proportion of the population in private dwellings and their relationship status to household head	<b>47</b>
<b>Figure 21</b>	Types of living quarters, Tuvalu 2012	<b>48</b>
<b>Figure 22</b>	Type of living quarters on Funafuti and outer islands (% of all occupied dwellings)	<b>49</b>
<b>Figure 23</b>	Rental dwellings by rental provider and total monthly rent paid (% of all occupied dwellings)	<b>50</b>
<b>Figure 24</b>	Ownership of land on which the main house was built (% of total dwellings)	<b>51</b>
<b>Figure 25</b>	Preference of cooking fuel (% of all households)	<b>55</b>
<b>Figure 26</b>	Cooking appliances owned (% of all occupied households), Tuvalu 2002 and 2012 censuses	<b>57</b>
<b>Figure 27</b>	Agricultural tools owned (% of all households), Tuvalu 2012	<b>58</b>
<b>Figure 28</b>	Fishing items owned, Tuvalu 2012	<b>58</b>
<b>Figure 29</b>	Main source of household drinking water	<b>59</b>
<b>Figure 30</b>	Main source of water for household cooking and other purposes	<b>59</b>
<b>Figure 31</b>	Percent distribution of household waste disposal by region	<b>61</b>
<b>Figure 32</b>	Percentage of households owning ICT goods by region	<b>62</b>
<b>Figure 33</b>	Percentage of the population aged 6 years and above who used a mobile phone in the last 12 months by island	<b>62</b>



<b>Figure 34</b>	Percentage of the population aged 6 years and above who used a computer in the last 12 months by island	<b>63</b>
<b>Figure 35</b>	Percentage of the population aged 6 years and above who used the internet in the last 12 months by Island	<b>63</b>
<b>Figure 36</b>	Percent of households receiving remittances by island	<b>65</b>
<b>Figure 37</b>	Percent distribution of source of remittances among households receiving remittances by region	
<b>Figure 38</b>	Proportion of total households with members engaged in collecting shellfish or catching fish and with fishing location	<b>67</b>
<b>Figure 39</b>	Distributions of households engaged in fishing activities by region	<b>67</b>
<b>Figure 40</b>	Frequency of households collecting shellfish and catching fish by place of fishing	<b>69</b>
<b>Figure 41</b>	Households engaged in fishing activities with fishing methods used	<b>70</b>
<b>Figure 42</b>	Proportion of households collecting shellfish by type of shellfish	<b>70</b>
<b>Figure 43</b>	Proportions of households with total fish catch weight per week	<b>71</b>
<b>Figure 44</b>	Resident population who reported being affected by ciguatera by age group and sex	<b>73</b>
<b>Figure 45</b>	Percentage of resident population who reported being infected by ciguatera fish poisoning by sex and island	<b>73</b>
<b>Figure 46</b>	Number of times affected by CFP among those who ever been affected	<b>74</b>
<b>Figure 47</b>	Percentage of the population affected by ciguatera from eating different types of marine resources.	<b>75</b>
<b>Figure 48</b>	Symptoms of affected population with ciguatera fish poisoning	<b>75</b>
<b>Figure 49</b>	Percentage of households growing various crops by area	<b>76</b>
<b>Figure 50</b>	Purpose for growing various crops by region and type of crop	<b>78</b>
<b>Figure 51</b>	Percentage of households cutting toddy by island	<b>79</b>
<b>Figure 52</b>	Toddy collected in 1 day among households collecting toddy	<b>79</b>
<b>Figure 53</b>	Percentage of households with home gardens by Island	<b>80</b>
<b>Figure 54</b>	Households with home gardens by area and region	<b>81</b>
<b>Figure 55</b>	Percent of households growing introduced crops by area	<b>81</b>
<b>Figure 56</b>	Percentage of households using each type of fertilizer	<b>82</b>
<b>Figure 57</b>	Percentage of households owning each type of livestock and pet by region	<b>83</b>
<b>Figure 58</b>	Percent distribution of livestock housing type among households owning livestock by region and type of animal	<b>84</b>
<b>Figure 59</b>	Percent distribution of livestock waste disposal among households owning livestock by region and type of animal	<b>84</b>
<b>Figure 60</b>	Percent of the population aged 60 years and below who have a disability by sex and region	<b>85</b>
<b>Figure 61</b>	Disability by sex and age group	<b>86</b>
<b>Figure 62</b>	Type of disability among persons with disabilities aged 60 years and below	<b>86</b>
<b>Figure 63</b>	Causes of disability by sex and region among disabled persons 60 years and below in percent	<b>87</b>
<b>Figure 64</b>	Percent distribution of the disabled's primary caretakers	<b>87</b>
<b>Figure 65</b>	The assistance (cash or in-kind) received from outside by region	<b>88</b>
<b>Figure 66</b>	Percent of main houses with natural floor materials	<b>90</b>
<b>Figure 67</b>	Percent of main houses with natural roofing materials	<b>91</b>
<b>Figure 68</b>	Percent of main houses with natural wall materials	<b>91</b>
<b>Figure 69</b>	Percent distribution of household kitchen type by region	<b>92</b>

<b>Figure 70</b>	Percent of households who collect traditional sources of protein-rich food by region and type of food	<b>94</b>
<b>Figure 71</b>	Percent of households collecting shellfish by region and type of shellfish	<b>94</b>
<b>Figure 72</b>	Percent of households cutting toddy by island	<b>95</b>
<b>Figure 73</b>	Percentage of households producing handicrafts by region and handicraft type	<b>97</b>
<b>Figure 74</b>	Possession of artefacts associated with traditional knowledge and skills	<b>98</b>
<b>Figure 75</b>	Percent literate among the population aged 15 years and above	<b>99</b>
<b>Figure 76</b>	Percent distribution of the highest educational qualification completed for adults aged 15 years and over by sex	<b>101</b>
<b>Figure 79</b>	Percent distribution of certificate qualifications completed by adults aged 15 years and over by Sex	<b>102</b>
<b>Figure 78</b>	Percent of households receiving income by income source and sex of head of household	<b>103</b>
<b>Figure 79</b>	Percent distribution of alcohol consumption for adults aged 15 years and over by sex	<b>103</b>
<b>Figure 82</b>	Percent distribution of tobacco use for adults aged 15 years and over by sex	<b>104</b>

## ACRONYMS

ACEO	Assistant Chief Executive Officer
AOG	Assembly of God
CFP	Ciguatera Fish Poisoning
CSD	Central Statistics Department
CSPro	Census and Survey Program
DPO	Data Processing Officer
EKT	Ekalesia Kelisiano Tuvalu
GER	Gross Enrolment Ratio
GPS	Global Position System
ICT	Information and Communication Technologies
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification
LDS	Latter Day Saints
NER	Net Enrolment Ratio
NGO	Non-Government Organization
NSO	National Statistics Office
NZAID	New Zealand Agency for International Development
SDA	Seventh Day Adventist
SPC	Secretariat of the Pacific Community
TANGO	Tuvalu Association for Non-Government Organization
TNPSO	Tuvalu National Private Sector Organization
TuFHA	Tuvalu Family Health Association
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
USP	University of the South Pacific

## SUMMARY OF MAIN INDICATORS

	National	Funafuti	Outer Islands
<b>Total population by region of enumeration</b>	<b>10,782</b>	<b>6,152</b>	<b>4,630</b>
Males	5,515	3,188	2,327
Females	5,267	2,964	2,303
<b>Resident population by region of residence</b>	<b>10,640</b>	<b>5,436</b>	<b>5,204</b>
Males	5,424	2,796	2,628
Females	5,216	2,640	2,576
<b>Resident population by island of usual residence and home islands</b>	<b>Same Island</b>	<b>Funafuti</b>	<b>Other Islands</b>
Nanumea (1,656)	588	958	110
Nanumaga (1,222)	528	622	72
Niutao (1,444)	666	680	98
Nui (1,304)	684	300	50
Vaitupu (2,068)	1,202	832	34
Nukufetau (1,381)	641	666	74
Funafuti (1,166)	-	1,111	55
Nukulaelae (543)	332	181	30
Others (126)	-	86	40
	<b>National</b>	<b>Funafuti</b>	<b>Outer Islands</b>
Proportion of the resident population by region of residence (%)	100	51.1	48.9
Proportion of the resident population by region of enumeration (%)	100	57.1	42.9
<b>Median age (years) of resident population by region of residence</b>	24.0		
Males	23.0		
Females	25.1		
<b>Resident population structure by region of residence</b>			
Population < 15 years old	3,496	1,812	1,684
Population 15-59 years old	6,237	3,245	2,992
Population 60+ years old	907	379	528
<b>Resident population (%) by region of residence</b>			
Population < 15 years old	32.9	33.3	32.4
Population 15-59 years old	58.6	59.7	57.5
Population 60+ years old	8.5	7.0	10.1
Sex ratio by region of residence	104.0	105.9	102.0
Dependency ratio by region of residence	70.6	67.5	73.9
<b>Average annual growth rate (2002-2012) by region of residence</b>			
Total population by region of enumeration (%)	1.2	3.1	-0.9
Resident population by region of residence (%)	1.3	3.2	-0.4
<b>Population density (persons per sq km)</b>			
Total population by region of enumeration	421	2,205	203
Resident population by region of residence	415	1,948	228

	National	Funafuti	Outer Islands
<b>Population of individual religions by region of residence</b>			
Ekalesia Kelisiano Tuvalu	9,118	4,274	4,844
Seventh Day Adventist	296	207	89
Jehova's Witness	136	106	30
Bahai	209	120	89
Brethren	321	221	100
Assembly Of God	97	95	2
Catholic	82	70	12
Latter Day Saint	110	98	12
None	17	16	1
Refused	2	2	0
Other	252	227	25
<b>Resident population by ethnic origin</b>			
Tuvaluan	9,234	4,796	4,438
Tuvaluan / I-Kiribati	598	252	346
Tuvaluan / Other	712	318	394
Other	96	70	26
<b>Number of private households by region of enumeration</b>	<b>1,761</b>	<b>845</b>	<b>916</b>
<b>Number of private households by island of enumeration</b>			
Nanumea	115		
Nanumaga	116		
Niutao	123		
Nui	138		
Vaitupu	226		
Nukufetau	124		
Funafuti	845		
Nukulaelae	67		
Niulakita	7		
<b>Number of private households on Funafuti by home island</b>			
Nanumea		143	
Nanumaga		90	
Niutao		94	
Nui		41	
Vaitupu		108	
Nukufetau		108	
Funafuti		185	
Nukulaelae		29	
Others		47	
<b>Average household size</b>			
Total population by region of enumeration	6.1	7.3	5.1
Resident population by region of enumeration	6.0	7.1	5.0
Resident population age 0-14 years old by region of enumeration	2.0	2.3	1.7
Resident population age 15-59 years old by region of enumeration	3.5	4.3	2.9
Resident population age 60+ years old by region of enumeration	0.5	0.5	0.5

	National	Funafuti	Outer Islands
<b>Educational characteristics</b>			
Gross enrolment ratio in primary education (%)	100.4	98.9	101.8
Net enrolment ratio in primary education (%)	96.8	96.1	97.4
Literacy rates (% 15 years and older population)	99.8		
<b>Economic activities (15 years and older population)</b>			
Labour force participation rate (%)	<b>59.4</b>	<b>66.6</b>	<b>52.0</b>
Male	67.6	72.5	62.3
Female	51.1	60.4	41.9
Employment population ratio (%)	<b>35.9</b>	<b>43.4</b>	<b>28.1</b>
Male	40.1	47.7	31.9
Female	31.6	38.9	24.5
Unemployment rate (%)	<b>39.6</b>	<b>34.9</b>	<b>45.9</b>
Male	40.7	34.3	48.8
Female	38.1	35.6	41.7

# 1 PREFACE

The 2012 Population and Housing census of Tuvalu is the third census conducted by the Central Statistics Division since Tuvalu gained political independence in 1978.

This document is the analytical report that provides the population and housing information. It obtained the summary of the main findings of the census. The report however provide good sources for policies pertaining to general health, education, labour force, employment, disability, children, youth, aging-population, gender, communication, technology, urbanization, home appliances and many others. We hope that planners, policy-makers, the business community and Non-Governmental Organizations will make good use of the report to formulate policies that will improve the social and economic developments of Tuvalu.

I would like to thank the donors for the continuous financial support in the census undertakings. I wish to acknowledge also the contribution by the United Nations Population Fund (UNFPA) in Suva for financial support. The full technical support was provided by the Secretariat of Pacific Communities (SPC) in New Caledonia under the leadership of Dr Gerald Haberkorn. The SPC is recognized in this census for assisting mostly in implementing a system that managed the census data, data processing, tabulation, analyses and reporting. The assistance offered is greatly appreciated.

I would also like to thank all the leaders of each Island Kaupule and the people of Tuvalu for their support. To the Census Steering Committee members, we fully acknowledge your fruitful work all throughout the census.

Finally, I am greatly grateful to all my staff and part-time workers for their hard work which has made this census a success. Last, but not least, I wish to congratulate the Central Statistics Division for the work, well done and especially the report writers for completing this analytical report on time.

Fakamaalo mo galuega gali,



Ms. Grace Alapati  
**Census Commissioner**

## 2 TAKING TO 2012 CENSUS OF TUVALU

### 2.1 2012 Census Background

At early dates of the second quarter of 2011, the Central Statistics Department (CSD) of Tuvalu practically began its preparatory activities for the 2012 census. The office initially planned the essential activities where the SPC Technical Assistant visited to revise the set out workplan of the census.

And during the preparatory phase, the critical activities of the census identified are the

- i. designing of the census questionnaire
- ii. creating the manageable database to manage the census data
- iii. census fieldwork material
- iv. census training
- v. census enumeration fieldwork
- vi. data processing of census data including data tabulations
- vii. data analyses
- viii. census reports
- ix. dissemination of census outcomes.

These activities would affect the duration of the whole census matters whenever there is a delay to any of them. And therefore these activities were to completely perform as they were scheduled to avoid the incurred additional cost.

The CSD initiated the census questionnaire started off with the users consultation rounds. It is an opportunity for the department to identify the users data needs.

The Steering Committee was formed as an external body besides the CSD purposely to monitor and approve the proposed census activities including the census budget. The committee eminently participated in revising of the census questionnaire.

To have the department properly equipped for the actual census, the CSD conducted a pilot census on Funafuti during 2011. The pilot census covered 2 enumeration areas of Senala village, 2 enumeration areas of Alapi and 3 enumeration areas of Vaiaku village with a total of 160 households altogether. It was initially planned to have the pilot census conducted on Funafuti and Vaitupu island. And due to shipping problems, Vaitupu island was exempted. The enumeration fieldwork of the pilot census was conducted in 2 weeks, 14 to 25 November, 2011.

The census trainings were conducted 2 to 3 weeks earlier in all the islands. The CSD ensured that the quality of the trainings delivered prepared the fieldworkers properly before they practically conducted actual enumeration.

The census night was fixed at 4<sup>th</sup> November 2012, which was a Sunday. The enumeration fieldwork was done in 2 weeks, which is from 5 to 16 November 2012. The dates were decided so as to be consistent with the 2002 census.



## 2.2 Census Mechanism

The CSD and the Census Steering Committee are the central focal components that drive and operate all the planned census activities. The Government Statistician, Census Commissioner,



*The Steering Committee of the 2012 census*

*top row left to right – Frank, Kaeva, Uatea and Semese*

*middle row – Lanieta, Lapana and Vavao*

*bottom row left to right – Seveleni, Miliama, Lupe and Kelena*

Data Processing Officer (DPO) and Census Clerk of the CSD were the main staffs to take control over the census activities. Each of them worked according to their responsibilities provided under their corresponding contracts. The Census Commissioner is basically assigned to ensure that the activities of the project are implemented as planned. The DPO was recruited purposely to create a reliable system that manage the census data and to manage the data processing phase of the census. The Census Clerk responsibly undertaken the clerical and secretariat duties

required by the Census Commissioner. The census as overall was coordinated by the Government Statistician.

The Census Steering Committee is composed of representatives of the Public service, Non-Government Organizations and the Development Partners.

### MEMBERS FROM THE PUBLIC SERVICE

Committee members	Department	Title
Mr Semu Malona	Central Statistics Division	Government Statistician
Miss Grace Alapati	Central Statistics Division	Census Commissioner
Mr Lapana Ene	Education	School Supervisor
Mrs Kaeva Lototele	Health	Health Statistician
Miss Kelena Tapa	Planning and Budget	Budget Advisor
Mrs Lupe Tavita	Women Department	Information and Research Officer
Mr Frank Fiapati	Rural Development	Local Government Officer
Ms. Lanieta Faleasiu	Community Affairs Division	Social Analyst
Mr. Uatea Vave	Agriculture - Extension and Information Section	Senior Agriculture Extension Officer
Mr. Semese Alefaio	Fisheries Research Section	Senior Fisheries Officer

### NON-GOVERNMENT ORGANIZATIONS

Mr Vavao Saumanaia	TNPSO	Chairman
Mrs Miliama Simeona	TUFHA	Director

### DEVELOPMENT PARTNERS

Mrs Sevelni Kapua	UNDP	Country Development Manager
-------------------	------	-----------------------------

## **2.3 Budget**

The Government approved the core budget of AU\$270,894 to meet the census activities. The specifications of the approved fund by years were AU\$21,262, AU\$166,574 and AU\$83,058 for 2011, 2012 and 2013 respectively.

The UNFPA has provided a total of AU\$120,000 to assist the CSD with the census awareness and training costs. The total provision for the 2012 census activities was therefore \$390,894

## **2.4 Publicity**

The CSD arranged important activities including the competitions to seek full support of the public. The competition to design a 'census logo' and assigning of a 'census theme' were advertised early in 2012. The competition turned out with a motivating Tuvalu phrase 'A KOE E TAUA' meaning 'everyone counts' as the census theme. A professional designed logo with colours was attractively designed, it simply reflect the message, everyone in Tuvalu are important.

Later on all the primary schools students in Tuvalu were given the opportunity to compete for the best 10 census posters and best 10 census poems. The Education department selected the best 10 posters and 10 poems from those submitted and the CSD congratulated the winners and provided their prizes. Including the children in census promotions introduced better census awareness opportunities to the parents.

A census newsletter was produced to keep the public informed of the census status and activities. The newsletter was accessed by the departments of the Public service and the Kaupule of all the islands.

The CSD utilized the radio to alert the public of the census. The census promotions were created to be advertised frequently over the radio. The promotions communicate to the people the importance of population -and housing census, census theme and initiative of the enumeration fieldwork. The Census Commissioner has been 'On-Air' programs to communicate census essentials and importance to the public.

The census campaign was conducted at the Vaiaku Falekaupule one month prior the actual census fieldwork and was live over the radio. The CSD invited all the island community leaders, island youths representatives and certain participants of NGOs. Other than the invited representatives, the campaign welcomes anyone who wanted to join the occasion. The representatives of the departments for Education, Health, Rural Development, Women, Legal Service and the Planning and Budget supportively discussed the census objectives and importance to the public. The campaign held a census quiz that enabled the participated groups whom were registered to compete and the public to get introduced to census history and important information. And also there was a competition for census songs during the campaign. Interestingly the public is noticed to be excited to hear the census songs composed by the competitors and the respective prized positions were selected by the judges assigned for this competition.

It is noticed for the first time of Tuvalu censuses, the 2012 census has lots of census awareness activities undertaken. Other activities includes a selective group of women were tasked to weave numbers of census hats to be used during the census enumeration fieldwork in all the islands. The CSD announced the public to take part in the best 10 estimates of the 2012 total population. The

prized 10 estimates were selected based from the preliminary analyses of the 2012 census. Other forms of promotions such as census bags, umbrellas and t-shirts were all used to gain the support of the public.

## **2.5 Census materials**

SPC assist the CSD in developing and standardizing of the census questionnaire. And like other countries, the questionnaire is divided into the household questions and the personal questions. Additional forms were added to improve the responses to household questions for floor size, volumes of water storage systems and the persons question regarding the literacy.

The training manual is designed to guide the fieldworkers to understand the objectives of the census, its importance and applications towards national developments, and especially to understand the questions provided in the census questionnaire. The manual directed and guided the fieldworkers with all census essentials including their authorities to collect information, techniques of conducting the interview, fieldwork procedures and confidentiality of the collected information.

The CSD created the classifications of industries, occupations and the countries for manual edits. For the industries classifications, all the existing corporations, companies and businesses including the agencies of the Public service were all coded based from the ISIC Revision 4 of all economic activities. All the occupations of respective industries that were collected again were coded according to the ISCO-08.

The 2 types of control forms were designed to monitor the fieldwork progress. The enumerators control forms records all the households status (i.e. complete, vacant, demolish), dates and number of times they visit the households to conduct the interview. All these forms are to be checked by the respective supervisors. The supervisors control forms records the types of questionnaire (i.e. completed, incomplete, refused) submitted by their enumerators, and the dates they were submitted while checking them. These forms however ensure that the questionnaires are completely filled at the time they are submitted to the office. And also it helped CSD to make certain that all the households were enumerated.

## **2.6 Households list, maps and enumeration areas**

The effort required to update the listing, thus the mapping has been light-weighted by the SPC collaborative work with the Island Profile team of the Home Affairs Ministry. The team conducted a mini-census in 2010. The CSD utilized the team's household list that already being mapped to continue the listing updates. Few modifications were made to the list based on the updates discovered during the pilot census together with the changes identified by the listers 3 to 4 months preceding the census fieldwork.

The enumeration areas were then generated within villages based on the strategy that an enumerator on Funafuti covered about 30 households and about 50 households for the outer islands enumerators.

## 2.7 Census recruits

The CSD recruited 8 census trainers 29 fieldwork supervisors, 89 enumerators and 6 office supervisors (or officials). The appointed census trainers were trained by CSD to train the census fieldworkers in the outer islands with the assistance from SPC. All the trainers were present in the outer islands during the fieldwork and therefore they were involved in supervising the enumerators and responsible for returning all census fieldwork materials especially the census questionnaires safely to the CSD.

The enumerators are mainly accountable for enumerating every person and households of their enumeration areas during the 2 weeks assigned for census fieldwork. There were 3 types of enumerators. One was responsible for filling of the main census questionnaire, the second enumerator responsibility is to complete the measurements form for floor size and water storage system of households. The third type of enumerator was to conducting a separate interview for literacy only. The literacy enumerators were practically recruited in all the outer islands. The supervisors and enumerators of Funafuti did the literacy interview for the households in their areas.

The fieldwork supervisors were tasked to control the fieldwork activities undertaken by their enumerators and to ensure that all the filled census questionnaires were completely filled during the fieldwork and returned safely to their census trainers.

And as there were limited staffs exist in the CSD system, the officials were recruited temporary to assist the CSD with the controls of the census fieldwork of Funafuti.

All the fieldworkers including the officials were provided with the list of the households, maps and control forms of their corresponding enumeration areas to ensure that none of the residents and households would be missed out by the census interviews during the fieldwork.

## 2.8 Enumeration fieldwork

The fieldwork last for 2 weeks and the fieldworkers were geared to have their entire interview or measurements complete before the fieldwork ends. They were trained to cover the listing of all

*Households to be covered by fieldworkers during the fieldwork*

Types of enumerators	10 working days		per working day	
	Funafuti	Outer islands	Funafuti	Outer islands
Officials	151	None	15	none
Enumerators	31	48	3	5
Literacy	none	111	none	11
Measurements	151	95	15	10
Supervisors	60	95	6	10

their households on the first day. That is on Monday, 5<sup>th</sup> November 2012, the enumerators went to every households in their enumeration areas to list all the household members that were present during the

census night, Sunday 4<sup>th</sup> November, and all members that were overseas temporary. For the remaining days of the fieldwork, all the enumerators were supervised by their supervisors to completely fill their questionnaires.

Allocation of the fieldworkers was planned as 1 fieldwork supervisor has to supervise 2 enumerators. And about 30 households per enumerator on Funafuti and about 50 households per enumerator at the outer islands.

And as illustrated above, a thorough supervision was required during the fieldwork. Averagely on Funafuti, the supervisors have to check that a total of 6 main questionnaires (including the literacy forms) and 15 measurement forms of households floor size and water storage volumes were to completely filled and submitted by the enumerators in a day.

Challenges were introduced, the main questionnaires were submitted to fieldwork supervisors and the supervisors were waiting for the measurements forms, therefore delayed their submissions to the officials. The fieldwork was conducted at close dates to USP examinations dates, thus certain enumerators did not pay full attention with their interview as they are the USP students.

With the South-South cooperative practice, the Statistics for Development Department (SDD) of the SPC endorsed the Samoa Bureau of Statistics (SBS) to share its capacity in assisting the fieldwork. And by that, the ACEO for Census and Survey of SBS, Mrs. Malaefono Taua, a capable statistician recognized by SDD was present all along and assisted the fieldwork.

## **2.9 Data processing**

The manual edits is the stage where the CSD has to check the returned census questionnaires were completely filled and coded to be readily prepared for electronic processes. And therefore during the process, the responsible editors were targeted to correct all the errors in filling the questionnaires arises during the enumeration fieldwork that they spotted.

The manual edits was conducted for 2 months starting right after the fieldwork, from mid-November to up to mid-January. The CSD recruited 10 editors from the fieldwork supervisors of Funafuti to carry out the manual edits. These editors were selected as they were assumed as best with the knowledge and experienced gained during the census trainings and would greatly reduce the chance of errors associated to fieldwork responses.

The same editors were retained as coders, to undertake coding for all the census questionnaires. Coding is another crucial activity of the manual edits that make data entry easier and quicker. Majority of the census questions were pre-coded. However, the CSD created the codes for few census questions that were not pre-coded and assigned the coders to enter the codes required for all the census questionnaires

Data entry was conducted for a period of 3 months, from late January to April. A data manageable system was developed by the CSD provided the assistance of SPC using the CSPro software. The system was utilized for data entry. The Data Processing Officer of SPC, Mr Toga Raikoti visited to assist the department in implementing the data entry where the CSD continue recruited the 10 editors and coders to enter the data.

Mr Raikoti continued working in cleaning the census data and run census tables based from the tabulation plan proposed by the CSD

## 2.10 Report authors

Writing of this report was not only done by the CSD. The department gave the opportunity to the users who submitted specific requirements as data needs to be collected by this census, to be authors of certain chapters.



*top row left to right – Lanieta, Uatea, Semese, Opetaiia and Alamai  
bottom row left to right – Itaia, Lupe and Akinesi*

Therefore the report was formulated by the CSD and certain data users listed below, provided the assistance of SPC

<b>Authors</b>	<b>Department</b>	<b>Title</b>
Mrs. Alamai Sioni	Cultural Division	Culture Officer
Mr. Pisi Seleganiu	Public Works Department	Water and Sewage Supervisor
Ms. Lanieta Faleasiu	Community Affairs Division	Social Analyst
Mrs. Lupe Tavita	Women Department	Information and Research Officer
Mrs. Siouala Malua	Fisheries Research Section	Fisheries Officer
Mrs. Fulitua Noa	Fisheries Research Section	Senior Fisheries Officer
Mr. Semese Alefaio	Fisheries Research Section	Senior Fisheries Officer
Mr. Opetaiia Simati	Department of Information & Communication Technology	Director
Mr. Uatea Vave	Agriculture - Extension and Information Section	Senior Agriculture Extension Officer
Mr. Itaia Lausaveve	Agriculture Division – Head Quarter	Director
Mrs. Akinesi Sianoa	Agriculture - Extension and Information Section	Field Officer

## 2.11 Technical assistance

NSO with very limited staffs like Tuvalu use to depend on specialized organizations to assist the surveys and censuses undertaking. The technical supports however were provided by technical staffs of SPC throughout the whole census. There were numbers of in-country visits, internet correspondences, an attachment at SPC and the South-South cooperation. The specialists involved were Mr Phil Bright assisted with GPS and mapping, Mr Toga Raikoti supported in data processing, editing and tabulations using CSPRO, Mrs Kaobari Matikarai assisted in preparatory planning of the census and involvement in census training. Mrs Kaobari Matikarai again, and Mrs Renee Sorchik assisted the CSD in compiling this report.

All the SPC missions would not have been achieved without the full support provided by the Manager of Statistics for Development Department at SPC, Dr Gerald Haberkorn.

## 2.12 Census Act

The 2012 census was taken under the authority of the Census Act 2008 revised Edition, Cap 22.05 which provides for the conduct of the census from time to time. The CSD is mandated by the Census Act as the official government agency responsible for planning and conducting the census in Tuvalu. Census undertaking includes counting all persons living in Tuvalu at the time of the census.

The Census Act does not specify the time interval to undertake the censuses, but authorized the CSD to conduct the census at any time as seen fit by it Minister.

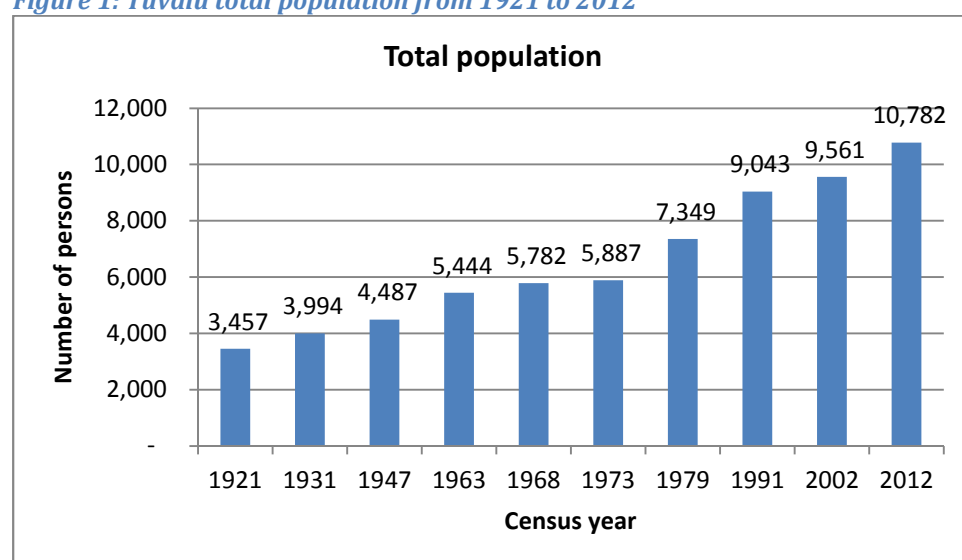
## 3 POPULATION STRUCTURE

### 3.1 Population Trend

The total population of Tuvalu enumerated and as present on 4 November 2012 was 10,782 people: 5,515 men and 5,267 women. As the 2012 census was a de facto count, this number included all persons present at census night in Tuvalu; residents and visitors; and excluded residents away from Tuvalu at the time of the census (even if they intended to be away only for a short time). This population count reflects an increase of 1,221 people compared to the 2002 Census (9,561).

Figure 1 shows the population of Tuvalu from 1921 to 2012. It can be seen from this graph that the population has continuously increased from the beginning of the last century reaching its highest in 2012 with 10,782 people.

*Figure 1: Tuvalu total population from 1921 to 2012*

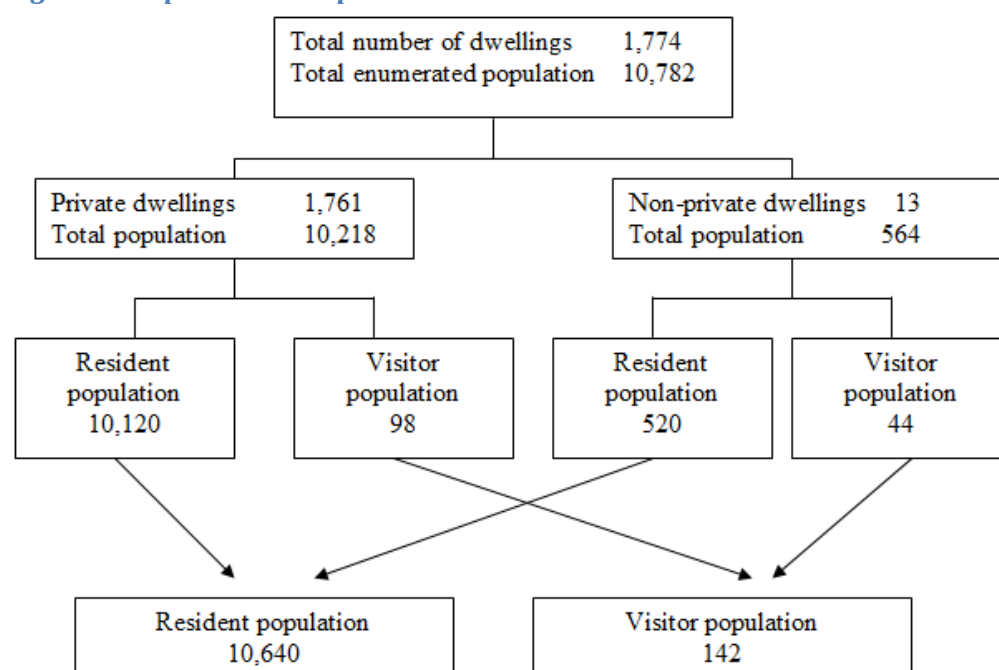


### 3.2 Population Composition

The total enumerated population of 10,782 people included 10,640 permanent residents and 142 visitors (non-residents). Figure 2 shows the distribution of the total population including permanent residents and non-residents among the private and non-private dwellings (institutions) counted during the 2012 census. The patients of the hospital were enumerated as part of their respective private households.



Figure 2: Population composition



### 3.3 Population Size, Change, Distribution and Density

#### A. Total population

The analyses provided in Table 1 were based from the resident population enumerated by place of enumeration. The total population (including short term visitors, tourists, and temporary contract workers) in Tuvalu increased by 12.8% (1,221) during the intercensal period 2002-2012. In accordance with an increasing population between 2002 and 2012, the population density also increased, from 373 people per square kilometre in 2002 to 421 people per square kilometre in 2012.

The population density varied widely by island. While there were 2,205 people per km<sup>2</sup> on Funafuti, the average population density of the outer islands was 203 people per square kilometre.

Table 1: Total enumerated population size, change, distribution and density by island, 2002- 2012

ISLAND	AREA (km <sup>2</sup> )	POPULATION		POPULATION CHANGE 2002 - 2012			POPULATION DISTRIBUTION (%)	DENSITY (person per km <sup>2</sup> )
		2002	2012	TOTAL	%	r*		
<b>FUNAFUTI</b>	<b>2.8</b>	<b>4,492</b>	<b>6,152</b>	<b>1,660</b>	<b>37.0</b>	<b>3.1</b>	<b>57.1</b>	<b>2,205</b>
<b>O/ISLAND</b>	<b>22.8</b>	<b>5,069</b>	<b>4,630</b>	<b>-439</b>	<b>-8.7</b>	<b>-0.9</b>	<b>42.9</b>	<b>203</b>
NANUMEA	3.9	664	556	-108	-16.3	-1.8	5.2	144
NANUMAGA	2.8	589	481	-108	-18.3	-2.0	4.5	173
NIUTAO	2.5	663	606	-57	-8.6	-0.9	5.6	240
NUI	2.8	548	542	-6	-1.1	-0.1	5.0	192
VAITUPU	5.6	1,591	1,558	-33	-2.1	-0.2	14.5	278
NUKUFETAU	3.0	586	536	-50	-8.5	-0.9	5.0	179
NUKULAEAE	1.8	393	324	-69	-17.6	-1.9	3.0	178
NIULAKITA	0.4	35	27	-8	-22.9	-2.6	0.3	64
<b>TUVALU</b>	<b>25.6</b>	<b>9,561</b>	<b>10,782</b>	<b>1,221</b>	<b>12.8</b>	<b>1.2</b>	<b>100</b>	<b>421</b>

\*Average annual rate of growth (in %)

During the census enumeration, the majority (57.1%) of the total population was present on Funafuti, and 42.9% in the outer islands. Each of the outer islands had a share of less than 6% of the total population with the exception of Vaitupu (14.5%).

While the total population of Funafuti increased by 1,660 persons during the intercensal period, the outer islands were decreased by 439 people. All the outer islands showed a decrease in population within the intercensal period.

The difference between the numbers and proportions of the resident population on Vaitupu shown in Table 1 can be explained by the population of Motufoua students being enumerated on the island. Many students who are from the other islands were present on Vaitupu during the census count.

## B. Resident population

The analyses provided in Table 2 were based from the resident population enumerated by place of residence. The resident population increased by 13.7% since the last census in 2002 when there were 9,359 usual residents living in Tuvalu. This number has increased by 1,281 people, resembling an average annual rate of growth of 1.3%. The residents of Funafuti have increased by 1,474 people from 3,962 in 2002 to 5,436 in 2012, an increase of 37.2%. The resident population of the outer islands was declined by 3.6% in the intercensal period. The outer island resident population decreased from 5,397 in 2002 to 5,204 in 2012, a decrease of 193 people.

*Table 2: Resident enumerated population size, change, distribution and density by island, 2002-2012*

ISLAND	AREA (km <sup>2</sup> )	POPULATION		POPULATION CHANGE 2002 - 2012			POPULATION DISTRIBUTION (%)	DENSITY (person per km <sup>2</sup> )
		2002	2012	TOTAL	%	r*		
<b>FUNAFUTI</b>	<b>2.8</b>	<b>3,962</b>	<b>5,436</b>	<b>1,474</b>	<b>37.2</b>	<b>3.2</b>	<b>51.1</b>	<b>1,948</b>
<b>O/ISLAND</b>	<b>22.8</b>	<b>5,397</b>	<b>5,204</b>	<b>-193</b>	<b>-3.6</b>	<b>-0.4</b>	<b>48.9</b>	<b>228</b>
NANUMEA	3.9	855	612	-243	-28.4	-3.3	5.8	158
NANUMAGA	2.8	710	551	-159	-22.4	-2.5	5.2	198
NIUTAO	2.5	817	694	-123	-15.1	-1.6	6.5	274
NUI	2.8	610	729	119	19.5	1.8	6.9	258
VAITUPU	5.6	1,310	1,542	232	17.7	1.6	14.5	275
NUKUFETAU	3.0	701	666	-35	-5.0	-0.5	6.3	223
NUKULAEAE	1.8	392	364	-28	-7.1	-0.7	3.4	200
NIULAKITA	0.4	2	46	44	2,200	31.4	0.4	110
<b>TUVALU</b>	<b>25.6</b>	<b>9,359</b>	<b>10,640</b>	<b>1,281</b>	<b>13.7</b>	<b>1.3</b>	<b>100</b>	<b>415</b>

\*Average annual rate of growth (in %)

While Vaitupu, Nui and Niulakita of the outer islands has shown a relative increase, the remaining outer islands have shown a decline in population.

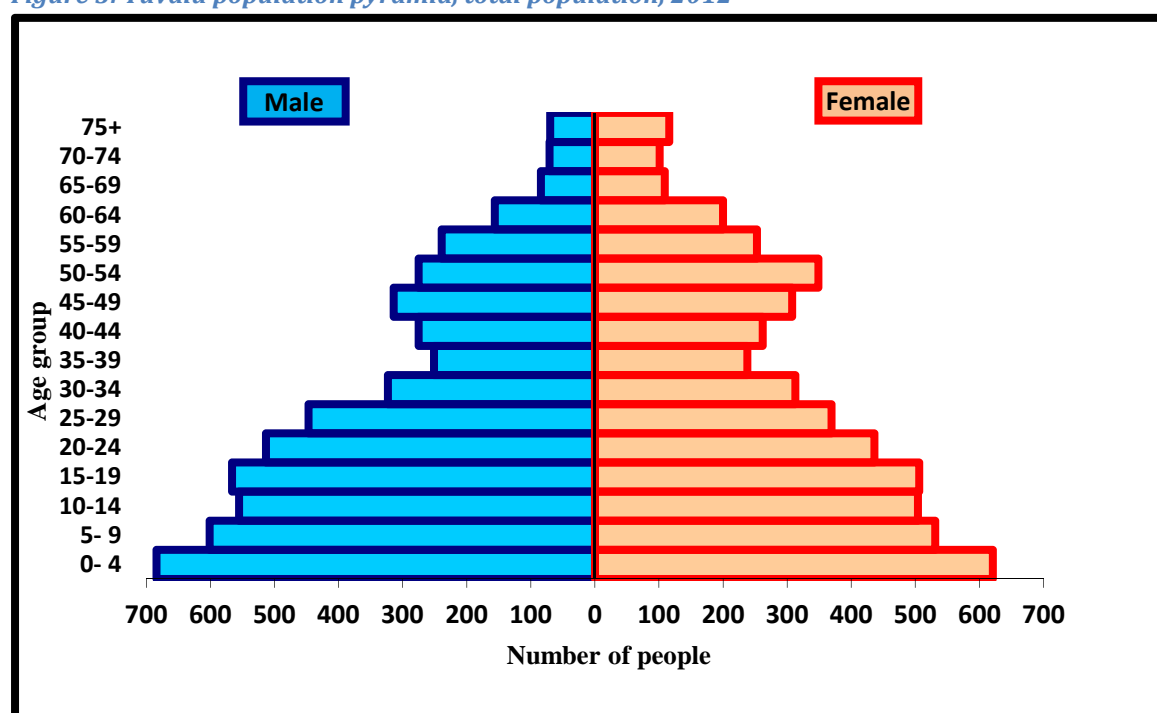
### 3.4 Population by age and sex

The resident population consisted of 5,424 males and 5,216 females in 2012, a surplus of 208 males, resulting in a sex ratio of 104, which means that there were 104 men for every 100 women.

A population pyramid (Figure 3) shows the number of males and females in 5-year age groups, starting with the youngest age group at the bottom, and increasing with age towards the top of the pyramid. The number of males is shown on the left and the number of females on the right.

A distinct feature of the population is the indent of the 25–44 year age groups, meaning that these age groups are much smaller than the younger age groups and the 30-44 year age group is smaller than the older ages directly above them. This indent in the pyramid for ages 25-44 is a sign of out-migration of these age groups.

*Figure 3: Tuvalu population pyramid, total population, 2012*



Thirty-three percent of the resident population was younger than 15 years, and almost 9% were older than 60 years (Table 3). The proportion of the population aged 15-59 was 59%.

The median age of Tuvalu's resident population has increased from 23.6 in 2002 to 24 in 2012 (i.e. in 2012, half of the resident population was younger and the other half older than 24.0 years. The median age of females was about two years higher (25.1 years) than that of males (23.0 years).

The median age of the total resident population of Funafuti (24.3) and the outer islands (23.3) was almost identical. The median age for males on Funafuti was 23.6 while it was 21.8 in the outer islands. The median age for females in both areas was about 25. At 29.7 years, the median age of Nanumaga was the highest of all islands while 18.9 on Vaitupu was the lowest due to the secondary school that is housed on the island. Generally the median age of females was considerably higher than that of males all throughout the islands except for Vaitupu island.

*Table 3: Resident enumerated population by broad age groups, median age, dependency and sex ratio, 2012*

ISLAND	Broad age groups (%)			Dependency ratio <sup>a</sup>	Sex ratio	Median age		
	0-14	15-59	60+			T	M	F
<b>Funafuti</b>	<b>33.3</b>	<b>59.7</b>	<b>7.0</b>	<b>67.5</b>	<b>105.9</b>	<b>24.3</b>	<b>23.6</b>	<b>25.2</b>
<b>Outer Islands</b>	<b>32.4</b>	<b>57.5</b>	<b>10.1</b>	<b>73.9</b>	<b>102.0</b>	<b>23.3</b>	<b>21.8</b>	<b>25.0</b>
Nanumea	32.8	56.5	10.6	76.9	111.0	26.5	21.9	33.5
Nanumaga	35.8	54.4	9.8	83.7	116.9	29.7	22.4	35.2
Niutao	34.0	56.2	9.8	77.9	96.0	27.6	23.6	31.8
Nui	34.7	54.3	11.0	84.1	103.1	27.2	26.3	28.2
Vaitupu	27.7	63.6	8.7	57.2	100.3	18.9	19.3	18.6
Nukufetau	33.5	54.8	11.7	82.5	97.0	23.9	23.1	24.9
Nukulaelae	35.2	51.6	13.2	93.6	91.6	25.9	25.0	27.0
Niulakita	41.3	56.5	2.2	76.9	119.0	24.2	17.5	33.8
<b>Tuvalu</b>	<b>32.9</b>	<b>58.6</b>	<b>8.5</b>	<b>70.6</b>	<b>104.0</b>	<b>24.0</b>	<b>23.0</b>	<b>25.1</b>

\*Dependency Ratio:  $(((0-14)+(60+))/(15-59))$

A common way to describe a population's age structure is via the dependency ratio, which describes the proportion of the economically dependent component of a country's population as a proportion of its productive component. This is conventionally expressed as the ratio of the young population (0-14) plus the old population (60+), to the population in the working ages (15-59).

The dependency ratio of the resident population of Tuvalu in 2012 was 70.6: this means that for every 100 persons in the working ages, there were 71 persons in the dependent ages. The dependency ratio has decreased since the 2002 census when it was 81.9.

The age structure of the outer islands was distinctively different from Funafuti (Figure 4 and 5). The proportion of the independent population (15-59 years) is higher for Funafuti when compared to that of the outer islands. As a result the dependency ratios of the outer islands were considerably higher than Funafuti.

The population pyramid of the outer islands is characterized by an extreme wide base (the proportion of children aged 0-19), and by extreme narrow bars at ages 20-44 years – the main age groups of emigrants.

Figure 4: Population pyramid, Funafuti resident population by number enumerated and usual place of residence

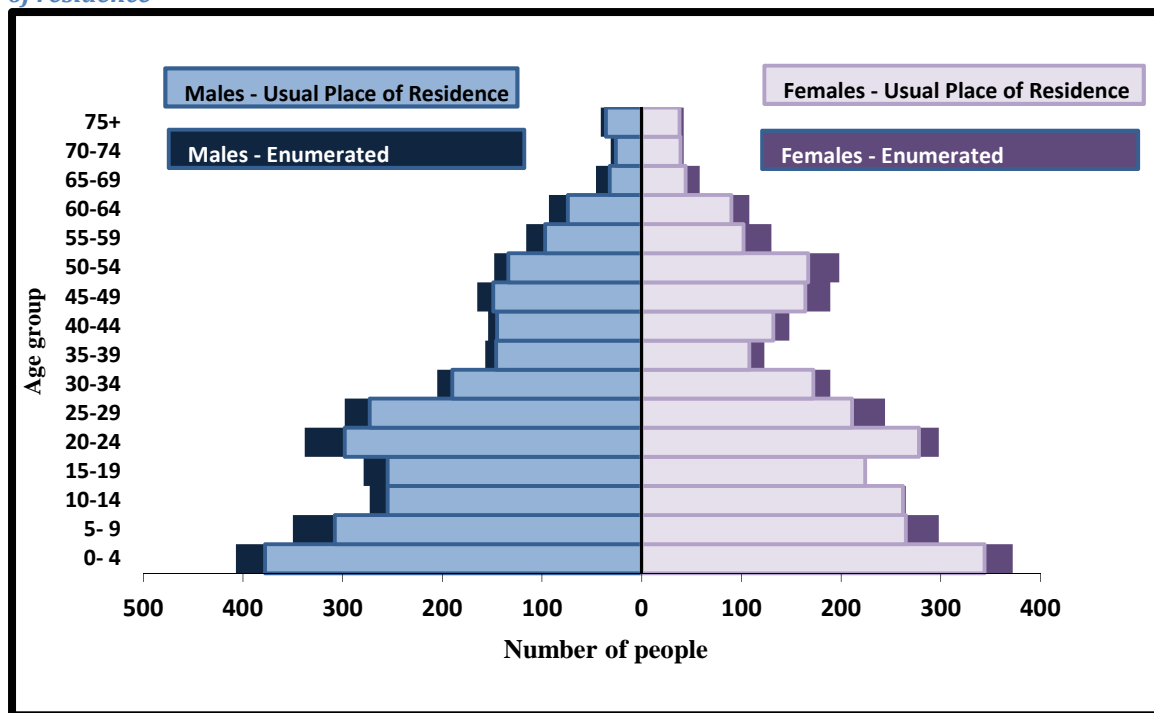
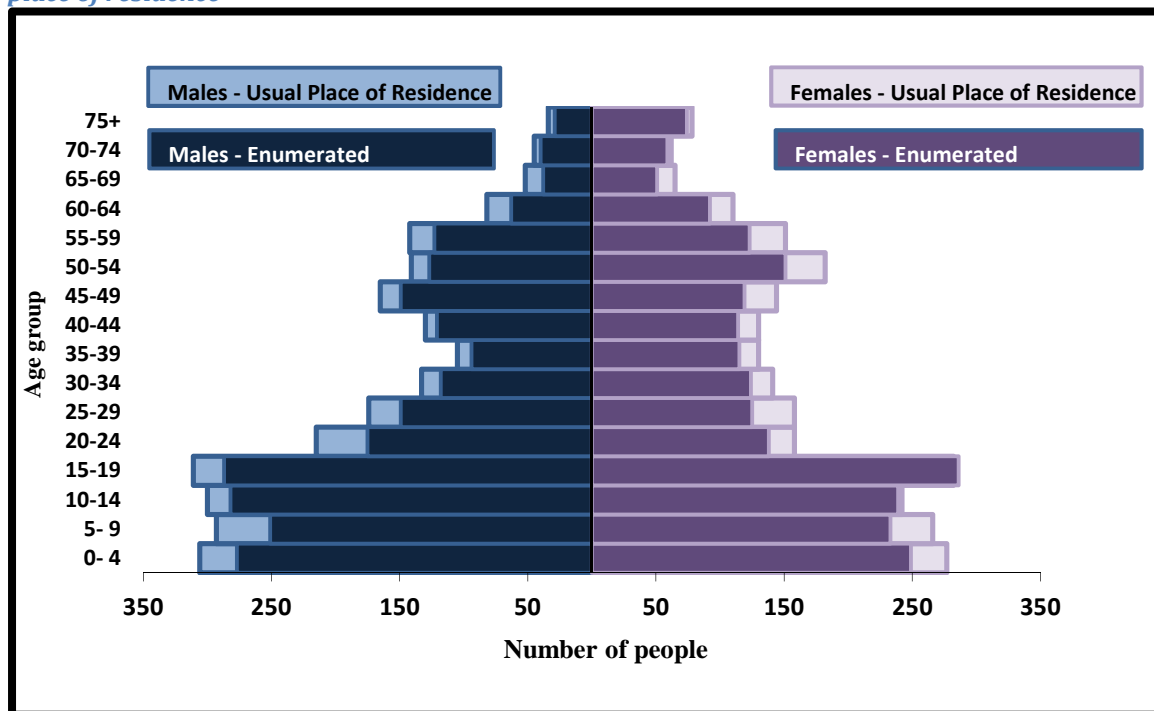


Figure 5: Population pyramid, outer island's resident population by number enumerated and usual place of residence



Figures 4 and 5 illustrate the difference in where residents were enumerated compared to where they stated their usual place of residence was. On Funafuti, enumerated individuals (6,025) outnumbered the number of people reporting to usually live on Funafuti (5,436). The opposite was true in the outer islands; 5,204 individuals reported their usual place of residence as being in the outer islands but just 4,615 were enumerated there. Because there is a discrepancy, the term “resident population” will refer to respondents’ usual place of residence for the rest of this report.

## 4 SOCIAL CHARACTERISTICS

### 4.1 Migration

#### A. Place of residence three years before the census

The population aged 3 years and older were asked where they lived three years before the 2012 census, 82.7% answered that they had lived at their current (November 2012) place of residence; 11% said that they were living elsewhere in Tuvalu, and 6.3% answered that they were living overseas (Table 4 and 5). A total of 415 Funafuti residents (8.3%) lived overseas at the time.

A significant number of people from the outer islands (465) moved to Funafuti, and from Funafuti to the outer islands (445) over the last 3 years. Those who lived in the outer islands 3 years ago accounted for 9% of the population on Funafuti.

*Table 4: Resident population 3 years and older, by usual residence 3 years before the 2012 census (2009)*

Usual place of residence at the time of the census		Usual place of residence three years ago			
		Funafuti	Same island	Other outer island	Overseas
Funafuti	4,994	4,114	-	465	415
Outer Islands	4,851	445	4,028	174	204
Tuvalu	9,845	4,559	4,028	639	619
Percentage (%)					
Funafuti	100	82.4	-	9.3	8.3
Outer Islands	100	9.2	83.0	3.6	4.2
Tuvalu	100	46.3	40.9	6.5	6.3

*Table 5: Distribution of resident population aged 3 years and older, place of residence 3 years before the census (2009)*

Residence 3 years ago (2009)	Percent
Same place	82.7
Elsewhere in Tuvalu	11.0
Overseas	6.3
Total	100

#### B. Place of birth

A total of 37% of all Tuvalu residents were born on Funafuti, 22.3% on the same outer island as where they were living at the time of the census, 19.4% on a different outer island, and 21.4% overseas.

Of the 10,640 resident population 4,861 live on the same island where they were born and 3,506 were born in Tuvalu, but not at their current place of residence.

**Table 6: Resident population by place of birth**

Usual place of residence at the time of the census		Place of birth			
		Funafuti	Same island	Other Outer Island	Overseas
Funafuti	5,436	2,488	-	1,585	1,363
Outer Islands	5,204	1,445	2,373	476	910
Tuvalu	10,640	3,933	2,373	2,061	2,273
Percentage (%)					
Funafuti	100	45.8	-	29.2	25.1
Outer Islands	100	27.8	45.6	9.1	17.5
Tuvalu	100	37.0	22.3	19.4	21.4

Almost half of Funafuti’s residents (45.8%) were born on Funafuti. The remaining Funafuti residents were born in the outer islands (29.2%) or overseas (25.1%).

Among the outer islands residents, more were born on the same island they claimed as their usual place of residence (45.6%) compared to those born on Funafuti (27.8%) or another outer island (9.1%). It appears that there is low internal migration among the outer islands based on the small percentage of outer island residents who lived on a different outer island 3 years ago, and the small percentage who were born on a different outer island than where they currently reside.

## 4.2 Ethnicity

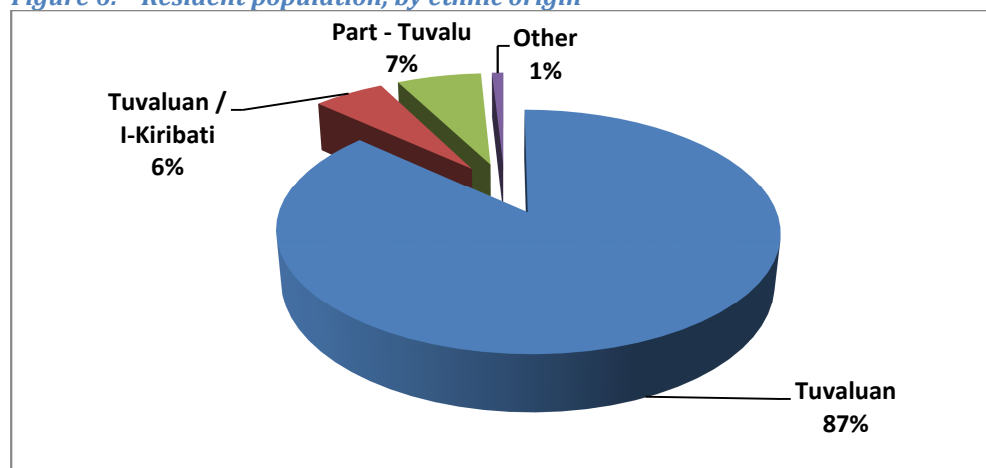
The population of Tuvalu is very homogeneous, with 87% being of Tuvaluan descent and another 12% being of Tuvaluan/I-Kiribati or part-Tuvaluan descent (Table 7 and Figure 6). Only 96 persons, or 1%, were of other descent.

**Table 7: Resident population, by ethnic origin**

Region	Ethnic Origin				
	Total	Tuvaluan	Tuvaluan / I-Kiribati	Part - Tuvalu	Other
Funafuti	5,436	4,796	252	318	70
O/Islands	5,204	4,438	346	394	26
Tuvalu	10,640	9,234	598	712	96

Among the people of “other” descent, 23 of them usually resided in the outer islands and 73 resided on Funafuti.

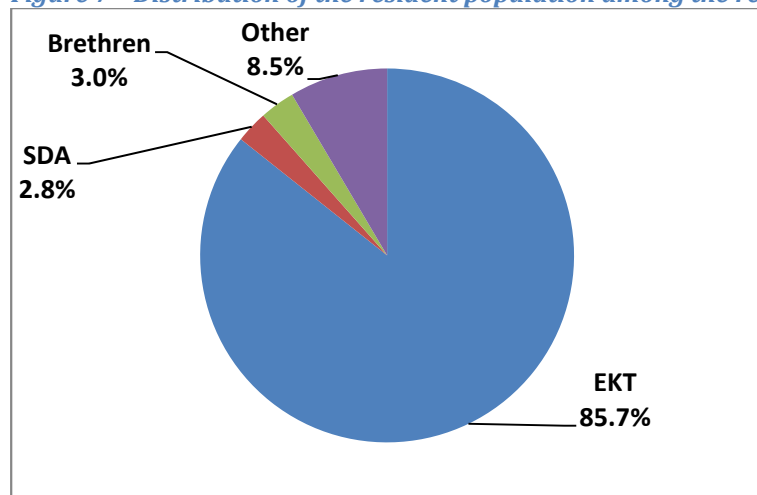
**Figure 6: Resident population, by ethnic origin**



### 4.3 Religion

With 9,118 persons (86% of the population) affiliated to it, the Ekalesia Kelisiano Tuvalu (EKT) was the dominant religion in Tuvalu (Figure 7). The next largest religions were the Brethren and Seventh Day Adventist (SDA), each group members was about 3% of the population. The remaining denominations accounted for 9% of the population in Tuvalu. The details of the religions in the 'Other' category are illustrated in the summary indicators of this report.

*Figure 7 Distribution of the resident population among the religious denominations*



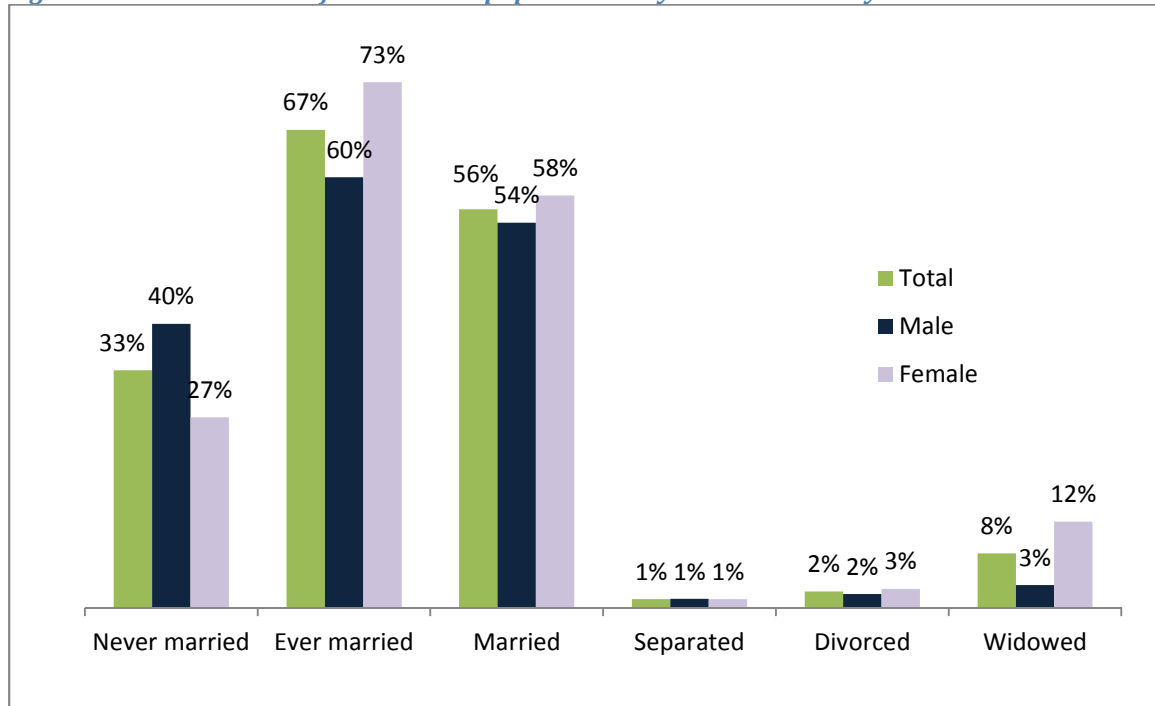
### 4.4 Marital Status

A little more than half of adults aged 15 years and older were married at the time of the census (56%) and about two-thirds had ever been married (67%). A larger proportion of women (73%) than men (60%) had ever been married, and slightly more women (58%) than men (54%) were married at the time of the census. The difference in marital status by sex can be partially explained by the fact that a number of men were likely to be working overseas at the time of the census and were not included in this enumeration. Women tend to get married at an earlier age than men in Tuvalu.

More women were reported being widowed (12%) than men (3%), but this is not surprising as female life expectancy is generally greater than that of males.

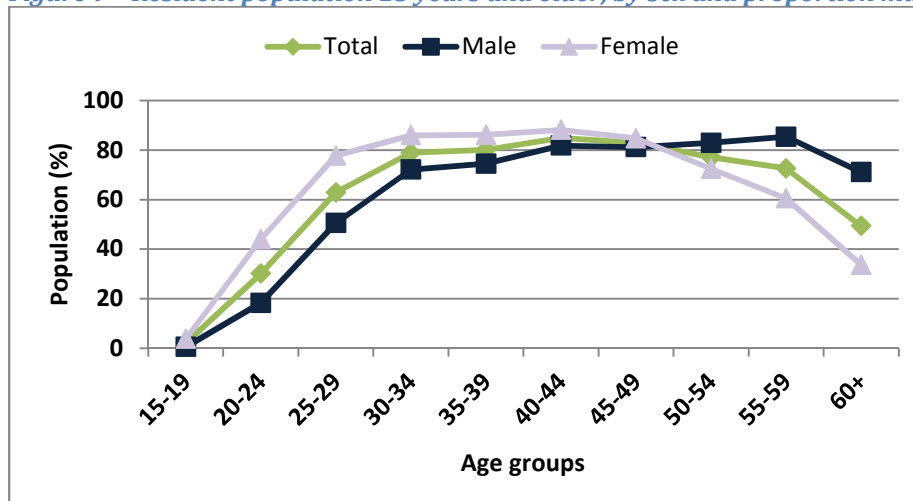


**Figure 8** Marital status of the resident population 15 years and older by sex



Higher proportion of young women compared to men who were married indicates women generally marry at younger ages than men (Figure 9). Only 18% of males were married at 20–24 years of age compared to 44% of women at that age. Similarly only 51% of males were married at ages 25–29 years, whereas 78% of females in this age-group were married. In fact, a larger percentage of women were married than men from ages 15–49.

**Figure 9** Resident population 15 years and older, by sex and proportion married



## 5 EDUCATIONAL CHARACTERISTICS

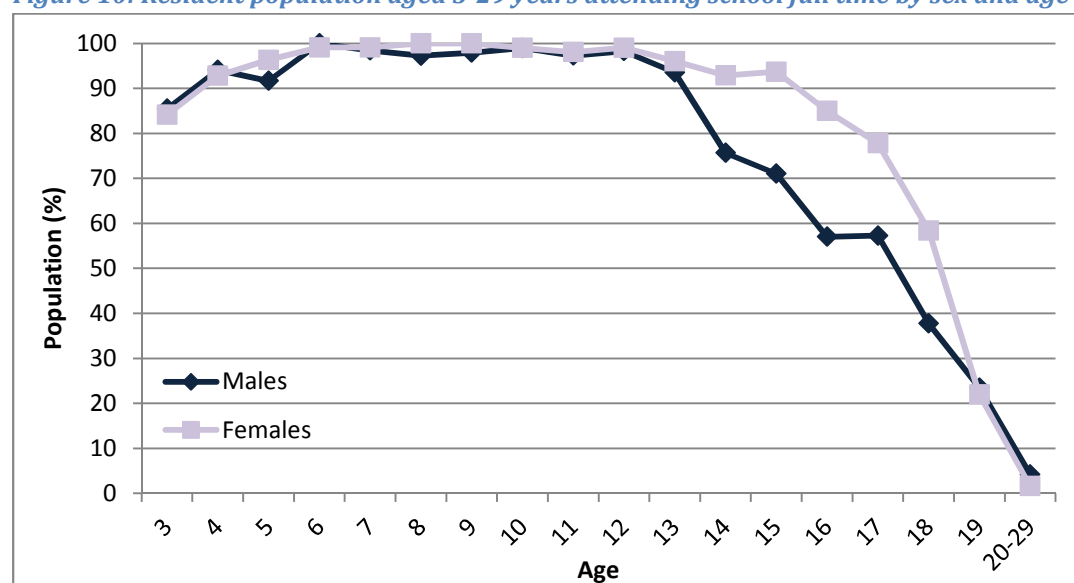
### 5.1 School enrolment

Education in Tuvalu is free for children at primary school level (i.e. Year 1 to Year 8) and compulsory for children at Year 1 to Year 10. This has ensured access to primary and secondary levels of education for all. At the time of the 2012 census, nearly all (98% showed in Table 47) children aged 6-13 reported that they were currently attending school.

School attendance for both males and females was quite high until age 13. Even at the younger ages, school attendance ranged upwards of 84% for children aged 3-5. At age 6, 100% of boys and 99% of girls attended school full time. Between the ages of 13 to 19 there is a gender gap where a larger percentage of girls are attending school full time compared to boys. By age 14, only 76% of boys are attending school full time, compared to 93% of girls the same age. At age 16, another decrease is seen for both sexes; slightly more than half of boys attended school (57%) and girls' attendance dropped to 85%. By age 18, just 38% of boys and 58% of girls attended school full time.

At ages 20-29, when one would be attending post-secondary school, this gender differential reverses even though the absolute numbers are quite small. At these ages, more men (4%) attended posted secondary school than women (2%).

*Figure 10: Resident population aged 3-29 years attending school full time by sex and age*



Among the population that would have been expected to attend primary or secondary school, 338 persons either left school or never attended school which amounted to about 12% of children aged 6-18 years.

## 5.2 Educational qualifications of adults aged 15 years and older

Slightly less than 2% of adults aged 15 or above had preschool education or less. This number did not vary much between Funafuti and the outer islands, nor was there a large difference by sex.

Approximately 60% of adults completed a secondary education or higher. More residents on Funafuti achieved this level of education (70%) compared to those residing in the outer islands (50%). However, these percentages did not vary much by sex.

In terms of tertiary education, 17% of adults had completed Form 7 or some form of post-secondary education. This percentage was twice as high for Funafuti residents (23%) compared to those residing in the outer islands (11%). However, achievement of post-secondary education did not vary much by sex.

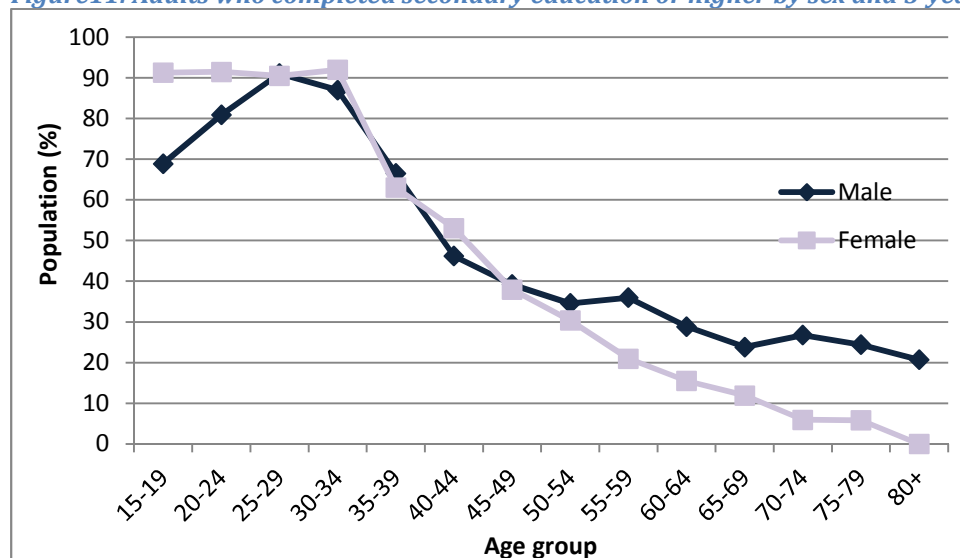
*Table 8: Highest level of education completed among adults aged 15 years and older by sex and place of residence*

Highest level of education completed (%)	Tuvalu			Funafuti			Outer Islands		
	T	M	F	T	M	F	T	M	F
No level completed & Preschool	1.8	1.6	2.0	1.7	1.7	1.6	2.0	1.6	2.3
Old Mission school	8.1	5.1	11.2	5.4	3.2	7.6	11.0	7.2	14.6
Primary school	30.0	32.1	27.8	23.2	24.3	22.0	36.9	40.5	33.5
Secondary school	43.0	43.9	42.1	46.7	47.9	45.3	39.3	39.6	38.9
Form 7 or post-secondary school	17.1	17.2	16.9	23.1	22.9	23.3	10.9	11.1	10.6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Among adults aged 15-24, more women than men completed a secondary education or higher. This trend was seen in reverse around ages 55-59 where higher proportions of men than women completed a secondary education.

For women aged 15-34, the proportion of women who completed secondary education or higher was quite high at 91-92%. Young men were less likely to have completed this level of education. Just 69% of men aged 15-19 and 81% of men aged 20-24 had completed secondary education. Secondary education for men peaked at 91% for ages 25-29. However, at age 35 and above, the percentage fell rapidly for both men and women. By ages 35-39, just 66% of men and 63% of women had achieved a secondary education or higher. By ages 60-64 these numbers fell to 29% for men and 16% for women.

**Figure 11: Adults who completed secondary education or higher by sex and 5-year age group**



### 5.3 Literacy status of adults aged 15 years and older

Table 9 shows the literacy status among adults aged 15 and older by sex. Among those who were asked and agreed to answer the census question asking if they could read and write in Tuvaluan, English, or Nuian, almost 100% were literate (99.8%). This did not vary by sex.

Literacy varied by language. While almost 100% of those asked and who agreed to respond reported that they were able to read and write Tuvaluan, just 87% were literate in English and not quite half (47.9%) were literate in Nuian.

**Table 9: Literacy status of adults aged 15 years and older by language**

Language	Total	Male	Female
Tuvaluan	99.8%	99.8%	99.8%
English	86.9%	89.7%	84.0%
Nuian	47.9%	46.9%	48.8%

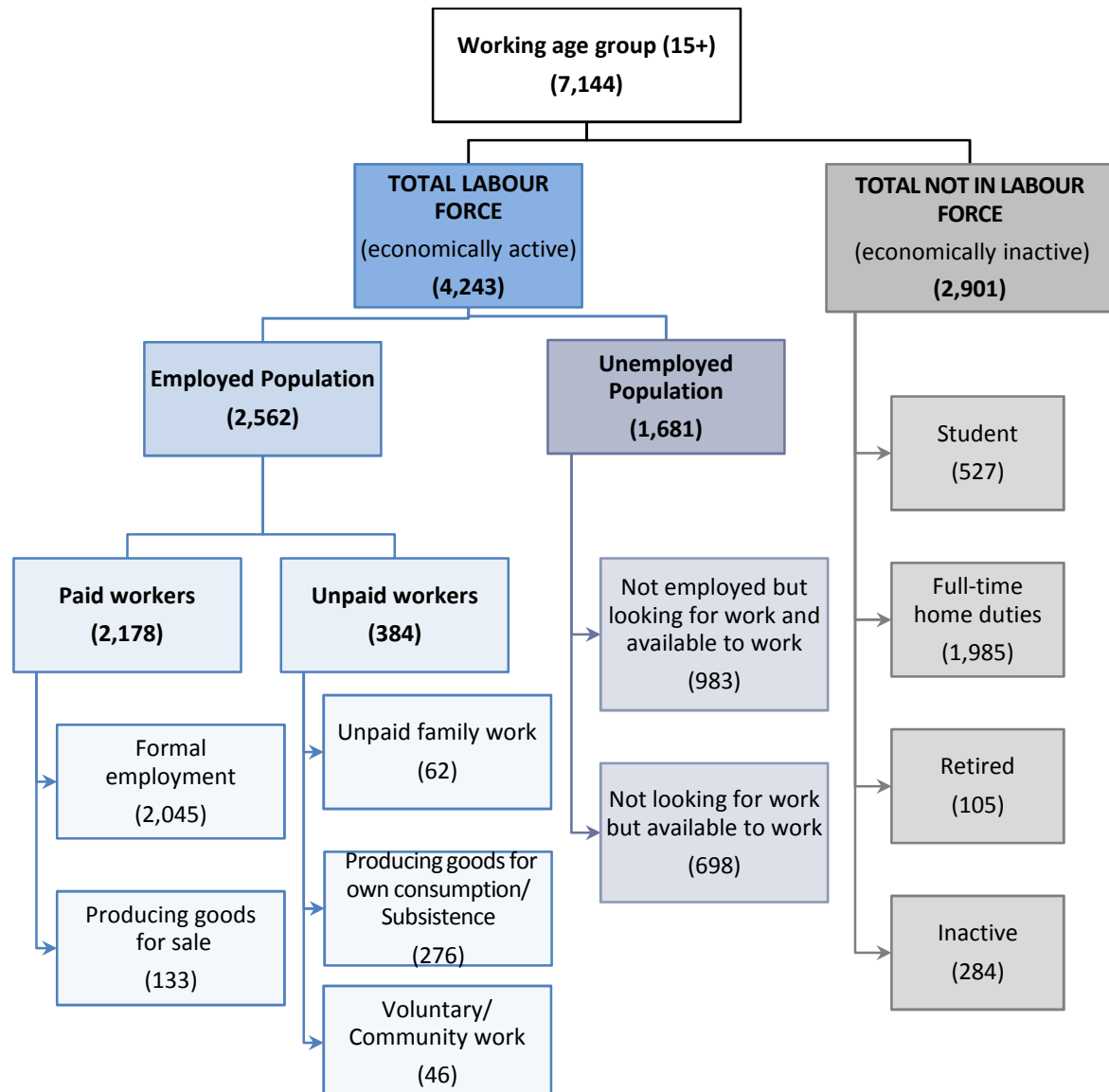
## 6 ECONOMIC CHARACTERISTICS

### 6.1 Economic activity status

Economically active persons included those who were formally employed, people who performed paid or unpaid work the week before the census (such as those producing goods for their family, working for a family business, or performing voluntary work), and those who were unemployed but actively looking and/or willing and available to work. Economically inactive persons included students, those who were engaged in full time home duties, retirees, and others who did not work and who were not willing or available to work the week before the census.

Out of a total of 7,144 residents aged 15 years and older, 59% (4,243) were economically active. A little more than half (57%) of the economically active population were males (2,423) and 43% were females (1,820). Differences were seen by sex between Funafuti and the outer islands in terms of economic activity. Where 60% of women were economically active on Funafuti (1,069), just 42% were economically active in the outer islands (751). More women were in the labour force on Funafuti than in the outer islands.

*Figure 12: Tuvalu Labour Force Framework*



*Table 10: Main economic activity in the week before the census for people aged 15 and older by region and sex*

Region	Economically Active								Economically Inactive					Total
	Employer	Employee	Self-employed producing goods/services for sale	Self-employed producing goods/services for own family use	Unpaid worker in family business	Voluntary work	Unemployed	Total economically active	Student	Home Duties	Retired	Did not work	Total economically inactive	
<b>Tuvalu</b>														
Total	30	2,015	133	276	62	46	1,681	4,243	527	1,985	105	284	2,901	7,144
Male	21	1,135	64	164	38	14	987	2,423	212	761	62	126	1,161	3,584
Female	9	880	69	112	24	32	694	1,820	315	1,224	43	158	1,740	3,560
<b>Funafuti</b>														
Total	30	1,375	105	28	31	3	842	2,414	178	854	55	123	1,210	3,624
Male	21	769	51	23	18	2	461	1,345	83	328	33	66	510	1,855
Female	9	606	54	5	13	1	381	1,069	95	526	22	57	700	1,769
<b>Outer islands</b>														
Total	0	640	28	248	31	43	839	1,829	349	1,131	50	161	1,691	3,520
Male	0	366	13	141	20	12	526	1,078	129	433	29	60	651	1,729
Female	0	274	15	107	11	31	313	751	220	698	21	101	1,040	1,791

## 6.2 Labour Force indicators

The labour force participation rate is calculated by dividing the number of persons 15 years and older that are economically active in the labour force (4,243) – including those who are unpaid and those unemployed but actively looking or available to work, by the total number of persons aged 15 years and older.

The employment-population ratio is calculated by the number of persons 15 years and older in the employed population (2,763) by the total number of persons aged 15 years and older.

The unemployment rate is calculated by dividing the number of unemployed persons by the total number of persons in the labour force.

Overall, the labour force participation rate was 59%, the unemployment rate was 40%, and the employment-population ratio was 36%. The labour force indicators were more positive on Funafuti than in the outer islands. Funafuti had a labour force participation rate of 67% compared to 52% in the outer islands. Additionally, while almost half of the labour force was unemployed in the outer islands (46%), slightly more than 1 in 3 people were unemployed on Funafuti (35%).

Labour force indicators were more positive for males than females. Male labour force participation was higher than female participation in both Funafuti and in the outer islands. While male unemployment (49%) was slightly higher than female unemployment (42%) in the outer islands, the reverse was true on Funafuti where males had an unemployment rate of 34%

compared to the female unemployment rate of 36%. The employment-population ratio was higher for males compared to females in all regions.

**Table 11: Labour Force indicators for resident population aged 15 and older by region and sex**

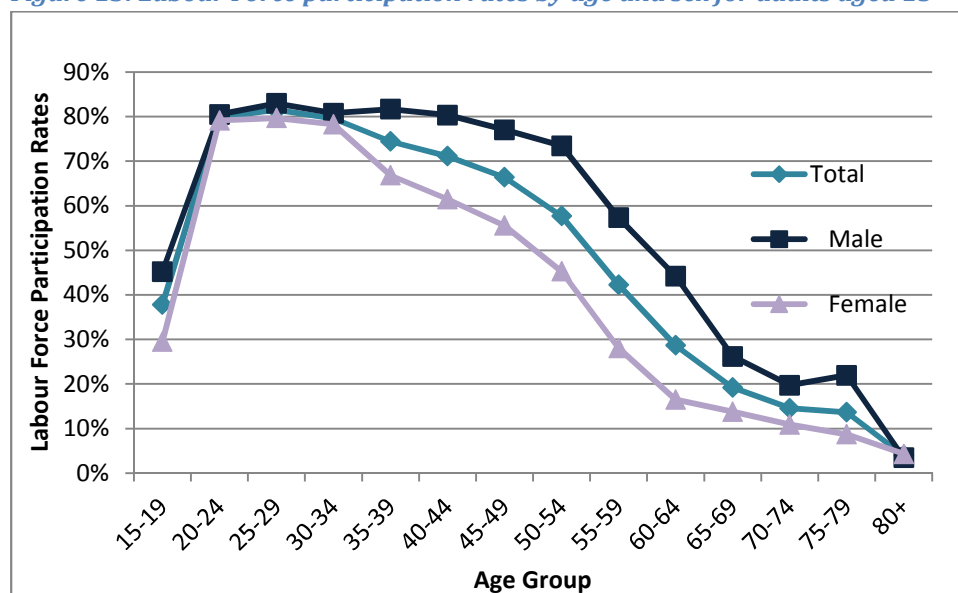
Region	Labour Force Participation Rate			Unemployment Rate			Employment-Population Ratio		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Tuvalu	59.4	67.6	51.1	39.6	40.7	38.1	35.9	40.1	31.6
Funafuti	66.6	72.5	60.4	34.9	34.3	35.6	43.4	47.7	38.9
Outer Islands	52.0	62.3	41.9	45.9	48.8	41.7	28.1	31.9	24.5

### Labour Force participation by sex and age group

Slightly more than one-third of young adults aged 15-19 were economically active (38%). Adults aged 20-34 were the most economically active with a labour force participation rate of 80 to 81%. After age 34, labour force participation remained above 70% until the ages of 40-44. By ages 65-69, the ages of retirement in some countries and the labour force participation rate fell to 19%.

Between the ages of 20 to 34, males and females experienced very similar labour force participation rates hovering around 80%. However, with the age group 35-39, this similarity starts to diverge. Males maintain a labour force participation rate of 82% while female participation falls to 67%. This divergence continues up until the 75-79 year age group. It should be noted that males maintain a labour force participation rate of 70% or more from ages 20 to 54.

**Figure 13: Labour Force participation rates by age and sex for adults aged 15+**

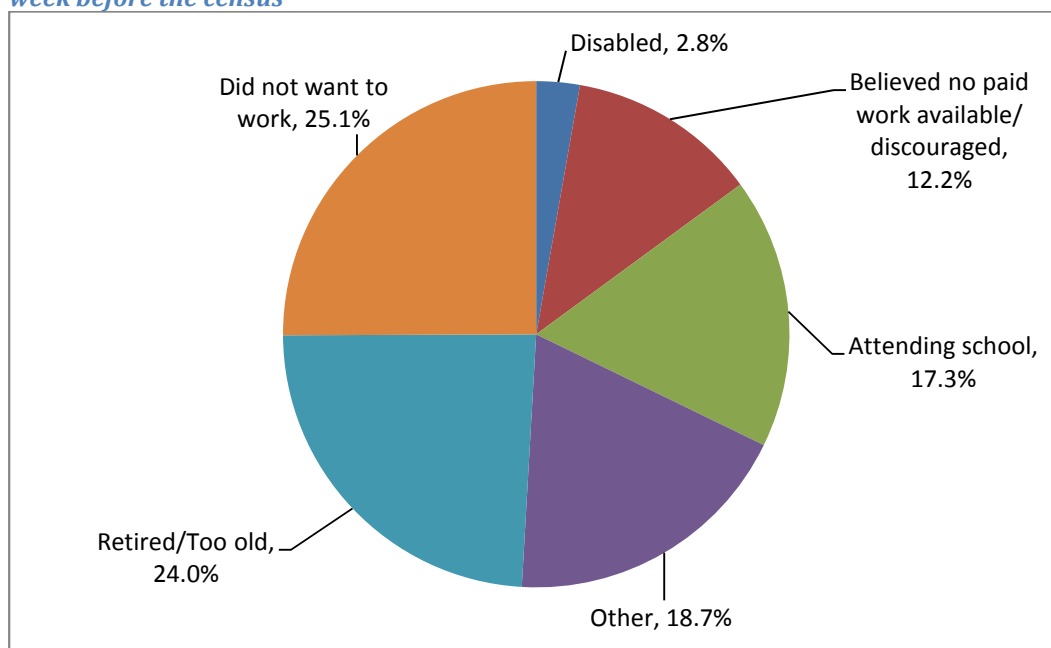


### 6.3 Economic inactivity population

Individuals who did not have gainful employment were asked whether they were willing and available to start work and whether they were looking for work in the week before the census. Of those willing and available to work, only 58% were actively looking for work (data not shown).

Individuals who indicated they were not actively looking for work were asked the reason why not. The primary response for not looking for work was not wanting to work (25%). The secondary reason was because the respondents were retired or felt they were too old (24%). About half of all responses fell into these two categories. About 17% of respondents were attending school, 12% believed there was no paid work available, and 3% were disabled.

*Figure 14: Reasons why adults aged 15+ who were not working did not look for work in the week before the census*

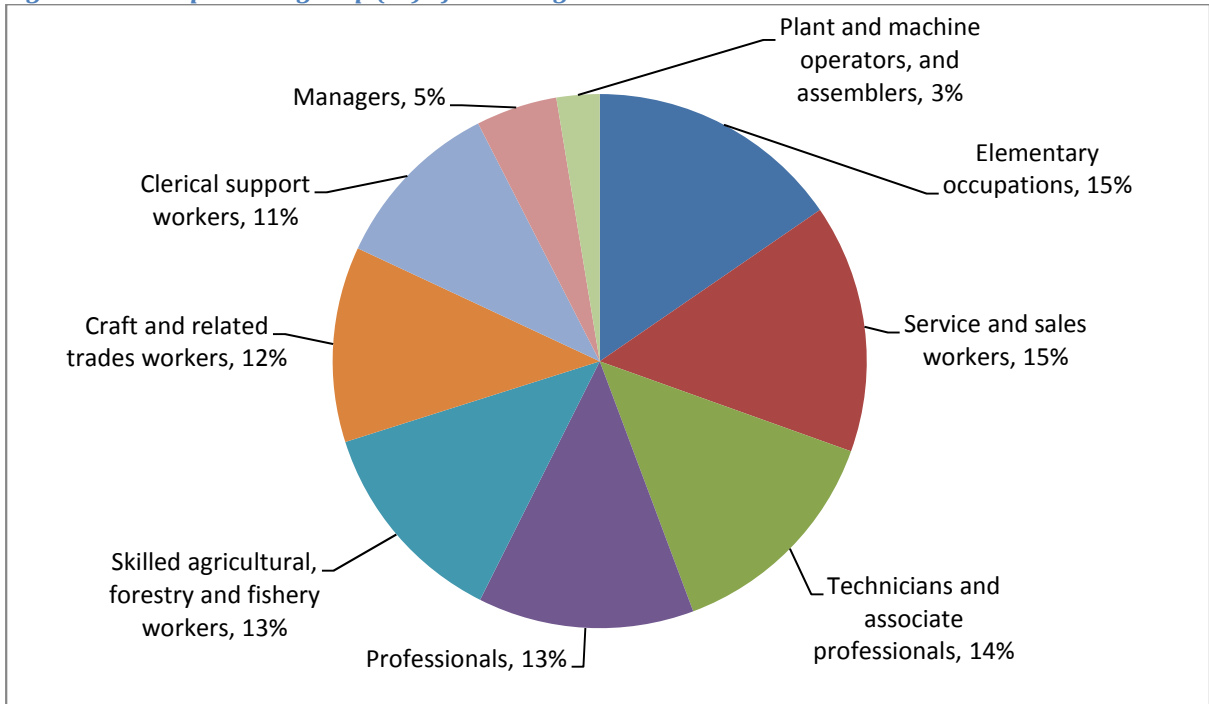


### 6.4 Occupation

The biggest occupational groups were the category “Elementary occupations” and “Service and Sales Workers” accounting for 15% each of all employees. The second largest occupational group was “Technicians and associated professionals” with 14%. “Professionals” and “Skilled agricultural, forestry and fishery workers” both accounted for 13% of occupational groups. “Craft and related trades workers” and “Clerical support workers” accounted for 12 and 11% of all employees respectively. The two smallest groups were managers (5%) and “Plant and machine operators, and assemblers” (3%).

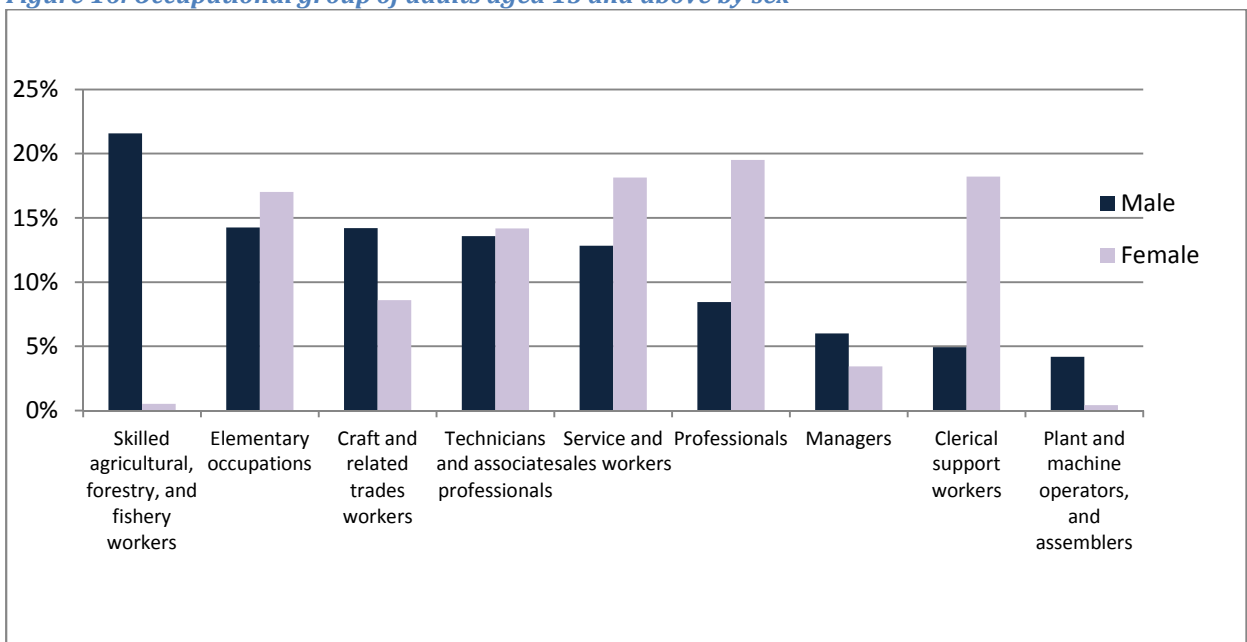


**Figure 15: Occupational group (%) of adults aged 15 and above**



Males far outnumbered females in “Skilled agricultural, forestry, and fishery workers” (22% of males employees compared to just 1% of female employees). More males than females were also working as “Craft and related trades workers,” and “Managers.” A much larger proportion of the female workforce compared to the male workforce was found in the categories “Professionals” (20% of females compared to 8% of males), and “Clerical support workers” (18% of females compared to 5% of males).

**Figure 16: Occupational group of adults aged 15 and above by sex**



## 6.5 Industry

The UN's International Standard Industrial Classification of All Economic Activities Revision 4 (ISIC-4) was used to group industries in Tuvalu into the standard 21 broad ISIC-4 categories.

The biggest industry in Tuvalu was Government-related with one quarter of the workforce working under the 'Public administration and defence; compulsory social security' category. There was not a large difference between the percentage of men and women or between the percentage of the workforce on Funafuti compared to the outer islands working in this industry. The next largest industry containing 16% of the workforce was 'Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use.' More of the workforce in the outer islands was involved in this activity (31%) compared to the workforce on Funafuti (5%). Fourteen percent of respondents worked in 'Wholesale and retail trade; repair of motor vehicles and motorcycles.' However, more respondents on Funafuti (18%), compared to the outer islands (7%), worked in this field. 'Education' was the fourth largest industry accounting for 12% of the workforce. There was a large gender differential in 'Education' with more women (19%) compared to men (7%). This was seen both on Funafuti (13% of women compared to 5 % of men) and in the outer islands (28% of women compared to 10% of men). All other industry categories accounted for 5% or less of the workforce.

There were no individuals in the 'Mining and quarrying' or the 'Real estate activities' industries.

*Table 12: Percent distribution of resident population 15 years and older working in each type of industry by region and sex*

Type of industry	Tuvalu			Funafuti			Outer Islands		
	T	M	F	T	M	F	T	M	F
Public administration and defence; compulsory social security	24.9	26.5	22.7	24.9	24.5	25.5	24.9	29.4	18.6
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	15.7	18.1	12.5	4.8	5.9	3.5	31.4	35.3	26.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	13.5	14.2	12.6	18.1	19.3	16.4	7.0	6.9	7.0
Education	12.1	6.8	19.3	8.3	4.7	13.2	17.4	9.7	28.4
Other service activities	4.6	3.8	5.7	3.4	3.6	3.0	6.3	3.9	9.6
Human health and social work activities	4.2	1.7	7.6	5.8	2.8	9.9	1.9	0.2	4.3
Agriculture forestry and fishing	3.8	6.1	0.7	4.4	7.3	0.6	2.9	4.4	0.9
Manufacturing	3.4	2.6	4.6	5.1	4.5	5.9	1.1	0.0	2.6
Construction	3.3	5.6	0.2	4.1	6.9	0.3	2.2	3.8	0.0
Financial and insurance activities	2.8	2.2	3.5	4.2	3.3	5.5	0.6	0.6	0.6
Information and communication	2.4	2.1	2.8	3.4	2.6	4.5	1.0	1.4	0.4
Electricity gas steam and air conditioning supply	2.1	3.1	0.8	2.0	2.8	0.9	2.3	3.5	0.6
Accommodation and food service activities	1.8	0.8	3.3	3.1	1.4	5.3	0.1	0.0	0.2
Transportation and storage	1.6	2.4	0.6	2.7	4.0	1.0	0.1	0.2	0.0
Professional scientific and technical activities	1.2	1.1	1.3	1.7	1.5	1.9	0.5	0.6	0.4
Administrative and support service activities	1.1	1.5	0.5	1.8	2.6	0.7	0.1	0.0	0.2
Activities of extraterritorial organizations and bodies	0.5	0.6	0.4	0.9	1.1	0.7	0.0	0.0	0.0
Arts entertainment and recreation	0.5	0.3	0.8	0.7	0.3	1.3	0.1	0.2	0.0
Water supply; sewerage waste management and remediation activities	0.4	0.7	0.1	0.6	1.1	0.0	0.2	0.2	0.2
Mining and quarrying	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Real estate activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

## 6.6 Secondary Economic Activities

Of the 6,834 people involved in some sort of paid or unpaid economic activity the week before the census, 91% or 6,246 people indicated having a secondary paid or unpaid economic activity. The most common secondary activity was home duties, reported by 52% of respondents (3,582 respondents). However, a larger percentage of women (66%) than men (39%) reported home duties as their secondary activity. Nineteen percent of respondents reported tending livestock or maintaining their home garden as a secondary activity (1,327 respondents). There was again a gender differential with 36% of men reporting this activity compared to just 3% of women. About 7% of respondents reported producing goods for their own personal use (455 respondents) and another 2% indicated producing goods for sale (103 respondents).

*Table 13: Secondary paid and unpaid economic activities among adults aged 15 years and older*

Region	Home duties	Tendering livestock/ garden	Producing goods mainly for own use	Part-time working for wages	Unpaid worker in family business	Producing goods mainly for sale	Other	None	Total*
<b>Tuvalu</b>									
Total	3,582	1,327	455	13	19	103	747	588	6,834
Male	1,357	1,223	191	9	9	30	382	240	3,441
Female	2,225	104	264	4	10	73	365	348	3,393
<b>Funafuti</b>									
Total	2,288	581	89	7	7	29	318	165	3,484
Male	856	564	66	6	5	7	183	93	1,780
Female	1,432	17	23	1	2	22	135	72	1,704
<b>Outer Islands</b>									
Total	1,294	746	366	6	12	74	429	423	3,350
Male	501	659	125	3	4	23	199	147	1,661
Female	793	87	241	3	8	51	230	276	1,689

*\*Total adults aged 15+ who indicated a main activity in the week before the census.*

*Excludes those who said they did not work.*

## 7 HEALTH CHARACTERISTICS

All adults aged 15 years and older were asked in the 2012 census whether they smoke cigarettes or use tobacco, drink alcohol, or drink kava. Table 16 shows the percentages of men and women who were reported using these different substances either “regularly” or “sometimes.”

Males are more likely than females to smoke cigarettes or use tobacco, drink alcohol, and drink kava. More than half of males 15 years old and older smoke cigarettes or use tobacco (53%) or drink alcohol (60%), about 10% of women drink alcohol and about a quarter (23%) smoke or use tobacco. About 20% of men drink kava compared to 11% of women.

Cigarette and tobacco usage is higher in the outer islands compared to Funafuti for both males (60% compared to 46%) and females (25% compared to 20%). Alcohol use was slightly lower in the outer islands (33%) compared to Funafuti (37%).

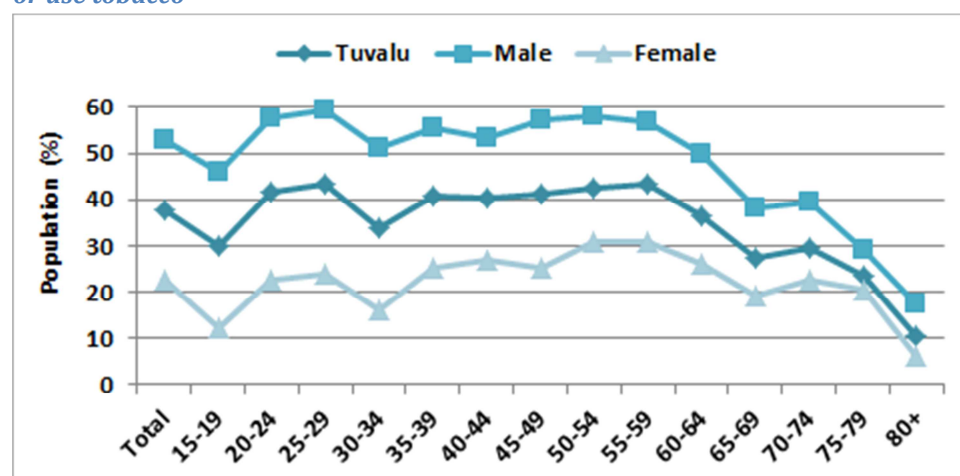
*Table 14 Proportion of resident population 15 years and older who smoke cigarettes, drink alcohol, or drink kava*

Region	Cigarette or tobacco use			Drink alcohol			Drink kava		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Funafuti	33.6	46.4	20.2	36.8	61.2	11.2	10.2	17.8	2.2
Other Islands	42.2	60.2	25.0	32.7	58.4	7.9	11.5	22.3	1.0
<b>Total</b>	<b>37.8</b>	<b>53.0</b>	<b>22.6</b>	<b>34.8</b>	<b>59.8</b>	<b>9.6</b>	<b>10.8</b>	<b>20.0</b>	<b>1.6</b>

### 7.1 Smoking

Males were more likely to smoke cigarettes or use tobacco in all adult age groups compared to females. Among the population under age 65, 15-19 year olds experienced the lowest proportion of cigarettes and tobacco used at 30%.

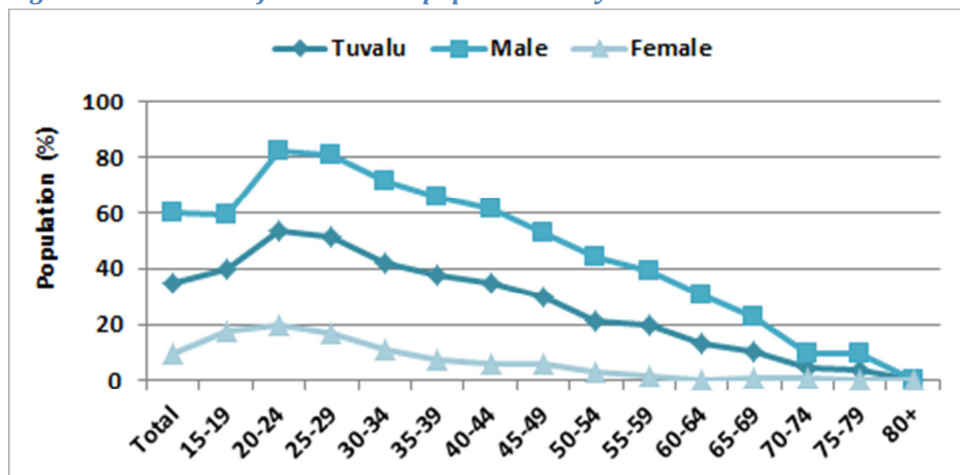
*Figure 17 Percent of the resident population 15 years and older who smoke cigarettes or use tobacco*



## 7.2 Drinking Alcohol

Among all the adult age groups, males were more likely to drink than females. People aged 20-24 years were the most likely to drink alcohol, 83% of males and 20% of females reported using alcohol either “regularly” or “sometimes.” Alcohol usage generally declined with age.

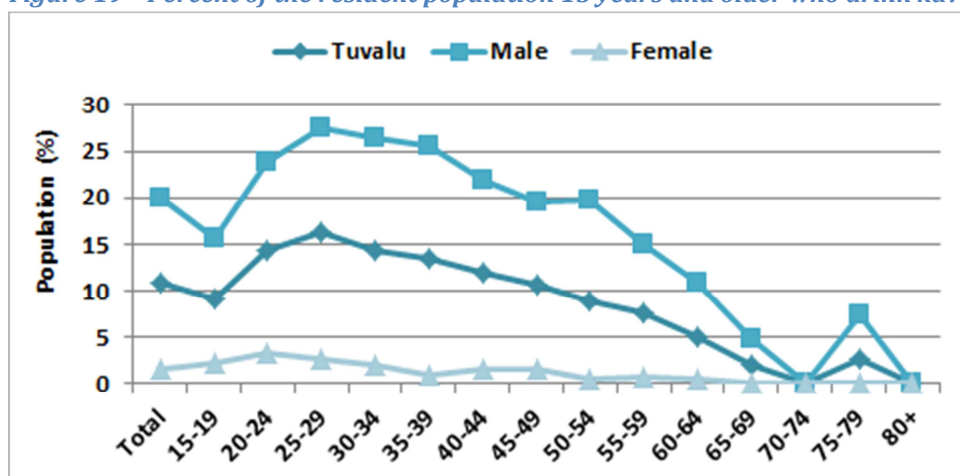
*Figure 18 Percent of the resident population 15 years and older who drink alcohol*



## 7.3 Drinking Kava

As with tobacco and alcohol, men were more likely than women to drink kava in all the adult age groups. The proportion of men drinking kava was highest in the age group 25-29 years at 28%. The highest kava usage among women occurred in the age group 20-24 with just 3% of women reporting use. Kava usage generally declined after age 30.

*Figure 19 Percent of the resident population 15 years and older who drink kava*



## 8 DWELLING AND HOUSEHOLD CHARACTERISTICS

### 8.1 Introduction

This chapter summarises the characteristics of dwellings and households. A dwelling means a building or structure that households reside in. A household refers to a family or a group of people who normally eat and share things together. In summary, the 2012 census enumerated 1,761 households while 13 were the institutions.

The primary focus of this analysis is on occupied dwellings and households living in them. The number of households had increased by 116 between 1991 and 2002 and 193 between 2002 and 2012 when there were only 1,568 households recorded.

*Table 15: The households, the occupants and average household size*

Island	Private households	Resident population by place of enumeration			Average household size
		T	M	F	
Nanumea	115	544	292	252	5
Nanumaga	116	481	258	223	4
Niutao	123	606	298	308	5
Nui	138	542	281	261	4
Vaitupu	226	1,555	747	808	7
Nukufetau	124	536	267	269	4
Funafuti	845	6,025	3,101	2,924	7
Nukulaelae	67	324	164	160	5
Niulakita	7	27	16	11	4
<b>Total</b>	<b>1,761</b>	<b>10,640</b>	<b>5,424</b>	<b>5,216</b>	<b>6</b>

Table 15 provides the average household size of Tuvalu (by islands) at the time of the 2012 census. The average household size was estimated at 6 people per household. Vaitupu and Niulakita have higher household sizes of 7 people. The outer islands have 5 people and lower per household averagely. Nanumaga, Nui, Nukufetau and Niulakita had the lowest with 4 persons per household.

In 2002, the average household size was recorded at about the same, 6 persons per household

### 8.2 Household Composition

Table 16 and Figure 20 reflect the household composition based from the relationships of family members to the head of households.

The majority of all heads of households in Tuvalu were 75% (1,327) males and 25% (434) were female. The low incidence of male being the spouses (6%) shows that males are usually the head

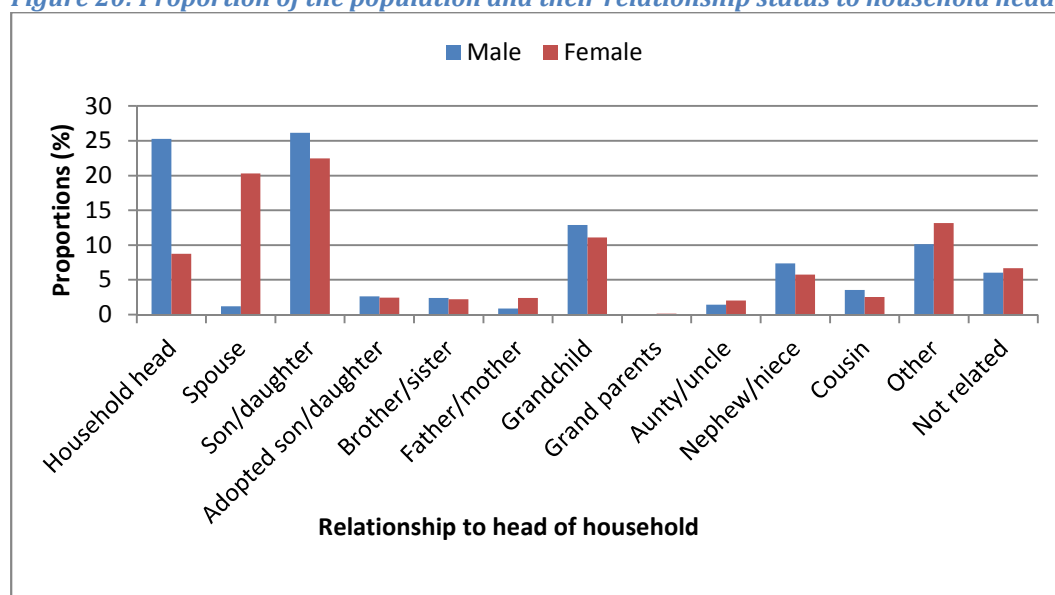
of household. The women can only be household heads if the males (husband, father or father-in-law) are not present.

An extended family structure is common in Tuvalu, as only 55% of all household members were husband and wife and their children - the so-called nuclear family. Another 39% were other relatives such as parents, siblings, cousins, uncles/aunties, nephews/nieces etc, and 6% were non-relatives

**Table 16: Population in private households and their relationship status to household head**

Relationship to household head	Number of persons in private households			Distribution (%)
	T	M	F	
Household head	1,761	1,327	434	17
Spouse	1,072	63	1,009	10
Son/daughter	2,487	1,372	1,115	24
Adopted son/daughter	261	139	122	3
Brother/sister	235	126	109	2
Father/mother	166	47	119	2
Grandchild	1,229	677	552	12
Grand parents	10	2	8	0
Aunty/uncle	177	76	101	2
Nephew/niece	671	386	285	7
Cousin	314	187	127	3
Other	1,187	533	654	12
Not related	648	316	332	6
<b>Total</b>	<b>10,218</b>	<b>5,251</b>	<b>4,967</b>	<b>100</b>

**Figure 20: Proportion of the population and their relationship status to household head**





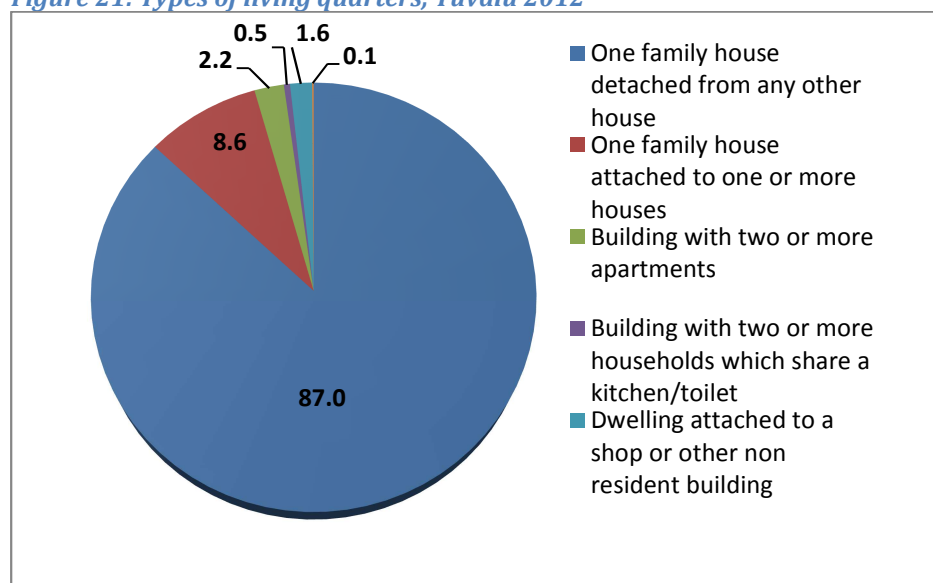
### 8.3 Type of Living Quarters

Tuvalu 2012 census provides information on the type of living quarters that each household lived in. Seven types of living quarters categories were distinguished:

1. One family house detached from any other house;
2. One family house attached to one or more houses;
3. Building with 2 or more apartments;
4. Building with two or more households which share a kitchen/toilet;
5. Dwelling attached to a shop or other non-resident building
6. Lodging house;
7. Other (any other type of building that cannot be classified as one of the above types).

Majority of households (87%) lived in a one family house detached from any other house followed by 8.6% lived in a one family house attached to one or more houses. There were less than 1% households occupied a building with two or more apartments, building with two or more households which share a kitchen/toilet and a dwelling attached to a shop or other non-resident building (Figure 21).

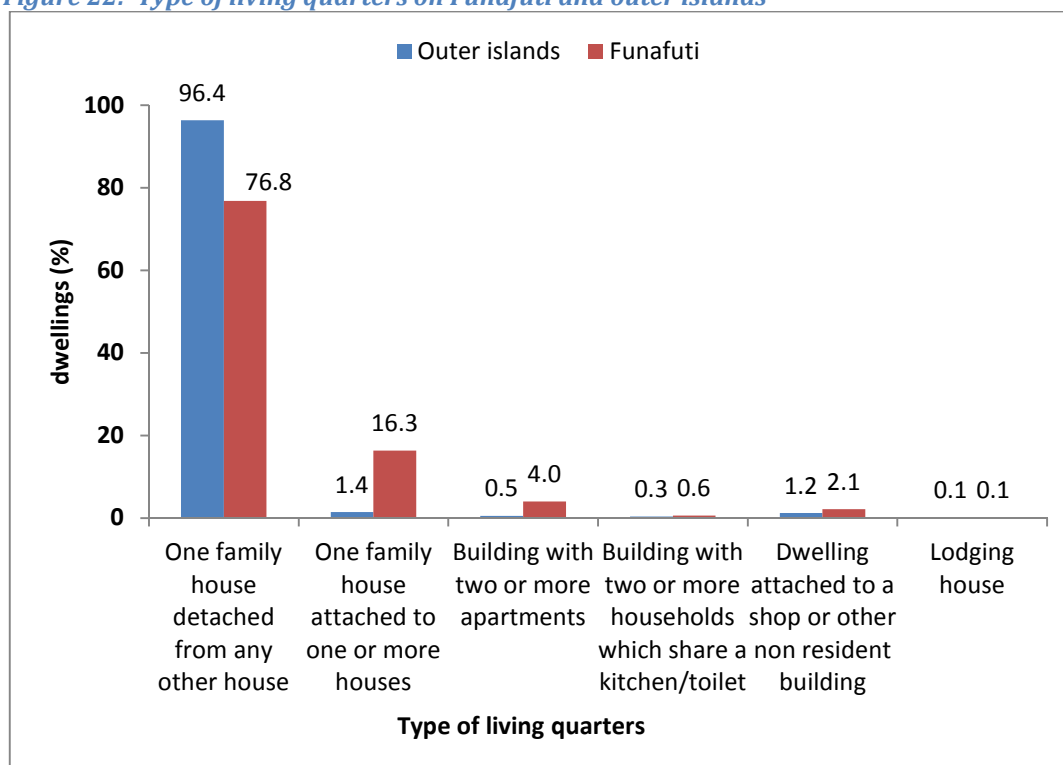
Figure 21: Types of living quarters, Tuvalu 2012



Looking at the living quarters by region, the same trend illustrated in Figure 21 exhibited on Funafuti and the outer islands. Households live mostly in a one family house detached from any other house followed by the type; a one family house attached to one or more houses. The lodging housing has the least incidence of 0.1% in both regions.

It is interesting to know that few buildings have 2 or more households share the same kitchen and toilets

Figure 22: Type of living quarters on Funafuti and outer islands



## 8.4 Dwelling ownership

Table 17 depicts of ownership dwelling resided by households, whether the dwelling is;

- owned by the head or any member of the household;
- rented from the government or private;
- under personal arrangement
- under arrangement other than specified above

A total of 67% (1,183) households reported to own the dwellings they live in. The remaining households (33% or 578) do not own the houses they resided, of which 1% (12) were identified as households with no proper ownership arrangements.

An indication of 21% (377) households rent the dwellings they resided. These households (37%) are common on Funafuti. In the outer islands only 7% households live in rental places. Figure 23 shows most rental dwellings are owned by the private or individual owner (41%) followed by Government (39%) and Kaupule (16%). The results indicated the need for Tuvalu Government in providing more housing services to the public services, particularly for civil servants.

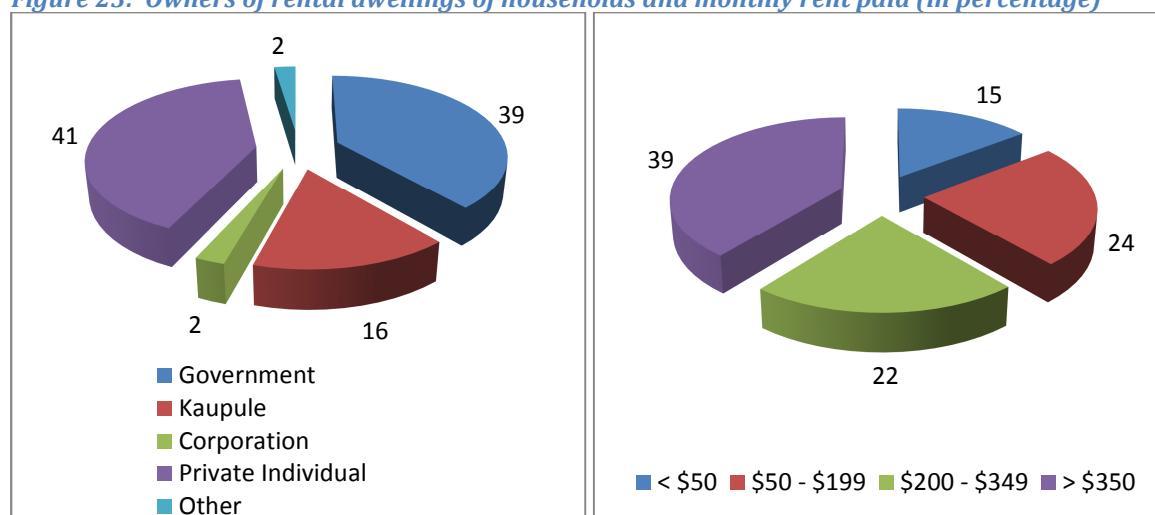
**Table 17: Ownership of dwellings resided by households**

Island	Own this house	Rent this house	Personal arrangement	Other	Total
Nanumea	91	6	17	1	115
Nanumaga	100	3	13	-	116
Niutao	80	9	32	2	123
Nui	123	12	2	1	138
Vaitupu	183	19	24	-	226
Nukufetau	107	7	9	1	124
Funafuti	443	310	85	7	845
Nukulaelae	56	4	7	-	67
Niulakita	-	7	-	-	7
<b>Total</b>	<b>1,183</b>	<b>377</b>	<b>189</b>	<b>12</b>	<b>1,761</b>
<b>Percentage of total households by regions</b>					
<b>Funafuti</b>	52.4	36.7	10.1	0.8	100
<b>Outer Islands</b>	80.8	7.3	11.4	0.5	100
<b>Tuvalu</b>	67.2	21.4	10.7	0.7	100

Households owning the house they lived by are noted to be much higher in the outer islands than on Funafuti. Opposing to it, households live in rental places is much higher in numbers for Funafuti compared to those of the outer islands.

A total of 39% households whom live in rental places are paying more than \$350 monthly, and 15% are paying less than \$50 per month.

**Figure 23: Owners of rental dwellings of households and monthly rent paid (in percentage)**



## 8.5 Land ownership

Heads of households were asked whether the land that the house was built on was:

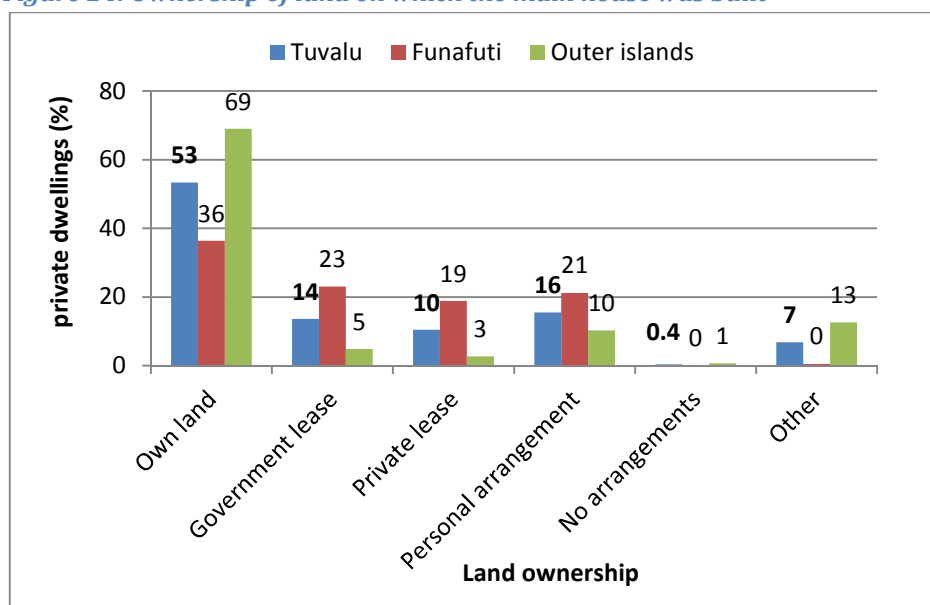
- owned by the head of the household, spouse or other family member;
- government leased, in which the land was owned by the government and the household occupants paid a lease to the government for a specified period;
- privately leased, where the land belonged to someone else and that the household occupants paid for the land;
- personal agreement, where the land belongs to someone else where the occupants and land owner have made arrangements;
- no arrangement made;
- other arrangements

Figure 24 presents the proportion of type of land ownership on which the main house was built on Funafuti and the outer islands. It is 53% households have their main houses built on their own lands, 69% households in the outer islands are of this kind.

Another 40% households have their main houses were built on Government lease, private lease or under personal land arrangement. Demonstrations indicate such ownership arrangement being popular on Funafuti compared to the outer islands. As expected, the employees of the Public service who occupied the Government houses and dwellings that were built on private lease live on Funafuti.

About 7% dwellings were identified as, other arrangements (arrangement such as between the community and the household) and also without proper arrangement made. Most of these dwellings are located in the outer islands.

*Figure 24: Ownership of land on which the main house was built*



## 8.6 Housing structure

### A. Main house construction

Of the total private dwellings, 49% used permanent concrete as the main building material, 30% used timber and 17% utilized both local and permanent materials. It is interesting to note the traditional houses had been declining between the last census in 2002 and 2012. Traditionally built houses were accounted for 17% in 2002 as compared to only 3% in 2012. On the other hand, permanent concrete house construction had been the most common used in the country since the last census (Table 18).

*Table 18: Types of main house construction (%)*

Regions	Permanent - concrete	Permanent - timber	Local	Combination	Other	Total
<b>2012 Census</b>						
Funafuti	38.7	47.0	1.1	11.1	2.1	<b>100</b>
Outer Islands	59.2	14.0	4.1	22.6	0.1	<b>100</b>
<b>Tuvalu</b>	<b>49.3</b>	<b>29.8</b>	<b>2.7</b>	<b>17.1</b>	<b>1.1</b>	<b>100</b>
<b>2002 Census</b>						
Funafuti	42.9	45.8	1.9	6.2	3.2	<b>100</b>
Outer Islands	37.2	16.5	27.7	17.7	1.0	<b>100</b>
<b>Tuvalu</b>	<b>39.5</b>	<b>28.3</b>	<b>17.3</b>	<b>13.0</b>	<b>1.9</b>	<b>100</b>

### B. Construction material of roofs, walls and floors of the dwellings

Information on constructions of houses is important, they provide further understanding on the status of the dwellings in which the household members lived. Table 21 shows the type of building material used to construct the roofs, walls and floors of the main house.

Most of the private dwellings (96%) had roofs made of finished materials such as metal roofing and these were commonly used in both Funafuti and outer islands. Only 3% had natural roofing such as coconut and pandanus thatching and these were obviously popular in the outer islands.

*Table 19: Type of roofs, walls and floors (in percentage) of the dwellings by region*

Region	Roof					Walls					Floor				
	Natural	Rudimentary	Finished	Other	Total	Natural	Rudimentary	Finished	Other	Total	Natural	Rudimentary	Finished	Other	Total
Funafuti	0.7	0.5	98.3	0.5	100	2.0	32.9	55.4	9.7	100	0.4	24.7	60.7	14.2	100
Outer Islands	5.3	0.2	94.4	0.0	100	12.3	23.5	60.9	3.3	100	4.5	7.6	86.2	1.6	100
<b>Tuvalu</b>	<b>3.1</b>	<b>0.3</b>	<b>96.3</b>	<b>0.2</b>	<b>100</b>	<b>7.4</b>	<b>28.0</b>	<b>58.3</b>	<b>6.4</b>	<b>100</b>	<b>2.5</b>	<b>15.8</b>	<b>74.0</b>	<b>7.7</b>	<b>100</b>

About 58% of dwellings used finished materials such as cement, cement block or wood planks to construct the walls of the main house. Interestingly, the incidence of houses with finished walls is higher in the outer islands (61%). Another 7% dwellings had natural walls designed using coconut midribs or lapalapa.

About three quarter (74%) of private dwellings had finished materials used to build their floor. These materials included cement, cement with ceramic tiles/carpet and paraquet or polished wood. These dwellings again, were mostly located in the outer islands compared to Funafuti. About 3% had natural floors that were made up of sand or gravel.

### C. Floor size

Table 20 summaries the floor size of dwellings at the time of the 2012 Tuvalu census. Evidence reflected 379 households had their floor sizes of 50 square metres or less. The likelihood of these households to be located on Funafuti is higher when compared to the outer islands. Only 33 households had their floor sizes more than 225 square metres. These dwellings on Funafuti doubled the number of those located in the outer islands.

*Table 20: Floor size (in square metres) of occupied dwellings by region*

Region	<26	26-50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	>225	Total
Funafuti	46	175	219	157	93	59	36	24	14	22	845
Outer Islands	41	117	263	272	120	58	23	9	2	11	916
<b>Tuvalu</b>	<b>87</b>	<b>292</b>	<b>482</b>	<b>429</b>	<b>213</b>	<b>117</b>	<b>59</b>	<b>33</b>	<b>16</b>	<b>33</b>	<b>1,761</b>

### D. Number of sleeping rooms

Table 21 shows information on the number of sleeping rooms together with the number of persons per household. The average number of sleeping rooms per private dwelling was 2.4 as compared to 2.2 in 2002. In the urban Funafuti, the estimated sleeping room was about 3 as compared to 2 in the outer islands. The average household size is estimated to be 6 persons per household with Funafuti having 7 persons per household. Based on the average household size of 6, the average person per room is estimated to be 3. The average person per room on Funafuti is about 4 persons.

*Table 21: Total and average number of sleeping rooms*

Region	Number of sleeping rooms					
	1	2	3	4	5+	Average
Funafuti	140	214	243	148	100	2.9
Outer islands	395	234	179	90	18	2.0
<b>Tuvalu</b>	<b>535</b>	<b>448</b>	<b>422</b>	<b>238</b>	<b>118</b>	<b>2.4</b>

## 8.7 Household appliances and amenities

### A. Types of kitchen

This census also captured the types of kitchen existing in dwellings occupied by the households. Every household were asked if they have the following three types of kitchens they used for cooking,

- traditional kitchen;
- modern kitchen;
- combination of the tradition and modern types of kitchen.

This information is important in providing additional information on the hygiene status of households in relation to the types of kitchen used for cooking.

In Tuvalu, a traditional kitchen is separate from the main dwelling. It is where the household cooks outside the house, often in an 'umu' (a simple cooking setup containing an open fire). Modern kitchens are often placed inside the dwellings. In some cases, both traditionally and modern kitchens are also used.

Out of the total private dwellings, about one in every five dwellings (21%) used traditional kitchen for cooking which was a decline of 44% from 2002 census. This simply indicates the increase in number of households changed to use modern kitchen in these days. Modern kitchen type was used by 44% of the total occupied dwellings as compared to 41% recorded in 2002 census. The use of modern kitchen appears to be more popular on Funafuti. Another 35% used both traditional and modern kitchen. Higher prevalence of the dwellings with this kind of kitchen situated in the outer islands compared to Funafuti (Table 22).

*Table 22: Types of kitchen (%) by region*

Region	Traditional	Modern	Both	Total
<b>2012 Census</b>				
Funafuti	6.9	65.6	27.6	<b>100</b>
Outer islands	33.8	24.2	41.9	<b>100</b>
<b>Tuvalu</b>	<b>20.9</b>	<b>44.1</b>	<b>35.0</b>	<b>100</b>
<b>2002 Census</b>				
Funafuti	10.9	72.2	16.9	<b>100</b>
Outer islands	66.3	19.3	14.4	<b>100</b>
<b>Tuvalu</b>	<b>43.7</b>	<b>40.9</b>	<b>15.4</b>	<b>100</b>

### B. Principle cooking fuel

Information on the type of fuel used for cooking is collected as another measure of the socio-economic status of the household. The use of some cooking fuels can also have adverse health consequences. The heads of the households were asked about the source of cooking energy they mainly used and which type they preferred to use mostly. Table 23 presents the summary results for the two censuses, the 2002 and 2012.

*Table 23: Main cooking fuel of households (%), Tuvalu 2002 and 2012 censuses*

Region	2012 census					
	Electricity	Gas	Kerosene	Wood	Coconut parts	Other
Funafuti	0.2	81.2	12.0	5.2	0.7	0.7
Outer islands	0.7	18.7	8.3	47.3	24.9	0.2
<b>Tuvalu</b>	0.5	48.7	10.1	27.1	13.3	0.5

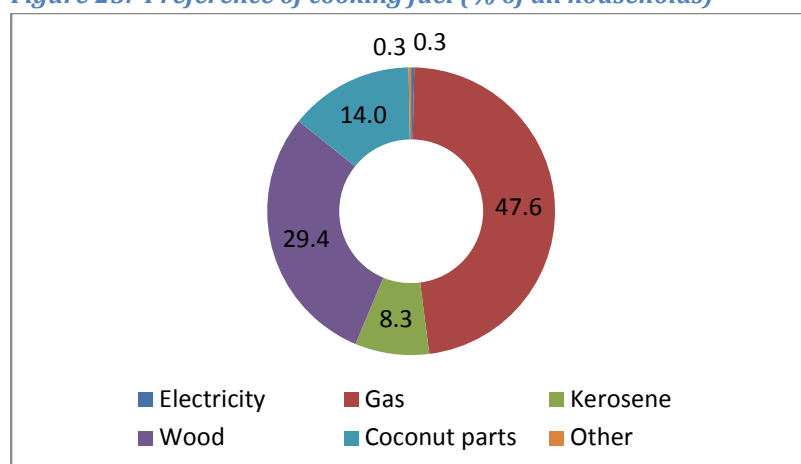
  

Region	2002 census			
	Electricity	Gas	Kerosene	Firewood
Funafuti	1.3	20.2	76.7	1.8
Outer islands	0.4	2.3	45.1	52.2
<b>Tuvalu</b>	0.8	9.6	58.7	30.9

The 2002 census showed kerosene was the main cooking fuel used by 59% dwellings. The recent census of 2012 indicated the main cooking fuel was gas used by 49% dwellings. The two censuses showed the transition from using kerosene to a more efficient cooking fuel such as gas. The majority (81%) of Funafuti dwellings reported to use gas as the main cooking source while there are only 19% of the outer island dwellings. Electricity is used by very few households (0.5%) while wood and coconut parts are still the main source of cooking fuel in the rural households in 2012. The practice of using the open fire as the main cooking type, thus the fuel for cooking is noticed to remain the same during the intercensal period (assuming that woods and coconut parts reflected in the 2012 census, were categorized as firewood in the 2002 census).

In response to the question on the preference of cooking energy, 48% of total households stated that gas was the cooking fuel they preferred mostly, followed by 29% preferred wood and with another 14% preferring the coconut parts. The kerosene, electricity and other cooking fuel were preferred by less than 10% of the total households.

*Figure 25: Preference of cooking fuel (% of all households)*





### C. Sources of Lighting

Electricity was the main source of lighting with 95% of the total households reported to use it. Almost all private households in both Funafuti and the outer islands used electricity as their main means of lighting. Other means of lighting such as solar, kerosene, generator and other sources accounted for 2% and less (Table 24)

*Table 24: Proportions of occupied households by source of lighting*

Region	Electricity	Solar	Kerosene	Generator	Other	Total
Funafuti	96.3	2.4	0.2	0.1	0.9	100
Outer islands	94.2	2.4	1.1	0.0	2.3	100
<b>Tuvalu</b>	<b>95.2</b>	<b>2.4</b>	<b>0.7</b>	<b>0.1</b>	<b>1.6</b>	<b>100</b>

Head of households were also asked the reason of why having such means of lighting as their main sources. As shown in Table 25, about 99% of the total dwellings using electricity as their means of lighting stated the electricity is the only source available for them. The purpose households used kerosene is mainly because it is the only source available and affordable.

*Table 25: Purpose (% of households stated in Table 25) of main source of lighting*

Source of lighting	Affordable	Only source available	Other	Total
Electricity	1.3	98.6	0.1	<b>100</b>
Solar	26.2	71.4	2.4	<b>100</b>
Kerosene	41.7	58.3	0.0	<b>100</b>
Generator	0.0	100.0	0.0	<b>100</b>
Other	10.3	20.7	69.0	<b>100</b>
<b>Total</b>	<b>2.3</b>	<b>96.4</b>	<b>1.2</b>	<b>100</b>

Households were also asked about their opinion on the supply of electricity. The data shows that 75% of the total households stated that electricity service is reliable in the country. Another 20% indicated that electricity is unreliable while 4% of total households did not have electricity connection (Table 26).

*Table 26: Opinions on the supply of electricity (% of all occupied households)*

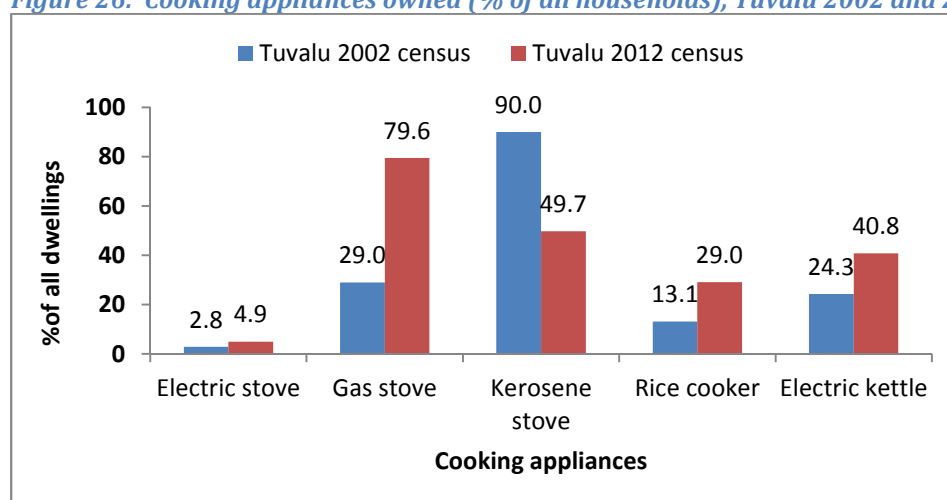
Region	Perception			
	No connection	Reliable	Unreliable	Other
Funafuti	3.1	91.1	5.8	0.0
Outer islands	5.1	60.9	33.8	0.1
<b>Tuvalu</b>	<b>4.1</b>	<b>75.4</b>	<b>20.4</b>	<b>0.1</b>

## D. Household ownership of items and capital goods

Tuvalu 2012 census questionnaire included questions that asked households about ownership of certain items in the household. The answers to these questions on ownership of certain items are very critical as they can be used as measures of the socio-economic status of the household. Tables 28 to 29 and Figures 27 to 28 presents the proportion of total private households with ownership of items by region in 2002 and 2012 censuses.

Kerosene stove had been the most common cooking item recorded in 2002 census which was owned by about 90% of the total households. However, the 2012 census revealed a different result indicating gas stove as the main cooking appliance for most households. About 80% of the households owned gas stove as compared to 30% in 2002 census. The majority of Funafuti households (91%) owned a gas stove while 69% of the outer islands households had a gas stove. There was a declining trend in owning or using kerosene stove between 2002 and 2012 from 90% of total households to about 50% in 2012. However, the data shows that owning other cooking appliances such as electric stove, electric kettle and rice cookers had increased between the two censuses (Figure 26 and Table 27).

**Figure 26: Cooking appliances owned (% of all households), Tuvalu 2002 and 2012 censuses**



**Table 27: Cooking appliances owned (% of all households), Tuvalu 2002 and 2012**

Cooking appliances	2002 Census			2012 Census		
	Funafuti	Outer Islands	Tuvalu 2002 census	Funafuti	Outer Islands	Tuvalu 2012 census
Electric stove	4.2	1.8	2.8	6.4	3.5	4.9
Gas stove	52.4	12.8	29.0	91.0	69.0	79.6
Kerosene stove	90.5	89.7	90.0	45.7	53.5	49.7
Rice cooker	23	6.2	13.1	36.8	21.8	29.0
Electric kettle	39.3	14	24.3	46.2	35.9	40.8

More than 50% of the total households had a freezer, washing machine, iron, electric fan and food safe as according to 2012 census. These household items were commonly owned by the households on Funafuti than the households in the outer islands. This pattern is similar at the time of the 2002 census results. Few households (30%) owned a refrigerator (Table 28).

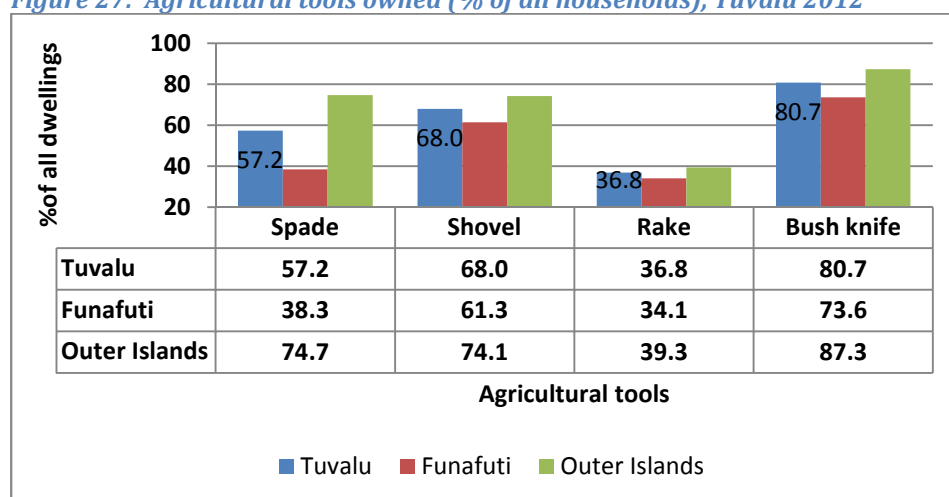
**Table 28: Household appliances owned, Tuvalu 2002 and 2012 censuses (% of all households)**

Household appliances	2002 Census			2012 Census		
	Funafuti	Outer Islands	Tuvalu	Funafuti	Outer Islands	Tuvalu
Freezer	50.4	38.1	43.1	59.5	50.4	54.8
Refrigerator	49.5	11	26.7	42.7	18.8	30.3
Washing machine	71.5	50.1	58.8	66.4	52.3	59.1
Sewing machine	55.4	57.4	56.6	48.3	47.5	47.9
Iron	73.9	37.4	52.2	76.3	59.4	67.5
Electric fan	81.2	45.1	59.8	73.0	41.7	56.7
Food safe	na	na	na	63.9	90.8	77.9

Note: data on food safe was not collected in 2002 census

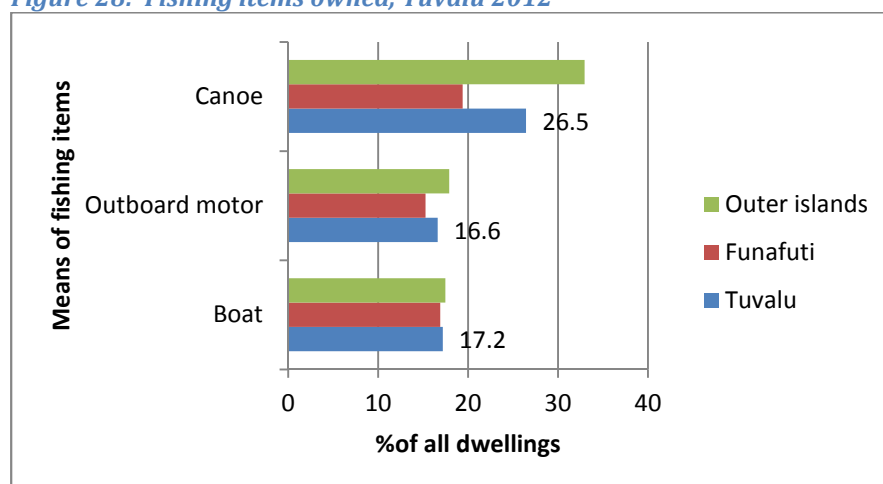
The most common agricultural tools owned by households were bush knives (81%) followed by shovels (68%), spades (57%) and rakes (37%). All reported agricultural tools except rake were more commonly owned by outer islands households than Funafuti households.

**Figure 27: Agricultural tools owned (% of all households), Tuvalu 2012**



Data from Tuvalu 2012 census shows that few households owned fishing items such as boat, outboard motor and canoe. Only 17% of total households had a boat, 16% owned an outboard motor while 27% reported to own a canoe.

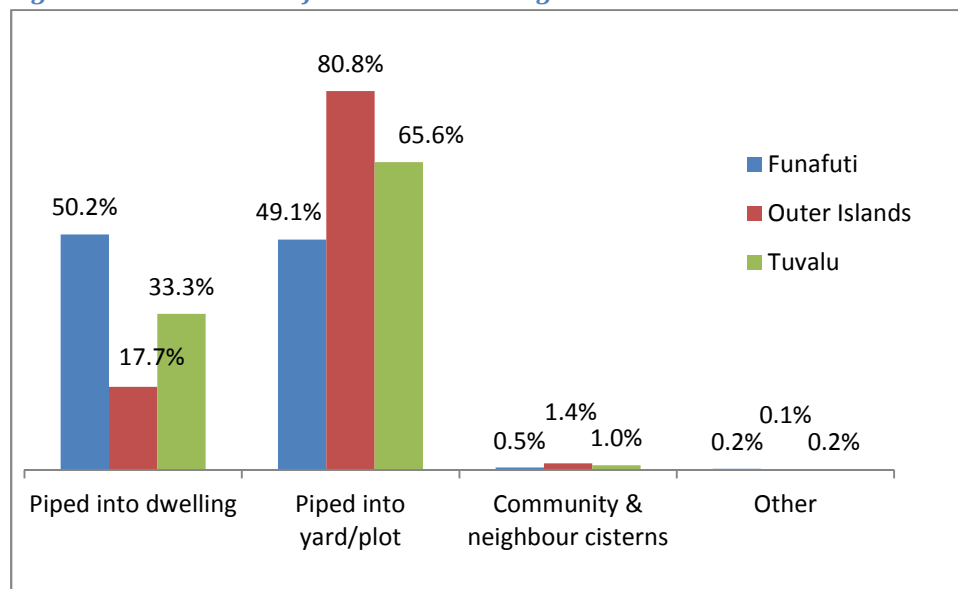
**Figure 28: Fishing items owned, Tuvalu 2012**



## 8.8 Source, supply and storage of water

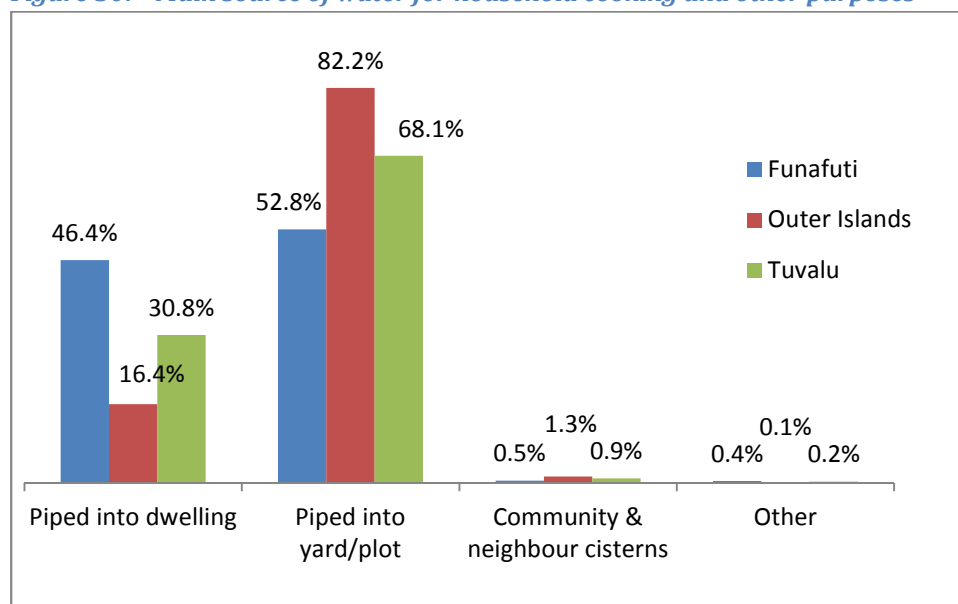
A total of 1,741 (99%) private households used their own cisterns and water tanks as their main source of drinking water (Figure 29). Water collected from outside tanks (the piped into yard/plot type) is the ordinary method of water supply for households drinking water, especially the outer islands. Only 17 households depend on either the community or neighbours cistern and tanks as their main source of drinking water (1%).

*Figure 29: Main source of household drinking water*



Results for the source of water for cooking and other purposes were similar to those of drinking water; 99% of households drew their water from their own cistern and tanks while less than 1% collect water from the community and neighbours water storages.

*Figure 30: Main source of water for household cooking and other purposes*



There are two common water system connection practices that are usually used in the dwellings:

- Water piping systems connected directly from water storage facilities (water tanks) either with or without the aid of an electric water pump.
- Water piping connected from water storage facilities to the outside of the dwelling.

The majority of households in Tuvalu had piped water whether or not the water was piped to the inside of their unit. Piping water inside of dwellings occurred predominantly on Funafuti, where 47% of household with piping had water piped into their unit. The majority of households in the outer islands (83%) had water piped only to the outside of their dwelling.

The number of households having to fetch and carry their water to their dwelling on Funafuti has decreased from 16% in 2002 (census 2002) to less than 1% in 2012. This improvement does not mean that every dwelling has access to sufficient and safe drinking water, but points out that most households have increased their water storage capabilities. Table 29 shows that, on average, households in Tuvalu had the capacity to store approximately 24,000 liters of water.

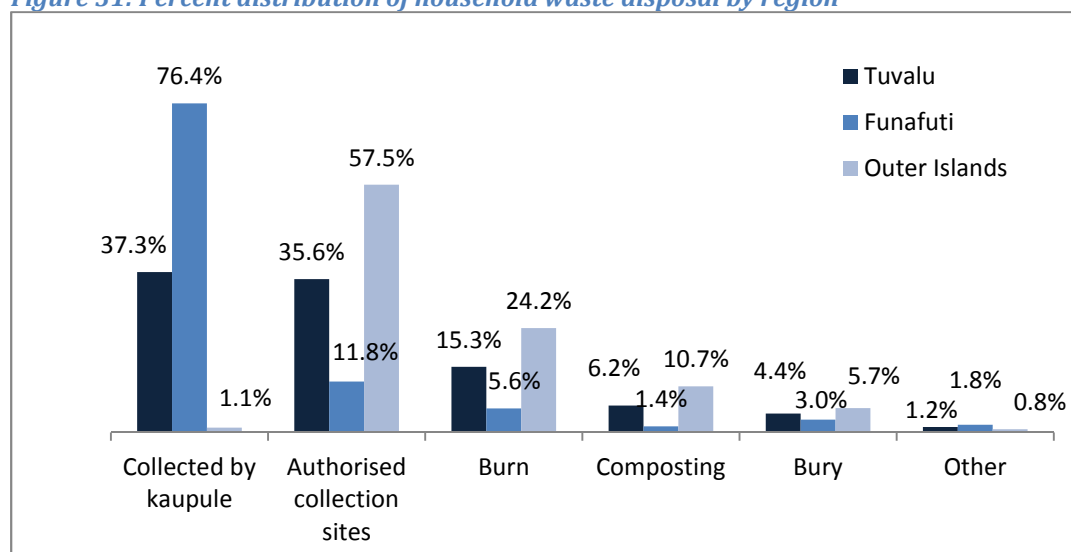
*Table 29: Volumes of water storages of households*

Region	Water storage volume (L)	Per household water storage volume (L)	Per household water storage volume (UK gal)
<b>Funafuti</b>	22,063,086	26,110	5,743
<b>Outer Islands</b>	21,138,539	23,077	5,076
<b>Tuvalu</b>	43,201,625	24,532	5,396

## 8.9 Means of waste disposal

The main means of waste disposal is by paid service (Kaupule 37%) and disposed at authorized dumping sites (36%). However, there were large differences in waste disposal between Funafuti and the outer islands. While 76% of total households on Funafuti disposed their waste by paying for Kaupule waste disposal services, about 1% of households in the outer islands dispose their waste the same way. Waste disposal at authorized dumping sites was the most popular means of disposal in the outer islands, accounting for 56% of outer island waste disposal. About 12% of total households on Funafuti used this method of disposal. About a quarter (24%) of outer island households burned their waste, and 11% composted their waste, compared to 6% and 1% respectively of households on Funafuti.

Figure 31: Percent distribution of household waste disposal by region



## 8.10 INFORMATION AND COMMUNICATION TECHNOLOGIES

There has been a general increase in the number of ICT devices in use in the country in the last decade or so. In private households, mp3-players, tablet computers and laptops became abundant as their prices dropped. A lot more students are now using their own laptops for schoolwork compared to queuing up at the labs for a workstation to become available. In most cases, the number of goods or access to ICT services is concentrated on Funafuti.

Table 30: Number of households that have selected ICT devices by island

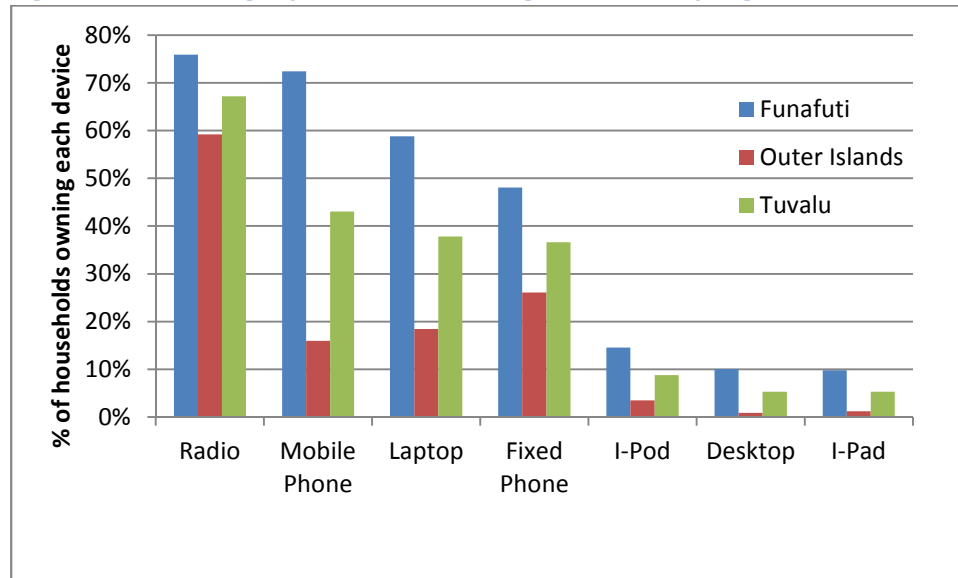
Island	Radio	Fixed Phone	Mobile Phone	Desktop	Laptop	I-Pad	I-Pod
Nanumea	76	35	13	1	32	4	7
Nanumaga	67	36	1	-	14	2	-
Niutao	48	33	2	1	11	1	3
Nui	80	30	5	1	16	1	5
Vaitupu	159	58	97	3	69	3	13
Nukufetau	71	34	2	1	14	-	2
Funafuti	641	406	612	85	497	83	123
Nukulaelae	36	13	26	1	12	-	2
Niulakita	5	-	-	-	1	-	-
<b>Total</b>	<b>1,183</b>	<b>645</b>	<b>758</b>	<b>93</b>	<b>666</b>	<b>94</b>	<b>155</b>

Radio is still the main medium for mass broadcasting and thus the most common item in private households, owned by 67% of households. Mobile phones and laptops have grown in popularity and these numbers will further increase as mobile and internet services are installed on the rest of the outer islands. Forty-three percent of households owned a mobile phone and 37% owned a fixed phone. Laptops were relatively common, with 38% of households owning one.

For all ICT devices, households on Funafuti were more likely to possess these goods than households in the outer islands.

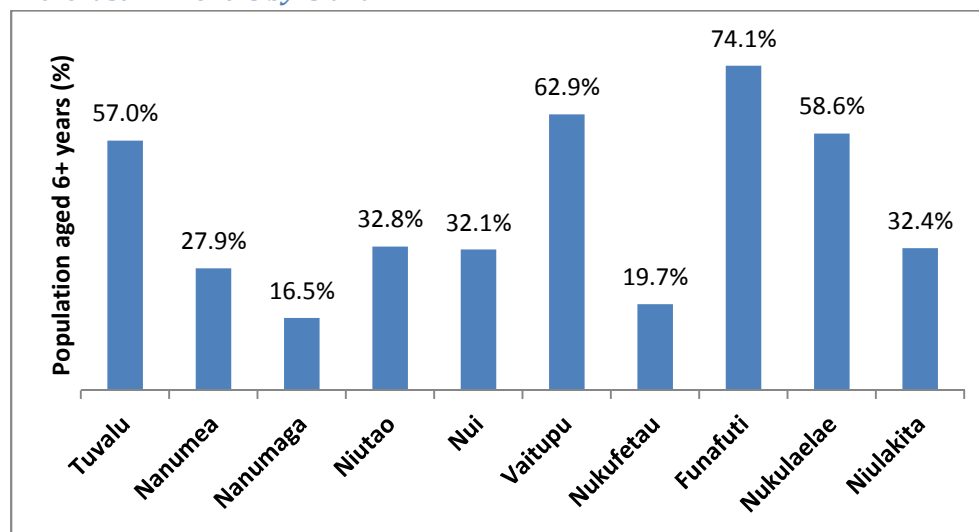
The number of iPads and iPods may have included other tablets and mp3 players. If the census questionnaire had been phrased to include all tablets and mp3 players, the totals may have been bigger.

**Figure 32: Percentage of households owning ICT devices by region**



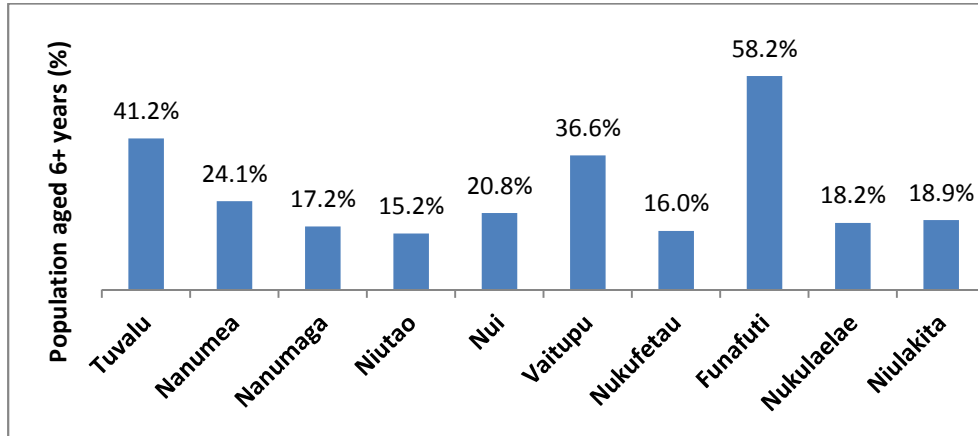
Over half (57%) of Tuvaluans aged 6 years and above have used a mobile in the past 12 months. At the time of the census, only Funafuti, Vaitupu and Nukulaelae had mobile service. It is understood that those on islands without the service may have used it whilst on one of these three islands. It's worth noting that mobile service has been installed on Niutao and Nanumea.

**Figure 33: Percentage of the population aged 6 years and above who used a mobile phone in the last 12 months by island**



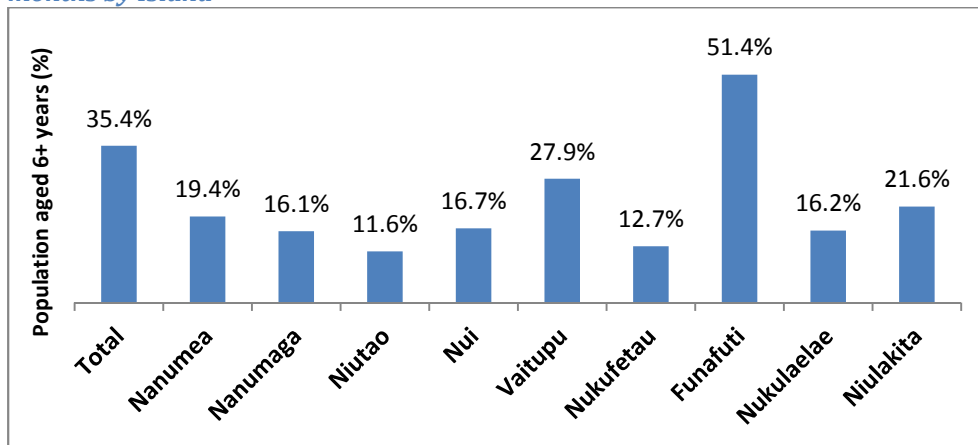
As seen in Figure 34, about 4 in 10 Tuvaluans over the age of 6 used a computer in the 12 months preceding the census (41%). This number was much higher on Funafuti (58%). Computer usage was lowest on Niutao (15%) and Nukufetau (16%).

**Figure 34: Percentage of the population aged 6 years and above who used a computer in the last 12 months by island**



More than one-third of Tuvaluans used the internet in the 12 months before the census (35%). Usage was highest on Funafuti (51%) and lowest on Niutao (12%) and Nukufetau (13%). Internet connectivity in the outer islands is generally intermittent and very expensive, and can be the main reason internet use in the outer islands is low. There is a chance the numbers would be higher if the question was on using Facebook as opposed to just using the internet.

**Figure 35: Percentage of the population aged 6 years and above who used the internet in the last 12 months by Island**





## 8.11 Household income

Many sources of household income were reported. Seventy percent of households reported income from wages. However, upon further examination, 88% of households on Funafuti received income from wages compared to about half (54%) of households in the outer islands. Remittances were also an important source of income; 36% of households on Funafuti received remittances as did 43% of households in the outer islands.

Other significant income sources were from leasing land (28% on Funafuti and 41% in the outer islands), investments (27% on Funafuti compared to 24% in the outer islands), sales of handicraft (19% on Funafuti and 26% in the outer islands), and income from owning a businesses (26% on Funafuti and 16% in the outer islands).

*Table 31: Percent of households receiving types of income by region*

Sources of income	Tuvalu	Funafuti	Outer Islands
Wages/ salary	70.0	87.5	53.9
Remittances	39.8	35.9	43.4
Lease of land	35.0	28.4	41.0
Investment	25.6	26.9	24.3
Handicraft sales	23.0	19.3	26.4
Own business	20.9	26.4	15.8
Senior citizens pay	14.8	12.1	17.2
Fish sales	9.2	7.2	11.0
Gifts	8.9	8.9	8.8
Rent of building	5.6	10.9	0.7
Animal sales	3.7	1.5	5.7
Other source of income	3.4	4.0	2.8
Crop sales	2.8	1.7	3.9
Rent of equipment	2.3	3.8	1.0
Pensions	0.6	0.8	0.3

Households are noted to receive incomes from various sources with differing frequencies. Wages and salaries were the most likely to be collected every month followed by remittances. Remittances and handicraft sales were more likely to generate income every 2 to 6 months. Income from land lease was most commonly acquired only once every year.

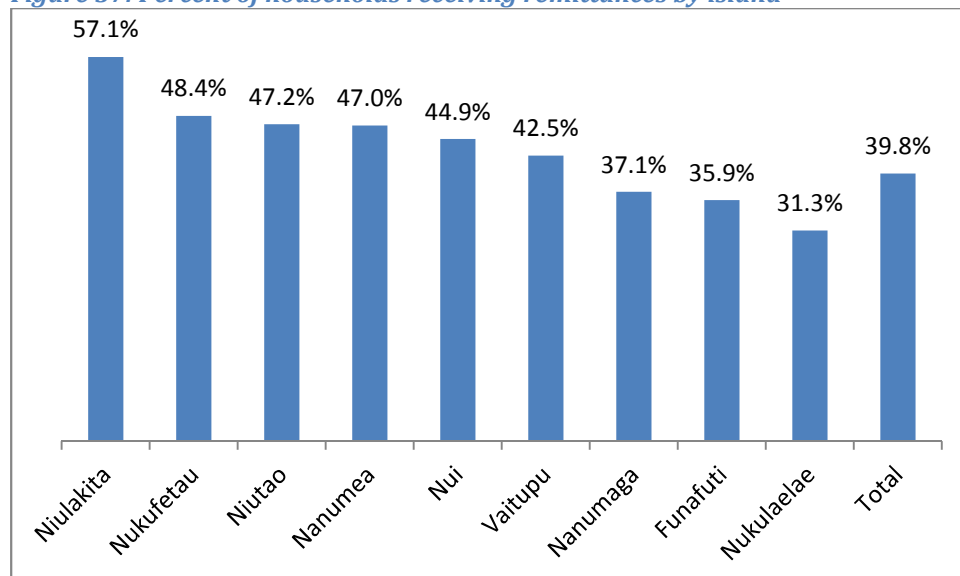
*Table 32: Frequency of type of income received by households*

Income Sources	Total Households	Frequency of Income			
		Every month	Every 2-6 months	Once a year	Occasionally
Wages/salary	1,233	1,197	14	3	19
Remittances	701	366	95	21	219
Lease of land	616	26	1	582	7
Handicraft sales	405	125	70	13	197

## A. Remittances

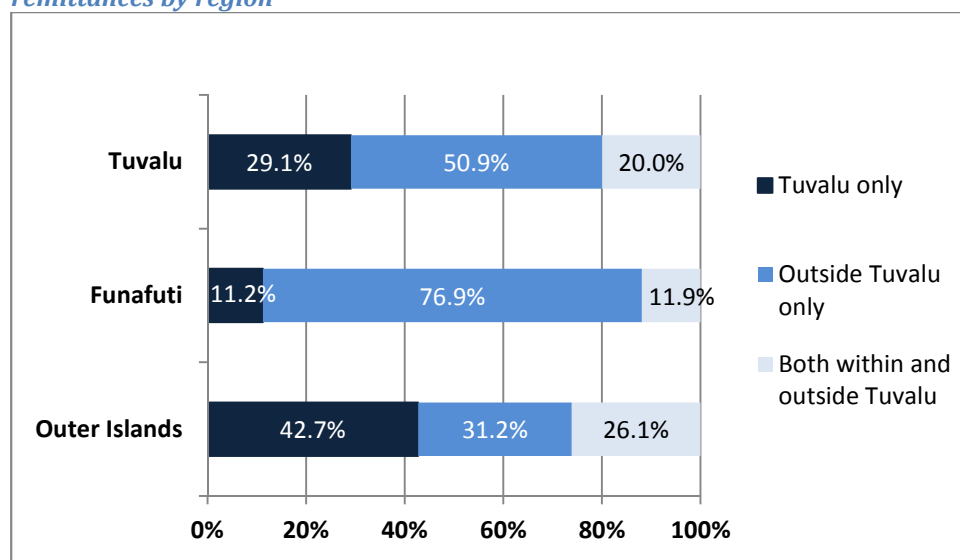
As shown earlier, 40% of households received income from remittances. This ranged from 57% of households on Niulakita to 31% of households on Nukulaelae.

*Figure 37: Percent of households receiving remittances by island*



About half of all remittances in Tuvalu came from overseas (51%). While 77% of remittances received on Funafuti came from outside Tuvalu, only 31% of remittances received by the outer islands originated from outside Tuvalu. Forty-three percent of households in the outer islands that received remittances obtained them from within Tuvalu. Only 11% of remittances received from households on Funafuti came from within Tuvalu.

*Figure 38: Percent distribution of source of remittances among households receiving remittances by region*



Slightly more than half of all remittances were received monthly (52%), and 14% of households received remittances every 2-6 months. Only 3% households received once per year, although about one third (31%) received occasionally. In general, households in the outer islands received their remittances less often than those on Funafuti.

*Table 33: Percent distribution of frequencies of remittances received by households*

Region	Every month	Every 2-6 months	Once a year	Occasionally
<b>Tuvalu</b>	<b>52.2</b>	<b>13.6</b>	<b>3.0</b>	<b>31.2</b>
Funafuti	63.4	10.2	2.6	23.8
Outer Islands	43.7	16.1	3.3	36.9

## 8.12 Fishing activities and engagement of households

Tuvalu 2012 census questionnaire also included several questions on whether any member of each household engaged in fishing activities or not. Households that were involved in any fishing activities were then asked further questions about the fishing methods used, the fishing location and whether the fishing was for subsistence, commercial purposes or both.

### A. Households engaged in fishing activities

This census captures a total of 436 households in Tuvalu do not involved in any kind of fishing activities. Of these households, 301 were from Funafuti and 135 were those living in the islands.

The most common type of fishing activities which most households engaged with were reef and lagoon fishing with more than 50% of the total households. Collecting shellfish on the lagoon and ocean flat are the least common types of fishing activities with less than 20% of the total households. Collecting shellfish on reef flat and catching fish in the ocean accounted for 31% and 38% of the total households. The results indicated that households engaged more in catching fish than collecting shellfish (Table 34 and Figure 38).

*Table 34: Households with members engaged in fishing activities by region*

Island	Collecting on reef flat	Collecting on lagoon flat	Collecting on ocean flat	Reef fishing	Lagoon fishing	Ocean fishing
Funafuti	175	212	84	314	461	207
Outer islands	365	129	190	657	471	468
<b>Tuvalu</b>	<b>540</b>	<b>341</b>	<b>274</b>	<b>971</b>	<b>932</b>	<b>675</b>

*Note: Collecting methods refers to collecting shellfish*

**Figure 38: Households (%) engaged in collecting shellfish or catching fish**

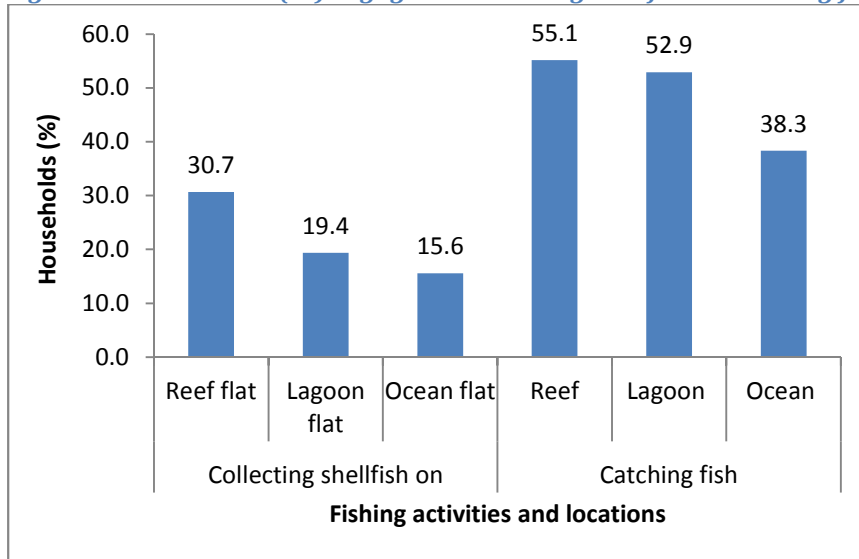
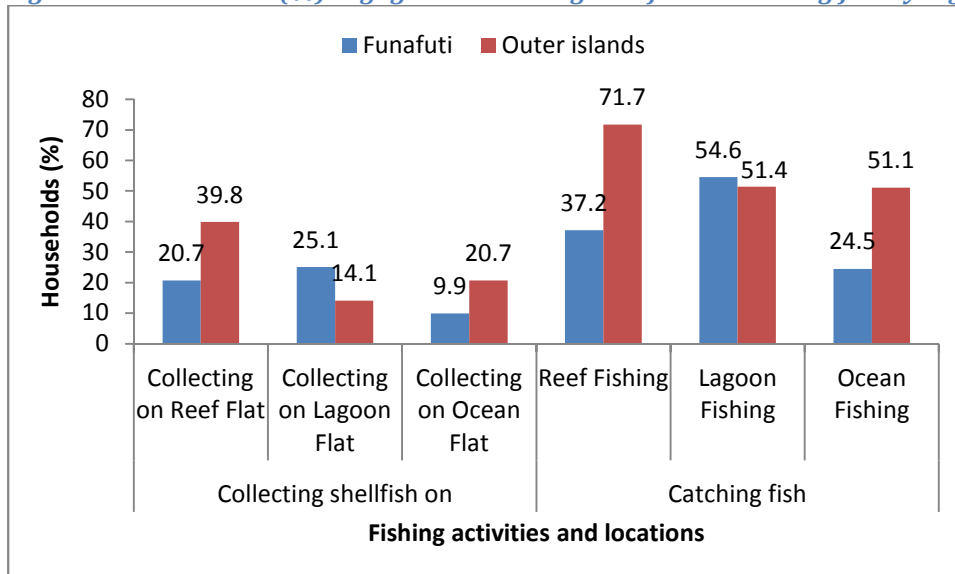


Figure 39 shows the households engaged in fishing activities by region and fishing location. The households on Funafuti were relatively less engaged in fishing activities than those on outer islands, except for collecting shellfish on lagoon flats and catching fish at the lagoon. The data implied that collecting shellfish on lagoon was more common among households on Funafuti.

**Figure 39: Households (%) engaged in collecting shellfish or catching fish by region**



## B. Purpose of fishing

Overall, fishing activities were carried out mainly for subsistence purposes. More than 80% of the households that participated in fishing activities were collecting shellfish or fishing for subsistence used.

Commercial fishing activities were not common in Tuvalu. Only less than 4% households were involved in these activities. The least fishing activities for commercial purposes were reef fishing, lagoon fishing and collecting shellfish on ocean flat (Table 35).

*Table 35: Proportions of total engaged households by type and purpose of fishing activities*

Purpose of fishing	Fishing activities					
	Collecting on reef flat	Collecting on lagoon flat	Collecting on ocean flat	Reef fishing	Lagoon fishing	Ocean fishing
Mainly subsistence	94.1	92.7	88.0	95.0	92.9	82.7
Mainly commercial	2.6	1.8	1.1	0.9	1.3	3.9
Both	3.3	5.6	10.9	4.1	5.8	13.5
Household engaged in fishing activities	540	341	274	971	932	675

Table 36 below presents the proportion of households with fishing activities in Tuvalu, their location whether they were located on Funafuti or in the outer islands, type of fishing activities and their main purpose of fishing. The table also provides additional information on the total households engaged in each fishing activities as well as the total households for each region, Funafuti and outer islands.

Of the total Funafuti households (845), there were 175 engaged in collecting shellfish on the reef flats of which 94% were mainly for subsistence purposes. A similar pattern is seen for all other forms of fishing on Funafuti and in the outer islands. Of the total 916 outer island households, 468 reported engagement in ocean fishing, of which 84% was for mainly subsistence purposes.

*Table 36: Proportion of households with fishing activities by region, type of fishing activities and purpose of fishing*

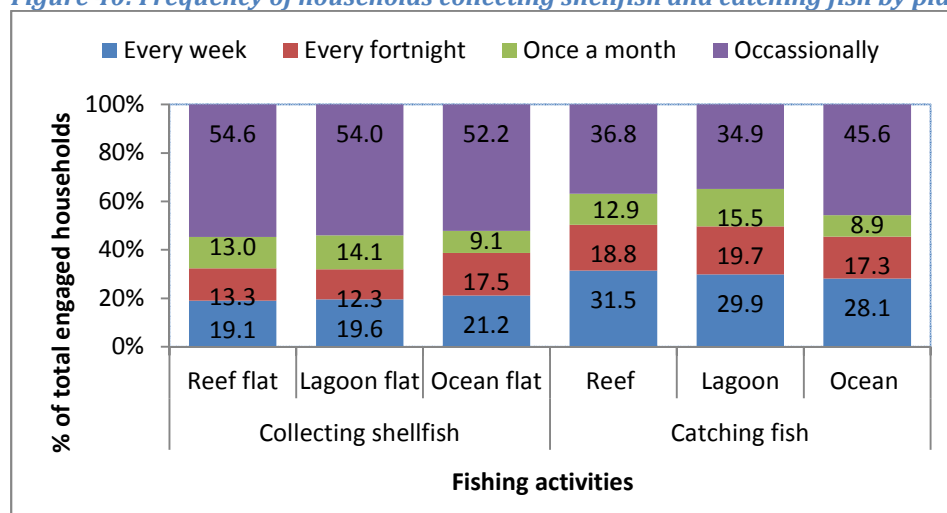
Purpose of fishing	Fishing activities											
	Funafuti						Outer Islands					
	Collecting on reef flat	Collecting on lagoon flat	Collecting on ocean flat	Reef fishing	Lagoon fishing	Ocean fishing	Collecting on reef flat	Collecting on lagoon flat	Collecting on ocean flat	Reef fishing	Lagoon fishing	Ocean fishing
Mainly subsistence	93.7	92.9	90.5	91.4	91.5	80.2	94.2	92.2	86.8	96.7	94.3	83.8
Mainly commercial	1.1	1.9	0.0	1.9	1.7	3.9	3.3	1.6	1.6	0.5	0.8	3.8
Both	5.1	5.2	9.5	6.7	6.7	15.9	2.5	6.2	11.6	2.9	4.9	12.4

### C. Frequency of fishing

Figure 40 presents the frequency of fishing and shellfish collection by households. The fishing activities that most households are frequently engaged in was reef fishing (32%), lagoon fishing (30%) and ocean fishing (28%). Between 19% and 21% of households reported that they were engaged in collecting shellfish every week.

More than half of the total households engaged in collecting shellfish occasionally, regardless of the fishing location (type of flat). Ocean fishing was an occasional activity carried out by about 46% of households, while reef and lagoon fishing were occasional for 35% and 37% of the households, respectively.

*Figure 40: Frequency of households collecting shellfish and catching fish by place of fishing*



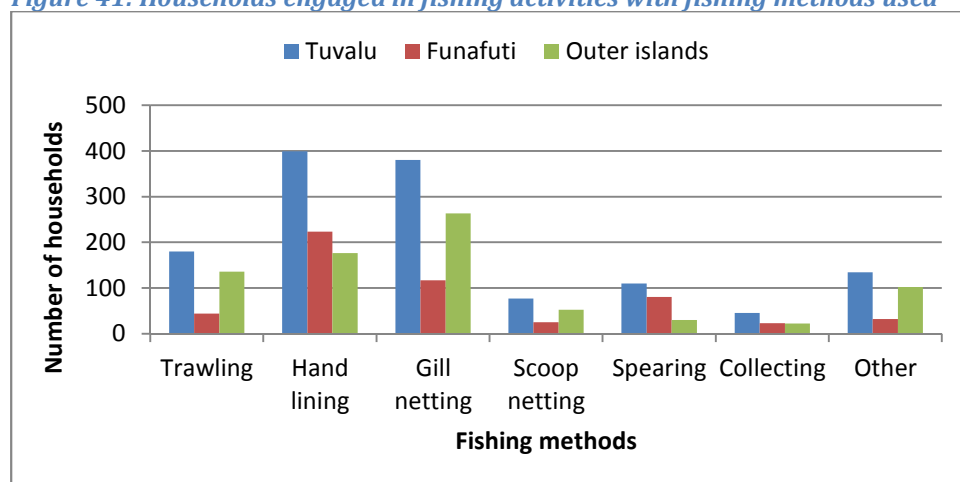
### D. Fishing methods

Households that were engaged in any fishing activities were further asked about the fishing methods they used.

The most common fishing methods that were used by households engaged in fishing activities in Tuvalu were hand lining, gill netting and trolling (Fig 43). The hand lining fishing method accounted for the highest percentage, 30.1% (399 households), followed by gill netting used by 380 households (28.7%) and trolling with the third highest number of households of 180 households or 13.6%. Collecting and scoop netting were the two least common major fishing methods used in Tuvalu.

The use of different fishing methods varied between Funafuti and outer islands households (Figure 41). For instance, gill netting, trolling, scoop netting and other methods were reported to be more commonly used by outer islands households, compared with households in Funafuti. Funafuti households favoured hand lining and spearfishing. There was about the same number of households from Funafuti and outer islands using collecting methods.

**Figure 41: Households engaged in fishing activities with fishing methods used**

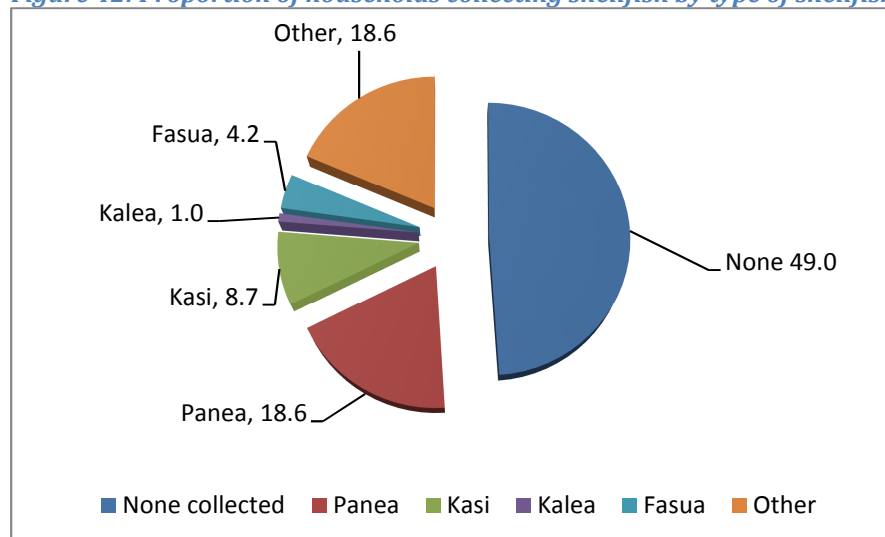


### E. Type of shellfish collected

Households engaged with collecting shellfish were asked about the types of shell fish they collected. Overall, 49% of all households engaged in the fishing activities stated that they had never collected shellfish.

Of those households which collected shellfish, the highest was Panea (conch) 18.6%, followed by Kasi at 8.7%, Fasua (giant clams) at 4.2%, and Kalea (spider conch) at 1.0%.

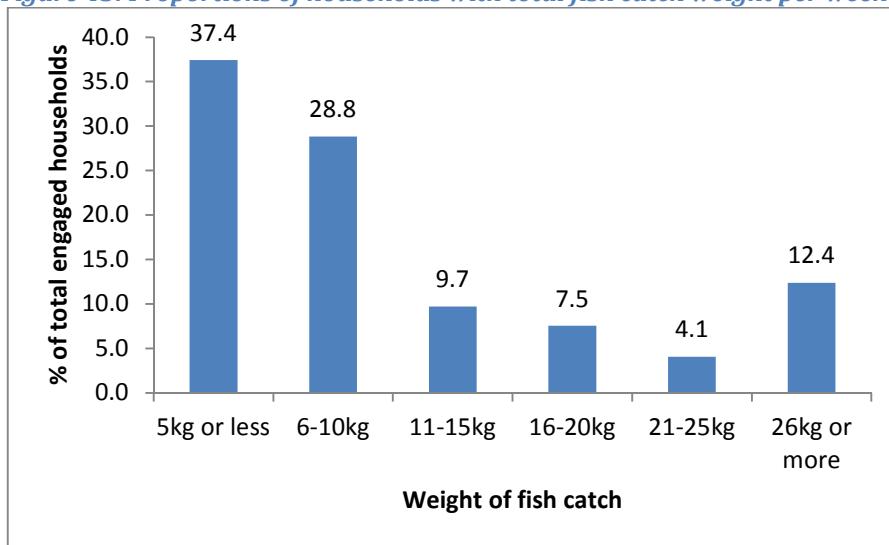
**Figure 42: Proportion of households collecting shellfish by type of shellfish**



### F. Total weight of fish catch

Overall, 66% of households reported a catch weight of 10kg or less per week. Most households (37.4%) reported that their total weight of weekly fish catch was 5 kilograms or less, and another 28.8% of households engaged in fishing reported a weekly catch of between 6 and 10 kilograms. About one third of households reported greater weekly catch weights of greater than 10kg. The number of households reporting a catch weight of 26kg or more was 12%, while the number of households reporting catches weights of intermediate levels (11-25kg) was lower (Figure 43).

*Figure 43: Proportions of households with total fish catch weight per week*





## 9 CIGUATERA FISH POISONING IN TUVALU

### 9.1 Introduction

Ciguatera is a particular type of food poisoning caused by eating tropical reef fish. Ciguatera comes from naturally occurring microscopic algae that often bloom on reefs, though the reasons for the blooms are not clear. Some researchers believe that ciguatera outbreaks are related to damage of reefs caused by natural events such as cyclones or by human activity (shipwrecks, pollution etc), but there are many cases of ciguatera in areas where there has been no damage.

Ciguatera fish poisoning (CFP) is increasingly becoming a big issue in Tuvalu, especially on Funafuti. The number of fish affected by ciguatera has increased. New fish species, not affected in the past are now being reported by fishermen as toxic. This includes Maiava (Rabbit fishes) and Ulafo (Parrot fishes). The Tuvalu Fishery Division included some questions related to CFP in the 2012 Tuvalu Census questionnaire in order to collect and obtain update information in this area which will assist them in developing strategies to fight against CFP.

The CFP-related questions asked all persons residing in Tuvalu during the 2012 Tuvalu census night whether they had ever been affected by ciguatera fish poisoning. Among the respondents who reported being poisoned, further questions were asked about the number of times people had been intoxicated, the type of fish or shellfish that caused the incident, and the main symptoms that were experienced. The responses that involved shellfishes are not ciguatera and would indicate that other forms of seafood poisoning may be involved. These are self-reported responses and thus must be interpreted with some caution as no medical diagnosis accompanied the responses.

### 9.2 Population affected by ciguatera

Out of the resident population (10,640), 1,360 people reported that they had been affected by ciguatera, which was about 13%. There was no great difference among affected population by sex; 51% of men and 49% of women reported being affected by CFP. The most affected population were in the adult age groups from age 45 years and over ranging from more than 20% to 45% been affected. The results also indicated less than 5% of the young population aged 0-14 were affected by ciguatera fish poisoning.

The results also showed differences among affected population by sex and by different age groups as presented in Figure 44. Males are more likely affected in the age groups 0-4 and 15-49 years while on the other hand there were more affected females in the age groups 5-9, 50-54 and 75 years and older.

**Figure 44: Resident population who reported being affected by ciguatera by age group and sex**

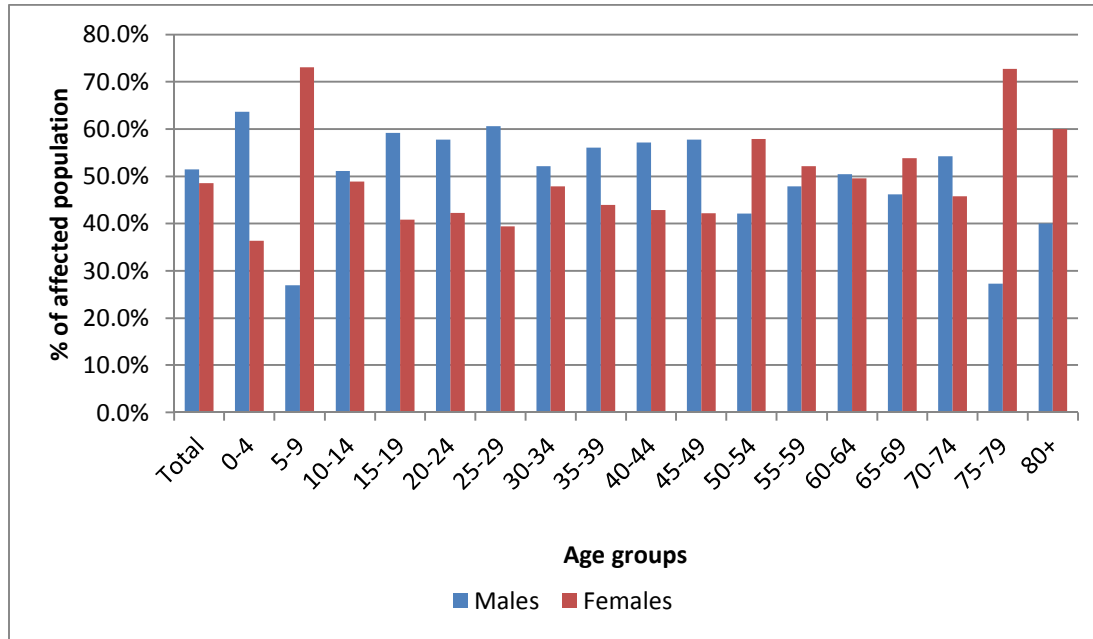
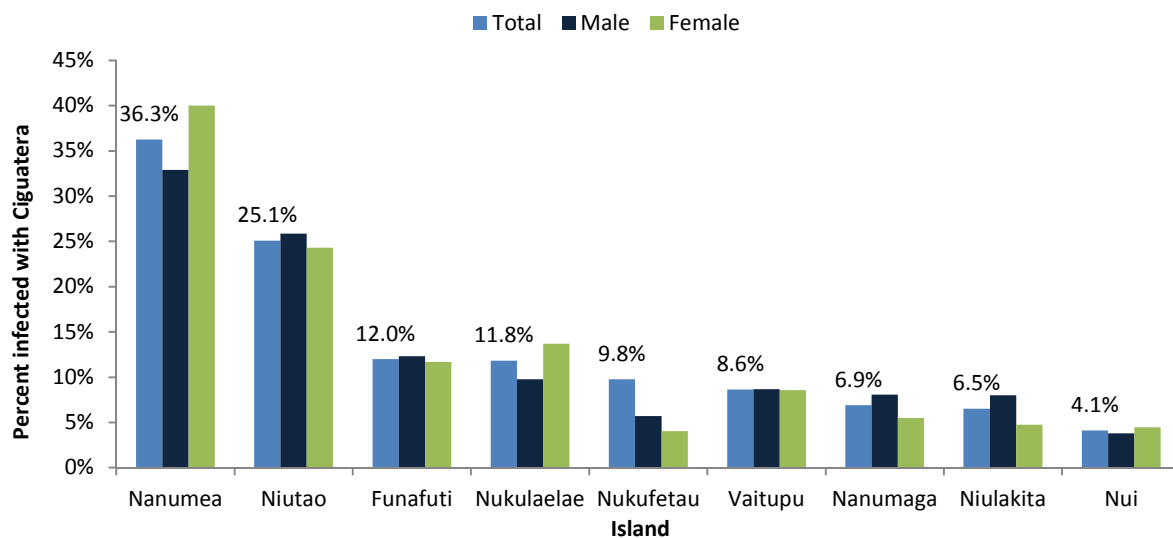


Figure 45 indicates the proportion of the population being affected by ciguatera fish poisoning by island. Generally, ciguatera fish poisoning had been experienced among resident population for each individual island but at different levels.

For instance, people living on Nanumea Island were the most affected by CFP (30% of the total Tuvalu population) compared to the remaining islands. Further, female residents of Nanumea were more likely to be affected than males. The second highest affected population was Niutao Island with about 25% of the population having experienced CFP at some time in their lives. On the other hand, Nui Island reported the lowest proportion of resident population affected by ciguatera fish poisoning, while the remaining islands reported between 5 to 10% of the affected population.

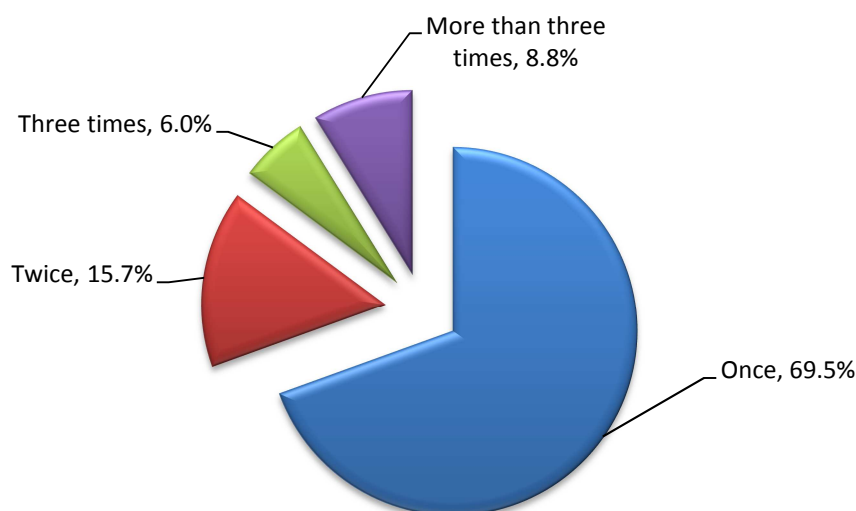
**Figure 45: Percentage of resident population who reported being infected by ciguatera fish poisoning by sex and island**



### 9.3 Number of times infected by ciguatera

Out of the total affected resident population (1,360), 945 reported being affected by ciguatera only once, which is about 70% of the whole affected population. There were more people affected once than those were affected twice or three or more times. The results also showed that about 9% of the affected population were affected more than three times (Figure 46).

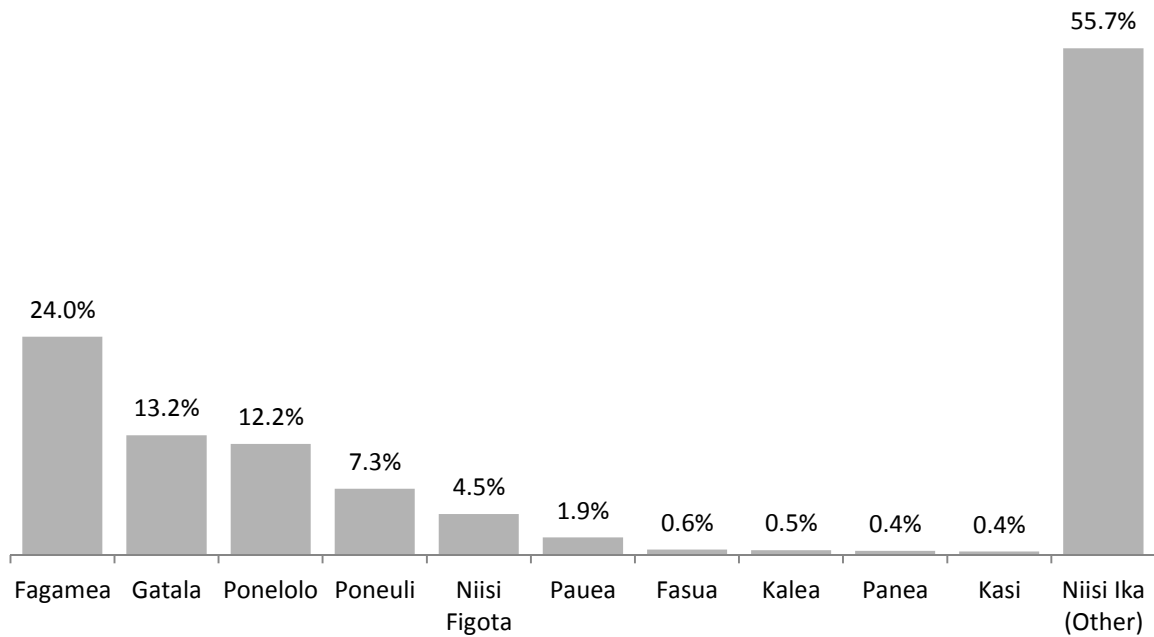
*Figure 46: Number of times affected by CFP among those who ever been affected*



### 9.4 Marine species transmitting ciguatera

The most commonly reported source of ciguatera intoxication was from eating other fish (Niisi Ika) which accounted for more than half the total infected population (56%). Almost one quarter (24%) reported being affected by eating Fagamea (Red bass, Lutjanus bohar). Those affected by eating Gatala (Groupers) and Poneulolo (Striped surgeon fish, Acanthurus lineatus) accounted for 9 were about 13% and 12%, respectively. Poneuli (Dusty surgeon fish, Ctenochaetus spp.) accounted for 7%, niisi figota (other shellfish) 5%, and Pauea (Baracudas) 2% were other less common sources of infection. Less than 1 per cent of people reported eating other shellfishes such as Fasua (Giant clams), Kalea, and Panea and Kasi before becoming infected (Figure 47). It is likely that poisoning from these shellfishes is another type of seafood poisoning.

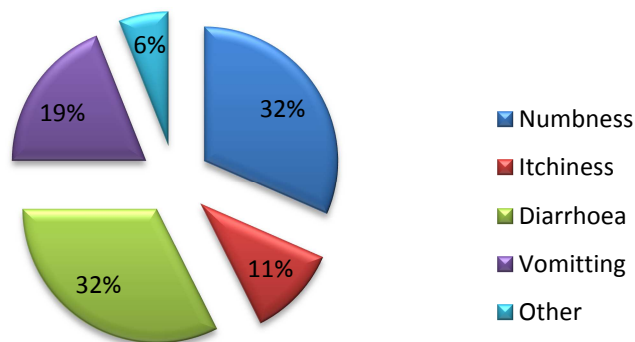
**Figure 47: Percentage of the population affected by ciguatera from eating different types of marine resources.**



### 9.5 Symptoms of Ciguatera Fish Poisoning

The most commonly reported main symptoms of ciguatera poisoning included diarrhoea (32%) and numbness (32%) followed by vomiting (19%) and itchiness (11%). Another 6% of the affected population reported other symptoms (Figure 48).

**Figure 48: Symptoms of affected population with ciguatera fish poisoning**



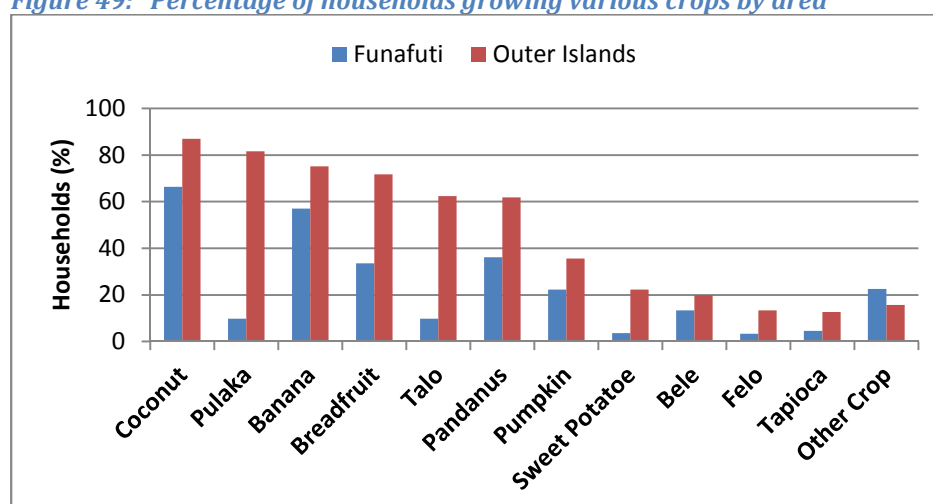
## 10 AGRICULTURE AND LIVESTOCK

### 10.1 Crops

Tuvalu is an atoll country and atolls are known for their harsh environment, limited resources, and narrow based vegetation with very limited livestock species. Much of Tuvalu’s agriculture production is dominated by subsistence farming and raising traditional crops, this will continue into the foreseen future. However, over the last twenty years with the promotion of improved farming systems and introduction of exotic food crops and livestock, Tuvalu has seen a gradual progress in its agricultural production that, to an extent, is reflected in the results from the 2012 census which are reported in this chapter.

The tree crops of coconut, breadfruit, bananas, and pandanus along with the root crop pulaka are very important traditional food crops. Around three-quarters of outer island households cultivated these crops. The lower percentage of households cultivating these traditional crops on Funafuti is due to the fact that the majority of households come from the outer islands (78%) and do not own land to cultivate such food crops. Additionally, Funafuti has one of the smallest land areas compared to the other outer islands.

*Figure 49: Percentage of households growing various crops by area*



The crops grown are the more traditional food crops of Tuvalu. Table 37 shows the involvement of household between Funafuti and the outer islands in planting these crops. With the exception of felo, over 60% of households in the outer islands grew each of the traditional crops. In contrast, on the capital island of Funafuti, less than 40% of households grew these traditional food crops with the exceptions being coconuts (66%) and bananas (57%). As stated previously, most of the households on Funafuti do not have land and therefore would not be able to plant each of these traditional crops in adequate numbers.

*Table 37: Number and percent of households growing traditional crops by region*

Region	Coconut	Banana	Breadfruit	Pandanus	Pulaka	Talo	Felo
Funafuti	561	482	283	305	82	82	28
Outer island	797	689	657	567	748	571	122
Tuvalu	1358	1171	940	872	830	653	150
Percentage (%) of total households							
<b>Funafuti</b>	<b>66.4</b>	<b>57.0</b>	<b>33.5</b>	<b>36.1</b>	<b>9.7</b>	<b>9.7</b>	<b>3.3</b>
<b>Outer Islands</b>	<b>87.0</b>	<b>75.2</b>	<b>71.7</b>	<b>61.9</b>	<b>81.7</b>	<b>62.3</b>	<b>13.3</b>
<b>Tuvalu</b>	<b>77.1</b>	<b>66.5</b>	<b>53.4</b>	<b>49.5</b>	<b>47.1</b>	<b>37.1</b>	<b>8.5</b>

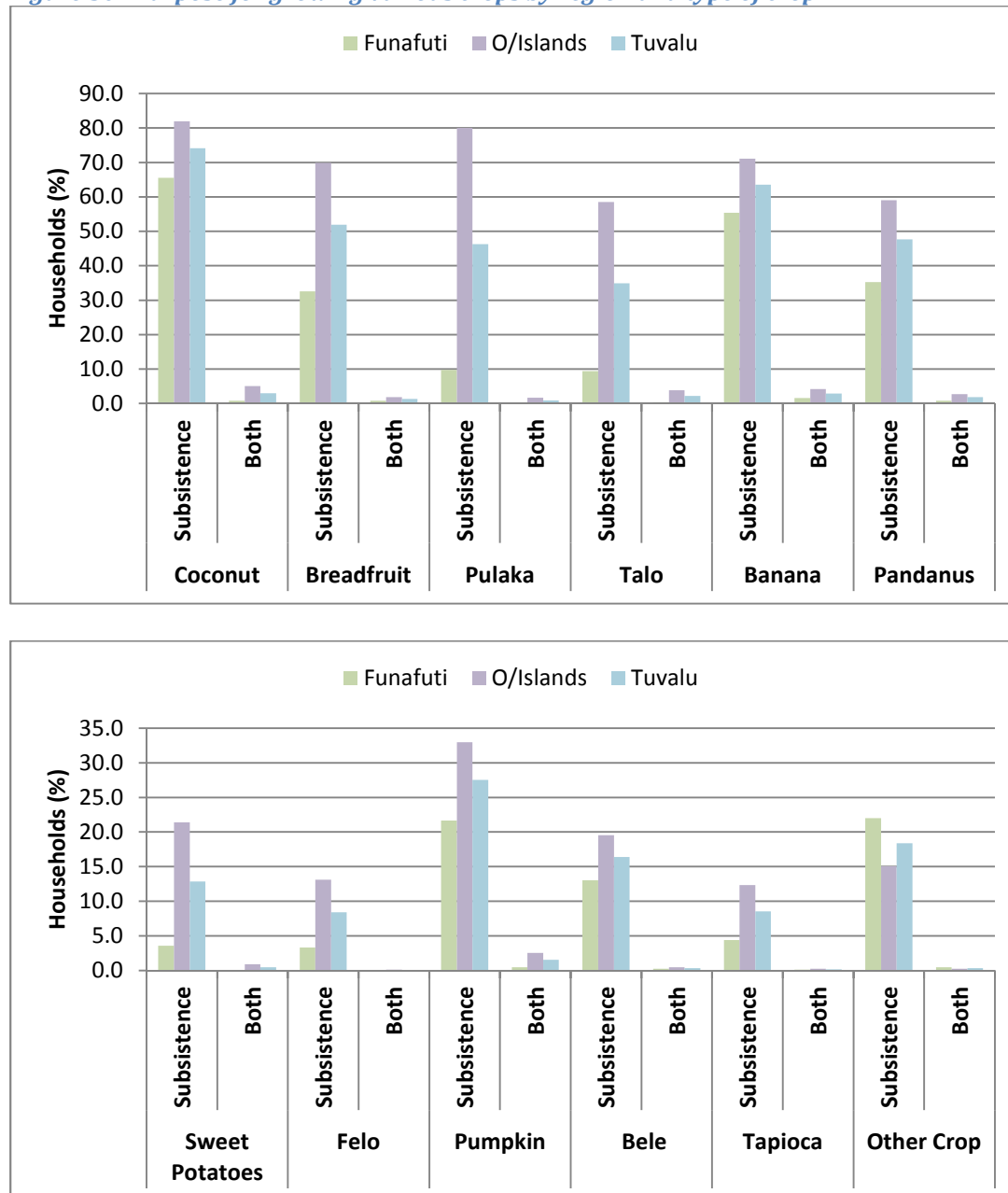
Table 38 is a range of the more popular exotic or introduced food crops. “Other crops” column refers to the common vegetable annual crops such as cabbages, tomatoes, and cucumbers that are also more typically cultivated in home gardens. With the exception of “Other crops,” a higher percentage of households from the outer islands grew these introduced food crops than the percentage of households on Funafuti. The low production in cassava is because it is a more recently introduced exotic root crop in Tuvalu.

*Table 38: Number and percent of households growing introduced crops by region*

Region	Pumpkins	Bele	Sweet potatoes	Cassava	Other crops
Funafuti	188	113	30	38	191
Outer island	326	183	204	116	143
Tuvalu	514	296	234	154	334
Percentage (%) of total households					
<b>Funafuti</b>	<b>22.2</b>	<b>13.4</b>	<b>3.6</b>	<b>4.5</b>	<b>22.6</b>
<b>Outer Islands</b>	<b>35.6</b>	<b>20.0</b>	<b>22.3</b>	<b>12.7</b>	<b>15.6</b>
<b>Tuvalu</b>	<b>29.2</b>	<b>16.8</b>	<b>13.3</b>	<b>8.7</b>	<b>19.0</b>

For households, there are three main purposes of growing these crops: ‘subsistence’, ‘commercial’ and ‘both subsistence and commercial (semi commercial farming - households selling excess production from their home garden).’ However, in Figure 50, the category for ‘commercial’ was omitted as too few and in most cases none of the results were observed for this category. It was therefore felt that the category ‘both’ or semi-commercial was adequate to cover the very minimal results for commercial activity. The graph shows that households in both Funafuti and the outer islands grow the crops mainly for subsistence agriculture with very little semi-commercial purposes.

Figure 50: Purpose for growing various crops by region and type of crop



## 10.2 Toddy

Cutting toddy is a very important traditional activity that is carried out daily and where the coconut todody is collected twice a day per tree by many young and middle aged men.

Data from the outer islands strongly indicates the importance of todody production with 74% of households harvesting todody (data not shown). Niulakita records the highest todody production with all households on the island cutting todody. Niulakita is quite unique as the island is administered by Niutao island in the northern group. Only 7 households were present during the census. These households are selected by the Niutao Kaupule to temporarily look after the island of Niulakita.

Interestingly the capital island of Funafuti, where the majority of the population lives, showed that only about one quarter of households cut toddy. The majority of households, that is more than three-quarters of the households on Funafuti, do not own land to access coconut trees for toddy production.

**Figure 51: Percentage of households cutting toddy by island**

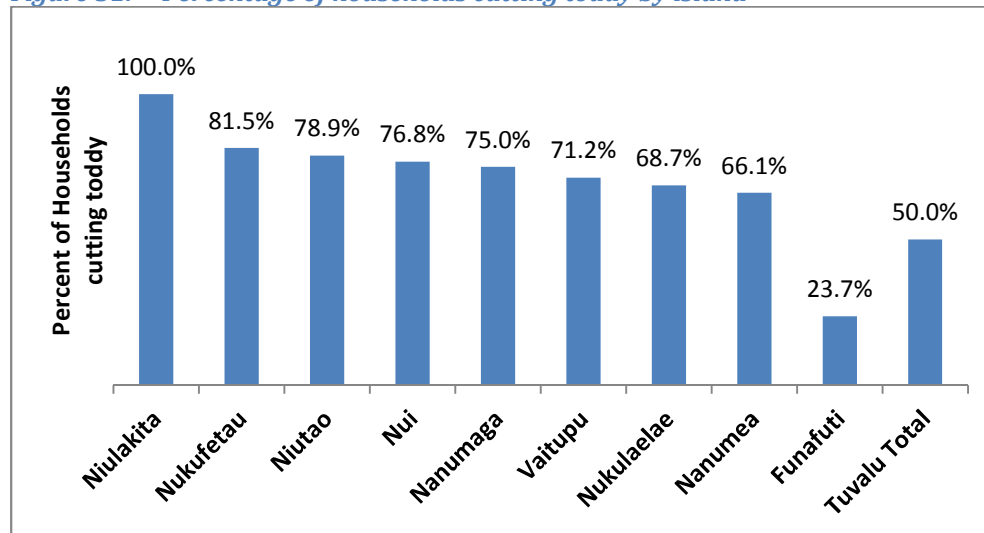
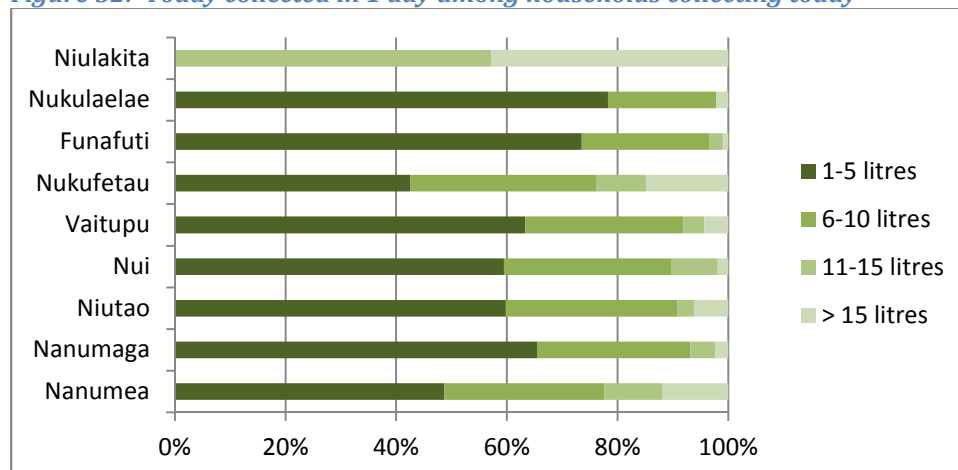


Figure 52 shows how much toddy was produced each day by households for each island including Funafuti. The production was categorized in 4 different ranges with lowest being 1 – 5 liters and the highest being more than 15 liters in one day. The analyses illustrated Niulakita with an outstanding production range of 11 to more than 15 liters a day. This high level of production by Niulakita over the rest of the islands is due to its high ratio of coconut trees per household. Niulakita is a 42 hectare island with only 7 households.

Funafuti and the rest of the outer islands excluding Niulakita all had relatively low toddy production. The negative implication of this is that households would not be consuming fresh toddy on a daily basis. Toddy is a very healthy drink and without it, households will spend their income on imported sugar as an alternative. Toddy is both a fresh drink but can also be fermented as an alcohol beverage, or cooked to produce a fine light brown syrup that is commonly used as a sweetener for drinks, cocktails and many other uses.

**Figure 52: Toddy collected in 1 day among households collecting toddy**





### 10.3 Home Garden

Home gardening to produce annual vegetables such as cabbages, capsicum, tomatoes and other introduced annual crops, was introduced in the early 80s to improve Tuvalu agriculture.

Even though home gardening has been recognized by mothers and young women as important because home gardens provide families with a nutritionally improved diet, home gardening is not highly practiced in Tuvalu. Only 24% households in Tuvalu have home gardens.

Nui (6%) and Vaitupu (10%) islands had the lowest percentages of households with home gardens. More than 20% of households in the rest of the outer islands and Funafuti had home gardens. The challenge, however, is getting consistent planting materials for these introduced annual crops as they can only be sourced from overseas as most of them are hybrids. This may partially explain the relatively low home gardening rates in the outer islands. Even with the highest rate of home gardening, only slightly more than a third of households on Niutao had home gardens (37%). The majority of households in Tuvalu (76%) chose not to have home gardens.

Figure 53: Percentage of households with home gardens by island

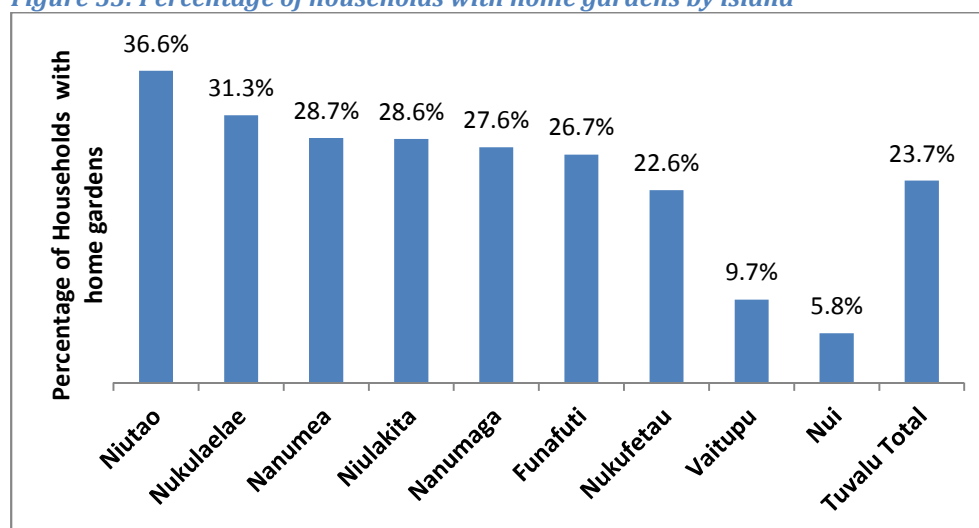


Figure 54 shows how much land area was used for home gardens. Among households owning home gardens, 72% have less than 11 square meters of land space for home gardens. In other words, 28% of households with home gardens have areas of 11 square meters or more dedicated to gardening. This reflects that in most villages in the outer islands and the main settlements of Funafuti (Fakaifou and Vaiaku villages) and Funafuti settlements (Alapi and Senala), the spaces around the houses are quite small in size and inadequate for home gardening. Land space is therefore an issue in Tuvalu if any expansion in future agriculture development is to be considered.

Figure 54: Households with home gardens by area and region

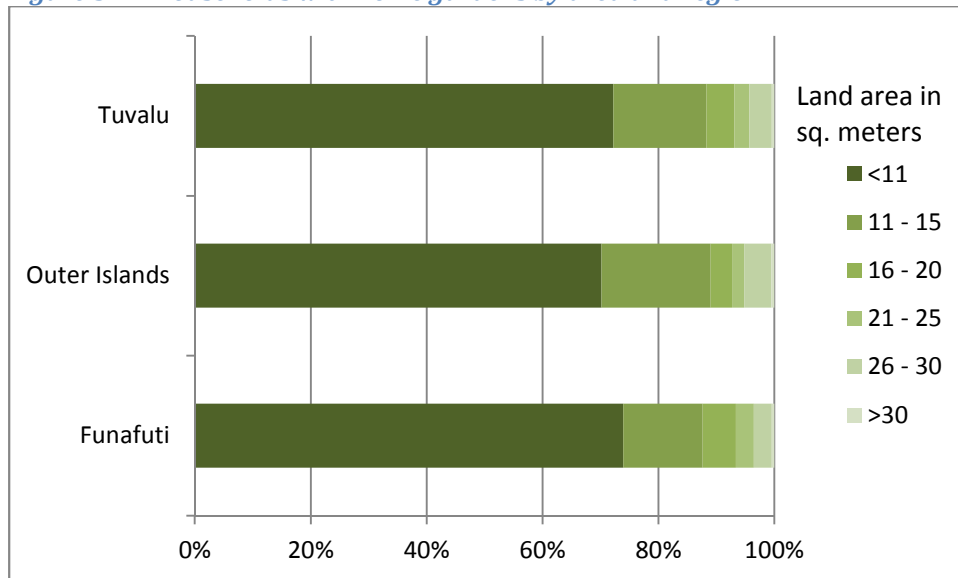
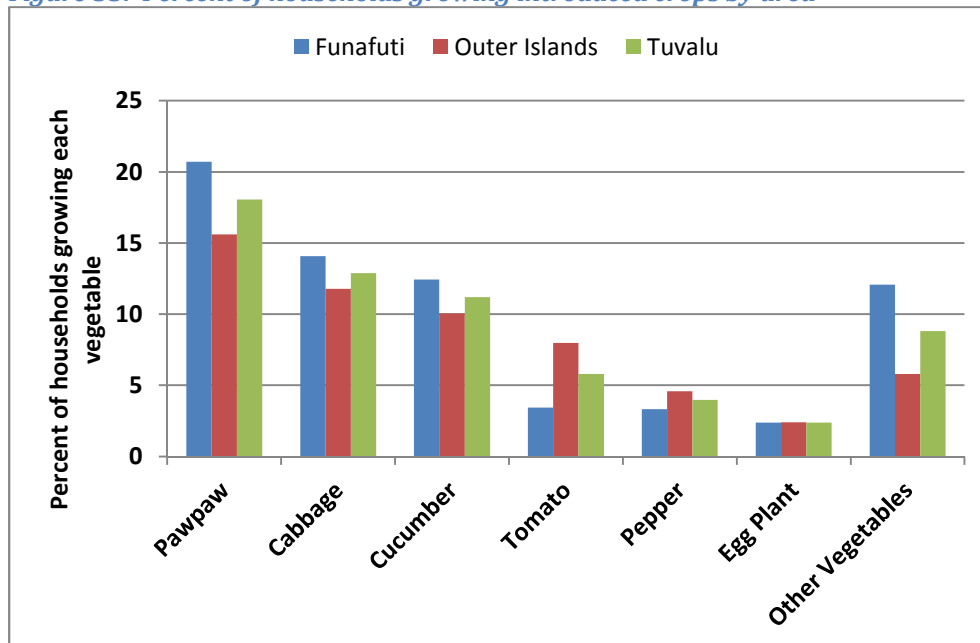


Figure 55 indicates some of the major introduced annual food crops that have become popular in Tuvalu. In most cases, a larger percentage of households on Funafuti grow these introduced food crops compared to households in the outer islands.

Figure 55: Percent of households growing introduced crops by area



In most cases, production yields from harvests have always been difficult to collect from households. The 2012 census asked a question to households with home gardens to estimate the weight (in kilograms) of the crops they harvested in a week

Pawpaw followed by cucumber and cabbage were the most harvested vegetables with a total yield per week of around 2,026 kg, 987 kg, and 750 kg respectively. The tomato plant also appeared to have a significant yield per week of 323 kg.

**Table 39: Weights of harvested vegetables per week among households with home gardens**

Total kilograms of harvested vegetables per week among households with a home garden							
Region	Pawpaw	Cucumber	Cabbage	Tomato	Egg Plant	Pepper	Other Vegetables
Funafuti	1170	574	428	93	80	57	496
Outer Islands	856	413	322	230	73	117	165
Total	2026	987	750	323	153	174	661
Average weight (kg) per household of harvested vegetables per week							
Funafuti	6.7	5.5	3.2	4.9	3.6	2.0	4.0
Outer Islands	6.0	4.5	3.2	3.1	3.0	2.8	3.3
Total	6.4	5.0	3.2	4.3	3.3	2.5	3.6

The original question for this table asked households the number of crop cycles they harvested in the last 12 months for each vegetable grown. The table below presents how many times crops were planted.

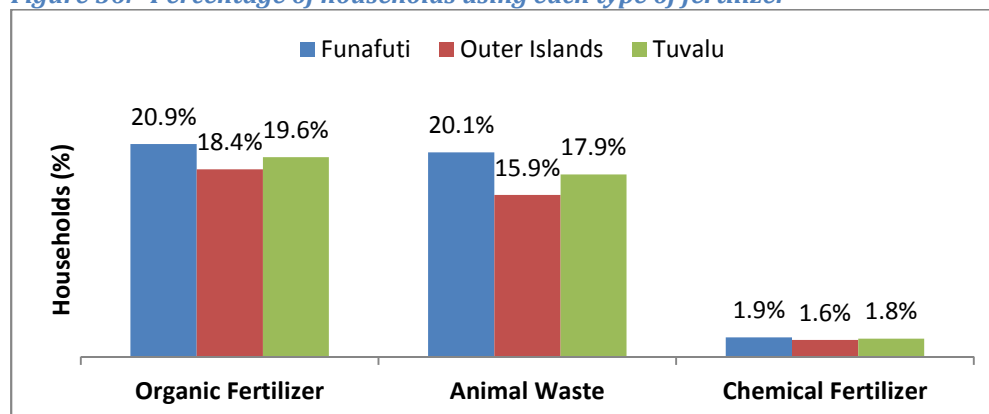
Most of the food crops mentioned were introduced annual crops including those in the ‘Other vegetables’ group. Importantly Table 40 illustrates that introduced annual crops have gained popularity in the outer islands ranging from 1.6 to as high as 2.4 average number of annual planting per household. This also shows that the food crops in the outer islands have become more diversified as these introduced vegetables become more established in the outer islands.

**Table 40: Number of plantings in a year for each crop per households by region**

Average number of plantings per household annually							
Region	Cabbage	Cucumber	Tomato	Pepper	Egg Plant	Pawpaw	Other Vegetables
Funafuti	2.9	2.6	2.3	2.3	1.8	1.7	1.9
Outer Islands	2.4	2.1	2.1	1.9	1.9	1.6	1.9
Total	2.7	2.4	2.1	2.0	1.8	1.7	1.9

The use of chemical fertilizer by households is very low (1.8%). Interestingly, households all over Tuvalu have been using a lot more organic matter (20%) and animal waste (18%). This is encouraging since heavy use of fertilizer in the long term would contaminate the islands’ underground-water lens, which is an important resource in Tuvalu. In the meantime the contamination from chemical fertilizer of the underground water is not a major concern. Tuvalu does not have any streams and depends only on rainwater and well water. The heavy use of animal waste and organic matter is a reflection of the promotion of compost use that the Agriculture Department has been encouraging farmers to use over the last fifteen years.

**Figure 56: Percentage of households using each type of fertilizer**

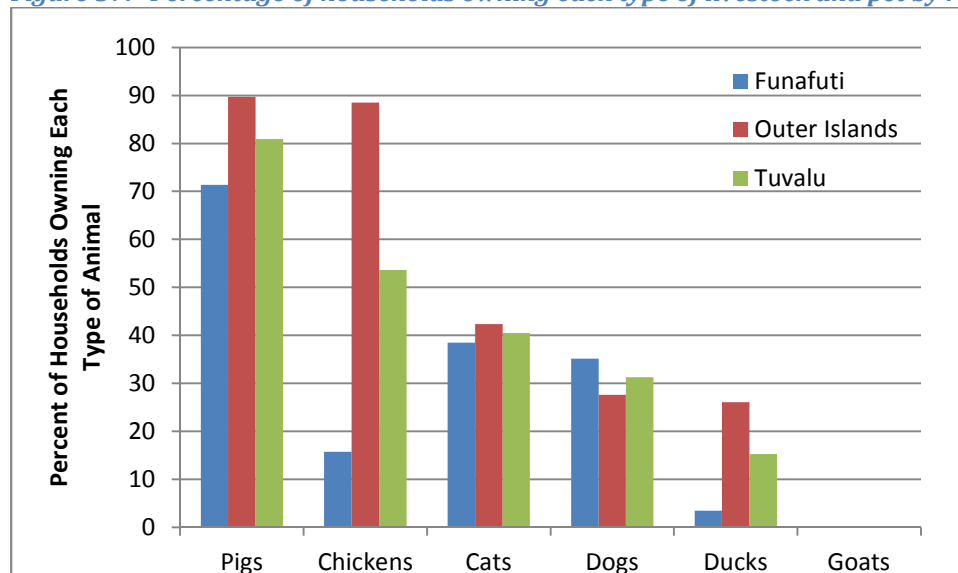


## 10.4 Livestock

Figure 57 demonstrates the percentage of households owning each type of livestock and pet. Pigs (90%) and chickens (86%) are the most common type of livestock being raised in the outer islands. Households raising chickens and ducks in the outer islands are comparably very high. The main reason behind this is the way they are raised. Most chickens and ducks in the outer islands are free range and so are easy to manage.

Pigs are more time consuming and difficult to manage as they are raised in pens. On the other hand, pigs in most outer islands are not allowed to be raised in a free range farming system. On Funafuti, pigs are raised in pens. Most residents on Funafuti are more likely to raise pigs than chickens as the only land available to them is government leased land that is only adequate to raise pigs but not conducive to raising poultry in a free range system. And 71% of households on Funafuti raised pigs.

*Figure 57: Percentage of households owning each type of livestock and pet by region*



With the exception of dogs, the average number of animals owned is larger for households in the outer islands compared to Funafuti. Chickens are the most numerous animal possessed in the outer islands at about 18 chickens per household. Pigs are the most common animal possessed on Funafuti with each household owning about 5 pigs on average.

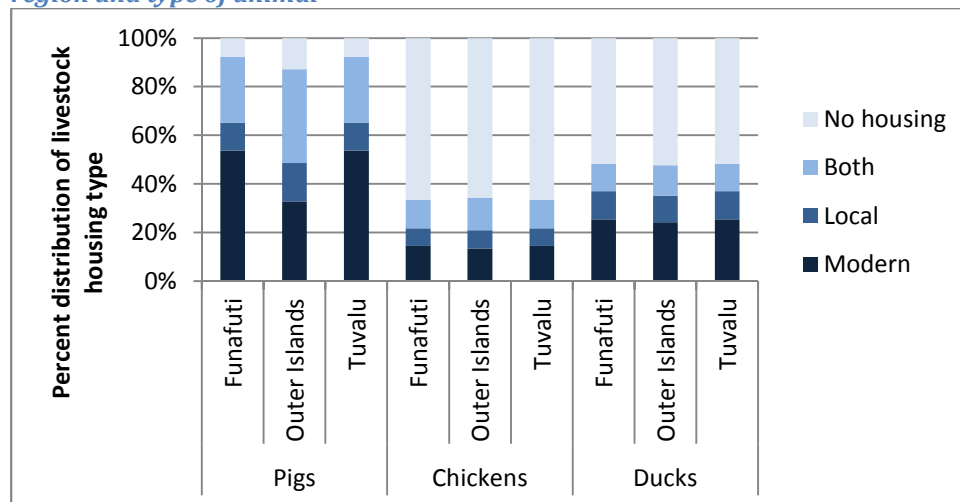
*Table 41: Average number of livestock and pets per households by region*

Region	Chickens	Pigs	Ducks	Cats	Dogs	Goats
Funafuti	3.3	4.7	0.2	0.8	0.5	0.0
Outer Islands	17.9	7.7	1.8	1.0	0.3	0.0
Tuvalu	10.9	6.3	1.0	0.9	0.4	0.0

Farmers have taken initiatives to improve their pig pens by using more durable materials such as cement, timber, fencing wire and iron roofing. These improvements can be seen in the capital island of Funafuti, where around 54% of households have modernized their pig pens. Most of these households have greater access to incomes compared to households on outer islands, and thus could afford these durable materials.

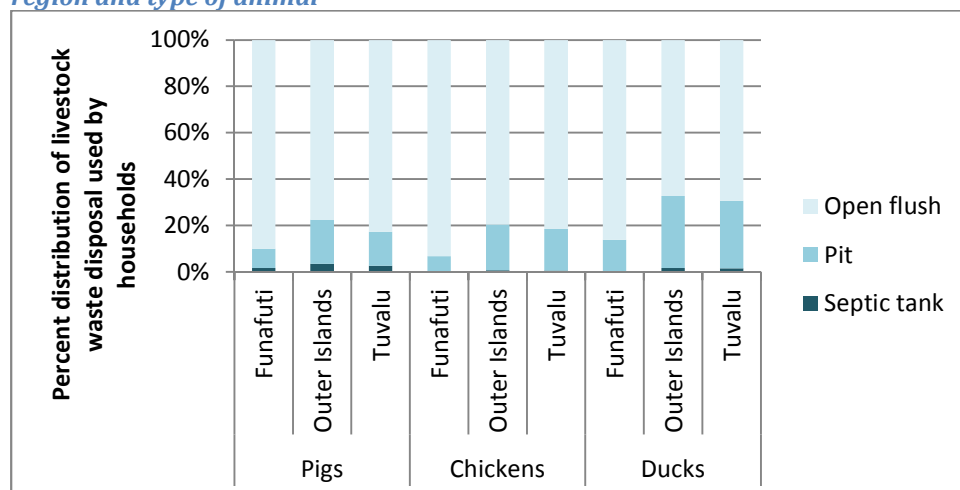
For chickens and ducks, free range or no housing is the most common way to keep livestock in all parts of Tuvalu with more than half of all households raising chicken and ducks in this way.

**Figure 58: Percent distribution of livestock housing type among households owning livestock by region and type of animal**



In both Funafuti and the outer islands the majority of households indicated their livestock waste was disposed of by using an open flush system. This was the case for 90% of households owning pigs on Funafuti. This finding may seem contradictory to the previous graph where a large number of pig pens were made from modern materials; one would expect a higher number of septic tanks used. The main reason for a high usage of open flush systems on Funafuti is that most of the pig pens are located around the banks of the Tafua pond, the borrowed pit pond and the Fakaifou settlement, thus animal waste is flushed into these ponds. Both ponds have brackish waters and the only fish residing in these ponds is tilapia.

**Figure 59: Percent distribution of livestock waste disposal among households owning livestock by region and type of animal**



# 11 DISABILITY AND THE ELDERLY POPULATION

## 11.1 Persons with Disabilities

The definition of ‘disability’ was derived from the UN Convention on the Rights of Persons with Disability (CRPD). The Convention defines disability as including: ‘those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.’

The 2012 Census used a ‘social model’ of disability. This model sees disability as ‘an evolving concept’ resulting from ‘the interaction between persons with impairments and attitudinal and environmental barriers that hinder full and effective participation in society on an equal basis with others.’ This is to ensure that the results captured a national profile on the demographic characteristics and the common difficulties experienced by persons with disabilities.

Traditionally, people with disabilities in Tuvalu live with their immediate families or relatives in a Tuvalu family structure. The government of Tuvalu has not been able to provide financial support to these people or their families. However, initiatives that support the lives of people with disabilities have taken place in the country.

The 2012 national captures the characteristics of people with disabilities who were 60 years of age and younger. The analyses of this section reflect the characteristics of this population.

A total of 198 people (2%) at the age 60 years old and younger are affected by disability. A higher percentage of people in the outer islands suffer from disabilities (2.8%) compared to the population on Funafuti (1.4%). Additionally, a higher percentage of males (2.3%) than females (1.7%) have disabilities.

**Figure 60: Percent of the population aged 60 years and below who have a disability by sex and region**

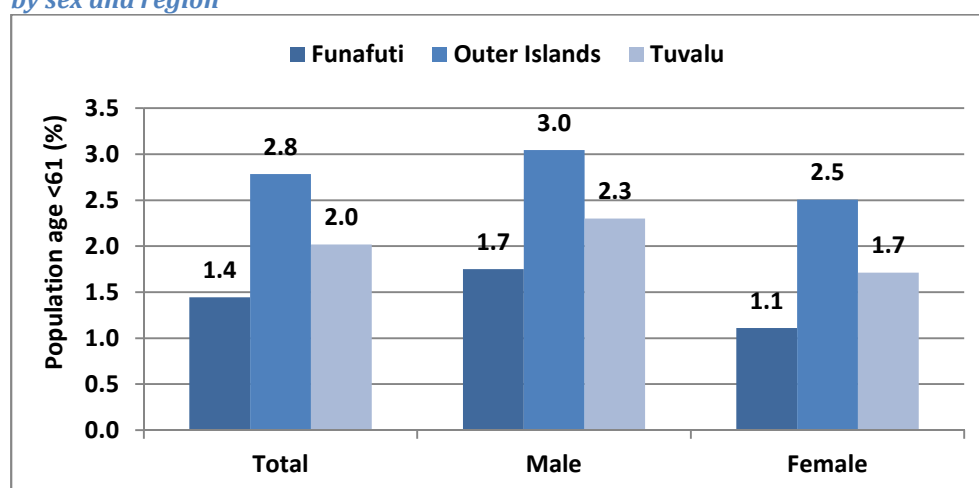
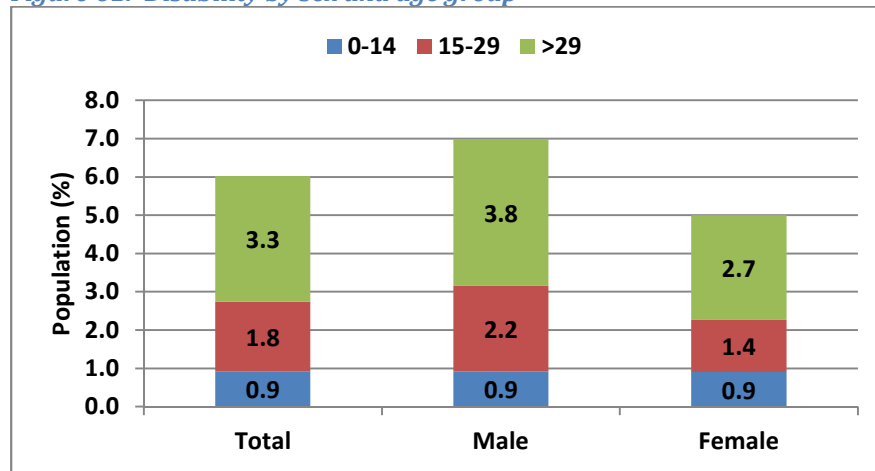


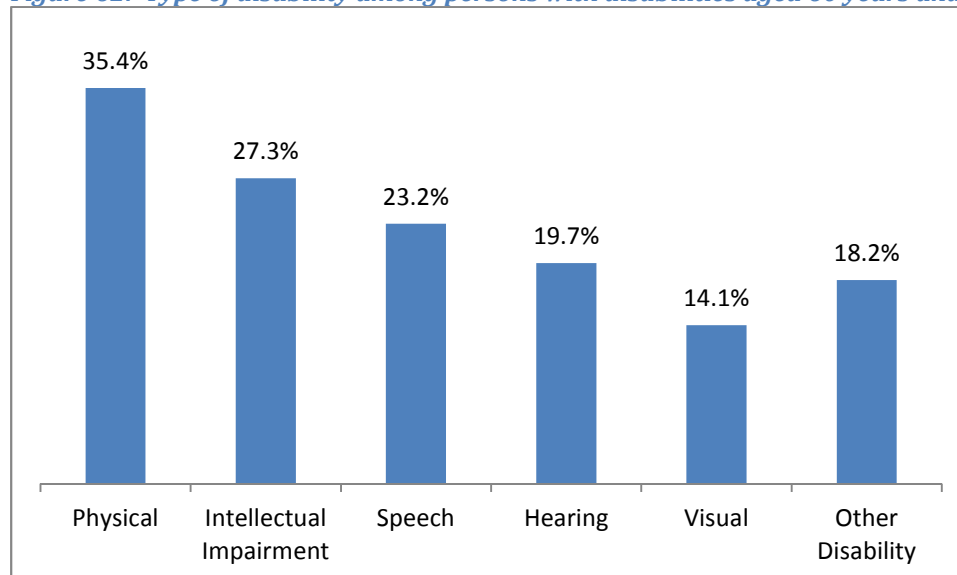
Figure 61 illustrates that the prevalence of disabilities tends to increase with age for both males and females. Less than 1% of children aged 0-14 were identified as having a disability (0.9%). Among younger adults aged 15-29, 1.8% reported having at least one disability. For adults aged 30-60, about 3% (3.3%) reported having a disability.

**Figure 61: Disability by sex and age group**



Physical disability was the most common type of disability, followed by intellectual impairments, speech disorder, hearing impairments, and visual impairments. Among people with disabilities, about one-third (35.4%) had a physical disability. Visual impairment was the least with common disability, affecting 14% of the disabled population.

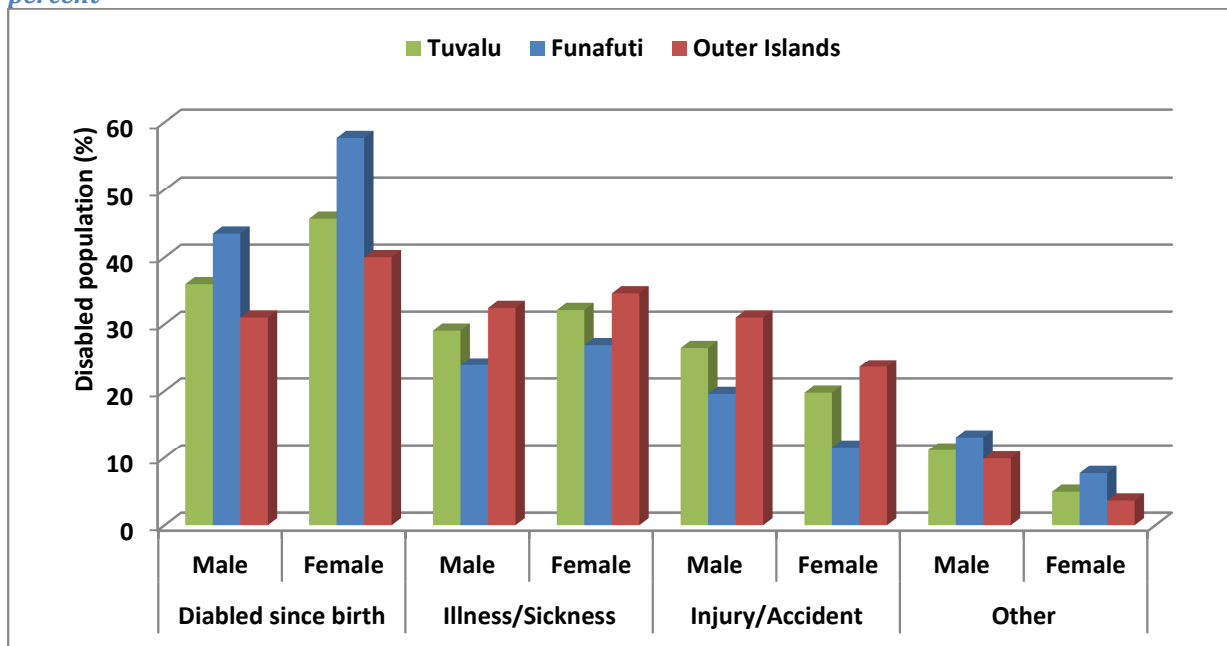
**Figure 62: Type of disability among persons with disabilities aged 60 years and below**



*Note: Values do not add up to 100% because it is possible to have more than one type of disability.*

As illustrated in Figure 63, disability since birth was the leading cause of disability in both males and females in both Funafuti and the outer islands. A total of 24 (29%) males and 26 females (32%) reported that their disability was caused from an illness or sickness. About 27% of men and 20% of women attributed their disability to an accident or injury.

**Figure 63: Causes of disability by sex and region among disabled persons 60 years and below in percent**



The 2012 census revealed that the disabled population mainly depend on their relatives to look after them. This was true in both Funafuti and the outer islands (data not shown). About 3% are looked after by friends and just 1% is cared for by workers or volunteers. All of those cared for by workers/volunteers are living on Funafuti which means that those in the outer islands don't have access to these type of resources.

**Figure 64: Percent distribution of the disabled's primary caretakers**

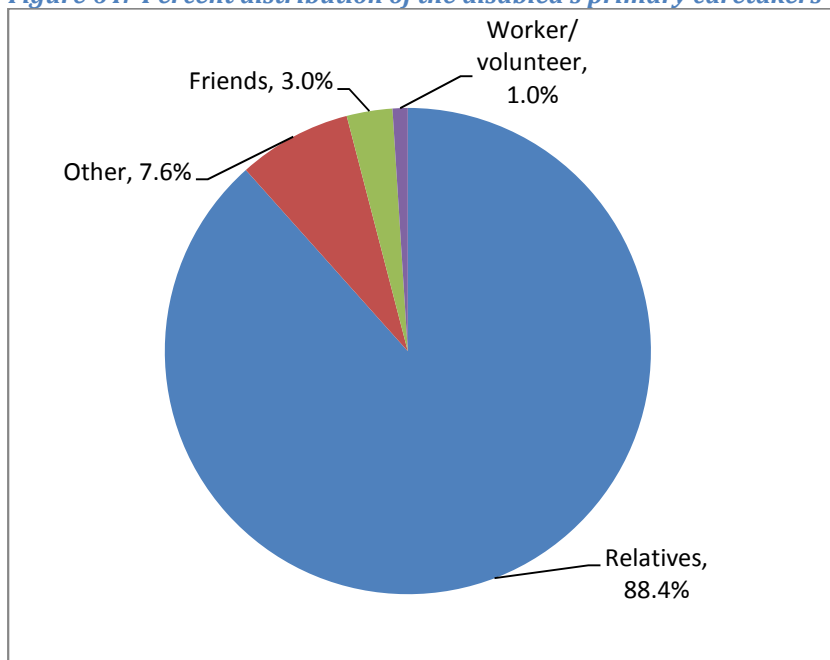
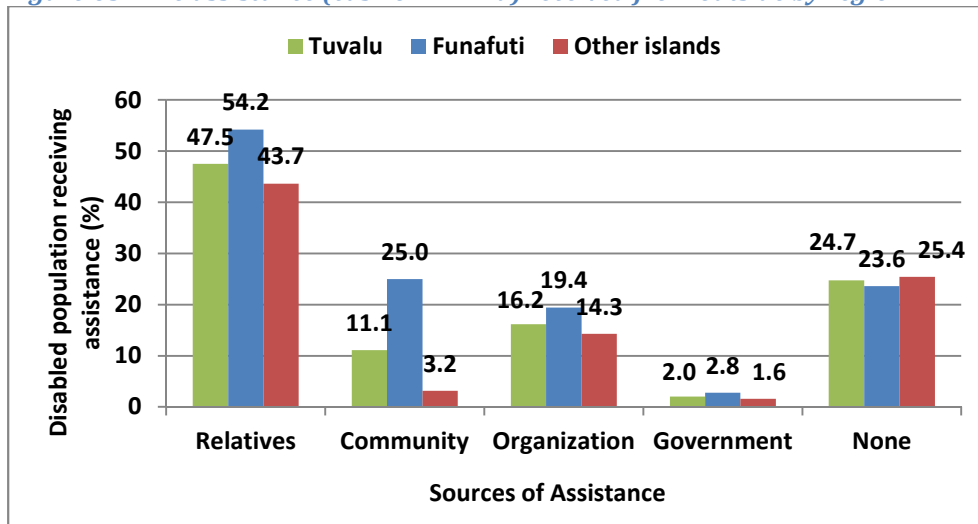




Figure 65 illustrates that in addition to being looked after by their usual caretakers, almost half of the disabled population received cash or in-kind assistance from relatives outside of their households. Very few (2%) indicated they receive assistance from the Government. While 11% received cash or in-kind assistance from their community, this was much more likely to occur on Funafuti (25%) compared to the outer islands (3%). About 16% of the disabled population received assistance from organizations, but it is worth noting that 25% reported receiving no assistance at all. About one-quarter of the disabled in both Funafuti and the outer islands received no cash or in-kind assistance.

*Figure 65: The assistance (cash or in-kind) received from outside by region*



## 11.2 The Elderly Population

The elderly population in this section refers to those age 60 years and above. This age group are included as part of the dependency ratio, as they are no longer earning a fixed income.

Traditionally, the elderly are protected and safeguard by the Tuvaluan family set up. However, changes such as urban drift, climate change, disease, and poverty can make the older population very vulnerable. As the working age population migrates to Funafuti for work, the elderly population is often left behind in the outer islands.

The Government of Tuvalu has no explicit and comprehensive national policy for elderly people. However, there are several national legal implications that recognized the elderly including the Tuvalu National Population Policy and the Tuvalu Senior Citizen Support Scheme (TSCSS). The scheme is a monthly financial support stipend received only by persons 70 years of age and above.

As illustrated in the 'Summary of main indicators' and Table 3, 8.5% of Tuvalu's resident population (or 907 persons) were aged 60 and above at the time of the 2012 census, 379 were living on Funafuti while the other 528 were scattered across the outer islands.

Table 42 demonstrates that 84% (or 748 persons) of the elderly population were financially dependent or inactive the week before the census. Most of the inactive elderly population reported home duties as their primary activity. Only 8% (70 people) of elderly people were noted as being formally employed, working for the Government and private businesses. Another 64 were self-employed, producing goods and services for sale or for their families (7%).

*Table 42: Activities of population aged 60 years and above involved 1 week before census by region*

Activities	Funafuti	Outer Islands	Total
Income earner (Government and private business)	52	18	70
Self-employed (sales or for own family)	19	45	64
Unpaid worker in family business	0	7	7
Voluntary work	0	18	18
<b>INACTIVE</b>	<b>308</b>	<b>440</b>	<b>748</b>
Home Duties	201	302	503
Retired	42	41	83
Did not work	65	97	162
<b>Total</b>	<b>379</b>	<b>528</b>	<b>907</b>

## 12 CULTURAL CHARACTERISTICS

### 12.1 Traditional Knowledge

#### A. Architecture

Tuvaluans have their own distinct knowledge and skills of architecture and utilise the natural materials available within their surroundings for constructions. Traditional architectural types of housings and utilisation of natural materials complement the climate type Tuvalu has. Typical traditional houses utilise either coconut or pandanus thatch for a roof. The dried coconut midribs, lapalapa (woven strips of raw coconut midrib) or nothing at all were utilised for the walls. Traditional floors are either sand, gravel, or coconut midribs for rudimentary floors.

To determine if traditional and cultural knowledge and skills of architecture are still utilised in housing construction, the 2012 census collected information on the construction materials of main houses and kitchens throughout the nation.

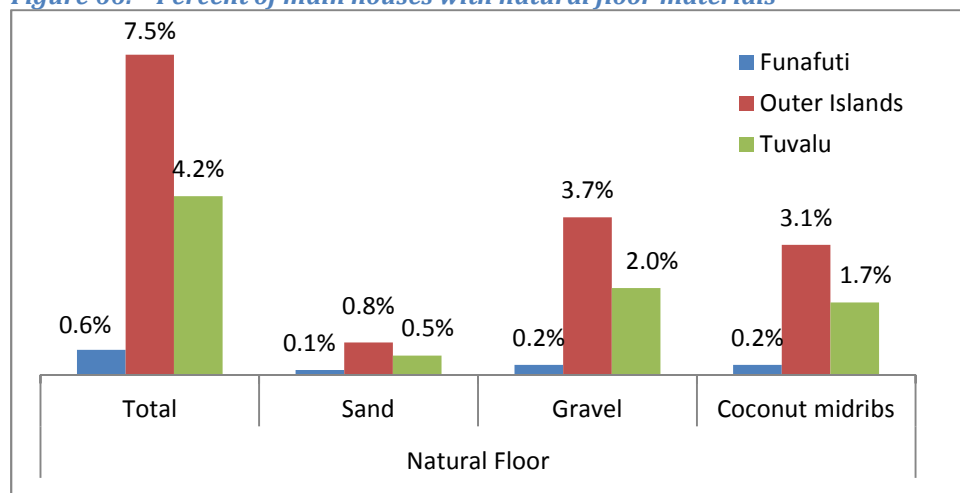
##### i. Main House

Figures 66, 67, 68 below clearly illustrate the number of main houses still utilising natural materials and maintaining the traditional architecture of building houses. Natural implies that materials utilised are from the available natural resources within Tuvalu and are thus traditional materials.

Findings indicate that limited main houses throughout Tuvalu utilise natural traditional materials, and almost all houses utilised imported building materials. Figure 68, 69, 70 indicate that nationally 4.2% of households have natural floors, 3.1% have natural roofing and 7.4% have natural walls in their main house. Traditional houses are more common at the outer islands than Funafuti.

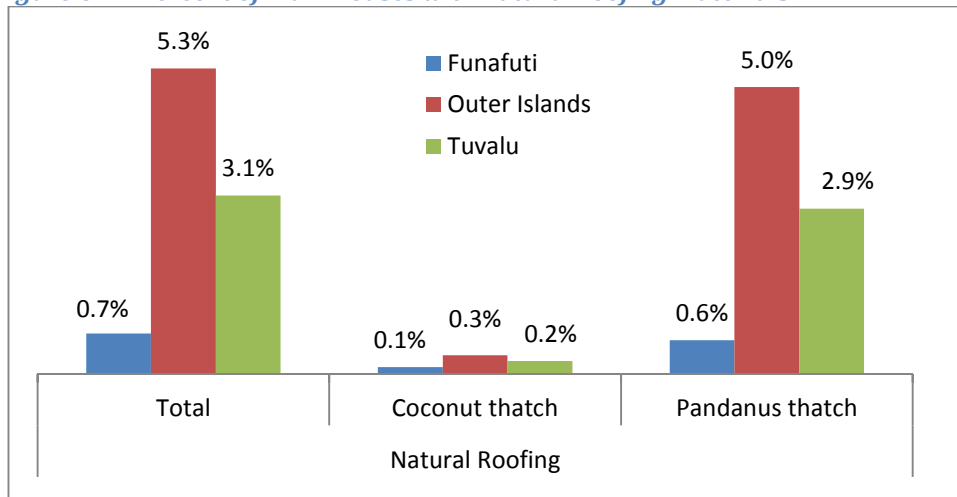
The coconut midribs floor is the most common type of natural floor used by households followed by the gravel type and lastly the sand floor.

*Figure 66: Percent of main houses with natural floor materials*



For roofing (Figure 67), about 2.9% of households utilised pandanus thatch while only 0.2% used coconut thatch. Pandanus thatch for roofing is traditionally and architecturally expected for a main house because it is long-lasting and provides good shelter from the rain and can withstand gusty winds and the sun's heat. The small percentage of main houses with coconut thatch roofing indicates this type of roofing is not very popular. Either houses with this type of roof are only makeshift shelters, or people residing in them do not have the knowledge to construct a proper home, or simply being lazy. Coconut thatch roofing is generally used for picnic and temporary shelters and is not meant for structures in which people reside for more than a couple of days.

**Figure 67: Percent of main houses with natural roofing materials**



About 7% of main houses in Tuvalu had walls that were made of natural materials. The percentage of households with this type of wall material was higher in the outer islands (12%) compared to houses on Funafuti (2%). Only 1% of households utilised coconut midribs, less than 1% used lalalapa, and almost 6% did not have walls. The latter is the most popular and perhaps the most suitable for Tuvalu's hot climate because it provides good ventilation and can accommodate comfortably a small standard household of 6 people.

**Figure 68: Percent of main houses with natural wall materials**

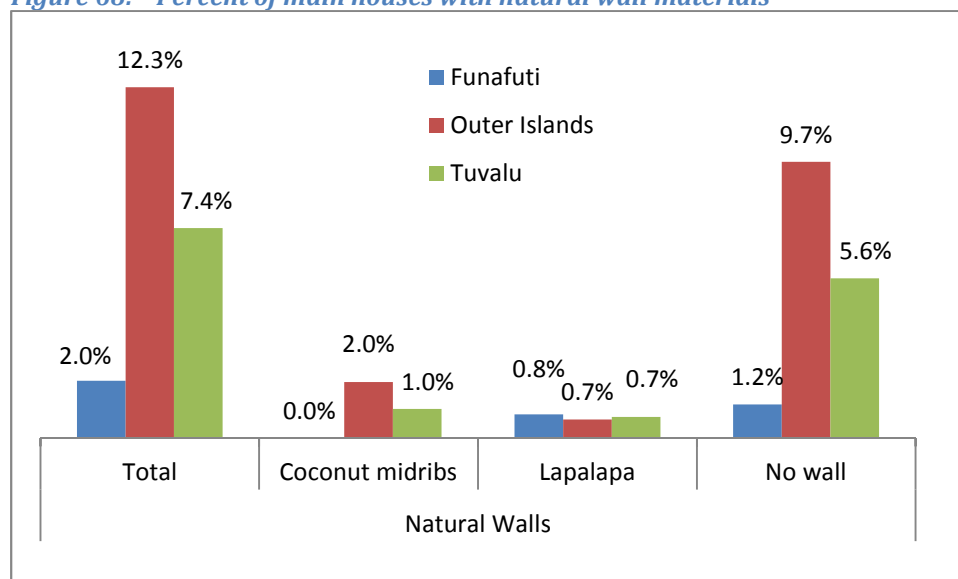


Figure 66, 67 and 68 may suggest that a very limited number of people have the knowledge or skills to use traditional materials in their architectural constructions which can lead to a disregard of cultural identity. It is likely that Tuvaluan people prefer imported and expensive materials for their houses because they can afford them and also because these are more permanent and require less maintenance.

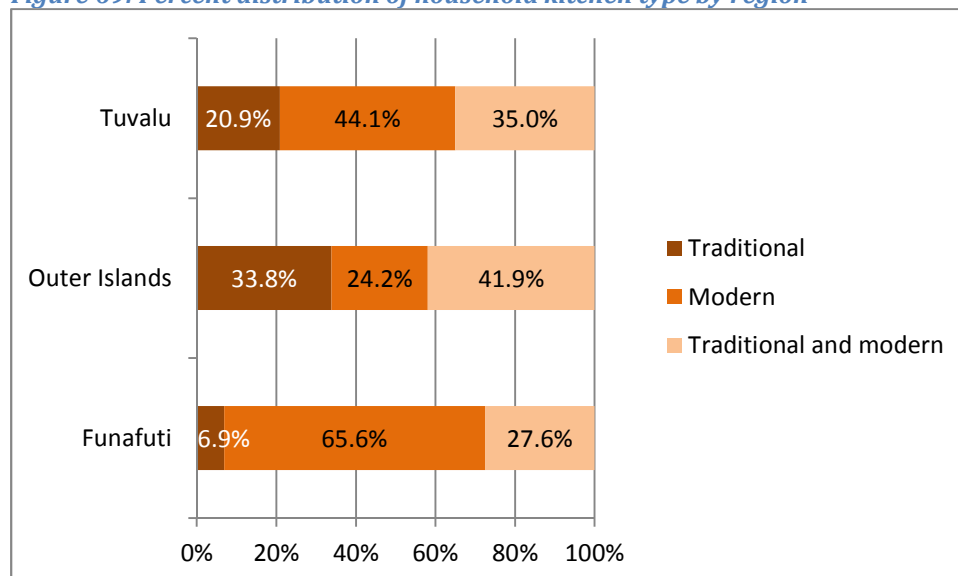
Further analyses from the 2012 census (data not shown) discovered that Niutao was the island most likely to utilise natural materials for main house construction. In fact, Niutao is nationally renowned for maintaining traditional architectural knowledge and skills, and data from the 2012 census re-emphasises this.

## ii. Traditional Kitchen

A standard traditional kitchen normally utilises natural materials namely pandanus thatch for the roof, no walls, and either gravel, sand or coconut midribs for the floor.

Figure 69 shows that 21% of households in Tuvalu had a traditional kitchen, 44% had modern kitchens, and 35% had a mixed modern and traditional kitchen. Funafuti had the largest percentage of households with a modern kitchen of 66%. Just 24% of households in the outer islands had a modern kitchen.

*Figure 69: Percent distribution of household kitchen type by region*



## B. Traditional Food Items & Culinary

Traditionally, the Tuvaluan diet is comprised mainly of: breadfruits, felo, coconut, and pulaka for energy; pandanus fruit for protective food; fish, pork, chicken, crabs and sea-food as protein giving food; and toddy or water for drinking. These food items are naturally cultivated from the resources accessible in Tuvalu. Their sustainability as food sources depends on how frequent they are harvested, collected, caught or fished. Since this section concentrates on highlighting

traditional and cultural knowledge and skills related to food, only a limited number of food items and traditional cooking types will be illustrated in this section. Other types of food preparation and harvesting will be detailed in other sections of this report.

### i. Energy-giving Food Items

Table 43 illustrates the percentage of households throughout the nation who cultivate some of the major traditional crops. Since Niulakita is very small with a limited residential population compared to the rest of the islands, it has been excluded from the Table 44 analysis.

Funafuti had some of the lowest percentages of households growing traditional crops. Households engaged in the production of pulaka, talo, and pumpkin are considerably lower on Funafuti than the other islands. And households that cultivate pulaka and talo were extremely high on Nukufetau, Nui and Vaitupu with 71-93 percent of households growing these crops. While all food crops need traditional skills and knowledge and recently introduced fertilisers to thrive in Tuvalu's poor soil, talo and pulaka are the two main traditional crops that need the most traditional skills and knowledge for cultivation.

Thus analyses can imply that Nukufetau, Nui and Vaitupu are the popular islands with households traditional knowledge and skills in food cultivation. Perhaps the low cultivation of traditional crops on Funafuti can be explained by the fact that majority of households there are not native to Funafuti and thus have no lands to grow crops (emphasized in the Agriculture section of this report).

However, slightly more than half of all households on Funafuti grew bananas (57%), this was even higher than the percentage of households on Nanumea cultivating bananas (51%). Perhaps the high cultivation of bananas is due to the fact that they can be grown with very little space.

Apart from Funafuti, the islands of Nanumea, Nanumaga and Nukulaelae had lower participation in the cultivation of certain traditional crops. One reason for this on Nukulaelae was that the census was conducted just after a very severe drought that may have effected crop cultivation.

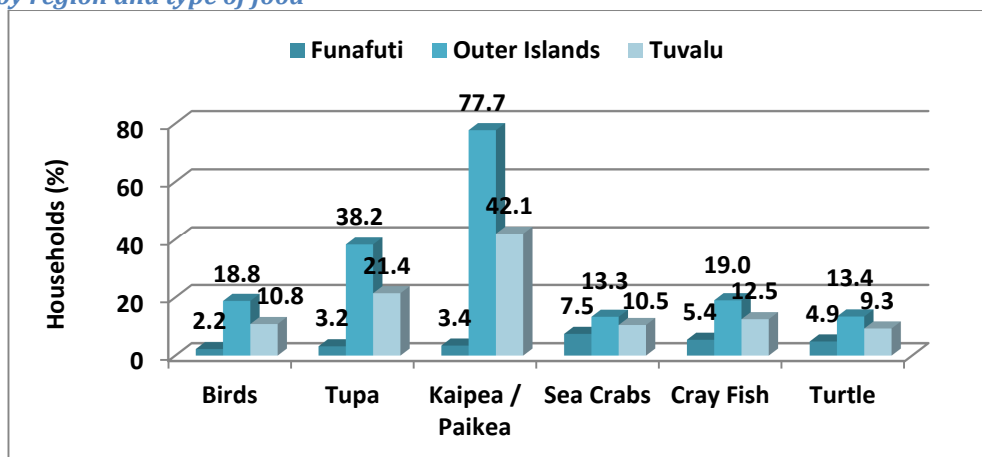
**Table 43: Households involvement in cultivation and harvest of major traditional crops and Island**

Islands	Households (%)						
	Coconut	Breadfruit	Banana	Pandanus	Pulaka	Talo	Pumpkin
Nanumea	91.3	68.7	51.3	61.7	84.3	78.3	20.0
Nanumaga	87.1	79.3	63.8	67.2	54.3	11.2	30.2
Niutao	93.5	82.1	71.5	64.2	74.8	22.0	36.6
Nui	89.9	82.6	91.3	80.4	91.3	87.7	40.6
Vaitupu	82.7	65.0	81.0	67.7	89.4	85.4	28.3
Nukufetau	93.5	74.2	79.0	41.9	92.7	71.0	42.7
Funafuti	66.4	33.5	57.0	36.1	9.7	9.7	22.2
Nukulaelae	62.7	41.8	80.6	23.9	79.1	58.2	70.1
<b>Funafuti</b>	<b>66.4</b>	<b>33.5</b>	<b>57.0</b>	<b>36.1</b>	<b>9.7</b>	<b>9.7</b>	<b>22.2</b>
<b>O/Islands</b>	<b>87.0</b>	<b>71.7</b>	<b>75.2</b>	<b>61.9</b>	<b>81.7</b>	<b>62.3</b>	<b>35.6</b>
<b>Tuvalu</b>	<b>77.1</b>	<b>53.4</b>	<b>66.5</b>	<b>49.5</b>	<b>47.1</b>	<b>37.1</b>	<b>29.2</b>

ii. Protein-giving Food Items

Figure 70 below indicates the households engaged in collection of protein food supplements for subsistence consumption. Many of those protein supplements are collected during bad weather when the fishermen cannot go fishing in the open sea.

Figure 70: Percent of households who collect traditional sources of protein-rich food by region and type of food

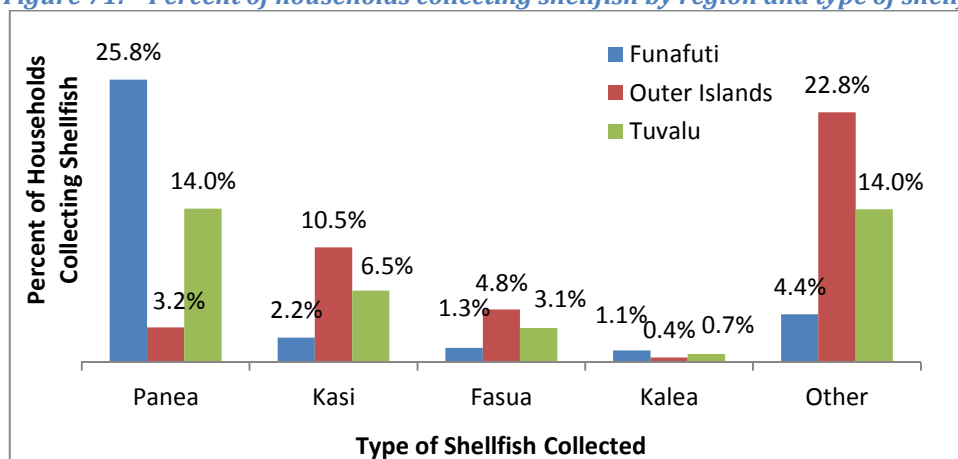


People on Funafuti collect less of each type of protein source compared to those in the outer islands. One factor that can explain this is that residents of Funafuti have more access to and choices of protein than those in the outer island. Protein-rich foods like chicken, sausages, chops, eggs, etc. are well supplied in the super-markets and shops on Funafuti, whereas the availability of these items is limited in the outer islands.

Kaipea (paieka) seems to be the most popular protein-rich food collected, especially in the outer islands where 78% of households collect it. Tupa is the second most popular source, collected by 38% of households in the outer islands. Kaipea and tupa are land crabs which are more plentiful in the outer islands, but limited on Funafuti due to lack of habitat.

In addition to the above-listed traditional protein sources, households also collect shellfish. Figure 71 below illustrates the percentages of the households that collect different types of shellfish.

Figure 71: Percent of households collecting shellfish by region and type of shellfish



Panea is the most commonly collected shellfish on Funafuti (26%) while Kasi is the most commonly collected in the outer islands (11%). Fasua is more commonly collected in the outer islands (5%) compared to Funafuti (1%). This is likely because fasua (or clams), are no longer abundant on Funafuti and they can probably only be found within the restricted conservation area on Funafuti. In the outer islands, fasua can be collected anywhere at any time.

### iii. Vitamins-Rich Food & Drinks

Toddy is collected either for drinking, cooking, fermenting into alcohol, or for use in making syrup.

Nationally 50% of households cut toddy compared to just 24% of households on Funafuti. As can be seen in Figure 72, Funafuti is the island with the lowest percentage of households collecting toddy. The low participation in toddy cutting on Funafuti is possibly due to limited access of residents to coconut trees, lack the traditional skills and knowledge needed to cut toddy, laziness or people these days prefer consuming sugar rather than toddy. Toddy production is higher in the outer islands compared to Funafuti.

*Figure 72: Percent of households cutting toddy by island*

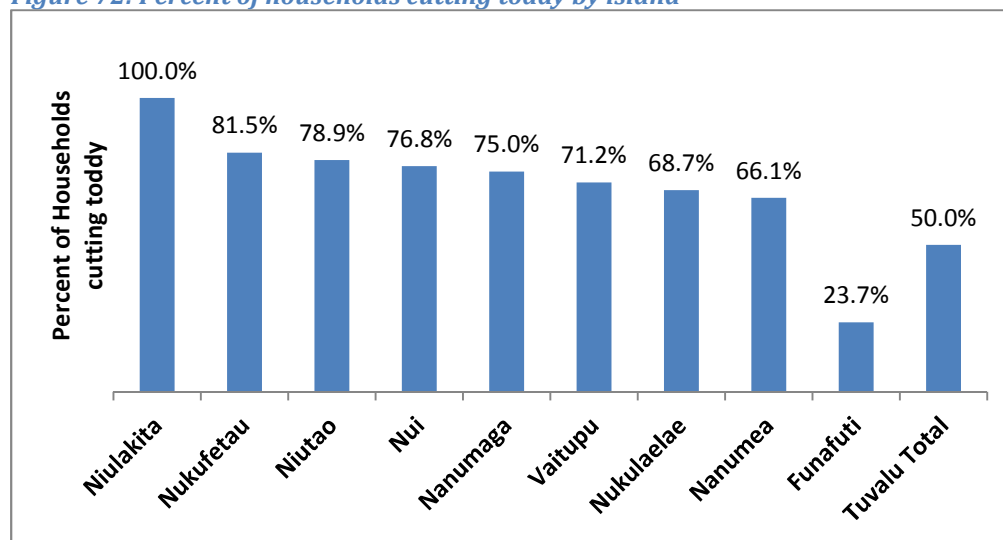


Table 44 shows the percent distribution of litres of toddy collected among households who cut toddy by island. The majority of households (62%) harvest 1-5 litres of toddy daily while 28% harvested 6-10 litres, 6% collected 11-15 litres, and 5% harvested more than 15 litres.



*Table 44: Toddy collected per day among households cutting toddy by island and region*

Island	Percent distribution of litres of toddy collected			
	1-5 litres	6-10 litres	11-15 litres	> 15 litres
Nanumea	48.7	28.9	10.5	11.8
Nanumaga	65.5	27.6	4.6	2.3
Niutao	59.8	30.9	3.1	6.2
Nui	59.4	30.2	8.5	1.9
Vaitupu	63.4	28.6	3.7	4.3
Nukufetau	42.6	33.7	8.9	14.9
Funafuti	73.5	23.0	2.5	1.0
Nukulaelae	78.3	19.6	0.0	2.2
Niulakita	0.0	0.0	57.1	42.9
<b>Funafuti</b>	<b>73.5</b>	<b>23.0</b>	<b>2.5</b>	<b>1.0</b>
<b>O/Islands</b>	<b>58.1</b>	<b>28.9</b>	<b>6.3</b>	<b>6.6</b>
<b>Tuvalu</b>	<b>61.6</b>	<b>27.6</b>	<b>5.4</b>	<b>5.3</b>

#### iv. Traditional Cooking Methods

Traditional cooking is most often done in an earth oven or over an open fire using local firewood. Table 45 does not specify the type of traditional cooking method used by households but it provides a breakdown of the percentage of households, by island, that used traditional, modern, or both methods for cooking.

*Table 45: Percentage distribution of household main cooking methods by island and region*

Island	Traditional	Modern	Traditional and Modern
Nanumea	63.5	13.0	23.5
Nanumaga	69.0	12.9	18.1
Niutao	56.1	4.9	39.0
Nui	65.9	7.2	26.8
Vaitupu	8.8	3.5	87.6
Nukufetau	56.5	21.8	21.8
Funafuti	5.6	53.6	40.8
Nukulaelae	19.4	11.9	68.7
Niulakita	85.7	14.3	0.0
<b>Tuvalu</b>	<b>26.6</b>	<b>30.8</b>	<b>42.5</b>
<b>Funafuti</b>	<b>5.6</b>	<b>53.6</b>	<b>40.8</b>
<b>Outer Islands</b>	<b>46.1</b>	<b>9.8</b>	<b>44.1</b>

Table 46 indicates that Funafuti had the largest percentage of households using modern cooking methods (54%). The sparsely populated island of Niulakita had the largest percentage of households using traditional cooking methods (86%). With the exception of Vaitupu and Nukulaelae, more than half of households in the outer islands used traditional cooking methods only as the main cooking type they used. This indicates that most of the households in the outer islands depend on traditional culinary methods which are best suited for preparing traditional

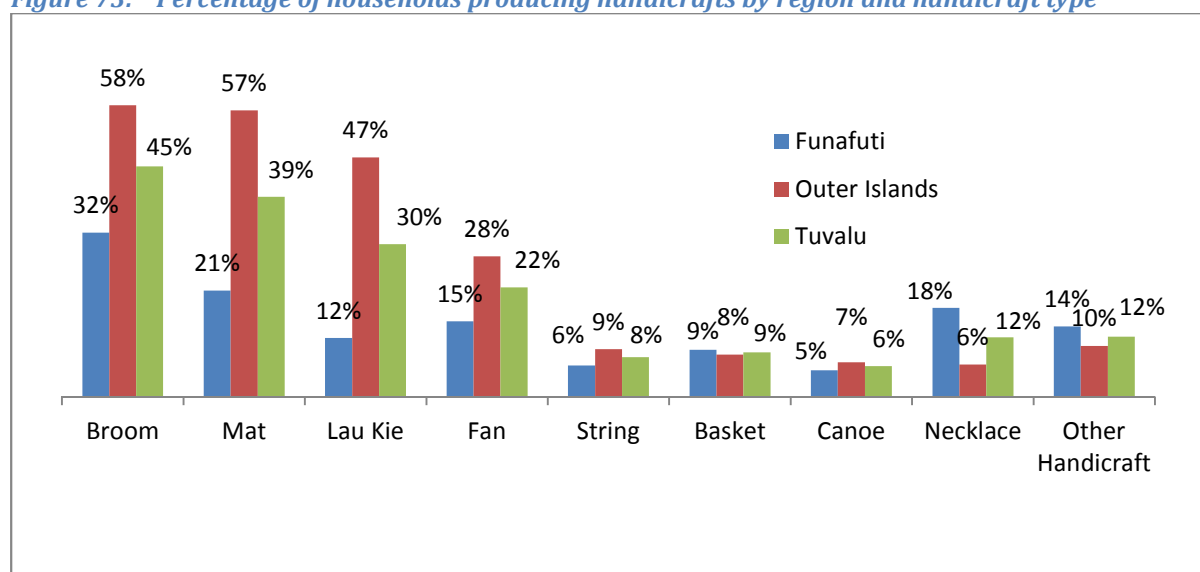
food items. The combination of modern and traditional culinary methods was the most common cooking method used in Tuvalu as a whole (42.5%).

### C. Handicraft

Tuvalu has many traditional handicrafts which are still utilised by its people. A limited number of questions regarding handicraft production were included in the 2012 census to analyse whether or not Tuvaluans still have the traditional interests and skills to make handicrafts.

Figure 73 below shows the percentage of households making handicrafts by region. With the exception of baskets, necklaces, and ‘other’ types of handicrafts, the outer island households were more likely to produce handicrafts compared to households on Funafuti. This is most likely because materials for handicrafts are more readily available in the outer islands. The 2012 census also asked the main purpose of producing the handicraft (data not shown in Figure 75). With the exception of necklace-making, most households stated that their production of handicrafts was mainly for subsistence purposes and not for commercial purposes. The difference in purpose for necklaces may be attributed to the high demands on Funafuti for necklaces as gifts for passengers on outgoing weekly flights.

*Figure 73: Percentage of households producing handicrafts by region and handicraft type*



The most common handicrafts produced by households in the outer islands were brooms (58%), mats (57%), and lau kie (47%) with about half of households producing these items. Canoe making was one of the least common types of handicraft activities on both Funafuti (5%) and the outer islands (7%).

## D. Possession of Other Traditional Skills

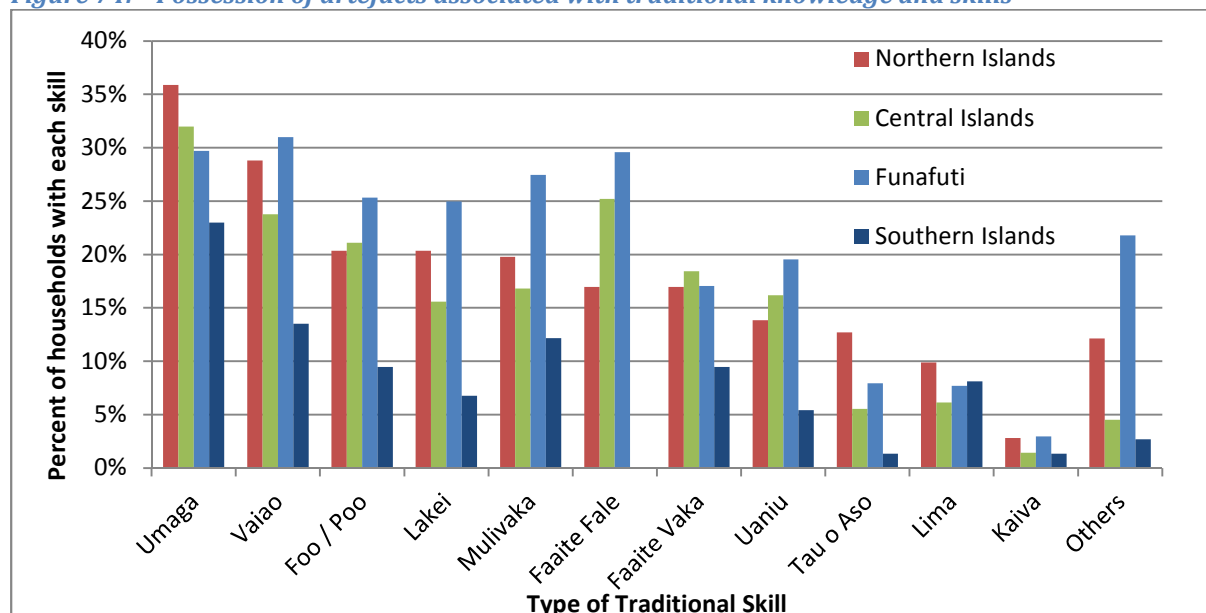
Cultural artefacts portray one’s heritage, identity, and origin. Each family and even individual islands have their own distinct traditional knowledge and skills which is shaped by their heritage. It is common in Tuvalu for individuals not to share their traditional family skills because these skills are identified as their family’s possession and are not for sharing.

The 2012 census asked if any household member possessed one of 11 traditional skills. The skills inquired about and discussed in this section include:

- Umaga - knowledge and skills of growing pulaka or talo
- Vaiao - knowledge of traditional herbal medicine
- foo/poo - massage
- Lakei - traditional accessories
- Mulivaka - knowledge of fishing
- Faite Vaka - canoe building
- Faite fale - house-building healing
- Uaniu - knowledge on how to ensure the land and especially the coconut trees bear high yields throughout the year
- Kaiva - knowledge of searching for lost items or people
- Lima - the knowledge to fight
- Tau o aso - knowledge of Weather forecasting

The analyses in Figure 74 were broken down by island grouping. The Northern Islands include Nanumea, Nanumaga & Niutao; the Central Islands are Nui, Vaitupu & Nukufetau; Funafuti stands alone; and the Southern Islands include Nukulaelae and Niulakita.

**Figure 74: Possession of artefacts associated with traditional knowledge and skills**



Funafuti is the capital island discovered in this census to be populated by more than half of the total population of Tuvalu, it also had a higher incidence of households possessing traditional skills compared to some of the outer island groups. However, the percentage of households with knowledge of these skills was relatively low across all the island groups, never surpassing more than 36%.

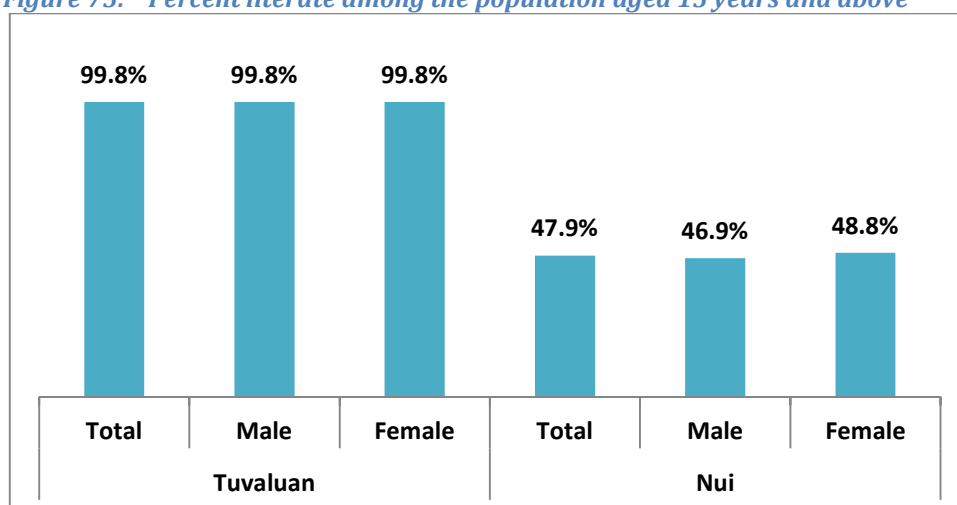
Knowledge of Umaga was one of the more commonly possessed skills throughout the islands, as was Vaiao. Knowledge of Kaiva and Lima was relatively lower than some of the other traditional skills. This suggests that either Tuvaluans were not completely open in sharing that they possessed these traditional skills, or that these skills have been forgotten over time. Such skills are an important part of the Tuvaluan heritage and were practiced by Tuvaluan ancestors. Maintaining them is important to the preservation of Tuvaluan culture.

### E. Vernacular literates

For one's sense of identity and heritage, speaking and writing the local language is essential. Tuvaluan and Nui are the two main historical languages spoken in Tuvalu. The Tuvaluan language is Polynesian by origin and is the language most commonly spoken. Some Tuvaluan words are very similar to those in the Tongan and Samoan languages. Nui is very similar to Kiribati's language; since it has strong oral traditions and ties to that country.

The 2012 census collected literacy data for the population aged 15 years and above to determine literacy of Tuvaluan, English, and Niu. Figure 75 indicates that among the adult population aged 15 years and above who were questioned about literacy in the census and who agreed to respond, 99.8% were literate in Tuvaluan. Significantly, only 47.9% were literate in the Nui language. It is likely that those literate on Nui were the returned contract workers from Banaba or Nauru where I-Kiribati language is spoken.

*Figure 75: Percent literate among the population aged 15 years and above*



## 13 GENDER

Gender relates to social constructed roles of men and women by society. Culturally in each society, men and women are known to have different roles. However, with advancement in education and technology, gender roles often become interchangeable. Leadership roles continue to be dominated by men, both at the local and national level in Tuvalu. The 2012 census gives insight into gender disparities. This section reflects certain gender issues in education, economic participation and social welfare. The 2012 census has important information for policy makers that address gender issues including inequality.

### 13.1 Gender and Education

Education is the key area for eliminating gender disparity at all levels. One of the goals of the 'National Strategy for Sustainable Development, 2005 - 2015' of Tuvalu and the 'Millennium Development Goals' is to eliminate gender disparity at all levels of education. This will pave a way for gender equality.

#### A. School Enrolment

Table 46 illustrates that school enrolment in Tuvalu is higher for females compared to males. It is very high at primary school level (i.e. age 6-13 years old population) with 98.4% children enrolled to school. However enrolment starts to decline at the secondary school level to 71.4%, particularly the boys with only 60.5% of them, a drop from 97.9% enrolled to school. The secondary school level in this context includes the Form 7 and Foundation students schooling at the USP centre on Funafuti.

*Table 46: Percentage enrolled in school for resident population aged 6-29 years by sex and region*

Region	Enrolled population aged 6-29 years in percent (%)											
	Total				Males				Females			
	6-13	14-18	19-29	6-18	6-13	14-18	19-29	6-18	6-13	14-18	19-29	6-18
Funafuti	97.6	63.3	12.6	86.4	96.9	56.8	12.7	83.0	98.3	71.9	12.4	90.4
Outer Islands	99.4	77.3	1.5	89.6	99.1	63.7	1.4	84.4	99.7	89.9	1.8	95.1
<b>Tuvalu</b>	<b>98.4</b>	<b>71.4</b>	<b>8.9</b>	<b>88.0</b>	<b>97.9</b>	<b>60.5</b>	<b>8.8</b>	<b>83.7</b>	<b>98.9</b>	<b>83.1</b>	<b>9.0</b>	<b>92.8</b>

The decline in enrolment may result from the internal examination which is required by Year 8. This examination permits only students who pass to enter Motufoua Secondary School, the only Government secondary school. Even though there is an option for those who failed the Year 8 examination to attend another secondary school (Fetuvalu High School, a school run by the Christian Congregational Church known as the Ekalesia Kelisiano Tuvalu), the gap in school attendance starting at Year 9 still exists. Reasons for this could include children getting pushed out of school, children are no longer interested in schooling (the drop-outs), or parents could not afford to pay their school fees. Another significant cause to high drop out from school is that education is not compulsory to children who have attended all grades of primary school level. After completing all levels of primary school, children have a choice to continue schooling or leave school.

## B. Never been to school

Of the total population of 5 years and over, only 1.3% have never attended school. Females were slightly more likely to never have attended school (1.5%) compared to males (1.2%).

**Table 47: Percentage of the population 5 years and over that have never attended school by sex and age group**

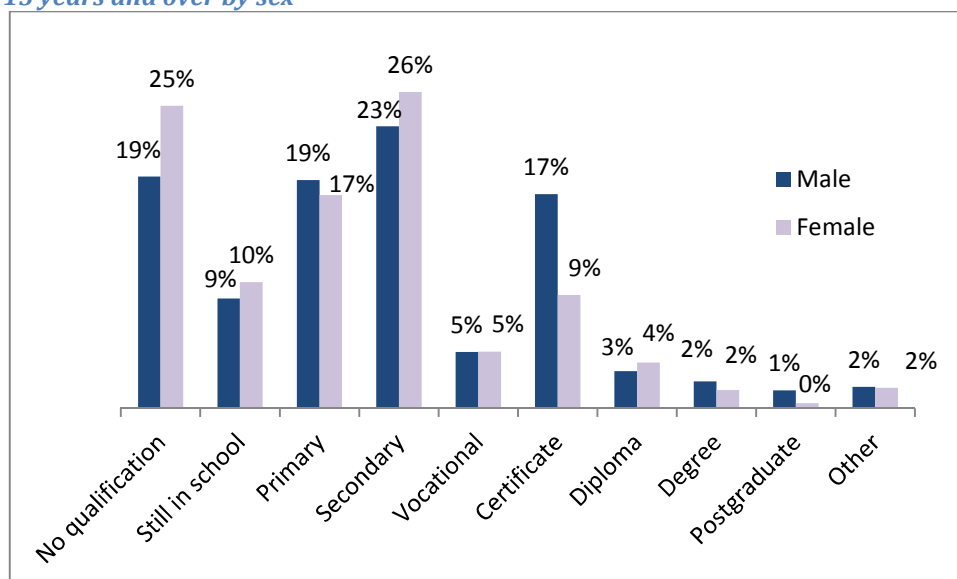
Sex	5 year age groups															Total	
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79		80+
Male	0.8	0.5	0.4	1.0	0.9	0.3	2.8	0.4	1.6	1.8	3.8	3.2	2.4	4.2	2.4	0.0	1.2
Female	0.4	0.0	1.0	0.5	1.1	0.6	1.3	1.5	1.6	3.2	2.8	3.5	3.7	5.9	7.2	2.1	1.5
<b>Total</b>	<b>0.6</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>1.0</b>	<b>0.5</b>	<b>2.0</b>	<b>0.9</b>	<b>1.6</b>	<b>2.6</b>	<b>3.3</b>	<b>3.4</b>	<b>3.1</b>	<b>5.2</b>	<b>5.5</b>	<b>1.3</b>	<b>1.3</b>

With the exception of the age group 55-59, more females than males never attended school among the older ages (i.e. 50 years old and over). Five decades ago women were discouraged to attend school when families had limited resources and when travel time and distance of travel by boat was great to reach secondary school.

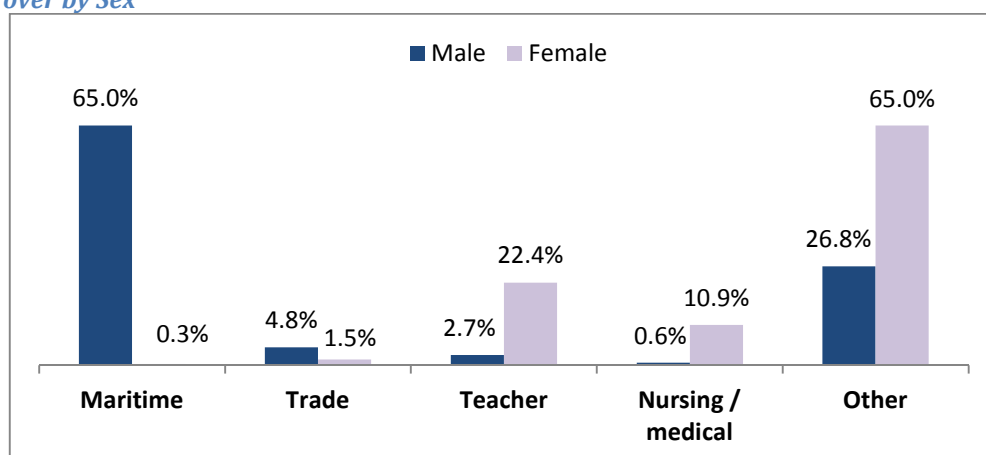
## C. Education attainment

For higher educational attainments such as postgraduate and undergraduate degrees, about the same percentage of men compared to women attained these degrees. Looking at the diploma, undergraduate degree and postgraduate qualifications only, males attained more qualifications than females: 6.7% and 5.7% respectively. A much larger percentage of men (17%) attained a certificate compared to women (9%). The popularity of males completing the certificates resulted from the 'maritime certificates' (Figure 76) being included to the certificate category; 65% of certificates for males were maritime certificates.

**Figure 76: Percent distribution of the highest educational qualification completed for adults aged 15 years and over by sex**



**Figure 77: Percent distribution of certificate qualifications completed by adults aged 15 years and over by Sex**



## 13.2 Gender and Economic Participation

And as illustrated in Table 12 of chapter 6, males had a higher labour force participation rate than females (67.6% compared to 51.1%). However, the unemployment rate has similar pattern between males (40.7%) and females (38.1%). It is also worth noting that the unemployment rate was nearly the same for males 34.3% and females 35.6% on Funafuti.

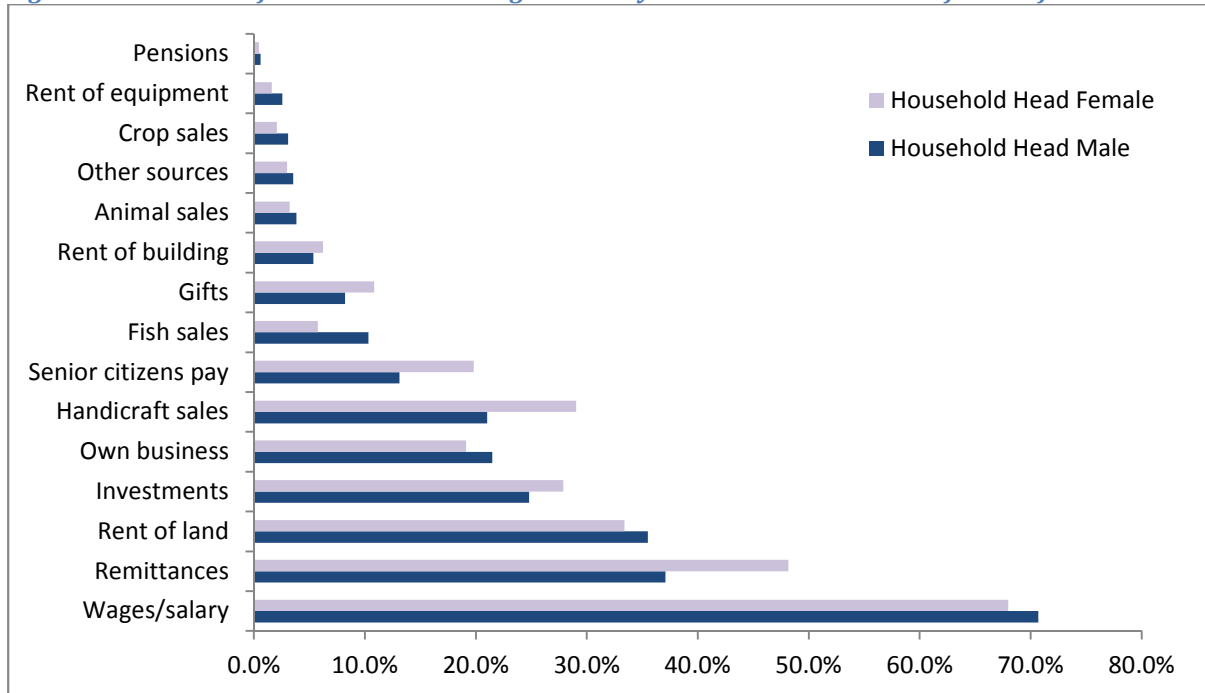
## 13.3 Social Characteristics and Wellbeing

### A. Households

Having a good home environment is necessary for both men and women to be healthy and productive. Among all 1,761 households, about 47% are nuclear family households and 53% are extended family households. Three-quarters of householders were headed by males while one-quarter were headed by females (data not shown).

The most common source of income in households headed by both males and females was from wages and salaries (70.7% for male-headed households and 68.0% for female-headed households). Female headed households were more likely to receive remittances compared to male-headed households.

**Figure 78: Percent of households receiving income by income source and sex of head of household**

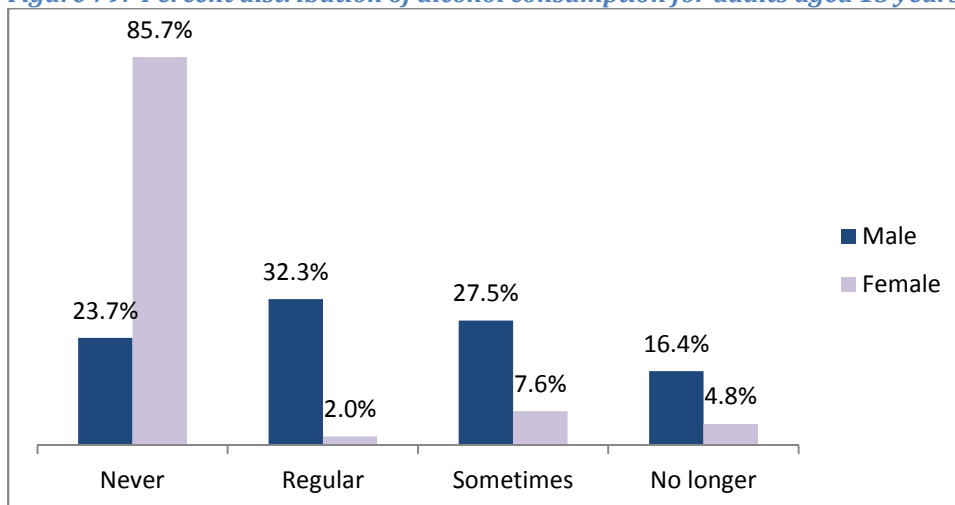


**B. Health Related Issues**

One of the key factors affecting economic growth is the high cost of expenses borne by the Tuvaluan Government to treat diseases. Additionally, when one member of a family smokes or drinks alcohol or Kava, this affects the entire family’s budget and wellbeing.

Figure 79 illustrates that 86% of females never drink alcohol compared to 24% of males. About 32% of males and just 2% of females consumed alcohol regularly. More men than women consumed alcohol regularly, sometimes, or in the past.

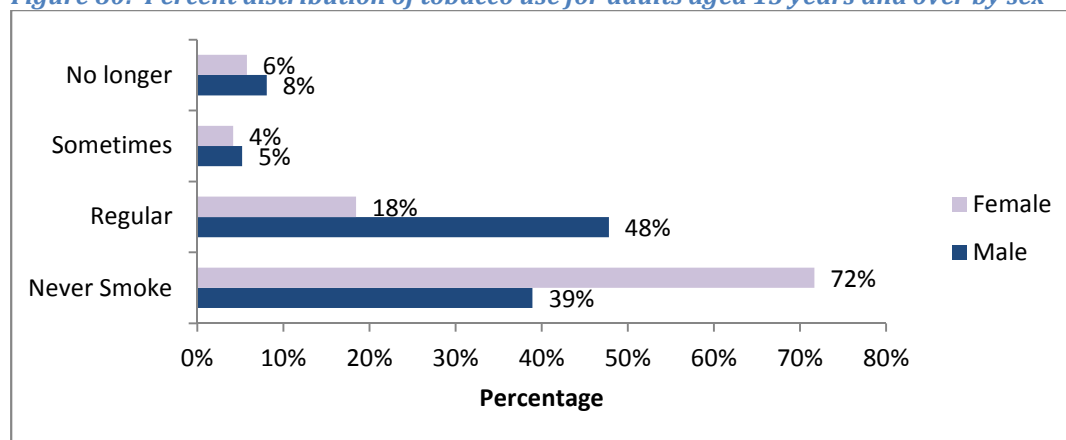
**Figure 79: Percent distribution of alcohol consumption for adults aged 15 years and over by sex**





Almost half of all men (48%) smoke cigarettes regularly compared to just 18% of women. Women were much more likely to not smoke (72%) than men (39%).

*Figure 80: Percent distribution of tobacco use for adults aged 15 years and over by sex*



### C. Spiritual Belief

Religion has a big influence on the life of both males and females. Most Tuvaluans are Christian. EKT is the largest religion with 86% of males and 85% of females as followers. There was not a big difference in the percent distribution of religious denomination by sex.

*Table 48: Percent distribution of religious denominations by sex*

Religion	Male	Female
EKT	85.9%	85.4%
Brethren	2.9%	3.1%
SDA	2.8%	2.8%
Other	2.5%	2.2%
Bahaii	2.0%	2.0%
Jehova's Witness	1.3%	1.3%
LDS	0.9%	1.2%
Catholic	0.8%	0.7%
AOG	0.7%	1.1%
None	0.2%	0.1%

## 13.4 Conclusion

Education is known to be the key factor for gender equality and empowering of women. It is seen at the primary level that nearly 100% of both gender attended primary school. However there are more females than men who had never being to school particularly for age group 55-59. This also reflected in more males hold higher qualifications such as degrees and masters than females.

Gender economic participation result shows that more men than women engaged in the labour force. Whereas the unemployment rate is nearly the same for both gender.

Social household characteristics shows that people live in extended families is slightly higher than those of nuclear families. In fact more household head are males and only a quarter of household headed by females.

Moreover health related behaviours for smoking and drinking shows that more males than females smoke and drinks that surely affect their health and the family budget.

Lastly but not the least the survey found that most Tuvaluan a Christian people with the large precent are EKT followers.