Sustainable Economic Development in the Midst of Growing Uncertainty: The Federated States of Micronesia Case

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I Introduction

Given the unique development challenges imposed on Pacific Islands countries by their economic geography, it is widely accepted that labor mobility will continue to represent a critical development opportunity well into the future. However, there are both demand and supply-side constraints that are currently preventing the Pacific from realizing the full potential of this opportunity. (World Bank 2015:1)

Here we will look at the current situation in the FSM to provide insight into whether and how similar compacts of free association with Australia, New Zealand or other receiving countries might be possible for other Pacific Islands countries. In these countries, the isolated, low-lying atolls are the most at risk to sea-level rise. Some of them already take part in seasonal worker schemes, as well as entry to the Pacific Access Category, and multi-year microstate work visas for Australia. Also, they continue to send relatively large numbers of seafarers abroad.

The Federated States of Micronesia migrants have visa-free entry into the United States to work. As this paper will show, this arrangement has worked well, with FSM emigrants being 40 percent of the resident FSM population. This study examines international migration of the Federated States of Micronesia under the Compact of Free Association. We draw insights and implications on ways similar international migration arrangements offer sustainable livelihoods in the Pacific Islands affected by climate change.

The Appendix looks specifically at Kiribati and Tuvalu because they are closest to the atolls of FSM. The atolls are largely the focus in terms of global warming's requiring migration from very low-lying areas. However, some of the other Pacific countries are going to consider migration to alleviate the effects of the warming as well.

II Micronesian migrants

FSM has had long-term ties to the United States, starting just after World War II, when FSM was part of the Strategic Trust Territory of the Pacific Islands (TTPI) administered by the United States for the United Nations (UN). FSM became a Freely Associated State (FAS) with the United States in late 1986 through the Compact of Free Association (COFA). Free Association permits visa-free entry into the United States for education and work.

<u>Permanent vs circular migration</u>. Circular migration takes place when an individual regularly goes back and forth between two geographical entities (citations). Usually the circular migration is for

employment, although it could be for study or health. Although the phenomenon of circular migration is not common among world countries, many of the Pacific Islands countries and territories practice it. Niueans, Samoans, and Tongans practiced circular migration to New Zealand and Australia starting in the mid-20th century. But then many of them stayed in the receiving country and facilitated relatives in following them.

After World War II when the United States took over the Caroline Islands including what became the Federated States of Micronesia, very few islanders could travel even if they paid for their tickets. During the Carter Administration, young Micronesians used the Pell Grant to go to school at a variety of colleges that pursued them financially. Initially, most islanders returned to FSM to take jobs, until those jobs filled. Students and others who went to Hawaii and the U.S. Mainland were often settled in at or near their schools and did not return. But many of those going to Guam, even in the early years, continued to go back and forth as circular migrants. United Airlines even instituted a service with flights from Guam to Chuuk and Pohnpei on Friday nights and return flights on Sundays. Chuukese and Pohnpeians went home for weekends. Very little circular migration continues.

<u>Guam, CNMI and Hawaii as steppingstones</u>. Yapese, Chuukese and Pohnpeians enter the United States Areas through Guam; Kosraeans usually go East instead, directly to Hawaii. In the early years after the Compact of Free Association implementation, many of those going to Guam (and CNMI to an extent) practiced circular migration. Later, more and more of them settled on Guam for the long term.

CNMI was the capital of the Trust Territory until about 1979 when FSM became an independent entity. Some FSM citizens moved there to work and then married and stayed there. The CNMI has not been receiving many COFA migrants because of its roller coaster economy.

In the early- to mid-1990s, Guam and CNMI became more like steppingstones, first to Hawaii, and then to the United States mainland. And Hawaii also became a stopping place for many. They went from their home islands (sometimes from outer islands to State capitals first), and then to Guam, and then to Hawaii and then to the U.S. Mainland. In many cases, early migrants established beachheads. Then they started bringing siblings, then parents, and then other relatives, forming small communities in almost all of the U.S. Mainland states.

II.1 Background on the Compact of Free Association

In 1986, the United States and the Federated States of Micronesia (FSM) formally implemented the Compact of Free Association. This Compact marked the beginning of independence for FSM. Under the terms of the Compact, citizens of FSM were granted free entry into the United States. They could "lawfully engage in occupations and establish a residence as non-immigrants in the U.S. and its territories." For the first time, Micronesians had legal immigration into the United States. The FSM and the U.S. felt the Compact became essential to the survival of a small island nation. At the time, FSM had a high population growth rate but limited resources and a dubious pathway toward economic development.

After Compact implementation, heavy emigration developed from FSM to the United States and the Territory of Guam and the Commonwealth of the Northern Mariana Islands (CNMI). Although fewer than 1,000 FSM born had migrated before Compact implementation, by 2012, about 50,000

Micronesians and their offspring were in the United States and territories. Many more have arrived since. While the outflow of migrants from FSM started relatively slowly, the tempo of outward migration picked up in the mid- and late-1990s. The FSM job market remained stagnant, and health and education services declined.

II.2 Sources Measuring the Migration

The U.S. Department of the Interior's Office of Insular Affairs (OIA) funded a series of emigrant surveys starting in 1992. Hezel and McGrath did their own survey soon after Compact implementation (1989). The OIA surveys used the snowball method to collect information on almost all migrants to Guam in 1992, 1997, and 2003, to the CNMI in 1993, 1998, and 2003, and to Hawaii in 1997 and 2003. In 2012, the Federated States of Micronesia's Congress of Micronesia funded sample surveys in Saipan, Guam, Hawaii, and the United States Mainland. Reports for all receiving areas included Hezel (2013), Hezel and Levin (1989, 1996, 2013), Levin (1997, 2003, 2007). The individual receiving areas' reports included CNMI (1994, 2000) and the University of Guam (1992).

II.3 Citizens living abroad and emigration.

Most of the Micronesians migrated before 1980 were students who got Basic Educational Opportunity Grant (BEOG) or Pell Grant in the late 1970s. Those students returned to the FSM whether they graduated. Even in the early 1980s, FSM saw little emigration. As Table 1 shows, about 410 Micronesians were living on Guam and 552 in the CNMI in 1980 according to the U.S. Decennial census. Many of the Micronesians in the CNMI were part of the Trust Territory Administration in Saipan. As the Trusteeship wound down, they returned to the FSM; others married on Saipan or remained with spouses and children they had brought there if they moved into the new Commonwealth administration.

	Guam			CNMI	Hawaii		
Year	Population	Source	Population	Source	Population	Source	
1980	410	1980 Guam Census (a)	552	1980 CNMI Census (i)			
1988	ca 1,700	McGrath household survey (b)	ca 1,400	Est based on school children (b)	ca 405	Est 1980 Hawaii Census (m)	
1990	2,944	Guam 1990 Census (c)					
1992/3	4,954	UOG Micronesian Survey (d)	2,261	CNMI Survey (j)			
1995			1961	1995 CNMI Census (i)			
1997/8	5,789	1997/1998 Migrant Surveys [e]	2,199	1997/1998 Migrant Surveys (k)	3,786	1997/98 Migrant Surveys (n)	
2000	8,573	2000 Guam Census (f)					
2003	9,098	2003 Migrant Surveys (g)	3,097	2003 Migrant Surveys (k)	5,091	2003 Migrant Surveys (o)	
2008	16,358	2008 Migrant Surveys (h)	ca. 1,560	2008 Migrant Surveys (l)	ca. 8,320	ACS (q)	
2012	13,588	2012 Migrant Surveys (p)	4,286	2012 Migrant Surveys (p)	7,948	2012 Migrant Surveys (p)	

Table 1: Micronesian migrant populations	, Guam, CNMI and Hawaii: 1980 to 2012

Sources: (a) USBC 1980, table 26; (b) Hezel and McGrath 1989; (c) USBC 1990; (d) Rubenstein and Levin 1992, Rubinstein

The Compact of Free Association went into effect in the late 1980s, and with it, visa-free entry into Guam, CNMI, and the United States. Hence, the 1990 census of Guam counted almost 3,000 FSM migrants. The numbers grew continuously after that, as shown in the table with its references.

^{1993; (}e) Levin 1998, table 2; (f) Gov Guam 2004:30; (g) Levin 2003, table 3-3; (h) USBC 2009;

⁽i) CNMI 2000, table 2; (j) Levin 1998:3; (k) Levin 2003, table 3-11; (l) U.S. GAO 2011:63, (m) Levin 2003, tab 15-4;

⁽n) Levin 1998, table 1; (o) Levin 2003, table 3-4; (p) Hezel and Levin 2013; (q) USBC 2009



The total numbers of emigrants increased from about 12,000 in 1995 to 22,000 in 2000, 30,000 in 2003, 42,000 in 2008, and 50,000 in 2013. The numbers also increased throughout the period in each of the receiving areas. The increase has been rapid, partly because the surveys also count children of migrants as migrants. Also, rather than sending remittances, once migrants establish themselves, they bring out the next "generation" of migrants by buying their plane tickets, and then housing them until the new arrivals start their own households.

II.4 Characteristics of Micronesian Migrants

The U.S. Census Bureau used different methods for different surveys of migrants. The 2012 surveys had the most enumerator-respondent contact in recent years, and so will be used for this study. For the 2012 surveys, for Guam, CNMI, and Hawaii, estimates of the expected migrants were based on results of the 2003 Migrants' surveys, births and deaths in the interim, and estimates of the migration. For the U.S. Mainland, Hezel provided the estimates based on other sources. We discuss the number of actual first-generation migrants by year and reason of entry in the section on citizenship below. The total number of first-generation migrants was around 32,600, so about 2 out of every 3.

Age and sex - The survey estimated about 50,000 migrants to all 4 areas, with about half being on the mainland. About 14,000 lived on Guam, about 8,000 in Hawaii, and about 4,000 estimated on Saipan (Table 2). The migrant population was young compared to the receiving populations. About 1 in every 3 of the "migrants" was younger than 15 years old. Of course, many of these were second generation migrants, the children of the actual emigrants from the FSM. But some of them came as family members.

Table 2: Age by Place of M	Migration, Migrants: 2012

Age Group	Total	Hawaii	Guam	CNMI	Mainland
Total	49,870	7,948	13,588	4,286	24,048
Less than 15 years	16,590	2,397	5,372	1,649	7,172
15-29 years	13,315	2,017	3,625	1,020	6,653
30-44 years	13,456	2,126	2,880	829	7,621
45-59 years	4,922	892	1,364	628	2,038

Table 3 shows the estimated sex distribution of the emigrant population in Source: 2012 Surveys of Micronesian Migrants 2012 by receiving area. Human

60 yrs and over	1,581	512	345	160	564		
Median	26.9	26.9	20.5	19.4	26.9		
Source: 2012 Surveys of Micronecian Migrants							

populations tend to have more females than males because males die earlier from diseases and accidents. All four receiving areas had more female than male migrants. The surveys estimated almost 3,000 more females than males in the migrant populations in 2012 - about 9 males for every 10 females. Hawaii was most evenly divided; the U.S. Mainland skewed the most female.

Table 3: Micronesian migrants by sex and place, 2012							
Place	Total	Males	Females	Sex Ratio			
Total	49,870	23,556	26,315	89.5			
Guam	13,588	6,540	7,048	92.8			
CNMI	4,286	1,988	2,298	86.5			
Hawaii	7,948	3,957	3,991	99.1			
Mainland	24,048	11,071	12,978	85.3			

Source: 2012 Micronesian Surveys

Median age - The median age – the age with half being older and half being younger – of the migrants in the samples was about 27 years, females being slightly older than males. The median age was 27 for both males and females overall, but was about 20 for Guam, about 19 for CNMI. The median was 27 for both Hawaii and the Mainland, showing older migrants to these places (and fewer either bringing or having children). The median age of the migrants was significantly higher than for those remaining in the FSM, as would be expected. The lower numbers for CNMI and Guam reflected the closeness to Micronesia, and thus the likelihood that the migrants would take their young children with them (being cheaper for airfare and easier to get back and forth). Some of the migrants were also having children in Guam and CNMI, and thus lowering the median.

Dependency ratio - The dependency ratio (the value derived by dividing the sum of those under 15 and over 64 by the potential workers 15 to 64) was 58 for all migrants, but about 73 for the migrants in Guam and CNMI compared to 58 for Hawaii and 47 for the Mainland. All of these ratios are low, showing only about 57 workers for every 100 dependents. The ratios in FSM itself were much higher. Among all the FSM-born migrants considered alone, the dependency ratio was only 19; this ratio means that the first-generation migrants had only 19 dependents for every 100 potential workers. The dependency ratio recorded in the 2010 FSM Census was 64 (FSM 2010 Census report). Because the dependency ratios are so low, the potential workers can take good care of the youth and elderly.

Fertility - Female migrants had fewer children than their counterparts remaining in Micronesia. Basically, all of the females considered here are first generation migrants; the timing has not been enough to produce many second-generation migrants. Part of the reason for this is that many moved into the workforce and others went to school, and so postponed the beginning of childbearing. This also reduced the total fertility as well since they started having children later, past peak fertility. Also, many of the females in the samples were young since migration remained relatively recent. Migrant females had about 1.6 children, on average. The figure was somewhat lower for females living in Hawaii (1.4) and the Mainland (1.3). But it was somewhat higher on Guam (about 2 children per female) and about 2.2 in CNMI. In general, the figures were low, much lower than in the FSM. These figures might show use of family planning, both for its own

economic sake, and to provide schooling and better opportunities for the children they were having.

Family size - Partly because of the larger number of children per female in Guam and CNMI, their migrants had larger households. While the average household size among the migrants was 4.4 people, the average for Guam was 5.4, one more person per house than average. The household size in CNMI was 5.1 but was only 4.0 for Hawaii and the Mainland. Since landlords are much stricter in Hawaii and the U.S. Mainland, some of the difference could be various laws. But the household sizes, nonetheless, were much smaller than in the FSM.

Reason for migrating - The 2012 round of surveys also asked the reason the emigrant left FSM for the receiving area. Of those who migrated, the largest group – about 1 in every 3 of the migrants who moved, went for employment. The next largest group was those who went for "family reasons", usually as the spouse or child of a worker, also about 1 in 3. Also, about 1 in every 3 of those who moved came to the receiving area as students, although they may not have remained in that category. The largest number of these "students" – more than 6,000 – resided on the Mainland in 2012, more than the total for the other three areas combined.

Short-term migration - Many surveys ask for short term migration as well as long term migration. The 2012 surveys reported numbers of people living in the same house 5 years before the 2012 surveys. That is, the respondents lived in the house in 2007 and also in 2012 (although they might have moved in between and then come back.) The figures include all those who arrived before 2007, even if the moved around before 2007. About 40 percent of the migrants lived in the same house during the two periods. The CNMI residents were the most likely to be in the same house – more than 50 percent of those 5 years and over in 2012. About half of those on Guam lived in the same house, compared to about 40 percent for those living in Hawaii and the U.S. Mainland.

Of those who did not live in the same house 5 years before the surveys, the largest percentages lived on the mainland, followed by those living in FSM (Figure 2). These figures do not necessarily reflect migration streams. The data show that more and more people were going directly from FSM to Hawaii and the U.S. Mainland without remaining on Guam for long periods. Large numbers living in those places in 2012 had been living in FSM 5 years before.



Generational migration - Comparing where a person's parents were born with where they themselves were born provides a measure called generational migration. Migrants included both first generation and second-generation migrants. For the mothers of the migrants. About 91 percent of the mothers were born in the FSM, followed by Guam (95 percent) and the U.S. Mainland (94 percent) being highest and Hawaii (79 percent) and the CNMI (73 percent) being lowest. One reason for these lower numbers is that when a Micronesian man marries a non-Micronesian woman, and has a child, that child will have a non-Micronesian mother.

Language - About 20 percent of the migrants (first and subsequent generation migrants combined) spoke only English at home. Most of them were recent migrants, and most lived in families speaking a Micronesian language at home. About 30 percent of migrants in the CNMI spoke English at home. While about 1 in 4 of those on Guam spoke English at home, those in Hawaii and the U.S. Mainland were less likely to speak it, at 20 percent. As more Micronesian parents speak to their children in English to prepare them for life in the U.S. and its territories, the percentages will change, and probably swiftly.

Attachment to land in Micronesia - One non-census-type item on the questionnaire asked whether anyone in the household still claimed land holdings in the FSM. It turned out that the farther away geographically from Micronesia they were, the more likely the householder would be to have claims to land holdings in Micronesia. Some of this attachment might be wistful thinking. About 6 in every 10 households claimed land holdings in Micronesia. About 7 in 10 of the Mainland households claimed land holdings compared to about 4 in 10 in Hawaii and about 3 in 10 of those in Guam and CNMI. While the Micronesians in Guam and CNMI could easily return to Micronesia to check on their holdings, this would be decidedly more difficult for those living in Hawaii, and nearly impossible for many of those who have established communities on the U.S. Mainland.

Citizenship - About 2 out of every 3 migrants in 2012 remained FSM citizens, while about 3 in 10 had become U.S. citizens (Figure 3). Children of first generation migrants remain either U.S. or FSM Citizens – or both – until they are 18, when they must choose one or the other. Hawaii showed the smallest percentage of U.S. citizens (about 1 in 6 compared to 2 of 3 being FSM citizens with a fair number of citizens from other countries). About 7 in every 10 of the Mainland migrants were FSM citizens, the largest percentage for any destination since migration started most recently. About 1 in 4 were U.S. citizens.

For Guam, about 3 in 5 of the migrants were FSM citizens and 2 in 5 were U.S. citizens. The CNMI had the opposite ratio – and 2 in 5 remained FSM citizens compared to 3 in 5 being U.S. citizens. Micronesians born in the United States or its territories are automatically U.S. citizens.

Migration to CNMI started much earlier since the TTPI administration was located there. Some FSM migrants married Saipanese, had children, and remained after the dissolution of the TTPI. The U.S. Mainland had the highest percentage of FSM citizens, mostly because the migration was the most recent; but Hawaii and Guam also had large percentages, reflecting more recent

migration. As discussed below, FSM had a vote on amendments to their constitution on July 4, and dual citizenship is now possible.

II.4 Earnings and remittances of FSM migrants

Micronesians choose to go to very few places when they leave Micronesia. Some join the U.S. military, and so go wherever they go to various places around the world.



But most of the civilians go either to Guam, Hawaii, or the U.S. Mainland.

Migrants on the mainland are the most likely to have paid employment – over 62 percent of the adults, those 16 years and over (Table 4). Those in the CNMI were least likely to have paid employment, at about 26 percent. CNMI and Hawaii had the largest proportions doing paid work and subsistence (growing food or fishing for home consumption), while Hawaii's migrants reported the largest percentages doing subsistence only. It is important to remember that subsistence encompasses more than just fishing and growing taro. It also includes those making handicrafts (although these are supposed to be for the home – when made for sale, they should report as working for pay, although the enumerators may not have known that.) About 3/4th of the adult migrants to CNMI were reported as not working.

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Work in Previous Week	Total	Hawaii	Guam	CNMI	Mainland
Total	33,278	5,550	8,215	2,637	16,876
Paid and no subsistence	15,163	1,314	3,068	489	10,292
Paid and subsistence	1,275	644	172	190	269
Percent paid	49.4	35.3	39.4	25.7	62.6
Subsistence only	700	403	162	28	107
Did no work	16,139	3,188	4,813	1,931	6,207

 Table 4: Work in previous week by location, Migrants: 2012

Source: 2012 Surveys of Micronesian Migrants

Most of the Micronesian migration is relatively recent. Also, it is harder for them to qualify for some public sector jobs since they are not U.S. citizens. Hence, the ratio of private to public sector jobs is high in all areas except for the Northern Mariana Islands.

Even in CNMI, about 60 percent of the migrant workers, first- and second-generation migrants combined, were working for the government; many of these migrants had family contacts or connections before their moves, helping to ease them into public sector jobs (Table 5). Less than 10 percent of all the 2012 Micronesian migrants were in the public sector, with CNMI having the largest percent in that sector, and Guam and the U.S. Mainland having the smallest percentages.

Table 5: Class of worker by	y location, Migrants: 2012
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	Total	Hawaii	Guam	CNMI	Mainland
Total	16,440	1,959	3,240	679	10,562

Private company	14,720	1,590	3,004	417	9,709		
Percent	89.5	81.2	92.7	61.4	91.9		
Government	1,392	243	170	258	721		
Self employed	328	126	66	5	131		
S 2012 S MI I MI I							

Source: 2012 Surveys of Micronesian Migrants

The surveys asked questions on hourly wages to adults working for pay. The average hourly wage for paid workers among all the migrants was about \$10.49, about 50 cents higher for males, and about 50 cents lower for females (Figure 4). But the actual wages were very low. An average of 2,000 hours a year of work would produce an average annual wage of about \$21,000. This amount does not account for family size. If a household had more than one worker, the wages would be additive, and so the family and household annual income would be higher.



The average hourly wage in the CNMI was lowest by far, at only \$6.35 (less than \$13,000 per year), with females earning slightly higher wages than male migrants. Guam wages were next, with the \$8.70 per hour being only about \$1.50 higher than the U.S. minimum wage, which is the minimum for Guam as well. The Hawaii average was less than \$10, although males were earning about \$1.50 more than females per hour. And, the wages on the mainland were highest, at almost \$11.50 per hour, still not very much to support

a family. The U.S. poverty level for a family of 4 in 2012 was \$23,050, so the majority of the population with one wage earner was below that level.

Besides asking if the migrant worked at all, the surveys also asked for weeks and usual hours worked in 2011 to account for those doing intermittent work, or who moved from Micronesia during the year. About half (52 percent) of all migrant workers in 2011 worked full-time *and* year-round, with males (56 percent) more likely than females (47 percent) to have worked full time

(Figure 5). Adults in Hawaii were least likely to have worked year-round full-time, at 31 percent, followed by CNMI, at 37 percent, Guam (40 percent), and the U.S. Mainland (59 percent). Those moving to the Mainland looked. U.S. on paper, to have become most like other U.S. workers, having left the more intermittent type of frequently work seen in



Micronesia itself. Almost 2 out of every 3 of the Mainland male migrants had worked year-round full-time in 2011.

The average annual wage income for all migrant adults in 2011 was about \$17,000 (whether they were full-time year-round workers or not). These were individual wages. Since few Micronesian households depend on only one income, the household and family incomes are higher, depending on the number of workers in the household. Male migrants earned more than females in all the areas.

It is important to note that the migration for jobs, and workers with their families, has not been easy. Guam and Hawaii report to OIA on the impact of the Micronesians on social services and education, but not the positive benefits of having the Micronesians in the workforce. Micronesians often "look different" with many women wearing colorful clothing. Also, they often have their own and other children with them when they venture out. Like migrants before them, they often become the subjects of local anxiety or animousity.

The World Development Indicators for selected countries appear in Table 6. The annual migration as of 2012 was about 2,000 emigrants from Kiribati compared to 8,000 for the FSM. The 3,000 emigrants for Kiribati in the second line is possible. And the 6,000 for Palau (about 30 percent of its resident population) is sound, the numbers for the Marshall Islands and FSM are too low. ALL of these numbers are very suspect given the information from subsequent censuses and surveys. The rates of emigration show high percentages as all the emigrants look for jobs abroad. Palau, especially, has a centralized, well-endowed high school and community college system, producing steady streams of graduates seeking jobs, with many of them having to go abroad to get them. The total amount of remittances received were like the numbers in the previous table and make up a fair share of the GDP and personal incomes of the island residents.

Table 6 : World Development Indicators: Movement of People across Borders and remittances, selected countries, and years								
Migration and Remittances	Units	Year	Kiribati	RMI	FSM	Palau	Samoa	Tonga
Net migration	Thousands	2012	-2		-8		-13	-8
International Migration Stock	Thousands	2010	3	3	3	6	5	5
Emigration rate of tertiary educated	Prent of 25+	2000	55.7	42.8	35.7	80.9	73.4	75.6
Personal remittances received	\$ Millions	2014	16	26	23	2	141	114
Personal remittances paid	\$ Millions	2014	1	24	17	10	12	5

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Source: World Bank Development Indicators

Note: Educated is to OECD countries

Table 7 shows remittance data presented by the World Bank from the International Monetary Funds' Balance of Payments Statistics data base for 4 of the 5 considered countries. Migrants remitted about \$22 million dollars to FSM and the Marshall Islands. For the Marshall Islands, this amount was about 11.5 percent of their Gross Domestic Product, compared to about 7 percent of FSM's GDP. While these amounts are significant, they clearly do not make up most of the Gross Domestic Product and could not cover funding for economic development or increased education and health activities.

Table 7: Migra	nt Remittar	ce Inflows	(U.S.\$ mil	lion) for Se	lected Cou	ntries: 2009	to 2014

Year	2009	2010	2011	2012	2013	2014e	GDP share
Kiribati	10.6	11.7	12.4	12.8	12.8	13.1	7.6%
Marshalls	23.6	22.4	22.3	22.0	22.0	22.2	11.5%
FSM	17.3	18.1	19.4	20.8	22.0	22.0	7.0%
Tuvalu	4.8	3.9	4.6	3.8	4.1	4.1	10.6%

Source: World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases country sources as of April 2015

Notes: All numbers are in current (nominal) U.S. Dollars; GDP data from WDI.

Both the FSM and the Marshall Islands, with legal free entry to the United States and its territories, should see remittances at least as high as those seen for Samoa and Tonga. And yet they don't. Average remittances for the Marshall Islands were \$11 per person in 2002, and \$22 on average for the FSM. It would be hard to fund a government on that.

The 2010 FSM Census collected information on remittances received (Table 8). While the remittances included those internally and internationally, very little within FSM remittances occurred because of the low minimum wage and the wage structure; subsistence activities also diminished the need for and the actual amount of internal remittances. Of the 16,800 households in the census, about 6,800 received remittances, so about 40 percent (2 in every 5 households). The median was about \$700. The mean household remittances received were \$1,120.

Table 8: FSM Household remittances received in 2009.

Remittances	Total	Yap	Chuuk	Pohnpei	Kosrae				
Total Households	16,767	2,311	7,024	6,289	1,143				
Households with remittances	6,795	283	3,704	2,134	674				
Percent	40.5	12.2	52.7	33.9	59.0				
Median amount	\$686	\$337	\$629	\$803	\$782				
Mean amount	\$1,120	\$832	\$1,013	\$1,383	\$989				
Mean for all units	\$454	\$102	\$534	\$469	\$583				

Source: 2010 FSM Census unpublished table

Figure 7 shows the other end of the stream. At the sending end of remittances, the 2012 surveys showed an average of \$1,026 being remitted to households to the receiving households. The highest average remittances were coming from the U.S. Mainland, at an average of \$2,320, with Hawaii also contributing near the average, at \$1,100. Households in the CNMI sent much lower remittances, about \$450 from households on Guam and \$250 for those on Saipan.



Table 9 inflates the numbers by multiplying the number of units by the average remittances. By these calculations, households in the FSM would receive about \$25.6 million in remittances over the year.

Table 9: Remittances from Micronesian Migrants: 2012

Remittances	Total	Hawaii	CNMI	Guam	Mainland		
Mean	\$1,026	\$1,081	\$251	\$449	\$2,320		
Est total	\$26 M	\$3 M	\$.4 M	\$2 M	\$19 M		
Est HHlds	18,332	3,333	1,666	5,000	8,333		
Source: 2012 Micronesian Migrants Surveys							

The estimated remittances look substantial, but they would not fund all government activities, even in the best of times. Still, the migration is young, and as time goes by, more established emigrant households may remit and those remitting may remit more.

So, it is important to note that Micronesian remittance behavior differs from that seen in the South Pacific (and, in fact, most countries of the world) because of visa-free entry. Instead of remitting large amounts of funds, Micronesians save those funds to accumulate enough to buy a plane ticket. They then help the next generation of migrants to get to Guam or Hawaii or the U.S. Mainland and begin their lives in the so-called "greener" pastures.

The 2010 FSM census inexplicably did not collect income data so did not provide trends or data on average hourly wages by age and sex or other characteristics. The FSM published comprehensive reports on its census results from 1994 to 2000 at both the National and State levels (1994, 2002). They only produced a preliminary report for 2010 (2010). However, the 2013 FSM Household Income and Expenditures Survey (HIES) did collect income data for a sample of units. So while we cannot look at income for small areas or small groups, we can look at household and personal income at the State and National levels FSM (2014). The 2000 Census was the last to collect income data, and since it was for the entire population, it does not have sampling error. (But, of course, we ignore the sampling error for the 2013 HIES here.) The averages appear in Table 10. Yap showed the largest increase over time, Chuuk and Kosrae showed decreases, but the total did not change very much.

able 10: Aver	able 10: Average household income by state, FSW: 2000 and 2015							
	2000				Change			
State	2000 Dol	Inflated	FSM Inf	2013	U.S. infla	FSM Infla		
Total	\$8,944	\$12,101	\$12,838	\$13,092	\$991	\$254		
Yap	\$10,344	\$13,995	\$14,847	\$15,844	\$1,849	\$997		
Chuuk	\$6,195	\$8,382	\$8,892	\$8,415	\$33	-\$477		
Pohnpei	\$11,249	\$15,220	\$16,146	\$16,707	\$1,487	\$561		
Kosrae	\$12,407	\$16,787	\$17,808	\$15,137	-\$1,650	-\$2,671		

Table 10: Average household income by state, FSM: 2000 and 2013

Sources: FSM 2000 Census and 2013 HIES

The average household incomes of heads 60 years and older increased during the period from 2000 to 2013. Household incomes with heads 60 to 69 increased by almost \$4,000 when adjusted for inflation (Table 11). However, the household incomes for younger heads decreased considerably, by around \$5,000 a year for those younger than 40. Part of the reason for this was the difficulty in getting any jobs, and so supply and demand came into play. Part of the reason was the continued step downs in U.S. Compact payments funding fewer soft-money jobs. FSM had fewer government jobs and the private sector became smaller to support for government job holders.

	20			
Age	2000 Dollars	2000 Inflated	2013	Change
Less than 30	\$7,819	\$11,220	\$5,269	-\$5,951
30-39	\$9,585	\$13,754	\$9,128	-\$4,626

40-49	\$10,647	\$15,278	\$12,563	-\$2,715
50-59	\$11,344	\$16,279	\$14,929	-\$1,350
60-69	\$9,952	\$14,282	\$18,086	\$3,804
70+	\$7,355	\$10,554	\$11,389	\$835
Sources: FSM	1 2000 Consus and 2	013 HIES		

Sources: FSM 2000 Census and 2013 HIES

Table 11: Average household income by age of Head, FSM: 2000 and 2013

Table 12 shows three income types making up part of the total individual and household incomes. Wages made up the largest proportion

of incomes, and the amount for individuals increased from about \$9,800 to \$11,400 over the 13year period when adjusted for inflation. Business income improved probably because more people had to form their own businesses as government work declined. And, the amounts received from remittances also increased.

In 2013, people on Pohnpei had the highest wages, at \$13,000, slightly down from 2000. Kosrae's wages also decreased during the period, but wages on Chuuk increased by more than \$2,000, and Yap by more than \$4,000, all of them when adjusted for inflation.

Table 12: Average annual income by type of income source and state, FSM: 2000 and 2013

		Wages		Business			Remittances		
State	2000	Inflated	2013	2000	Inflated	2013	2000	Inflated	2013
FSM	\$6,837	\$9,811	\$11,386	\$2,038	\$2,925	\$17,371	\$673	\$966	\$1,689
Yap	\$5,256	\$7,542	\$11,804	\$3,279	\$4,705	\$24,960	\$554	\$795	\$905
Chuuk	\$5,086	\$7,298	\$9,578	\$1,248	\$1,791	\$11,045	\$649	\$931	\$1,810
Pohnpei	\$9,250	\$13,274	\$13,029	\$2,792	\$4,007	\$19,004	\$1,055	\$1,514	\$1,599
Kosrae	\$6,346	\$9,107	\$8,474	\$1,797	\$2,579	\$15,754	\$766	\$1,099	\$2,252
G 0	AND TONE	C 1	2012 HE						

Source: 2000 FSM Census and 2013 HIES

The 2013 Household Income and Expenditures Survey also made comparisons with the survey done in 2005. The total amount of income in the FSM increased from \$220 million to \$283 million during the 8-year period (Table 13). Wages and salaries made up 47 percent of the income in 2005, but only 38 percent in 2013. According to the report, the percentage of business income decreased, somewhat contradicting the 2000 to 2013 change reported above. The largest change came in what is called "imputed rent", which increased from 10 percent of the total in 2005 to 23 percent in 2013.

Table 13: Annual income and distribution of income, FSM: 2005 and 2013

Source of income	2005	5	2013	
(2005 classification)	US\$ 000	Percent	US\$ 000	Percent
TOTAL	220,465	100.0	282,683	100.0
Wages & salaries	104,146	47.2	106,544	37.7
Business income	19,972	9.1	13,058	4.6
Rental	2,167	1.0	3,394	1.2
Scholarship	4,478	2.0	7,040	2.5
Subsistence	39,577	18.0	41,159	14.6
Remittances	6,973	3.2	11,728	4.1
Gift	7,933	3.6	9,627	3.4
Other	12,436	5.6	26,038	9.2
Imputed rents	22,783	10.3	64,095	22.7

Source: 2013 FSM Household Income and Expenditures Survey

Note: Wages in 2013 includes wages in kind from the employer

The 2013 HIES report also showed some changes from the 1998 HIES to 2005 and then to 2013, as illustrated in Table 14. The total income increased from \$173 million in 1998 to \$198 million in 2005, and \$219 million in 2013. Because the number of households did not change very much during the period, mainly as a result of emigration, the monthly average household income also did not change very much: from \$900 in 1998 to \$1,000 in 2005, and \$1,100 in 2013.

Table 14: Household income (excluding imputed rents), FSM: 1998 to 2013

Indicator	Unit	1998	2005	2013
Total income (excluding imputed rents)	US\$ 000	\$173,468	\$197,682	\$218,588
Total number of households	Number	16,100	16,427	16,677
Monthly average household income (excluding imputed rents)	US\$	\$898	\$1,003	\$1,092
Monthly ave. Income Growth rate period 1998-2005 & 2005-2013	Percent	-	11.6%	8.9%
CPI index rate period Q1.1999 to Q4 2005 & Q4.2005 to Q4.2013	Percent	-	11.7%	42.9%
	G			

Sources: 1998, 2005, and 2013 FSM Household Income and Expenditures Surveys

Migrant wages and total income among migrants became higher than in Micronesia, once established in Guam, CNMI, Hawaii, or the U.S. Mainland. Remittances remain low, as seen at both ends of the migration – in the sending populations and in the receiving households in the FSM. Income is high by third world standards, but needs and wants are also high, and so efforts should be made to increase economic development.

II.6. Determining which segment of the FSM population emigrates

This section compares Micronesians living inside FSM based on the 2010 FSM Census with the sample of Micronesian migrants collected in the 2012 Micronesian migrants' surveys. Once again, the 2012 survey covered only a small sample of Micronesian migrants' households while the 2010 census covered all households living in the four States in 2010. Hence, not only did the sources differ, but the time frame differed. We will look specifically at the 2010 FSM Census data and the 2012 Survey data by educational attainment.

With little incentive to speak English within Micronesia, except for those with Bachelor's degrees or higher, few Micronesians within Micronesia spoke English at home. Only about 1 in 5 of those with degrees spoke English at home compared to about 1 in 3 of those abroad (Figure 8). Because the migrants had to speak English in the places they migrated, in school and in the work



environment, larger percentages of them spoke English at home as well. However, the percentages for the migrants were still low, showing that even if they were speaking English outside the home, most were still speaking Micronesian languages within the house.

Since Chuuk contains about half of Micronesia's population, about half of all speakers of Micronesian languages speak Chuukese. Figure 9 shows that larger proportions of migrants spoke Chuukese if they had less education than if they had more education. In the FSM itself the proportion speaking Chuukese decreased with educational attainment. Migrants speaking other

Micronesian languages were likely to have higher education than Chuukese in FSM (except for those with Associates' degrees.)

It is sometimes difficult to identify what exactly is labor force participation in societies still doing subsistence activities, with some islands doing almost only subsistence activities. We use the definitions of labor force participation selected for each of the instruments. We find that the percentages in the labor force for the migrants were lower at each level of educational attainment than those



working within Micronesia. In each case, the percentage in the labor force increased with each level of education, but the migrants always had lower participation rates. The rate was only about 1 in 4 for the least educated migrants rising to about 7 in 10 of the most educated. The rate increased from more than half for the FSM residents least educated to almost 9 in 10 of the most educated residents (Figure 10). We explain most of these differences by the different definitions of labor force participation.





We can see the differences when we look at work for "pay only" in the week before the census survey, as seen in Figure 11. The percentage working for pay was about the same for the two sources for the highest educated workers. For less educated, the migrants were inevitably more likely to be working for pay than those living in FSM. Of course, since we exclude those doing only subsistence activities or primarily subsistence activities, the trend lines differ.

FSM has had very little private sector development, and does not look likely to have much in the future (Figure 12). So, aside from the small stores and other enterprises catering to the government workers, smaller percentages of those in FSM worked in the private sector than the migrants. Most of the migrants, in fact, rarely have access to work in the public sector when they move. Less than half of the FSM

resident workers worked in the private sector, and that decreased even more for the more educated workers. Among the migrants, more than 3 in every 4 in the private sector for all educational levels except the highest were in the private sector, but that dropped to about 1 in 3 of the highest educated workers.

Migrant wages and total income among migrants are higher than in Micronesia, once established in a receiving Area. Remittances remain low, as seen at both ends of the migration – in the sending

populations and in the receiving households in the FSM. Income is high by third-world standards, but needs and wants are also high, and so the United States and FSM should increase economic development.

Remittances remain low, even by Pacific Islands standards. The migrants require time to establish themselves, so they don't send much in remittances during that period. And, then they become established and get better jobs and move up within jobs. But they accumulate the funds that would go to remittances so they can bring the next relatives or families out by buying air tickets and working the new migrants to establish their own households.

The comparisons of the census and the surveys show the migrants who had better educational attainment were more likely to be in the labor force. The data on the numbers and characteristics of the Micronesian migrants in the sections above show that Micronesians of all educational levels are preparing to emigrate. And the flow sped up as the Micronesian economy declined. Even "A" students have trouble finding jobs in the government sector, let alone in the private sector. Educated students depart for jobs in the receiving Areas. Some of those with the least education remain behind and live at subsistence. Others find entry-level jobs abroad or working in Momand-Pop stores or fishing and growing taro and bananas and collecting breadfruit.

The migration started in the late 1970s with students going to Guam and the United States under Pell Grants (called Basic Education Opportunity Grants). Some came back, but others stayed and married and now have children and even grandchildren, many of whom have never returned to Micronesia. The early 1980s saw a decrease in migrants, but after implementation of the Compact, the flow began. The first migrants were the traditional ones – students and recent high school graduates looking for jobs. As they became established, they began bringing their brothers and sisters, wives and husbands and children, then parents, and then other relatives. By the 2000s, the floodgates were open because migrants already had some relatives abroad who could help them get settled and into entry-level jobs. And little pockets of Micronesians appeared in places like Corsicana, Texas, and Milan, Minnesota. So, at this point Micronesians of both sexes, all ages, all educations, and all skills, are emigrating under the auspices of visa-free migration.

Because the Micronesian migration stream under the Compacts of Free Association has been so recent, anthropologists have made very few studies of the numbers and characteristics of migrants from individual islands and villages on islands. The studies show the ease in migrating and bringing successive waves of relatives to follow those making beachheads in various cities on Guam, Hawaii, and the U.S. Mainland. This type of migration would not be possible without the ease of entry provided by that part of the Compact allowing for visa-free entry.

Another factor in Micronesia has been the United States Peace Corps. In the early years of the Corps, Micronesia moved into "International" for bringing in low cost, highly educated teachers. And the result was several generations of Micronesian leaders. Few Peace Corps remain, but second and third generation potential migrants benefited from their presence.

The biggest incentive to emigration is the lack of a developing economy. Because of its beauty and relative access from major Asian countries, tourism would be a likely economic endeavor. However, FSM has very few tourists. FSM is less than a plane ride from Asia. But even from Hawaii and the U.S. Mainland, only one carrier serves the country, and infrequently, and at a very

high-ticket price. The hotel and restaurant industries are under-developed because of this lack of access. These factors are unlikely to change soon, so serve as a big push factor for likely migrants.

It is important to note that FSM still has some jobs available to college graduates. Most of the jobs are in the government since it is the primary economic activity. But some returnees take jobs in their family businesses or set up new businesses, like computers or other appliances and repair. Others are involved in software development.

The stream of emigrants will continue because of lack of economic development, the relatively young ages of many of the public sector workers, and large numbers of students coming up through the education system,. As students graduate from high school, many go to the College of Micronesia and then back to their home islands or outside Micronesia. Others leave immediately (or after a lag at home) after high school to the receiving Areas. Once these former students establish their beachheads or in previously started communities by earlier migrants, they earn enough money to bring out their parents and other relatives. The stream is currently very strong and is unlikely to diminish until many more people have left Micronesia for better education and health and jobs.

Employment of FSM migrants in the United States and its territories has included largely entry-level jobs. These jobs included house cleaners, aides in nursing homes, security guards, deliverymen, cashiers at convenience stores and eateries, among others. The 2012 Micronesian Migrants' Surveys showed migrants to the U.S. mainland had a high percentage (63 percent) finding paying jobs with average annual incomes of \$27,000. This amount was a substantial increase in their earning potential had they remained in FSM. However, Micronesian migrants in Hawaii, Guam and CNMI had lower levels of formal employment and a greater reliance on government benefits. On Guam, 58 percent of FSM households received food stamps. Some migrants moved to Hawaii specifically to receive medical treatment that they otherwise could not afford. These movements illustrate some of the downside impact for receiving countries if the right support mechanisms are not present.

III Policy implications

Migration is a development pathway for FSM or for the people of FSM. If fewer people are present, funds can improve the conditions of those who remain. And, the emigrants do not lose their "Micronesian-ness" when they depart, and they do provide some remittances. Nonetheless, because FSM has no economic development, little attracts young people to stay or to return after their education or trip abroad. (see Levin 1976 on the traditional and contemporary use of the "trip").

<u>Dual citizenship</u>. The FSM had a vote on a series of amendments to the constitution. One amendment is on the possibility of dual citizenship. The country voted to have dual citizenship. If individuals choose to have U.S. citizenship in addition to FSM citizenship, they will have easier entry into the United States. And they will also have easier entry into many countries that currently require visas.

The problem, of course, is that U.S. Citizenship provides even more incentive to move to the United States and stay there. Hence, the numbers within FSM are likely to decrease even further. And, many of those moving to the U.S. full time, and with citizenship, are likely to be

the best educated and have the greatest skills. Dual citizenship will make the FSM even less viable as a country.

<u>FSM's economy.</u> The Federated States of Micronesia has never had a viable economy since World War II. In every census, the public sector is larger than the private sector. And, the private sector consists mostly of mom and pop stores to supply those in the public sector with food, clothing, other needs and luxuries. Micronesia has some niche industries like handicrafts and some eco-tourism, but these are not enough to fund the government. Guam, CNMI, and Palau are closer to most Asian countries, and have more for tourists to do. So visitors go to those places instead of Pohnpei or even Chuuk with its Japanese Pearl Harbor.

The United States provided funding for Micronesia at very low levels from the end of World War II, but began increasing funding year to year, starting in the mid-1960s. In 1986, the first Compact of Free Association went into effect, and with it a large infusion of additional funding. This money funded many soft money government positions, like Special Education and a Women's Office, and a lot of travel for many of the government employees. It also funded infrastructure, but with mixed results. The initial Compact had two step downs after each 5 years, with the third step down throwing some people out of work. A second Compact started in 2003 for 20 years, with increased funding. And, FSM and the U.S. are finishing implementing the third Compact, with greatly increased funding, partially out of fear of Chinese take over – financially or physically.

If the idea of the Compacts was to create a viable economy in Micronesia, it clearly is not working. While emigration allows more *per capita* funding for those left in Micronesia, it also removes some of the best and brightest. Because of the visa-free entry and global warming, FSM's economy is unlikely to get better.

<u>FSM society.</u> It is clear that FSM's society is being altered in very unfortunate ways. In the early years of the FSM as an entity, most college students studied either education of public health. Their degrees made them teachers or nurses for the most part. After World War II almost all teachers and nurses were males, but in recent years, more females than males are studying in those professions. In the early years, anyone who wanted a teaching position could get it. Then, a bachelor's degree was required, so returning students replaced the older, less educated teachers. But, in recent years the students who would have become teachers are emigrating. The Chuuk education office has been coming to Hawaii, with incentives, to bring potential teachers back to Chuuk to teach in the schools. All of the States are having trouble getting enough teachers.

The States are being depopulated. Kosrae had about 7,500 people in the 2000 census, but will have fewer than 5,000 in the current census. A loss of one-third of the population, including most of those who could get jobs in Hawaii or the U.S. Mainland is having a devastating effect on the remaining population. (Many of them are preparing to depart as well). Many of the houses are now vacant and deteriorating. Many of the auxiliary skills and occupations are now not being filled.

<u>Climate induced migration</u>. Kosrae does not have "outer islands", that is coral atolls whose highest points are barely above sea level. But Yap, Chuuk, and Pohnpei all have atolls, many of which are still inhabited. However, sea level rise is already very apparent on many of the atolls (although in a few cases, like Eauripik in Yap State, the ocean has deposited a build up at the end

of the lagoon, thus temporarily extending the atoll. Of course, that will not last. The high islands will also suffer since almost all of the villages are on the shore. The communities that continue will need to move inward and upward on to the mountains where they can. Also, storms and typhoons are now more prevalent and are much stronger and more devastating. Living on the shrinking atolls is getting more and more precarious.

IV Next steps

Studies of Micronesian migrants are fortunate because the sending and receiving Areas use the same questionnaires and procedures to get pictures of both ends of the migration stream. We can establish the characteristics of the sending population, the receiving population, and the migrants themselves. We can study their characteristics to see what educational attainment, language skills, and economic characteristics define various groups of migrants. By repeating the surveys, we can see trends for all three populations to help develop programs.

Besides the surveys themselves, focus groups in the FSM and on Guam, Hawaii, and the U.S. Mainland could provide better knowledge of the accomplishments and struggles of the migrants and the potential migrants. The 2012 FSM Migrant surveys included focus groups (Hezel 2013). These groups provided adaptation strategies of the migrants.

III Compact of Free Association

This section looks at the immigration part of the Compact of Free Association and provides lessons for Australia and New Zealand on how the Compact model could be tweaked in order to minimize some of the negative impacts resulting from open labor market access on both the sending and receiving country end.

The original Compact of Free Association between the United States and the Federated States of Micronesia was implemented in November, 1986. The Compact was to run for 15 years. A second compact was negotiated and implemented in 2003 which is to run for 20 years, until 2023, when the funding parts of the Compact are due to expire. Article IV on Immigration is the relevant part of both the original Compact and the amended one.

Basically, the Compact allows for non-visa entry into the United States and its territories as nonresident aliens. That is, any FSM person "may be admitted to, lawfully engage in occupations, and establish residence as a nonimmigrant in the United States and its territories and possessions" separate from U.S. Immigration laws. In the first years after Compact implementation, the Office of Insular Affairs (OIA), Department of the Interior), solicited Compact impact reports from the territories (with expectation that most migrants would go to Guam and CNMI), and the State of Hawaii. OIA made contracts with the Census Bureau to administer the impact surveys reported above. In recent years, in addition to CNMI, Guam, and Hawaii, surveys have also been conducted in various parts of the U.S. mainland to obtain counts of the FSM "nonimmigrants".

The article also details which relatives of FSM-born migrants and Naturalized FSM citizens will have free-entry into the United States and its territories. While quite a few paragraphs are devoted to this, FSM makes Naturalization very difficult, and so very few people fall in this category. In

the early years of the migration, OIA insisted that counts be made only of post-Compact migrants – those arriving after implementation – and their children. Unfortunately, it was not possible to statistically obtain children only of post-compact migrants, so all children of FSM migrants were included as legal. Many relatives, if they could prove their relationships, were included. Persons adopted only for the purpose of this migration were not included. Persons buying passports for the reason of migration were also excluded.

Residence meant "the person's principal, actual dwelling place in fact, without regard to intent" as provided in the U.S. immigration laws. The FSM migrants were termed "nonimmigrants" as noted. Immediate relatives included "a spouse, or unmarried son or unmarried daughter less than 21 years of age". The law states that the nonimmigrant had to prove sufficient means of support to stay, and were required to follow all U.S. laws. However, in fact, as long as the migrant, of any age, has the appropriate entry information, they can come into the United States or its territories.

The nonimmigrant Micronesians could not become citizens automatically through length of stay, but were required to go through the same procedures as regular immigrants, but the compact "shall not prevent a citizen of the Federated States of Micronesia from otherwise acquiring such rights or lawful permanent resident alien status in the United States." That is, they would get a "Green card," which could eventually lead to citizenship. Finally, the article also has provisions allowing U.S. Citizens to live and work in Micronesia.

The sections on the numbers and characteristics of the Micronesian migrants and their contributions to the economy in CNMI, Guam, and Hawaii above, clearly show that the Compact of Free Association, as an enabling document has worked well. While some Micronesians have a period of adjustment, they soon start contributing to the economy (and to the diversity of the United States.) The model of nonimmigrant residence works because the numbers are small, and the migrants want to work and become functioning members of the receiving countries. Hence, the model as presented in the Compact is an appropriate one for large receiving countries accepting migrants from the very small Pacific countries.

IV Discussion

The appendix looks at the characteristics of potential emigrants living in Kiribati and Tuvalu. Kiribati and Tuvalu, and the Marshall Islands and Nauru, have the worst-case scenario of being the most vulnerable to global warming's rising waters since they are all atoll countries and do not have a high island attached for refuge. An increasing literature on the global warming forcing migration from these atolls now exists, but will not be covered here.

A few years ago the World Bank has published a report called *Pacific Possible Labour Mobility: The Ten Billion Dollar Prize*, written by Richard Curtain et al. One section in that report discusses possible open access under an Australia-New Zealand Atoll Access Agreement. This section summarizes those ideas with reference to the findings described in this paper.

As noted, the United States allows visa-free entry for Freely Associated States citizens to work as does New Zealand for Cook Islanders and Niue citizens, but Kiribati and Tuvalu and several of the other Pacific Islands countries do not have agreements with any major power. Australia and New Zealand could consider some form of freer association between the two powers and the two small

atoll nations. (Although the World Bank, for example, stresses the strategic importance to the U.S. of the Freely Associated States, most US and FSM observers would note that at this point the ties are more just historic – that because the U.S. administered the FAS for so long, they owe these countries continued assistance in their economic development.) Recently, the relationship has become much, much closer because of the United States' fear of China's intrusion into Micronesia and other Pacific countries.

Pacific Possible describes the impact of climate decline which is intensifying in recent years. They note that because of the large numbers living in the capitals of Kiribati and Tuvalu and other countries, overcrowding has also led to ecological degradation and acidification. These countries do not have open access to the U.S. or New Zealand. While these two countries have migrated previously for phosphate mining and seafaring, the former, at least is in sharp decline. Many continue to be long-term fishermen.

Pacific Possible also notes that very small numbers of Kiribati and Tuvalu born have migrated to Australia and New Zealand. But their current fertility rates – with a doubling time of about 17 years – project increased populations on the islands at the same time the amount of land is declining, and the environment is degrading. The countries prefer slow outward migration rather than wholesale movements. Both Kiribati and Tuvalu need increased access to employment and residences overseas for 'migration with dignity' (Voigt-Graf and Kagan 2016).

Of the migration and movement described by Pacific Possible and presented earlier, the Pacific Islands countries fit only into permanent migration status based on their remoteness and travel costs to actually move to a major power, even if admitted. It would help if Australia and New Zealand opened their labor markets in a manner similar to the relationship the United States has with the Freely Associated States. The numbers will be small, but the benefits to both the sending and receiving countries are great. Pacific Possible sees glimmers of possibility:

In recognition of this, two schemes have been established specifically targeted at Kiribati and Tuvalu. New Zealand's Pacific Access Category reserves 75 places each for the two countries. And just last year Australia established the Pacific Microstates–Northern Australia Worker Pilot in Australia which provides 250 places over five years (in total) for i-Kiribati, Tuvaluans, and Nauruans to work in Australia for up to two years.

Another Pacific Possible report describes the likely increase in Kiribati and Tuvalu populations with land areas likely both to decline and degrade, so additional migration will be needed. However, because of the financial and legal constraints, the migration is likely to start out very slowly and then pick up over time. (Pacific Possible 2015).

Economic Conditions at Home

<u>Tourism.</u> Most of the small Pacific countries are too small and too isolated to have either manufacturing or other common industries, like tourism. Part of the reason is the lack of tourists. Table 5.1, for example, shows an average of 13,500 annual visitors and tourists to all 4 FSM States, about 37 tourists per day. The numbers are inflated since many of the visitors do not participate in tourist activities and many go to more than one State, so the actual numbers are smaller.

Table 5.1: Tourists	Visitors and	Friends by	Country	and	Year: 20	108 to	2013
Table 5.1. Tourists,	visitors and	i nenus by	Country	anu	1001.20	00 10	2015

				2		
Country	2008	2009	2010	2011	2012	2013
FSM		14,778	14,048	12,138	12,878	13,737
Kiribati			1,111	957	1,365	1,544
Tuvalu	537	669	543	424		
a	1			1 37 .1 1	0	

Source: FSM Department of Justice, Kiribati & Tuvalu National Statistics Offices

Even fewer visitors go to Kiribati (only Tarawa is reported – some others go to Christmas Island.) About 3,000 visitors come to Tarawa each year. Of these, about 250 per year come for "pleasure". Clearly the small number of people working in hotels and restaurants can provide the needed services, but the amount spent would not be enough to provide much of the GDP. Similarly, about 1,500 visitors arrive in Tuvalu each year. Of these about 350 are there for holiday or vacation.

The 2012 Tuvalu census counted 51 people working in accommodations and restaurants and the 2010 Kiribati census recorded 190 working in these fields. Clearly these numbers are both a small part of the total work force, providing little contribution to the GDP.

Tourism has never been a large part of the GDP in any of the three countries, and none of the countries is likely to see much improvement in the future. Of course, with global warming, some visitors may come to see the effects of the rising waters, but ultimately the residents will be leaving and, with them, the economy.

<u>Remittances</u>. Remittances could be one source of government continued funding. As shown in the section on remittances, money and merchandise flows change under Free Association. Instead of remittances returning to the sending countries, as in the cases of Tonga and Samoa, funds are maintained in the receiving countries until a ticket can bring the siblings and parents and cousins and nephews and nieces out to begin their own new lives in better economic conditions. Clearly, while the first group, the beachhead, tend to attend school or, having been educated, move into more skilled jobs, the second and subsequent generations will be more heterogeneous, with some of them needing to go into entry level jobs.

While FSM, the Marshalls and Palau do not have a tradition of remittances, the non-U.S. affiliated migrant populations do send considerable funds back to the home areas. Hence, we have a cautionary tale for Kiribati and Tuvalu and the other Pacific countries. If the governments want continued residence as long as possible, remittance streams are desirable. Much would depend on the implementation of the migration to Australia and New Zealand, if put in place. If migration to the receiving country is as easy as it is for FSM migrants – that is, basically the price of a ticket out – it is unlikely that emigrants will send remittances. Instead they will save their money and bring the next generation out. However, if more restrictions, time in country, ability to cover return residents in the case of indigence or crime, then the migration flow could be considerably less. And the sending governments, in efforts to make the migration flow such that the remaining population maintains a standard of living, could expect streams of remittances to assist in the GDP. While the model of Free Association between FSM and the United States has worked reasonably well, it is clear that many of the migrants have left many of their customs and practices behind. That probably is not the best model for all sending countries.

Migration

Lottery visas. One method of assuring a measured flow would be lottery visas. Because Micronesians have visa-free entry, lottery visas are not needed. The flow of i-Kiribati into Australia and New Zealand is likely to be slow and orderly. If a similar Compact between these countries and Kiribati and Tuvalu or some of the other countries is put into place, it is unlikely that a lottery would be needed. Australia currently has about 24.5 million people, so even if all of the Kiribati population arrived at once, it would only add about 100,000 people, or less than one half of one percent of the residents. A lottery should not be needed.

<u>Lack of restrictions on sponsoring relatives</u>. The current Compact only requires that the Micronesian have an FSM passport, a proposed residence, and a document called an I-94, which takes the place of a visa, but which does not require a fee and is permanent. Any Micronesian can be sponsored and can travel with only a passport to document their citizenship. Hence, any relatives, or even non-relatives can enter the United States. There are no restrictions on sponsoring relatives.

The I-94 is still required along with a valid passport to prove legal presence. The paper I-94 is no longer required and has been replaced by electronic I-94. So, if an FSM citizen entered the US after April 30, 2013, that person obtained his or her I-94 record from a US CBP website if requested by local government agencies or companies. Right now, with the automated I-94 process, there is no longer any need to apply for a replacement unless the person entered the US prior to April 30, 2013 and remained in the US since. There is a fee for reprocessing the I-94 for those who came earlier and lost their paper copy. The I-94 is not issued in the FSM. It is issued upon entry into the US at the port of entry (Guam or Hawaii). All current I-94s are electronic. Those coming in now obtain an electronic number used to access the US government site and their I-94 when they need to see it.

<u>Path to citizenship</u>. FSM citizens have several ways of becoming U.S. citizens. The easiest way is in provisions in the Compact of Free Association that allows men and women to enlist in the US military. Expedited naturalization is provided for those who do enlist after a period of military service. This process is usually handled within the military and US Citizenship and Immigration Services (CIS).

Civilians have more complicated paths. A visa is always available for immediate relatives of U.S. citizens although procedures must be followed. FSM citizens in the US applying for US citizenship on their own without an US citizen sponsor, will have difficulty because US CIS will require them to go back to FSM, file immigration paperwork with the US Embassy in Pohnpei and wait for its approval and for their visas. They can then come to the US. Secondly, if an FSM citizen is sponsored by a US citizen (spouse or child), the petitioning process for a change of immigrant status from Compact migrant to a visa status can be done in the US. Thirdly, US based organizations (churches or employers) can also petition for a change of status, but this is more challenging.

After immigration status changes to a visa, the next step is Permanent Residency or Green Card. Once they obtain this, the next step is the citizenship test, and if passed, the final step is a naturalization ceremony where one becomes naturalized and is issued a naturalization certificate. it can take some time for the immigration status change and to obtain a visa, , maybe more than a month, if not a year. So, for civilians, the procedure can be short or it can be as lengthy as for any other immigrant.

While these procedures have worked well for the Freely Associated States and the United States, it has taken a while to get the procedures in place. But the example is probably an appropriate one for Australia and New Zealand to consider.

<u>Deportation</u>. Some migrants become deportees from crimes committed in the United States or its territories. Most of the crimes occur under the influence of alcohol or drugs. While many Micronesians have problems with these substances, most of the problems occur among high islanders rather than atoll dwellers. The atoll cultures require constant reinforcement of family and cultural ties, and, with no place to go when conflicts occur, tend to sublimate rather than express themselves through Western criminal activities. The high islanders often come from traditions of conflict and many continue displays of "macho" behavior, particularly under stressful or altered conditions. Atoll dwellers, like those form Kiribati, are much less likely to engage in this type of behavior, and so would not be as likely to need to be removed. The one-stop approach to address potential social and economic problems, though, could be used as part of orientation for adult migrants, and re-orientation should problems arise; again, it is unlikely that Kiribati and Tuvalu migrants, being from atolls, are likely require removal from the country.

Social and Economic Conditions

<u>Costs of social and educational adjustment</u>. Saipan in the Commonwealth of the Northern Mariana Islands (CNMI) was the capital of the Trust Territory, and, as noted, some of the Micronesians working there before the Compact was implemented, married and stayed on. Also, CNMI has had continuing problems establishing an economy, although in recent years it has developed a very strong tourism industry, with most of the foreign workers being from the Philippines. Hence, the impact of the new migrants was not great. The migration to the U.S. Mainland has been stronger recently, but because beachheads were established throughout the Mainland in the late 1970s and 1980s, no one area has seen much social or economic impact. Hawaii, and particularly Guam, have seen the greatest impact, with almost 10 percent of Guam's population now being Micronesian.

In each case, some expense is needed to bring the new populations into what is called the Melting Pot. But, each group has integrated in a reasonably short period. The best example for advocating Micronesian migrants to Hawaii is the Samoans, who started to move to Hawaii in the 1950s after service in World War II, and their continuing immigration into the 1970s. The Honolulu newspapers were full of reporting of problems of Samoan adjustments to living in Hawaii. Those reports now rarely occur as most Samoans have already moved into the mainstream, having jobs, and participating in church, family gatherings, and other charitable work. Micronesians want what all immigrants want, and with a little assistance, they will soon by net positives.

And, as the data on labor force participation of the migrants above showed, Micronesians are contributing to Guam and Hawaii's economies in terms of both labor force participation (at many levels, both in entry level positions, and as time has gone by, higher levels of employment), and in local and Federal taxes paid. Micronesians are also putting money into the Guam and Hawaii and U.S. Mainland economies by buying goods and contributing to services. Although some of the remittances are monetary, in many cases, major goods like stoves and refrigerators and motor cycles are bought and sent back to Micronesia. And, of course, since the actual costs of providing the

education and social services are not known, it is difficult to say what the actual difference between costs and benefits actually is.

Finally, OIA's FY2015 report to Congress also addressed quantification of benefits and costs within the Freely Associated States. They note the continued out-migration, and they make a suggestion, that "increased oversight and accountability are needed in the use of funds by the FAS, particularly in the field of infrastructure grants for health and education. Improving the quality of life for their citizens may help to address the out-migration of FAS citizens to the United States."(OIA 2015:7). Of course, OIA does not address the need for economic development to keep islanders from migrating – so they will be healthy and well-educated, but without jobs.

<u>Costs of economic adjustment</u>. The section on the impact of the Compacts of Free Association only require "negative" reporting, so the net contributions of Micronesians working in the CNMI, Guam, Hawaii, and the U.S. Mainland are not accounted. However, as shown earlier, most Micronesian adults who are not students move into the workforce. And, because they are in the workforce, they pay Federal and State taxes, social security, and property taxes (either directly or indirectly if they rent. Also, Micronesians are great consumers, of food, entertainment and goods, both for themselves, and in the case of refrigerators, motorcycles, and so forth, purchases to send back to their home islands. Eventually, the contributions will out weigh the territorial and State expenditures assisting in the transition.

<u>Hawaii homeless Micronesians</u>. Homelessness is a considerable problem in Hawaii, with the State having the highest per capita homeless in the country. Part of the reason for the relatively high numbers is the mild climate, making life outside of traditional housing and even homeless shelters possible. Several writers, Chad Blair (2011 and others) and Neil Mellon (2016) in particular, have noted high percentages of Micronesians among the homeless. These percentages are not based on full censuses since censuses of homeless are almost impossible, so reliance is on anecdotal evidence. The OIA surveys have shown that in general Micronesians take care of each other, taking in otherwise mentally healthy relatives as they would do at home, as long as they can comply with rental agreements. And, for atoll emigrants in particular, as shown earlier, this care is extremely important, so numbers of homeless previous atoll residents are very low. Receiving countries considering accepting Kiribati and Tuvalu and the other Pacific country migrants should not have problems of homelessness among the migrants.

<u>How Guam and Hawaii are addressing the social/economic burden</u>. Under the terms of the Compact of Free Association, the U.S. Department of the Interior's Office of Insular Affairs (OIA) must gather data on the impact of the Compacts on Guam, CNMI, Hawaii, and other U.S. jurisdictions and make an annual report to the U.S. Congress. Costs of providing services to the migrants, particularly in the areas of education and health, are to be offset by U.S. Federal funding.

Clearly, if the migrants move into the economic mainstream, getting jobs and paying taxes, they are less reliant on government subsidies and additional English language and skills training. Hence, OIA has funded "one-stop" agencies to assist the migrants in adapting to life away from home. The first office on Guam was at the University of Guam. The Hawaii Organization is called *We are Oceania* and is currently quite active, particularly on Oahu. *We are Oceania* has a small full-time staff, some part-time staff, and many volunteers. Almost all of them are Micronesian.

The Micronesian Awareness Project (MCAP) was established and funded by Hawaii's Office of Community Services in 2007 to assist in acculturation between the State of Hawai'i agencies to the Micronesian community. Hawaii's Department of Education was the first point of contact. Since implementation, MCAP provided over 70 cultural awareness trainings to State agencies, churches, service providers, and communities statewide. (We are Oceania website.)

In the early years, the One-Stop agencies were not as effective, partly because they were seen as elitist, so those Micronesians who adapted easily used them for social contacts, and those who needed them most felt uncomfortable, but now that basically all staff are Micronesians – Micronesians successful in making the transition – the organizations themselves have been successful in helping new migrants make the transition to life in Guam or Hawaii. The model is a good one for other Pacific Islander migrant situations.

Education programs to assist in migration

<u>Gates Fellowships</u>. As noted in the Education section, for a period of about 10 years, Micronesians were eligible to apply for full-scholarship grants from the Bill and Melinda Gates Foundation. These grants paid for tuition, travel, and subsistence for 4 years of undergraduate education. About 15 students, mostly from the private Xavier High School obtained these scholarships. The returns have been impressive – all scholars graduated from their respective schools. Unfortunately for Micronesia's future economic development, few returned to the FSM; on the other hand, these graduates are the U.S.'s gain. If Australia and New Zealand could partner with private sector foundations and institutions, they might provide funding for Kiribati and Tuvalu students, with the students then contributing to the development of their home countries or adopted ones.

<u>Basic Education Opportunity Grants (BEOG).</u> The United States has been providing the BEOG (or Pell) grants to Micronesians since the late 1970s. These Federal government grants provide partial tuition coverage at most U.S. colleges and universities. The amounts are not sufficient to cover all expenses, but often go with FSM National and State scholarships to cover students' whole tuitions and often living expenses as well. The investments pay off when the students graduate and then move into the labor forces of FSM or the adopted county. Australia and New Zealand could make investments in their future adoptees at fairly low costs for the rather large returns.

V Conclusion

Free Association has benefited both Micronesia and the United States. The U.S. has continued to have military and economic precedence in Micronesia, and Micronesia has seen some limited economic advantage, mostly in continued Compact funding. However, because of its very limited economic development, the most important parts of the Compact involve visa-free entry into the United States and its territories for work, joining the military, and schooling.

Micronesia only became a U.S. colony after World War II, unlike Samoa, Tonga, Niue, the Cook Islands, and Tokelau, which have had long-term arrangements with Australia and New Zealand. Some of the Pacific countries have been moving for short and long-term work for decades, with individuals and families establishing beachheads that then brought others through various channels. This same type of migration is now in full force among the Micronesian migrants to the United States and its territories.

While Kiribati and Tuvalu were together as the Gilbert and Ellice Islands until the late 1970s, and were administered by Great Britain, they have not had the closer relations of their more southwestern neighbors. In fact, all migration (and short- and long-term labor mobility) has been very limited. The islands have become more crowded in recent times because of relatively high fertility and longer life expectancy. With current natural growth, even without climatic conditions, migration would be needed to maintain any semblance of physical and cultural maintenance.

Global warming producing sea rise and land degradation make finding emigration paths essential. The main issue at this point is how to develop relationships with accepting receiving countries, and the flow of migrants. If all of Kiribati's population were to move to Fiji, for example, the increase would be about 10 percent of that country's population. But, unlike on Guam, where Micronesian migrants are now about 10 percent and are readily seen because the island is small, Fiji is relatively large, so could accept that part of the Kiribati resident population expected to go there.

But New Zealand and Australia are much larger, and if visa-free entry were implemented along the lines of the Compact of Free Association, the impact would be relatively small. Almost all of the Kiribati and Tuvalu adults who are already in the receiving countries are in the labor force, and so paying taxes. The Micronesian migrants to Guam, Hawaii, and the U.S. Mainland already move into the labor force quickly, and so do not remain a burden to the State once they are established and can find work. Some assistance is needed at the very beginning, of course, as in all migration, but that assistance can be justified as the migrants become parts of the communities.

The emigration from the FSM started in the 1970s, as students went to various colleges and universities in Guam and the United States with Pell Grants. The colleges were dispersed geographically, so the students – the graduates and less-than-graduates – established beachheads. Brothers and sisters followed, and then parents and other relatives. So, over time FSM communities developed on Guam, in Hawaii, and in many small and medium cities on the U.S. Mainland. Because of the dispersion, some efforts were made to bring emigrants from specific FSM States and islands together periodically for cultural and recreational events.

Kiribati planners do not want to follow the FSM example. These policy makers want to see an orderly exodus as the country becomes unlivable due to climate change and subsequent ocean rising. They expect the first generation to establish communities, and subsequent atoll and islander groups following over several decades. Rather than dispersing the population throughout Australia or New Zealand or Fiji or the United States, they want to make efforts to centralize the emigration, preferably along a sea coast to allow continued access to fishing and similar, if not the same, agricultural products. But, it is clear that they also want access to larger, more industrial areas as well for those i-Kiribati who want paid employment. The experience in Fiji taught some lessons, lessons that the planners hope to use to use Trust funds to purchase more appropriate areas in countries receptive to the needed migration.

The urgency of a solution cannot be understated. Recent reports are showing that Global warming is having increasing impact on low lying islands and other land areas, so emigration "with dignity" from the atoll nations must take the highest priority.

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APPENDIX

Applying Findings to Kiribati and Tuvalu

We can use the Micronesian migration model to see how it applies to Kiribati and Tuvalu likely outward migration. What would be the potential direct and indirect economic and social effects if granted open labor market access to Australia and New Zealand?

Kiribati and Tuvalu – Some Numbers And Characteristics of the Potential Sending Populations

This section will look at characteristics of the Kiribati and Tuvalu populations. For Kiribati, we use 2010 and 2015 census data. For Tuvalu, we use 2012 census data. In order to get a feeling for the counts and characteristics of the migrants, it is useful to look at the results of recent censuses.

Kiribati

Kiribati is an island nation in the central tropical Pacific Ocean. The permanent population was 110,136 in the 2015 census on 800 square kilometers (310 sq. mi). The nation comprises 32 atolls and one raised coral island, Banaba, dispersed over 3.5 million square kilometers (1,351,000 square miles). Kiribati straddles the equator and borders the International Date Line at its easternmost point in the Line Islands. Kiribati became independent from the United Kingdom in 1979. It is a member of the Commonwealth of Nations, the IMF and the World Bank, and became a full member of the United Nations in 1999.

Kiribati has a long history of census taking under the British Administration. The first census with microdata was in 1968, followed by a second in 1973 before Kiribati took over its own census work about the time of Independence. After a transition census in 1978 (for which the microdata are lost), the country went into a 5-year cycle in 1985 and has taken censuses quinquennially since then. The population in 1968 was 48,000, but increased throughout the period at about the same pace – to 53,000 in 1973, 56,000 in 1978, 63,000 in 1985, 70,000 in 1990, 78,000 in 1995, 84,000 in 2000, 93,000 in 2005, 103,000 in 2010 and finally 110,000 in 2015. They recently undertook a 2020 Census, with analysis to be published soon. Unlike many Pacific Islands nations that have free association or other migration routes with a Colonial power, few people from Kiribati can leave the country for better jobs. Hence, the population has increased throughout the period, and continues to increase.

Demographics

Figure A.1 shows population pyramid for 2015. The 2015 census shows either reduced fertility 10 to 14 years before the census or current out-migration for this student cohort.

Figure A.1: Population by age and sex, Kiribati: 2015



The total fertility rate was around 7 children per female in the 1970s, then decreased to around 4.5 children per female by the late 1990s. It then decreased by one child in the early 2000s, before moving back up to 4 in the 5-year period before the 2010 census (Levin 2015a). This level of fertility will increase the resident population if emigration does not occur.

Labor Force

Of the 66,000 adults in 2010, about 39,000 or 59 percent were in the labor force (Table A.1 and Figure A.2) Unlike in the United States and its current and former territories, those doing subsistence in Kiribati are included in the labor force. The theory is that if they are doing subsistence, they are gainfully employed, whether they are paid or not. The 59 percent includes those in the paid labor force – about half the total – those working without pay about $1/6^{th}$ of the labor force, and those unemployed – that is, not working but looking for work (about 2 in every 6 in the labor force).

Males, at about 2 in every 3 adults, were more likely to be in the labor force than females (somewhat more than half the females). Males were more likely to be in the paid labor force, females were more likely to be unemployed.

Table A.1: Detailed Labor Force by Sex, Kiribati: 2010

	Numbers			Percent		
Detailed Labor Force	Total	Males	Females	Total	Males	Females
Total	65,802	31,696	34,106	100.0	100.0	100.0
In the Labor Force	39,014	21,175	17,839	59.3	66.8	52.3
Paid employees	19,581	10,755	8,826	29.8	33.9	25.9
Percent Paid in LF				50.2	50.8	49.5
Employee government	6,717	3,584	3,133	10.2	11.3	9.2
Employee private	4,254	2,568	1,686	6.5	8.1	4.9

Employer	1,118	775	343	1.7	2.4	1.0
Self-employed	1,343	829	514	2.0	2.6	1.5
Producing goods for sale	6,149	2,999	3,150	9.3	9.5	9.2
Unpaid employees	7,498	4,569	2,929	11.4	14.4	8.6
Voluntary work	577	355	222	0.9	1.1	0.7
Unpaid family work	2,914	1,887	1,027	4.4	6.0	3.0
Own consumption	4,007	2,327	1,680	6.1	7.3	4.9
Unemployed	11,935	5,851	6,084	18.1	18.5	17.8
Percent of Potential Paid				37.9	35.2	40.8
Not in the Labor Force	26,788	10,521	16,267	40.7	33.2	47.7
Student	5,374	2,559	2,815	8.2	8.1	8.3
Home duties	9,731	2,771	6,960	14.8	8.7	20.4
Inactive	5,811	2,819	2,992	8.8	8.9	8.8
Retired	5,102	1,988	3,114	7.8	6.3	9.1
Disabled	770	384	386	1.2	1.2	1.1
Source: 2010 Kiribati Census ur	published	tables				

Of those not in the labor force, the largest category was those doing "home duties", about 1 in every 3 of those not in the labor force. For the others, the "not in the labor force" included equal numbers of students, those "inactive", and those retired. About 10,000 adults in 2010 were producing goods either for sale or for own consumption. Those producing goods for sale should be included in the labor force, but are put in a different part of the series here. The categories "voluntary work", "unpaid family work", and "producing goods for own consumption" almost certainly overlap. Of the paid employees, about 6,700 were government employees, about 2,500 more than the private sector employees. About 1,100 were employers and another 1,343 were self-employed. Again, the category definitions could be a bit ambiguous. Nonetheless, the 27,000 total is a good proportion of the whole adult population, and so the group most likely to bring skills to any emigration.





Except for those producing goods for sale, all activities skewed male (Figure A.4). "Employers" were the most male, at more than 2 males for every female. Another high proportion of males compared to the females were those doing unpaid family work. About 114 males worked in the government for every 100 females.

About 37,000 adults were not working. Of those, about 11,500 were actively looking for work, or about 31 percent of those not working (Table A.2). About 1 in every 4 people 15 to 19 were actively looking for work, but many of this age group were still in school, and so not needing to look. For older ages, an indirect correlation existed between age and those looking for work. That is, about 56 percent of the people 20 to 24 who were not working were looking for work, but these values decreased with increasing age, as is seen in the table. The median age of all persons not working was about 29, while the median age for those actively looking was about 25 years.

				Actively	/ Looking For	r Work			
						Why not looki	ng		
		Actively	looking	Total	Not want	Full time		Retired/	
Age	Total	Number	Percent		to work	homemaker	memaker Student		Other
Total	37,127	11,491	31.0	25,636	3,635	9,344	5,248	4,913	2,496
15 - 19 years	9,065	2,377	26.2	6,688	625	1,336	4,444	21	262
20 - 24 years	6,470	3,647	56.4	2,823	588	1,274	594	16	351
25 - 29 years	4,129	2,143	51.9	1,986	455	1,121	105	22	283
30 - 34 years	2,786	1,143	41.0	1,643	345	1,020	20	25	233
35 - 39 years	2,335	775	33.2	1,560	319	963	30	15	233
40 - 44 years	2,515	606	24.1	1,909	388	1,132	14	92	283
45 - 49 years	2,201	375	17.0	1,826	392	932	11	220	271
50 - 54 years	1,975	179	9.1	1,796	183	563	7	871	172
55 - 59 years	1,687	125	7.4	1,562	150	394	4	879	135
60 - 64 years	1,210	56	4.6	1,154	67	200	7	796	84
65 years and over	2,754	65	2.4	2,689	123	409	12	1,956	189
Median	28.7	24.6		34.0	32.2	34.6	18.0	61.9	37.6

 Table A.2: Persons 15 Years and Over Actively Looking for Work or Reason Not Looking, Kiribati: 2010

Source: 2010 Kiribati Population and Housing Census

The variable for occupation had the same major categories in both censuses, so data from both 2010 and 2015 are shown in Table A.3 below. In 2015, the median age for occupational groups was 36.6, about half way through most worker's active lives. Legislators and managers had the

highest median, at 47, followed by craft and related workers. The youngest workers were clerks and skilled agriculture and fisheries workers.

The number of those with occupations increased from about 27,100 to about 28,200 during the 5year period. As the table shows, the changes were not systematic, which is probably due to changes in coding. For example, the category "Skilled agriculture and fishing" was to include those selling their product, with "Elementary occupations" being subsistence-related activities. The data clearly show that two categories were not coded in the same way in the two censuses unless very large numbers stopped selling and started doing subsistence activities only by 2015. However, while the numbers doing subsistence increased by 2,400, other groups, like services and sales workers and craft and trades workers also increased, so some people may have moved from skilled agriculture and fishing to those occupations.

Table A.3: Main Occupation by Age, Kiribati: 2010 and 2015

					2015 A	ge Distrib	ution		
Occupation	2010	Change	Number	Percent	15 - 29	30 - 44	45 - 59	60+	Median
Total	27,096	1,062	28,158	100.0	9,237	10,971	6,476	1,474	36.6
Managers	812	-41	771	2.7	81	260	331	99	47.0
Professionals	3,132	887	4,019	14.3	879	2,005	934	201	38.5
Technicians and associated professionals	1,719	-39	1,680	6.0	527	845	282	26	35.6
Clerical Support Workers	1,289	-507	782	2.8	347	327	97	11	32.0
Services and Sales Workers	4,156	1,260	5,416	19.2	2,108	2,028	1,102	178	34.4
Skilled Agriculture and fishing	7,425	-4,804	2,621	9.3	1,113	829	551	128	33.6
Craft and Related Trades Workers	4,163	1,185	5,348	19.0	1,443	1,919	1,463	523	39.6
Plant and Machine Operators and Assemblers	1,153	723	1,876	6.7	580	907	355	34	35.9
Elementary occupations	3,247	2,398	5,645	20.0	2,159	1,851	1,361	274	35.4

Sources: 2010 and 2015 Kiribati Census unpublished tables

Unfortunately, the categories – or codes – changed between 2010 and 2015 for industry, and so only 2010 data are shown here. While the average industrial worker was 36.1 years old in 2010, those in manufacturing were older, at 41.1 years (Table A.4). Only those in finance, insurance, and real estate activities were younger than 30, on average. All the other industries had medians in the 30s. As with occupation, the largest numbers were doing agriculture, forestry and mining, followed by those in wholesale and retail trade.

Table A.4: Major Industry by Sex and Age						
Maior in ductor			То	tal		
Major muusuy	Total	15 - 29	30 - 44	45 - 59	60+	Median
Total	27,096	9,335	10,395	5,829	1,537	36.1
Agriculture Forestry and Mining	5,983	2,460	2,023	1,219	281	33.9
Manufacturing	3,563	923	1,163	993	484	41.1
Utilities and Repair & Installation of Equipment	271	52	153	60	6	38.2
Construction and Related Activities	535	158	238	116	23	36.9
Wholesale & Retail Trade and Repair of Motor Vehicles	4,784	1,777	1,680	1,056	271	35.5
Transportation Storage and Courier Activities	1,143	416	528	185	14	34.4
Accommodation and Food Service Activities	196	69	86	38	3	35.1
Information and Communication	586	188	284	91	23	35.5
Financial Insurance and Real Estate Actvities	805	420	288	86	11	29.4
Professional Scientific and Technical Activities	285	108	108	66	3	34.8
Administrative and support service activities	700	279	246	146	29	34.3
Public Administration	2,021	455	1,041	459	66	38.0
Education	514	132	232	132	18	38.1
Health	784	253	371	137	23	35.6
Arts Entertainment Recreation and Other Service Activities	2,495	604	1,252	529	110	37.7
Activities of households as employers	64	21	21	16	6	37.9
Undifferentiated own use	2,219	972	623	464	160	33.3
Activities of extraterritorial organizations and bodies	148	48	58	36	6	36.7

Source: 2010 Kiribati Census unpublished tables

The median ages for the different types of work at the time of the census were remarkably similar – all in the mid-30s (Table A.5). The largest group of economically active people were government employees, at about 1 in every 4 of those active, followed by those producing goods for sale. About 1 in every 3 of the economic active persons 30 to 44 were government employees, but that percentage then decreased with age. The percentage producing goods for sale increased with age, for the most part, rising to 1 in 3 for those 60 years and over.

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Economic Activity	Total	Percent	15 - 29	30 - 44	45 - 59	60+	Median
Total	27,096		9,335	10,395	5,829	1,537	36.1
Percent		100.0	100.0	100.0	100.0	100.0	
Government employee	6,721	24.8	20.4	33.1	21.5	7.7	36.3
Private employee	4,258	15.7	18.2	15.6	13.4	10.4	34.0
Employer	1,118	4.1	3.5	4.8	4.2	2.8	36.9
Self-employed	1,343	5.0	4.6	4.6	5.5	7.0	37.5
Voluntary work	578	2.1	2.3	1.8	2.3	2.9	36.1
Unpaid family work	2,915	10.8	13.1	8.1	10.7	14.7	34.2
Producing good for sale	6,153	22.7	21.5	20.1	26.7	32.0	37.6
Producing goods for own consumption	4.010	14.8	16.3	11.8	15.6	22.4	35.9

Table A.5: Economic Activity by Age, Kiribati: 2010

Source: 2010 Kiribati Census unpublished tables

Table A.6 shows characteristics of adults not working by age. About 39 percent of the 37,000 not working claimed they were available for work. The percentage increased with age, so while almost half of those 15 to 29 years old not working were available to work, only about 7 percent of those 60 and over were in that category. About 45 percent of the 15 to 29 year olds not looking for work were students, as might be expected. In the next age group, those 30 to 44, about 61 percent of those not actively looking were full-time homemakers.

Table A.6: Characteristics of Person Looking for Work, Kiribati: 2010

Looking for work	Total	15 - 29	30 - 44	45 - 59	60+
Total	37,125	19,664	7,636	5,863	3,962
Percent available to work	38.3	49.4	41.5	18.4	6.7
Actively looking for work	11,491	8,167	2,524	679	121
Not actively looking	25,634	11,497	5,112	5,184	3,841
Percent		100.0	100.0	100.0	100.0
Didn't want to work	3,635	14.5	20.6	14.0	4.9
Full time homemaker	9,344	32.5	60.9	36.4	15.9
Student	5,248	44.7	1.3	0.4	0.5
Disabled	688	1.4	2.8	3.9	4.7
Believe no work available	567	2.2	3.5	2.1	0.5
Retired / Old age	4,912	0.5	2.6	38.0	71.6
Weather / No transport	47	0.3	0.3	0.1	0.0
Other	1,193	3.9	8.1	5.1	1.8

Source: 2010 Kiribati Census unpublished tables

Table A.7 shows economic activity by highest educational attainment. As would be expected, those economically active had higher educations than those not economically active. And, those in paid employment had the highest attainment of all.

Table A.7: Labor Force by Educational Attainment, Kiribati: 2010	0
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		No	Primary		Senior		Some	Bachelor's
Detailed Labor Force	Total	school	leaving	Form 3	Secondary		college,	degree
		completed	certificate	certificate	Certificate	Diploma	no degree	or higher
Total	65,802	6,613	19,983	14,893	22,330	698	488	797
In the Labor Force	39,014	3,112	11,087	8,231	14,927	594	394	669
Percent	59.3	47.1	55.5	55.3	66.8	85.1	80.7	83.9
Paid employees	19,581	1,428	5,501	3,623	7,608	518	299	604
Percent	29.8	21.6	27.5	24.3	34.1	74.2	61.3	75.8
Employee government	6,717	153	907	941	3,732	384	197	403
Employee private	4,254	275	1,043	870	1,832	65	53	116

Employer	1,118	55	287	222	454	33	24	43
Self-employed	1,343	152	524	239	382	17	10	19
Producing goods for sale	6,149	793	2,740	1,351	1,208	19	15	23
Unpaid employees	7,498	1,091	3,079	1,582	1,637	25	51	33
Voluntary work	577	69	179	111	168	11	21	18
Unpaid family work	2,914	499	1,132	634	631	6	6	6
Own consumption	4,007	523	1,768	837	838	8	24	9
Unemployed	11,935	593	2,507	3,026	5,682	51	44	32
Percent of Paid LF	37.9	29.3	31.3	45.5	42.8	9.0	12.8	5.0
Not in the Labor Force	26,788	3,501	8,896	6,662	7,403	104	94	128
Student	5,374	99	551	2,108	2,548	19	31	18
Home duties	9,731	1,090	3,506	2,390	2,659	36	18	32
Inactive	5,811	846	2,058	1,273	1,577	15	16	26
Retired	5,102	1,183	2,499	779	535	32	26	48
Disabled	770	283	282	112	84	2	3	4

Source: 2010 Kiribati Census unpublished tables

About 27,000 working adults in Kiribati reported occupations in 2010. Of those, the largest numbers were skilled agriculture and fisheries workers (7,400 or about 1 in 4), Service and Sales (4,200), Craft and related workers (also 4,200), elementary occupations – that is, subsistence (3,200), and professionals (3,100). The largest number of workers with Bachelor's degrees or higher were professionals, followed by legislators and managers (Figure A.5). Those with little education were most likely to be doing agriculture and fishing or being service workers and crafts workers.



Table A.8 shows labor force participation by the ability to write in English and the Kiribati language in 2010. Almost 80 percent of the adults in Kiribati could write in English, and about 78 percent could write in both English and the Kiribati language. More than 83 percent of those in the labor force could write in English, which is a good sign for integration into the Australian or New Zealand labor force should they be able to migrate and choose to do so. Almost 96 percent of the Kiribati Government employees were able to write in English, as well as 90 percent of private sector employees. All of these bode well both for those staying in Kiribati over time and those moving.

Table A.8: Ability to Write in English and Kiribati, Kiribati: 201	0
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Detailed Labor Force	Can this person write in English?									
	Total			Yes			No			
	Write in Kiribati?			Write in Kiribati?			Write in Kiribati?			
	Total	Yes	No	Total	Yes	No	Total	Yes	No	
Total	65,874	63,942	1,932	52,240	51,684	556	13,634	12,258	1,376	

In the Labor Force	39,034	38,075	959	32,557	32,180	377	6,477	5,895	582
Percent in the labor force	59.3	59.5	49.6	62.3	62.3	67.8	47.5	48.1	42.3
Paid employees	19,593	19,122	471	16,778	16,553	225	2,815	2,569	246
Unpaid employees	7,503	7,231	272	5,361	5,288	73	2,142	1,943	199
Unemployed	11,938	11,722	216	10,418	10,339	79	1,520	1,383	137
Percent of Paid Labor Force	37.9	38.0	31.4	38.3	38.4	26.0	35.1	35.0	35.8
Not in the Labor Force	26,840	25,867	973	19,683	19,504	179	7,157	6,363	794
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Source: 2010 Kiribati Census unpublished tables

Migrants from the Kiribati Census

As noted in earlier sections, because of its vulnerability to climate changes, migration is inevitable. Several researchers, including Ives (2016), report on the current problems on the ground.

The 2015 census asked three questions on _ migrants who had left the households. These

Table A.9: Year	r by Migrated by Numb	er Migrating, Kiribati: 2015
	<u> </u>	<u> </u>

Year Migrated	Total	1	2	3	4	5+	Migrants
Total	982	643	186	64	42	47	1,648
2015	347	239	60	23	15	10	545
2014	269	178	52	16	9	14	446
2013	164	97	41	13	8	5	280
2012	131	83	24	6	8	10	240
Before 2012	71	46	9	6	2	8	137

Source: Unpublished 2015 Kiribati Census

questions could only be asked at households where someone was there to report so the results are less than they would be since units where everyone migrated could not be enumerated. Table A.9 shows that about 1,650 people being part of the household but away, either temporarily or permanently. About 1,000 departed in 2014 or 2015, so 2/3rds of those leaving.

Table A.10: Reason for Migrating by Number of Migrants, Kiribati: 2015											
						5 or					
Reason for migrating	Total	1	2	3	4	more	Total				
Total	982	643	186	64	42	47	1,648				
Pacific Access Category (PAC)	119	62	20	9	11	17	270				
Marriage	70	46	15	4	3	2	113				
Returning home	104	59	24	8	9	4	190				
Other	689	476	127	43	19	24	1,075				
Source: Unpublished 2015 Kiribati Census											

As noted elsewhere, Kiribati were eligible for the Pacific Access Category (PAC) program. About 300 of the migrants were in that program, although

some in the "other" category were almost certainly also in that program (Table A.10). Others migrated for marriage or were returning home since they had migrated earlier.

Wealth

Finally, Principal Components Analysis in STATA developed a wealth index. Table A.11 and Figure A.6 show quintile percentages for characteristics in the census. As the quintiles increased, the percent Protestant also increased, while percent Catholic decreased. Those with more assets had fewer children, were more likely to have ever gone to school, were more likely to have finished at least Form 7, and were more likely to speak English. While only 3 percent of the lowest quintile used the internet, 30 percent (or about 10 times the percentage) of the highest quintile used the internet. The top 20 percent were least likely to smoke or use kava, but were about the same as the others for use of alcohol. As would be expected, those in the highest quintile were the most likely to be in paid employment, and having managerial, professional, or associate occupations.

Table A.11: Percentages for Selected Characteristics by Wealth Quintile, Kiribati: 2015

Characteristic	Total	Lowest	Second	Middle	Fourth	Highest
Catholic	57.8	64.5	59.9	58.6	58.8	50.4
Kiribati Protestant Church	31.4	28.7	31.6	30.0	29.5	35.7

Females 35-44 CEB	3.55	4.09	3.85	3.70	3.39	3.05
Never attended school	6.8	9.1	8.0	7.6	6.2	4.4
Highest Level Form 7 or more	6.3	0.9	1.8	4.7	6.4	13.5
Able to Speak English	70.4	60.8	65.1	69.9	71.8	79.6
Use the Internet	14.3	2.9	4.4	10.1	15.5	30.6
Smoke	39.2	49.7	45.8	41.3	37.5	28.8
Drink alcohol	22.7	22.0	21.2	22.2	24.3	23.1
Drink kava	26.9	31.9	30.3	28.7	25.9	21.4
Play sports	32.9	35.8	34.5	33.2	31.2	31.3
Main role: Income earner	20.6	10.8	13.6	20.5	24.1	27.8
Economic Status:						
Paid employment	36.0	34.0	34.3	34.7	34.9	40.1
Subsistence	4.0	6.6	7.3	4.5	2.7	1.3
Not Employed	59.9	59.4	58.4	60.9	62.3	58.6

Source: 2015 Kiribati Census Unpublished Table



Tuvalu

Tuvalu is one of the smallest countries in the world, both in geographic size and population. Until Independence it was part of the Gilbert and Ellis Islands colony, administered by Great Britain. Since the Capital was in Tarawa in what is now Kiribati, government employment was there. After Independence, many Tuvalu government workers returned, but others did not. While those who stayed appear in the Kiribati censuses, because few people migrated the other way, few Kiribati appear in the Tuvalu census reports. Gerard Finin described the economic situation in Tuvalu after independence in an early paper (2002).

Demographics

Almost 11,000 people were living in Tuvalu in 2012. Another 1,200 reported as being away from Tuvalu at the time of the census. Hence, the census enumerated about 12,000 people as being present or absent. Tuvalu had very few visitors in 2012, so the *de jure* population of 12,000 included most of those who lived in Tuvalu or were likely to return to Tuvalu under conditions.

The total Tuvalu population had 108 males for every 100 females. Usually the relationship is the other way around – more females than males – because females live longer. So, either females

have moved to Australia and New Zealand, or some were missed in the census. But most likely, since the numbers are small, they are also correct. The resident population had 105 males for each 100 females, but 4 males for each 3 females were away but reported in the housing units.

The median age was about the same for the residents and the migrants. The median age of the total population was 24.3 years, with the median for the resident population being 24.1 and the median for the non-residents at 25.1. Resident females were 2 years older than the males, but the non-resident males were 4 years older than the females. So, the migrants, as expected, skewed male. But the population was young, so the population will continue to increase without more emigration.

The population pyramid shows a traditional pyramid structure. Younger ages were greater than the older ages. Numbers increased with age (Figure A.6). Emigrants showed a very different structure with the working age population predominating. The graph shows percentages, so is more striking than if it showed actual numbers. But a fair number of people 20 to 24 years old did not live in Tuvalu.



Figure 5.7 shows the series of total fertility rate estimates based on the 1968 through 2012 censuses, using the own-children fertility estimation method. The method reverse survives the women and children from a single source to produce age-specific and total fertility rates. The average woman in the early 1960s was having over 6 children. But then Tuvalu saw a rapid decline in total fertility to 3 children per woman in the late 1970s - a 50 percent decrease. However, unlike

in many other countries, that trend changed, and the total fertility rate creeped up to 4 children per female, where it has remained since about 1990.

Within Tuvalu, considerable lifetime migration occurred. Of the 10,640 residents, only 43 percent were living on the island of birth (Table A.12). The median age of those who did move was 8 years older than for those who did not move -28 years compared to 20 years. Hence, young people remained on their islands, but many moved later for jobs in the urban areas.

Table A.12: Birthplace by A	ge, Tuvalu:	2012						
Birthplace	Total	0 - 14	15 - 29	30 - 44	45 - 59	60 - 74	75 +	Median
Total	10,640	3,496	2,837	1,662	1,738	721	186	24.6
Tuvalu (this island)	4,620	1,870	1,248	522	588	291	101	20.3
Other Islands/Countries	6,020	1,626	1,589	1,140	1,150	430	85	28.1

Source: 2012 Tuvalu Population and Housing Census

Labor Force

About 2,178 of the 7,144 adults (population 15 years and older) did paid employment (Figure A.8). Another 1,015 were unemployed, that is, not working for pay but looking for paid work. Hence, about 45 percent of the adult population were in the labor force (including the unemployed). And, about 32 percent of the adults were unemployed - that is, they would have liked paid work, but could not get it. The rest of the population was doing some other type of economic activity, or none at all.



Almost half the adults 15 to 29 were in the labor force, but about half of the adults were unemployed (Figure A.9). Adults 20 to 44 years old had the highest labor force participation, at 63 percent. But after that the percentage in the labor force decreased rapidly, with only 2 out of 5 of those 45 to 59, and small percent of those 60 years and over. The unemployment rate also decreased with age, from 1 in 4 of those 30 to 44, then to about 1 in 6 of those 45-59, and smaller percentages for those older.



The median age of the adult population only in 2012 was 37 years (Table A.13). The average age of the paid employees was also in that range, so young people just getting their education and looking to join the labor force would have to wait for some years, unless the economy expands.

Table A.13: Looking for Work by Age, Tuvalu: 2012											
Looking for Work	Total	15 - 29	30 - 44	45 - 59	60 - 74	75 +	Median				
Total	4,966	2,107	878	1,162	641	178	36.4				
Yes	1,015	612	257	134	11	1	27.4				
No	3,951	1,495	621	1,028	630	177	41.6				

About 4,000 of the adults were not working for pay and also were not looking for a

Source: 2012 Tuvalu Population and Housing Census

job. About $1/4^{th}$ of those were too old to work (or retired). The data were not completely edited because a few young people were already "retired" (Table A.14 and Figure A.10). Another 1 in 4 said they did not want to work – some people prefer to do only subsistence – and those are unlikely to want to migrate.



Of the 5,000 people not working, about 1/3rd were available to work, whether or not they were looking for a job (Table A.14). About equal numbers of the 15- to 29-year-olds were available (and not available) to work, and the percents available then declined with age. The average age of those not available was about 46 years compared to about 28 for those available.

Table A.14: Available to Work by Age, Tuvalu: 2012

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Available to Work	Total	15 - 29	30 - 44	45 - 59	60 - 74	75 +	Median
Total	4,966	2,107	878	1,162	641	178	36.4
Yes	1,681	1,005	393	257	25	1	27.5
No	3,285	1,102	485	905	616	177	45.9

Source: 2012 Tuvalu Population and Housing Census

The distribution of occupations among the adult workers in 2012 saw "service workers" as the largest category, followed by technicians and professionals (education and health workers). But the distribution of occupations was diverse among the various occupation categories (Figure A.11).

The largest industry category was public administration in 2012. About half of the adult working population was in general public administration, or education or health. The private sector was smaller. But Tuvalu did have diversity in the distribution of its industries.



Education



Educational attainment showed a picture of increased education by age group (Figure A.13). As the figure shows, in particular, the percentage with some secondary schooling increased considerably in recent years. However, the percentage finishing at least Form 7 and having tertiary education, including vocational training, did not increase in numbers between the 30 to 44 and 15 to 29 group. Still, the percentages of tertiary educated are significant enough that if they migrated, they should be able to find jobs.

Even as isolated as Tuvalu is from the rest of the world, many residents had a mobile phone and computers in 2012. About 57 percent of the population had access to a mobile phone. The peak of about 2 out of every 3 was in the 15- to 29-year-old age group (Figure A.13). About 2 out of every 5 used a computer, and more than 1 in 3 had access to



the internet. In each case, those 15 to 29 were most likely to have these conveniences. And, of course, these are the most likely potential migrants. The median age for mobile use was 28, compared to 26 for computers and 27 for the internet. These are potential migrants already preparing for the technology needed should they migrate.

Migration

Residence 3 years before the census – in this case in 2009 – shows the likelihood of migrating – at least of migrating into Tuvalu and from island to island. About 7,500 people – 3 in every 4 – of the Tuvalu population 3 years and older in 2012 lived on the same island in 2009 as 2012. The other $1/4^{\text{th}}$ either lived on a different island or were outside the country in 2009. The median age of those who did not move at 27.2 years was greater than those who moved (25.5 years), a reversal of the life-time migration.

Finally, returning to Tuvaluans outside Tuvalu, Figure A.14 shows the age for the 1,200 individuals. The largest group away were those 15 to 29, so students and young people looking for work outside.



Even if all of the Tuvaluans left Tuvalu, they could easily be absorbed into the populations of the major powers with less than a ripple. But, even then, the Tuvalu population clearly has the skills and education to move right into jobs in the receiving populations.

Social Cohesion

Pacific Islanders live communally, and those on atolls are even more likely to work towards decreasing individual goals to create and maintain social cohesion. Because it is often difficult to "get away" from potential problems and conflicts, generations of islanders have learned to sublimate their individual interests to those of the group. Naturally, these actions create and maintain ties, whether on their island, in urban-rural exchanges, or when some migrate and send back remittances.

Islanders eat together and drink together to build and maintain the ties. Traditionally, they also did daily physical labor, which kept them physically fit. Fewer adults do full-time subsistence activities in places like the FSM. The U.S. heavily subsidizes the government, so allowing workers to buy canned tuna rather than go fishing. Hence, the population has become less fit. Many of these potential migrants must leave in order to get medical care in Western centers.

Table 5.16 looks at variables that make up measures of social cohesion. Researchers collected survey data between 2004 and 2006. The table compares the results for Chuuk in 2006 with Kiribati for the period 2004 to 2006. Each survey disaggregated the results by sex. Most of the results are shown as summary measures.

Table A.15A shows Kiribati adults were more likely to smoke (at 58 percent) than those on Chuuk (30 percent). Chuuk's smokers started about one year earlier than those in Kiribati and smoked more than twice as many cigarettes as Kiribati smokers. Over 4 out of 5 Chuuk adults smoked manufactured cigarettes (which they would have to buy – showing better finances) than the 2 in 5

in Kiribati. About the same percentage of people in each place were lifetime abstainers of alcohol, at 7 in every 10 adults. So 3 in 10 were regular drinkers, but only about 1 in 10 of the Chuuk adults abstained in the previous year compared to 3 in 10 of those in Kiribati.

Table A.15A	Tobacco Use and Alcohol	consumption.	Chuuk and Kiribati:	2006
1 abic 11.10/1.	100ucco ose una meono.	consumption,	Chuuk and Kinouti.	2000

	Chuuk 2006			Kiı	4-2006	
Disease or Habit	Total	Males	Females	Total	Males	Females
Tobacco Use						
Percentage who currently smoke tobacco	30.5	48.9	11.6	58	74.1	43.1
Percentage who currently smoke tobacco daily	25.1	42.1	7.5	54.8	71.5	39.2
For those who smoke tobacco daily						
Average age started smoking (years)	17.2	16.6	20.9	18.4	17.6	19.7
Percentage of daily smokers smoking manufactured cigarettes	83.8	83.7	84.5	44.4	43.6	45.7
Mean number of manufactured cigarettes smoked per day (manufactured cigarettes)	16.3	16.7	13.9	5.8	6.6	4.4
Alcohol Consumption						
Percentage who are lifetime abstainers	70.5	46	95.8	69.6	46.5	91.2
Percentage who are past 12-month abstainers	11.8	20.8	2.4	30.4	53.5	8.8
Percentage who currently drink (drank alcohol in the past 30 days)	17.7	33.2	1.8			
Percentage who engage in heavy episodic drinking in the past 30 days		48.4	37.4			

Source: STEPS surveys of FSM and Kiribati 2006.

Adults on Chuuk ate fruits and vegetables about 3 times a week, compared to twice a week for Kiribati. Both were more likely to eat vegetables than fruits (Table A.15B). Almost none of the Kiribati adults ate as many as 5 servings of fruits and vegetables compared to about 10 percent of those on Chuuk who did.

Table A.15B: Fruits and Vegetable Consumption and Physical Activity, Chuuk and Kiribati: 2006

	Chuuk 2006			Kiribati 2004-2006		
Disease or Habit	Total	Males	Females	Total	Males	Females
Fruit and Vegetable Consumption (in a typical week)						
Mean number of days fruit consumed	2.7	2.6	2.7	1.6	1.6	1.6
Mean number of servings of fruit consumed on average per day	1.1	1.1	1.1	0.4	0.5	0.4
Mean number of days vegetables consumed	3.1	3.0	3.2	2.0	1.9	2.1
Mean servings of vegetables consumed on average per day	1.0	1.0	1.1	0.4	0.4	0.4
Percent eating less than 5 servings fruit and/or vegetables per day	90.4	91.3	89.5	99.5	99.4	99.6
Physical Activity						
Percentage with low levels of activity (defined as < 600 MET-minutes per week)*	64.7	60.5	68.9	44.3	34.8	52.5
Percentage with high levels of activity (defined as \geq 3000 MET-minutes per week)*	24.1	29.6	18.5	27.8	38.5	18.4
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	5.7	12.9	2.1	38.6	60.0	25.7
Percentage not engaging in vigorous activity	79.9	73.1	86.7	78.2	64.8	90.0

Source: STEPS surveys of FSM and Kiribati 2006.

While about 2 in every 3 Chuukese adults participated in low level physical activity each week, this was true for less than half of the Kiribati adults (Table A.15C). About 1 in 4 of each group participated in high levels of physical activity, with those in Kiribati being much more likely to spend much more time doing physical work. Fishing is physical activity, so Kiribati males averaged an hour of physical activity every day. But in both places, 4 of every 5 adults did not engage in vigorous physical activity.

Both sample groups were overweight or obese as defined by their BMIs. More than 6 in 10 of the Chuukese were overweight and more than 7 in 10 of the i-Kiribati fell in this category. And, more than 1 in 3 of each group were obese. These included about 1 in 4 of the Chuukese males, 1 in 3

of the Kiribati males, and about half of the females in each group. Blood pressures were in normal ranges. More than 1 in 3 of the Chuukese were in the diabetes range compared to about 1 in 5 of those in Kiribati.

		Chuuk 20	006	Kiribati 2004-2006		
Disease or Habit	Total	Males	Females	Total	Males	Females
Physical Measurements						
Mean body mass index - BMI (kg/m ²)	28.4	26.5	30.3	29.1	28.1	30.1
Percentage who are overweight (BMI $\ge 25 \text{ kg/m}^2$)	62.6	51.3	74.1	72.4	67.2	77.4
Percentage who are obese (BMI \ge 30 kg/m ²)	35.1	23.1	47.3	39.9	32.3	47.2
Average waist circumference (cm)		88.4	94.9		90.0	92.6
Mean systolic blood pressure - SBP (mmHg), currently on meds for raised BP	115.5	119.0	112.1	118.7	124.3	113.4
Mean diastolic blood pressure - DBP (mmHg), currently on meds for raised BP	70.1	69.6	70.7	74.4	75.6	73.2
Percentage with raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg)	10.1	10.7	9.5	13.5	16.2	11.0
Biochemical Measurement						
Mean fasting blood glucose, currently meds for raised blood glucose : mmol/L	6.0	5.9	6.2	5.6	5.7	5.4
Percentage with raised fasting blood glucose or meds for raised blood glucose \cdot capillary whole blood value $\geq 6.1 \text{ mmol/L} (110 \text{ mg/dl})$	35.4	34.4	36.4	20.4	22.0	19.0
Mean total blood cholesterol, currently on meds for raised cholesterol : mmol/L	4.6	4.5	4.7	4.6	4.5	4.7
Percentage with raised total cholesterol ($\geq 5.0 \text{ mmol/L or} \geq 190 \text{ mg/dl}$)	19.2	12.4	24.2	25.2	22.5	27.1

Table A.15C: Physical and Biochemical Measurements, Chuuk and Kiribati: 2006

Source: STEPS surveys of FSM and Kiribati 2006.

Finally, over 7 in 10 of the Kiribati sample had 3 or more risk factors at all ages (Table A.15D). For the Chuuk sample, more than half of those 25- to 44-year-olds had 3 or more risk factors compared to 7 in 10 for those 45 to 64 years old.

Table A.15D: Combined Risk Factors, Chuuk and Kiribati: 2006

		Chuuk 20)06	Kiribati 2004-2006						
Disease or Habit	Total	Males	Females	Total	Males	Females				
Summary of combined risk factors										
current daily smokers · overweight (BMI≥25 kg/m ²)										
\cdot less than 5 servings of fruits & vegetables per day raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg or										
low level of activity	on medication	for raised BP)								
Percentage with none of the above risk factors	1.0	1.3	0.6	0.1	0.0	0.1				
Percentage with three or more of the above risk factors, aged 25 to 44 years	56.6	54.2	59.0	72.7	77.2	68.8				
Percentage with three or more of the above risk factors, aged 45 to 64 years	71.5	75.5	67.8	79.0	80.4	77.7				
Percentage with three or more of the above risk factors, aged 25 to 64 years	62.4	62.4	62.4	74.6	78.2	71.5				

Source: STEPS surveys of FSM and Kiribati 2006.

Obviously, social cohesion involves more than physical fitness. The Micronesian cultures all require social mechanisms to maintain equanimity in the societies. And, for the most part these are maintained. Few crimes are committed, although, especially in places like Chuuk, lack of jobs and lack of recreational facilities and too much time sometimes lead to anti-social behavior. Occasionally, these behaviors continue after migration. At least with the FSM migrants, their migration is very traditional U.S. migration. They start with small beachheads, followed by immediate relatives, and then extended family, and then other relatives, all first living with or close to other relatives. They then go off on their own, becoming regular members of Hawaii or Guam or U.S. Mainland society, paying taxes and taking part in work and church activities.

Functioning of the family unit

Table A.16 and Figure
A.14 show the types of
households in the 2015
Kiribati Census. The
table shows 4 types of
nuclear families (that
is, head, spouse,
children, and step-
children only) –
married couples, with

	Wi	th an Emig	rant	Nun	nber of	Total		
Household Type	Total	Number	Percent	Total	1	2	3+	Emigrants
Total	17,772	982	5.5	982	640	183	159	1,708
Married couple male head	5,017	150	3.0	150	101	28	21	250
Married couple female head	429	15	3.5	15	12	3	0	18
Male head no spouse	205	14	6.8	14	6	3	5	34
Female head no spouse	439	37	8.4	37	28	5	4	57
Extended family male head	5,052	276	5.5	276	171	45	60	520
Extended family female head	1,988	177	8.9	177	124	32	21	278
Non-family male head	3,029	182	6.0	182	119	34	29	320
Non-family female head	1,067	106	9.9	106	62	30	14	187
Male person only	367	14	3.8	14	9	2	3	24
Female person only	179	11	6.1	11	8	1	2	20
Sources 2015 Vinibati Conques		A 4 - 1 1 - 4						

Source: 2015 Kiribati Census unpublished tabulations

either a male or female head of household, and households with a male head but no wife present, and female households with no husband present. These 6,000 households were about $1/3^{rd}$ of all the households in the country. Another 7,000 households were extended families; these were households with other relatives, like cousins, aunts, and in-laws as well as the nuclear family. And another 4,000 were households where the head was not related to the other people in the unit, even though those people might be related to each other. These were non-family households. Finally, about 500 people lived alone.

As discussed earlier, about 1,000 of the 18,000 households (about 5.5 percent) had at least one emigrant reported. The table shows that married-couple families were the least likely to have an emigrant reported since they were still a nuclear family. Female-headed households of every type were more likely than males to have an emigrant. If the male were present, he most likely would have been considered the head of the household. We cannot tell the sex of the emigrants since that was not asked. Almost 10 percent of the female-headed non-family households had an emigrant, showing that when the male leaves, other people move into the house, at least in some cases. Similarly, 9 percent of the extended family female-headed households and 8 percent of the female-headed households with no husband present also had at least one emigrant reported.



The extended family male-headed households had the largest number of emigrants reported, at 520, or about $1/3^{rd}$ of the total. Perhaps they sent out young people to work and send home remittances. Non-family male-headed households were next largest, followed by extended family female-headed households and married couple male-headed households. Of course, the absolute number of households of that household type influenced these numbers.

Wealth (based on assets) had some

influence on emigration. As Table A.17 below shows, richer households were more likely to have emigrants than poorer households. Of the 1,000 households with emigrants, about 3 in 5 were in the two highest quintiles, compared to less than 1 in 4 in the lowest two quintiles. Only

about 2 in 5 of the households without emigrant were in the highest 2 quintiles. Hence, wealthier households were more likely to have migrants. Except for female-headed households with no husband present and single-person households, most emigrants for each category were in the top two quintiles. Poorer households were less likely to fund emigrants going abroad.

		With e	migrants		Without emigrants					
Household Type	Total	Quin 1& 2	Quin 3	Quin 4 & 5	Total	Quin 1& 2	Quin 3	Quin 4 & 5		
Total	982	23.7	16.0	60.3	16,790	41.0	20.2	38.8		
Married couple male head	150	32.7	16.7	50.7	4,867	51.6	22.8	25.7		
Married couple female head	15	13.3	13.3	73.3	414	25.8	26.3	47.8		
Male head no spouse	14	28.6	14.3	57.1	191	57.6	19.4	23.0		
Female head no spouse	37	37.8	16.2	45.9	402	50.5	19.9	29.6		
Extended family male head	276	27.2	18.1	54.7	4,776	43.7	18.6	37.8		
Extended family female head	177	18.6	16.9	64.4	1,811	34.0	16.8	49.3		
Non-family male head	182	15.9	13.2	70.9	2,847	27.3	20.6	52.1		
Non-family female head	106	14.2	12.3	73.6	961	20.5	17.0	62.5		
Male person only	14	57.1	14.3	28.6	353	53.0	24.4	22.7		
Female person only	11	36.4	27.3	36.4	168	51.2	22.0	26.8		

Table A.17: Emigrants by Household Type and Quintile, Kiribati: 2015

Source: 2015 Kiribati Census unpublished tables

Kiribati and Tuvalu emigrants to Australia and New Zealand

The OECD International Migration Database uses Excel to show point-to-point migration. Just as very few i-Kiribati emigrate, very few people move to Kiribati annually. For 2013, considerably more than half of the 300 "migrants" came from Germany. New Zealand was second at 72. It is not clear how many of these people were true immigrants, intending to live in Kiribati long term and how many were there to work and then to leave later. Also, it is not clear how many of the 72 New Zealanders were i-Kiribati ethnicity. In any case, the numbers were very small.

Table A.18: Expatriates by country of origin, Selected Countries: 2000											
	Environment and an analytica	Educ	ation	Emigration rate							
	Emigrant population	Primary	Tertiary	Total	Tertiary educ						
Country of birth	(thousands)	(%)	(%)	(%)	(%)						
Kiribati	1.7	41.4	21.9	3.0							
Marshall Islands	5.3	34.9	10.9	17.1							
Micronesia	6.5	26.9	13.3	9.3							
Palau	2.1	12.7	28.3								
Tuvalu	0.9	53.8	8.5								
C D (1	I ' CECE			1 D	1 T (2000)						

For emigration, Table A.18 shows numbers and educational attainment of emigrants from selected Pacific Islands countries by country of origin about the year 2000. The table is useful in comparing the educational attainment of the emigrants. While 22 percent of Kiribati's migrants had a tertiary education,

Source: Database on Immigrants in OECD Countries (DIOC) and Barro and Lee (2000).

Tuvalu migrants were less than half as likely to have that level of education. Almost 3 in 10 of the Palauan migrants had college educations compared to around 1 in 10 of those from the Marshalls and FSM.

Not much government statistical information is readily available on Kiribati and Tuvalu migrants to Australia and New Zealand because the numbers (and so their characteristics) are so limited. As Figure A.15 shows, the numbers of Kiribati born in New Zealand did increase from 1986 when 123 were counted in the census, to 225 in 1991, 318 in 1996, 504 in 2001 and 822 in 2006. Two

additional censuses would provide numbers – for 2011 and 2016 – but the numbers shown show increased from census to census.

The number of I-Kiribati ethnically identified, also increased from census to census, starting with 192 in 1986 and ending with 1,116 in 2006 in this series. More than half of the I-Kiribati were born in Kiribati in 2006, so about $\frac{1}{2}$ of one percent of the population resident in Kiribati. About 1 in 3 of the I-Kiribati were born in New Zealand with smaller numbers born in other places. The population was more female than male in every census.



The migration from Tuvalu was stronger. While the 1986 census counted 105 Tuvalu born, by 2001 more than 1,000 persons born in Tuvalu were counted, and the increase continued in the 2006 census (Figure A.16). The numbers of Tuvaluans increased throughout the period as well, going from 168 in 1986 to about 2,000 in 2001 and 2,600 in 2006. About 44 percent of the Tuvaluans in the 2006 census were born in Tuvalu, and about 36 percent were born in New Zealand. While the 1986 census skewed male for Tuvaluans, and subsequent censuses skewed female.



Table A.19, from Bedford and Bedford (2010), repeats the numbers reported in New Zealand for the 2006, but adds the numbers for Australia. The numbers for Kiribati born were about 400, less than half of those living in New Zealand. And the number for Tuvalu was 118, about 1/10th the size of the New Zealand Tuvalu-born population. The ratios for the ethnic groups were similar.

Australia gave very few approvals of residence for the i-Kiribati, but New Zealand approved more than 1,500. While this number is small, it is still 1.5 percent of the Kiribati resident population at home. Australia gave only 4 approvals for Tuvaluans compared to 700 for New Zealand. This number, of course, is over 5 percent of the Tuvalu home population. For I-Kiribati in New Zealand, 2/3rds of the approvals were for skilled migrants. About 500 of the approvals for Tuvaluans in New Zealand were for skilled migrants or others (including the PACs).

anu ap	piovais ioi	residence	(2004-2007)						
Population	Aust.	NZ	Population	Aust.	NZ	Population	Aust.	NZ	
Birthplace (200	6 census)		Approvals for res	idence (2	2004-7)	Approvals for resi	Approvals for residence (200		
Kiribati	394	822	I-Kiribati			Tuvaluan			
Tuvalu	118	1,227	Total	19	1,511	Total	4	700	
Ancestry/ethnic	city (2006 c	ensus)	Skilled migrant	0	1,064	Skilled migrant	3	25	
I-Kiribati	482	1,116	Family sponsor	19	447	Family sponsor	1	190	
Tuvaluan	336	2,625	Other (incl PAC)	0		Other (incl PAC)	0	485	

 Table A.19: Kiribati and Tuvalu populations in Australia and New Zealand (2006)

 and approvals for residence (2004–2007)

Source: Bedford and Bedford, 2010:108

Table A.20 shows results of the 2006 and 2011 censuses in Australia. The 2011 Australia census enumerated about 150,000 Pacific Islanders, an increase of about 38,000 in the 5 years from the previous census. Almost none of the Pacific Islanders were ethnically I-Kiribati (671 in 2011) or Tuvaluan (433). In fact, these were the two smallest named groups of Pacific Islanders in the census. Unlike Samoa and Tonga, neither Kiribati nor Tuvalu has traditional ties with Australia, and so the numbers have remained very small.

 Table A.20: Pacific Islanders in Australia: 2006 and 2011

Place	2006	2011	Change		Place	2006	2011	Change			
							-	-			

Total	112,140	150,061	33.8	Micronesian	1,106	1,315	18.9
Polynesian	75,216	103,991	38.3	I-Kiribati	482	671	39.2
Tuvaluan	334	433	29.6	Others	624	644	3.2
Samoan	39,996	55,846	39.6	Melanesian	34,421	42,727	24.1
Tongan	18,427	25,095	36.2	Fijian	19,171	23,768	24
Others	16,459	22,617	37.4	PNG	12,550	15,462	23.2
Others	1,397	2,028	45.2	Others	2,700	3,497	29.5

Source: Australia 2006 and 2011 Censuses

This section has shown that the current numbers of migrants from Kiribati and Tuvalu remain very small compared to those from Samoa, Tonga, and Fiji. But, the numbers are increasing census by census, and as beachheads become established, more family members will join those already migrated, and others will start communities of their own. Also, while Kiribati had an adult emigration rate of 5 percent, the rate was more like 20 percent for Tuvalu (Curtain 2015:8).

Labor Supply and Employment

While FSM has now had open labor market access for almost 40 years, many Pacific Island countries have had few opportunities to emigrate. Kiribati and Tuvalu, two low-lying atoll nations, and thus most affected by sea level rise, fall in this category. Both have access to seasonal migration schemes in the region; however, they have struggled to compete with larger, better-resourced labor-sending countries. Collectively they have sent 170 workers through Australia's Seasonal Worker Programme (SWP) and 1,201 through New Zealand's Recognised Seasonal Employer (RSE) Scheme (World Bank 2015).

New Zealand's Pacific Access Category grants the two countries 75 permanent visas each. They have recently been included in a new multi-year visa programme established by the Australian Government. However, the quotas imposed on these schemes mean they are unlikely to deliver significant and long-lasting impacts. Furthermore, the seafaring industry, which they have historically relied on, has declined substantially in the wake of the Global Financial Crisis. As a result, only 2 percent of I-Kiribati and 16 percent of the Tuvaluan population have been able to move abroad.

Table A.21 shows the numbers and labor force participation of Kiribati and Tuvalu males 25 to 64 in New Zealand as compiled from the 2013 New Zealand census. The census enumerated only 330 Kiribati and 360 Tuvalu males of these ages. Of those, 70 percent of the Kiribati males were in the labor force compared to 65 percent of the Tuvalu males. Somewhat less than half of the Tuvalu males in the labor force had no education qualifications compared to 1 in 4 of the Kiribati males. But 35 percent of the Kiribati males received their education at overseas secondary institutions compared to 21 percent of the Tuvalu males. All of the numbers are very small so only present inferential evidence. As more migrants move to New Zealand, they will provide more precise characteristics.

			Kiriba	ti				Tuvalu		
										Not in
		In the Labor Force			Not in the		In the Labor Force			the
										Labor
Education	Total	Number	Percent	Percent	Labor Force	Total	Number	Percent	Percent	Force
Total	330	231	70.0	100.0	57	360	234	65.0	100.0	99

Table A.21: Employment Status, Males 25 to 64, by Educational Attainment, in New Zealand: 2013

No qualifications	75	57	76.0	24.7	15	153	111	72.5	47.4	42
Certificates 1 or 2	33	21	63.6	9.1	0	36	21	58.3	9.0	12
Certificates 3 or 4	60	42	70.0	18.2	15	42	24	57.1	10.3	9
Diplomas 5 or 6	21	9	42.9	3.9	6	30	15	50.0	6.4	9
Bachelor & above	33	21	63.6	9.1	0	24	12	50.0	5.1	6
Overseas secondary	108	81	75.0	35.1	21	75	51	68.0	21.8	21

Source: 2013 New Zealand Census

For comparison, Table A.22 compares labor force participation between iKiribati in New Zealand in 2013 with labor force participation in Kiribati in 2015. Unfortunately, the education categories differed, so only approximations appear in the table. The hierarchy maintains. As noted, about 70 percent of the iKiribati males in New Zealand were in the labor force compared to about 59 percent in Kiribati. (The base was males 25 to 64 in New Zealand but all males 15 years and over in Kiribati, which would account for some of the difference). But about 9 percent of those in New Zealand had Bachelor's degrees or above compared to about 3 percent with some college or a Bachelor's degree in Kiribati. About 13 percent of those in New Zealand had level 5 diplomas or more compared to about 4 percent of those in Kiribati. As expected, the Kiribati emigrants had higher educational attainment.

Table A.22: Employment Status, Males 25 to 64, by Educational Attainment, in New Zealand (2013) and Kiribati (2015)

iKiribati in New Zealand						Kiribati					
		In the Labor Force					In the Labor Force				
Education	Total	Number	Percent	Percent		Education	Total	Number	Percent	Percent	
Total	330	231	70.0	100.0		Total	65,802	39,014	59.3	100.0	
No qualifications	75	57	76.0	24.7		No school completed	6,613	3,112	47.1	8.0	
Certificates 1 or 2	33	21	63.6	9.1		Primary leaving certificate	19,983	11,087	55.5	28.4	
Certificates 3 or 4	60	42	70.0	18.2		Form 3 certificate	14,893	8,231	55.3	21.1	
Diplomas 5 or 6	21	9	42.9	3.9		Senior secondary certificate	22,330	14,927	66.8	38.3	
Bachelor & above	33	21	63.6	9.1		Diploma	698	594	85.1	1.5	
Overseas secondary	108	81	75.0	35.1		Some college or BS or above	1,285	1,063	82.7	2.7	

Sources: 2013 New Zealand Census and 2015 Kiribati Census

Because the numbers of migrants are still so small, further divisions by occupation and industry cannot really be obtained yet. Nonetheless, it is clear that New Zealand promotes a pull for educated potential migrants.