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Tuvalu and New Zealand Case Study Report

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1. Introduction

Relatively unknown a few years ago, in recent years Tuvalu has become a media darling: many television documentaries have been produced about the small archipelago in the last decade, and countless articles have flourished in magazines and newspapers. Apart from some specific details, they all tell pretty much the same story: the story of a small atoll country whose very existence is threatened by sea-level rise, and its quest to accommodate its population abroad as ‘climate change refugees.’ Portrayed as an Atlantis in the making or a ‘canary-in-the-coalmine’ of global warming, Tuvalu is now taken as a prime example of the problems associated with climate change and sea-level rise.

One of the smallest and most remote countries on earth, Tuvalu seems to exemplify a typical case of forced migration induced by environmental change. As time went on, Tuvalu has become perceived through the lens of environmental displacement and vulnerability to climate change, a perception that has been consistently reinforced and sustained by the discourse of its government.

This report looks at the main patterns and characteristics of migration from Tuvalu to New Zealand. New Zealand, and Auckland in particular, is the prime destination for Tuvaluans migrating abroad, with an estimated population of about 3,000 Tuvaluans. What role do environmental factors play in the migration decision? How do environmental factors mingle with other migration factors, and what are the strategies developed to increase resilience? What have been the government policies, in Tuvalu and New Zealand, to manage these migration flows?

In order to answer these questions, this report draws upon fieldwork that was conducted in Tuvalu and New Zealand, within the framework of the EACH-FOR project. A major characteristic of the report, and what we see as a key difference with previous studies on the case, is that the study was conducted both in the origin and destination areas, i.e. in Funafuti (Tuvalu’s main atoll) and the Auckland area in New Zealand.

The first section of this report provides a general overview of Tuvalu, the environmental issues faced by the small country, and the migration processes between Tuvalu and New Zealand. The methods used, which included a standardised questionnaire and expert interviews, are described and

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discussed in the second section. The third section provides the main findings from the fieldwork, both from Tuvalu and New Zealand, and these findings are analysed in a comparative perspective in the fourth section. Finally, the last section is devoted to a discussion on future research directions.

1.1. Synthesis of the context

1.1.1. Historical outlook

The history of Tuvalu remains difficult to write, and large parts of it is still unknown. McDonald (1996: 37) rightly notes that the writing of such histories was 'largely the preserve of non indigenous historians' and that most were 'Western historians writing about "the other."' This might partly explain why little is known about the pre-colonisation era, even though it is widely believed that Tuvalu was first settled by Polynesians around 1,000 BC.

Though some islands of Tuvalu³ were first spotted by the Spanish explorer Álvaro de Mendaña y Neyra in 1568 and again in 1595, it was only in 1819 that Captain Arent de Peyster's ship landed in Funafuti, the island's capital city, making first contact with Tuvaluans.

Christianity was introduced in the 1860s by missionaries from the Cook Islands and Samoa. At the same time, Tuvalu sparked interest from 'blackbirders,' ships that were sailing the South Pacific in search for slaves to work in the sugar cane plantations of Queensland or the guano mines of Peru. Tuvalu, then known as Ellice Islands, was proclaimed as a British protectorate in 1892. One of the reasons given to justify this decision was the protection of the population from hostile raids of blackbirders.

In 1915, the islands were incorporated with the Gilbert Islands (now Kiribati) to form the British colony of the Gilbert and Ellice Islands, and most of the population had been converted to Christianity by then. There were major differences between the two groups of islands however: while Tuvaluans were Polynesians, I-Kiribati were Micronesians.

Funafuti was later transformed into an American airbase during World War II. As a result of soil dug up to build an airstrip, large holes – the 'borrow pits' – were dug at the two ends of the island. Remains of this period can still be seen today, in particular wrecked tanks abandoned in the lagoon and the 'borrow pits', now used as waste dumps, that were never filled up by the American military, despite repeated pleas from Tuvalu government.

Shortly after the war, two other significant population movements occurred: the first one from the atoll of Vaitupu, and the second one from Niutao. In 1951, elders from Vaitupu, led by Donald Kennedy, an Australian expatriate who was also the headmaster of the boarding school, decided to purchase the island of Kioa, an outlier to Fiji. The main reason underlying the purchase was the fear that resources on the island would be too scarce to sustain

³ The island of Nui in 1568 and Niulakita in 1595.

demographic growth. A few dozen families relocated to Kioa by 1983, and were eventually granted Fijian citizenship in 2005, even though the island still enjoys some autonomy and has its own administrative body. British colonial authorities had similar thoughts about Niutao, then Tuvalu's most-populated atoll, and decided to ship some Niutao islanders to the uninhabited Niulakita atoll⁴ in 1949. From then on, Tuvalu, which means 'cluster of eight', would count nine populated atolls. Niulakita remains the least populated atoll, with only about 40 inhabitants. These two displacements reveal that the idea of permanent resettlement was considered by some well before the threats of climate change were known.

Tuvalu suffered significant damage, as well as a heavy toll on human lives, after hurricane Bebe, which hit Funafuti in 1972. A few years later, as Kiribati was seeking to gain independence, Tuvaluans were concerned that their identity could be overshadowed by I-Kiribati, who outnumbered them by seven to one. Thus they opted for secession, and 92 percent of the population voted in favour of it in a referendum held in August 1974. The amiable separation became effective on October 1st, 1975, and Tuvalu gained full independence three years later on October 1st, 1978. Tuvalu rapidly established itself as a parliamentary democracy, and has been served by twelve different prime ministers between 1978 and 2008.

A turning point in Tuvalu's history was the sale of the internet domain '.tv' in 1999. This domain, which had been attributed by the International Standardisation Organisation (ISO), was sold to internet company VeriSign for US\$ 50 million in royalties over a twelve-year period, thus representing a significant part of Tuvalu's annual budget. This unexpected influx of money allowed for a number of development projects.

Tuvalu became a member of the United Nations on September 5th, 2000⁵. Enele Sopoaga was appointed ambassador to the United Nations, and quickly became one of the most vocal advocates of Tuvalu. Sopoaga quickly took up the vice-presidency of the Alliance of Small Island States (AOSIS), a position that would give him a prominent role in the negotiations related to climate change. The government has since consistently used international fora to attract the world's attention to the specific vulnerabilities of small island states and the threats of climate change, and Tuvaluan leaders have been particularly successful in voicing their concerns about climate change to the rest of the world and the international media alike.

⁴ It is interesting to note here that the atoll of Niulakita was not entirely uninhabited, and that some families from Vaitupu had already settled the atoll. This group was promptly shipped back to Vaitupu. The anecdote is narrated in Bennetts and Wheeler photographic essay on Tuvalu, and was orally confirmed during our stay.

⁵ Tuvalu also became a full member of the Commonwealth on the same occasion. The Queen of England remains the official head of state, even though republican movements gained some strength under the leadership of the late Prime Minister Ionatana Ionatana. On April 30th, 2008, a referendum on Tuvalu's transformation into a republic was defeated by a two to one majority.

1.1.2. Geography

Tuvalu is one of only five countries comprised entirely of low-lying islands and atolls, which are 'rings of coral reefs that enclose a lagoon. Despite a territory spreading over 750,000 square kilometres in the South Pacific Ocean, its land area is only of 26 square kilometres, making it the fourth smallest country in the world, after Vatican City, Monaco and Nauru.

Located half way between Hawaii and Australia, the archipelago is made up of six coral atolls and three reef islands. Funafuti, Nanumea, Nui, Vaitupu, Nukufetau and Nukulaelae are all coral atolls, with a lagoon open to the ocean; Nanumanga and Niutao are reef islands, but have a landlocked lagoon, while Niulakita, the smallest entity, doesn't have a lagoon. In addition, Tuvalu also comprises about 120 islets. None of these entities are separated by a distance less than 60 kilometres, and there are 350 nautical miles between the most northern atoll, Nanumea, and the most southern island, Niulakita .

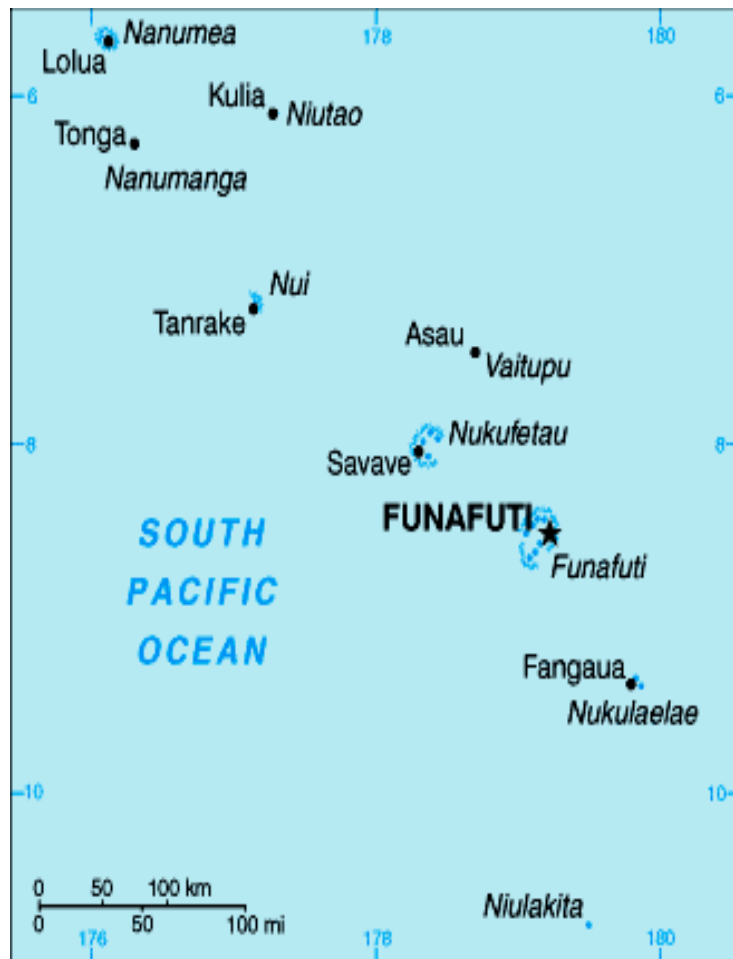


Fig. 1 – Map of Tuvalu⁶

⁶ Source: Intute, University of Manchester

The main characteristics of Tuvalu's geography, and the one that drew most of the attention, is its very low elevation: its highest peak⁷ is at a striking 5 metres above sea-level. This low elevation makes Tuvalu extremely vulnerable to sea-level rise and other climate events.

Furthermore, in the absence of any lake or river, sources of potable water depend exclusively on the rain water that is collected in tanks and reservoirs. The salinity of the soil makes it extremely difficult to grow any crops.

1.1.3. Population

The population of Tuvalu, and of Funafuti in particular, has undergone considerable changes over recent years. The whole population of the island consistently increased over the 20th Century, as shown in the table below:

Island	Area ⁸	1947	1963	1968	1973	1979	1991	2002	Distribution ⁹	Density ¹⁰
Funafuti	2.79	528	687	826	871	2,120	3,839	4,492	47.0	1,610
Nanumea	3.87	746	1,051	1,076	977	844	824	664	6.9	172
Nanumanu	2.78	524	544	585	587	605	644	589	6.2	212
Niutao	2.53	644	797	796	907	866	749	663	6.9	262
Nui	2.83	490	528	569	569	603	606	548	5.7	194
Vaitupu	5.60	728	823	876	948	1,273	1,202	1,591	16.6	284
Nukufetau	2.99	524	655	646	620	626	751	586	6.1	196
Nukulaele	1.82	282	317	354	343	347	353	393	4.1	216
Niulakita	0.42	21	42	54	65	65	75	35	0.4	83
Total	25.6	4,487	5,444	5,782	5,887	7,349	9,043	9,561	100.0	373

Fig. 2 – Tuvalu's population, 1947-2002. Sources: Connell 1983, Secretariat of the Pacific Community 2005, own calculations

The current population is estimated to be around 9,500. An important feature of the demographic evolution of Tuvalu is the internal migration from the outer islands to the main atoll, Funafuti. Given the recent development of Tuvalu, Funafuti has been home to new shops and services, including a hospital, which attracted many migrants. The total population of Funafuti was only 871 inhabitants in 1973, with a population density of 313 inhabitants per square

⁷ Ironically, this point is known as Mount Howard, in reference to former Australian Prime Minister John Howard, who famously refused to ratify the Kyoto Protocol.

⁸ Noted in square kilometres

⁹ Noted in %

¹⁰ Noted in persons per square kilometre

kilometre; Funafuti's population, 25 years later, is currently about 4,500, with an extremely high population density of 1,610 inhabitants per square kilometre. Overpopulation has thus become a major concern for the government, and one of the reasons why emigration is encouraged. The whole population is Polynesian, with a small Micronesian minority (mostly from Kiribati), and only a few immigrants (mostly international volunteers).

1.1.4. Economy

As most atoll countries, Tuvalu is particularly vulnerable to global economic change, due to low levels of income, low infrastructure and a high level of dependency upon foreign aid. Tuvalu only natural resources are fish and taro. Its economy relies heavily on foreign aid, notably through a Trust Fund established in 1987 by the UK, Australia and New Zealand. This Trust Fund was established in order to provide supplementary resources to the country's budget and pay for its deficits. The Fund is not an emergency assistance: only its proceeds can be used, whereas its capital must remain intact. The initial amount of the Fund was AU\$ 27 million, but additional reinvestments, by Japan and South Korea amongst others, made it grow to AU\$66 million.

The Fund represents roughly 25 percent of the GDP, while an additional 20 percent is provided by remittances, mostly from sailors working at sea. Economic activity is overwhelmingly dominated by the public sector: two-thirds of all waged employment is concentrated in the public sector, one of the highest rates in the world. Only one third of the total workforce is formally employed, even though the statistics are somewhat misleading, domestic duties not being considered as unemployment for example. Its GDP per capita is about US\$ 1,600.

Agriculture is extremely limited, mostly due to the salinity of the soils. Copra exports have stopped in the 1990s, due to low market rates, and cultivation of taro remains difficult. The fishing industry is not a high income generator, but Tuvalu benefits from licensing fees sold to distant nations. Manufacturing is almost non-existent, tourism is extremely limited and Tuvalu does not export any goods, apart from collectible stamps.

Foreign aid remains the principal source of income for Tuvalu, and has sometimes led to unsustainable development projects which impacted upon the islands' natural adaptation capacity. In the 1990s, Tuvalu experienced some economic growth, mostly thanks to some 'unusual development strategies', which included capital investment in the United States, the production of collectible postage stamps, and the renting of its telephone country code – 688 – to phone sex companies.¹¹ As explained above, a major shift in Tuvalu's economy occurred with the sale of the internet domain ".tv" in 1999, which provided significant additional resources.

¹¹ This latest venture, however, was quickly abandoned after moral concerns were raised. The venture capital investment in the United States has also come to an end.

1.2. Brief Overview of environmental problems

Small island states are extremely vulnerable to climate change and sea-level rise, as stressed in the latest assessment report of the IPCC, which states:

Sea-level rise is expected to exacerbate inundation, storm surge, erosion and other coastal hazards, thus threatening vital infrastructure, settlements and facilities that support the livelihood of island communities. (...) There is strong evidence that under most climate change scenarios, water resources in small islands are likely to be seriously compromised. (...) Climate change is likely to heavily impact coral reefs, fisheries and other marine-based resources. (...) It is very likely that subsistence and commercial agriculture on small islands will be adversely affected by climate change.

Sea-level rise is naturally a major concern for the Tuvaluan population, and some have already started building small dikes to protect their houses. Actual measurements of sea-level rise, however, are surprisingly scarce, and people tend to rely on their own observations and anecdotal evidence to find proof of the rise.

Hunter (2002) calculated that the average long-term relative sea level change at Funafuti would be a rate of 0.8 +/- 1.9 mm per year, relative to the land. However, Hunter also noted that uncertainties in the calculated trend remained 'undesirably large,' and Connell added that 'sea levels are not now perceptibly rising'. In the absence of reliable data, Tuvaluans turn to empirical observation for evidence of climate change. Two phenomena in particular attracted wide attention. The first one is the disappearance of a small islet in the Funafuti lagoon. The islet, which used to be abundant in trees, has now been reduced to a small pile of sand and rocks, which many see as an evidence of climate change. The second phenomenon is probably more striking and has a deeper impact on the people's perception of the dangers associated with climate change: every year round April, large parts of the atoll are submerged by 'king tides'. King tides are yearly high tides that come directly from beneath the ground, and penetrate it from below. King tides used to occur once in every five or six years; they have now become annual, triggering the fears of some that they might eventually become permanent.

Furthermore, the salinity of the soil has also considerably increased, rendering the cultivation of taro almost impossible. Taro is Tuvalu's main agricultural product. Moreover, the formation of Tuvalu atolls is primarily based on coral reef which barely holds any soils making plantations on the atolls extremely difficult. Declining yields have forced Tuvaluans to rely increasingly on imported products for their diet, resulting in severe health problems, including diabetes.

Another consequence of climate change for small island states is the increasing frequency of extreme weather events. A cyclone is created in the Pacific Ocean when the surface seawater temperature reaches 27° C. The

cyclones can develop into a hurricane which then wanders around in the Pacific Ocean. Several times during recent years the islands have been hit by severe hurricanes even though the most northern part of the island group lies outside the “hurricane belt”. In 1997, Funafuti was hit by the three hurricanes Gavin, Hina and Helly. Memories of the hurricane Bebe, which devastated Funafuti in 1972, are still vivid among the population, and the fear that the atolls could be obliterated by a cyclone and a hurricane might even be higher than the anxiety associated with sea-level rise. Tuvaluans know that they would have nowhere to hide or evacuate in the case of an extreme weather event, and couldn’t plan their migration. They are particularly anxious that a storm surge might coincide with a king tide, which would be especially dangerous if it occurred at night.. A cyclone that devastated Tonga shortly before our fieldwork had further reinforced this fear.

Climate change, however, is far from being the only environmental concern. The lack of freshwater is another major difficulty: without any rivers or lakes, the only source of water across all atolls of Tuvalu is rainwater that the islanders collect in water tanks. Scarcity of water is further compounded with the problems of increased island populations that demand much greater water consumption. Furthermore, Tuvalu atolls continuously suffer twin water problems that consist of freshwater shortage and saltwater flooding. Droughts have been more frequent in recent years.

Another environmental problem concerns waste disposal and treatment. The demographic growth of Funafuti, as well as its increasing reliance of imported goods, has led to a major problem of waste disposal.

1.3. Brief overview of migration processes

Before examining the migration patterns of Tuvaluans, it should be noted that the whole Polynesian region is highly prone to migration. Migration is a significant pattern of lifestyle, and even a social routine at times. Amongst the migrants interviewed, many had migrated several times during their lifetime, some of them up to eight times. Migration has long been significant in Tuvalu. Labour migration first occurred to plantations in Samoa and Queensland, then diversified into the phosphate mines of Banaba (Kiribati) and Nauru. Migration increased again after the Second World War, and further diversified ‘as Tuvaluans were trained to work as merchant seamen on the ships of overseas lines, alongside continued migration to Nauru, both of which activities brought a substantial flow of remittances to Tuvalu’. Phosphate mines in Nauru have now been exhausted however, and migrant workers were sent back to Tuvalu, resulting in a significant decrease in remittances. In the absence of higher education in Tuvalu, most Tuvaluans go abroad to study, mostly to Fiji at the University of the South Pacific (see below).

The Tuvaluan government has been seeking migration opportunities in Australia, Fiji and New Zealand for several years, and is actively promoting an emigration policy, which fulfills a triple objective:

- Alleviates the pressure from overpopulation in Funafuti;

- Increases remittances;
- Responds to the fears of the population regarding the threat of climate change.

We now examine the principal current migration flows.

1.3.1. Internal Migration

The first key pattern of migration in Tuvalu is internal migration. Since the Australian government donated the Nivanga boat to the Tuvaluan government in the late 1990s, migration and movement between the different atolls has considerably expanded. Before the boat was introduced, the only way to move from one atoll to another was a seaplane, whose maintenance was extremely costly and which could only carry a very limited number of passengers. International aid not only brought an easier way to travel between the atolls, but also provided a major 'pull' factor to do so, since Funafuti underwent rapid development in the late 1990s and early 2000s. International support was provided for the establishment of numerous facilities, including a new administrative building, a hospital, a telecommunication centre, a wharf, and the development of the maritime school just outside of Funafuti. Furthermore, the royalties derived from the sale of the ".tv" internet domain allowed for the asphaltting of the road and the introduction of luxury goods such as DVD players and plasma screens on the island. Migration from the outer islands to Funafuti boomed, and the government is now desperately trying to develop services and facilities on the outer islands as well, in order to slow down this continuous flow.

1.3.2. Migration to Fiji

Migration to Fiji is prominent due to the presence of the University of the South Pacific, of which Tuvalu is an associate member, in the capital Suva. Students of the University usually receive a scholarship from the Asian Development Bank or the South Pacific Commission (SOPAC), which allows them to bring their family with them for the duration of their studies. Upon completion of their degree, students – and their families – are requested to move back to Tuvalu. Another reason for Tuvaluan presence in Fiji is international and regional organizations, such as the local offices of UNDP or SOPAC. Tuvaluan civil servants working for these organizations typically settle in Fiji with their families. Finally, a limited, but sustained flow still exists between the atoll of Vaitupu and the island of Kiao, which was purchased from Fiji in 1951. Since 2005, Tuvaluans from Kiao have been entitled to Fijian citizenship. Migration flows between Tuvalu and Fiji have however considerably slowed down since the introduction of a visa for Tuvaluans and other Pacific Islanders. Tine Leuelu, Tuvalu's High Commissioner in Fiji, recalls nonetheless that Tuvaluan presence in Fiji remains and that community organizations are active and well-structured.

Migration to Australia and the United States

Migration to Australia or the United States is extremely limited, due to tight migration policies and controls. According to the Tuvaluan Ministry for External Affairs, there are no more than 300 Tuvaluan residents in Australia, mostly in the area of Brisbane.

1.3.3. Migration to New Zealand

Migration between Tuvalu and New Zealand remains much more significant, since an estimated 3,000 Tuvaluans currently live in New Zealand, mostly in the West Auckland area. Pacific immigration to New Zealand has had a tortuous history: in the 1970s, the New Zealand government was highly concerned with Tongan over-stayers, who were perceived as trouble-makers and arrested by the police in dawn raids. Dawn raids later extended to illegal migrants of all nationalities, who were detained and sent back home, while Polynesians were subject to random searches by the police in the streets: this caused a serious tension in the relationship between New Zealand and its Pacific neighbours, as well as an embarrassment for the New Zealand government. McDonald (1996) observes that New Zealand and its Pacific neighbours are still 'tied into a neo-colonial relationship' by aid, trade and immigration."

Migration to New Zealand is currently possible through two migration schemes: the first one, often confused and misnamed by the media as an environmental migration agreement, is the Pacific Access Category, a scheme that allows an annual quota of 650 citizens from Fiji, Tuvalu, Kiribati and Tonga to settle in New Zealand. Under this scheme, Tuvalu has an annual quota of 75 migrants that is hardly filled up. Immigrants need to meet very stringent conditions before they can move to New Zealand, including a good command of English, a job offer in New Zealand, and the undergoing of a rigorous and costly medical check-up in Fiji. Once these immigrants are settled in New Zealand, they can apply to bring other family members under the Family Sponsored Stream. The other agreement is most recent and was only implemented at the start of 2008. It consists of a seasonal migration scheme that allows Tuvaluans (and other Pacific islanders) to come and work (typically in the agricultural sector) for six or nine months, before workers are sent back home with their wages. It is yet too soon to say how Tuvaluans will take advantage of this programme.

2. Methods

2.1. Justification of the selection

In Tuvalu, fieldwork was conducted on the main atoll of Funafuti. Practical conditions prevented the conduct of fieldwork on Tuvalu's outer islands, even though the perspectives on environmental change and migration might have been different. It should be noted, however, that Funafuti is home to about half of Tuvalu's population, and has been characterised by important inflows of internal migration in recent years, allowing for interviewing respondents born on other islands. Furthermore, it is the only possible departure point from

Tuvalu. The choice of Funafuti, though imposed by technical constraints, seemed therefore to be the most pertinent area to conduct the fieldwork.

As noted above, New Zealand, as the primary destination for Tuvaluan migrants, was also the most pertinent area to conduct fieldwork in the destination region. From January to April 2008, twenty-five (25) Tuvaluan migrant families were randomly selected to complete the questionnaire. The following section discusses the field questionnaire results and findings.

The western metropolitan region of Auckland, including the wards of Waitakere, Massey, Henderson and New Lynn is home to the highest concentration of Tuvaluan residents in New Zealand. Therefore, the majority of the Tuvaluan questionnaire participants were drawn from this suburban region of Auckland with a few exceptions from other regions in New Zealand.

2.2. Discussion of methods

The standard methods of the project were applied in this case study, with the exception that the study was conducted both in the origin (Tuvalu) and destination regions (New Zealand). In both regions, interviews were conducted with migrants (or non-migrants) as well as experts.

Interviews with migrants/non-migrants were conducted according to the standard questionnaire of the project. All interviewees in New Zealand were naturally considered 'migrants', whereas not all Tuvaluan residents were considered 'non-migrants': some of them had already migrated from an outer island.

Respondents were chosen using the snowball method, but departing from different points: each respondent was asked to provide contact details of another potential respondent. The researcher would then balance between the different respondents, according to socio-economic and gender criteria. No random sampling could be used, as population registries were not available. About 20 questionnaires were conducted in Funafuti and another 25 in New Zealand.

Interviews with experts were semi-open interviews. Experts included elected officials, civil servants, representatives of NGOs, church ministers, and journalists. In Tuvalu, these interviews were conducted in Funafuti, and in Auckland and Wellington for New Zealand.

2.2.1. Interviewee characteristics in Tuvalu

All respondents identified themselves as Tuvaluans; about half of them (12) had migrated from an outer island, whereas the others were born in Funafuti. Most of those originating from an outer island had migrated more than 5 years ago, but some had migrated only recently.

Respondents had an average age of 36 years old. Most of them had a high school diploma, whereas three of them were still students. Family size ranged between 3 and 8 people.

2.2.2. Interviewee characteristics in New Zealand

Nationalities of the questionnaire participants included those who identified themselves as Tuvaluan, Tuvaluan-New Zealander, and New Zealander (of Tuvalu ethnicity). The respondents' ethnic groups included all of 9 islands of Tuvalu: Funafuti, Nanumea, Nui, Nukufetau, Nukulaelae, Vaitupu, Nanumanga, Nuitao and Niulakita.

22 questionnaire participants were married (or in de facto status), while 3 were single. The average age of all respondents was 40 years and 9 months old. Respondents' education level distributions were: 15 high school (60%), 8 secondary school (32%), 1 primary school (4%) and 1 currently in university (4%). Respondents' family size ranged from 1 to 6, including respondents' spouse, parents, own children, adopted children and family relatives living together in the same household.

3. Fieldwork Findings & Analysis

3.1. In Tuvalu

3.1.1. Population views

Tuvaluans have varied views on climate change and the need to migrate. These different views can be gathered in two groups: those who didn't want to leave, and those who would like to leave.

a. Those who don't want to leave

The most commonly held view mixes resignation and despair: while acknowledging the reality of climate change, these respondents also expressed a deep attachment to their country, and asserted they wouldn't leave it even if the island was entirely submerged by the ocean.

This is my country, I'm ready to die here. I know some people who are leaving, but I don't want to go with them. I want to stay here (Eti Eseta).

I don't want to leave, if we all leave, Tuvalu is going to die, and I don't want that. We need to be there, this is where we need to be (Luisa Kakamua).

The international community needs to do something to help us. We're not responsible for climate change, so our country cannot disappear. The other countries need to fix this problem (Suilia Toloa).

Others adopted a more optimistic tone, and believed it was possible for the country to adapt, even though it would require international assistance. These mostly regarded migration as a defeat, and would only consider it if all other

strategies had failed. Those holding this view were usually amongst the most educated, and closer to the government.

If we have enough resources to adapt, Tuvalu can be salvaged. It's all a matter of money, you know. I don't think Tuvalu will disappear, there's no need to migrate. It's not God's plan for Tuvalu to move (Sakala Tekavatoetoe).

This discourse, however, is sometimes not based on reality. A representative of the government held this discourse for about half an hour before admitting, off the record, that he was actually due to leave soon and had bought some land in Fiji.

Others refused to acknowledge climate change as a problem, and viewed sea-level rise as a natural process:

We are an atoll country, it is normal that the sea-level changes with the tides and the currents. One day it goes up, the other day it goes down (Risasi Finikaso).

A few reacted angrily to our presence, and claimed that climate change was only an invention of industrialized countries to scare island nations.

We didn't have any problem before people like you came and started talking about climate change... Now the people are leaving for New Zealand because of you (Pulafagu Toafa).

A small, religious minority remained convinced that a divine intervention would save Tuvalu, because God had made the promise to Noah that there would be no more flooding on Earth. The Church is now considering the problem seriously, and has started raising awareness about the problem, as well dismissing Noah's story as a metaphorical legend, not to be taken literally.

b. Those eager to leave

Amongst those considering migration as an option, two different views contrasted: the first group envisioned migration out of the fear that the island would be brutally flooded.

I don't want to wake up one morning with the island washed away, look what happened in the Salomon Islands! I prefer to leave now before I have no other choice: I don't know what can happen to our country, so I will apply for the Pacific Access Category as soon as I will have enough money (Nofalofoa Petero).

Another group considered migration in a more proactive fashion, as a way to reduce environmental vulnerability and develop other projects in New Zealand.

The future of Tuvalu is uncertain, so I think I'll be better off in New Zealand. Life is better in New Zealand anyway. There are no opportunities in Tuvalu (Kumitia Tekaa).

In most cases, environmental factors were mixed with economic and social factors. Most of these would-be migrants had family in New Zealand already, and these family ties were a strong 'pull factor' as well. Migration was often considered to be in the interest of the children, and thus as a risk-reduction strategy for the family.

This overview of attitudes towards climate change and migration shows that migration is not conceived in a deterministic framework, but rather a decision taken by the migrant, based on personal perceptions, values and interests. A similar perception of climate change could lead to two different outcomes (stay/leave), whereas different views on the impacts of climate (Tuvalu will survive / will disappear) could lead to the same outcome. Hence there was no direct causal relationship between climate change, its perception, and migration behaviour. Other factors such as personal values and interests need to be accounted for in order to understand migration behaviours.

3.1.2. Different migration drivers to New Zealand

Concern about climate change was very obvious amongst the Tuvaluan community in New Zealand, even though they had no direct experience of the situation. Almost all migrants interviewed indicated that climate change and rising sea-level had been a concern, even though not always the main one, in their decision to move to New Zealand.

All share a common concern on the climate stake of their home island and are very aware of the trouble and difficulties that their families are facing, back on the island. All fear that their country is in danger of being submerged under the seas, and this fear is widespread amongst all age groups. Most of them had a good understanding or fair knowledge of the impacts of climate change on their islands and have heard from families and/or personally experienced the flooding situations and coastal erosion on the islands.

When I left, it was clear that it would be going worse year after year. My brother was here already with his family, so it was easier for me to leave Tuvalu. I return once a year, because I still have family in Tuvalu. Maybe they'll come as well to New Zealand, one day. That depends on how bad it gets. (...) I don't know if Tuvalu will disappear or what (sic), but I don't think people have a future in Tuvalu, it's going to get worse (Tomalu Talu).

Family ties and social networks played an important role in their migration: many have indicated the help from island community groups for immigration purposes, such as sponsoring the migrants, helping seek employment, or even filling in the immigration application forms. Economic factors also played a significant role in the migration decision, and almost all respondents

mentioned unemployment or insufficient income as a reason that drove their migration decision.

Finally, it should be noted that many of them wanted to obtain New Zealand citizenship, with the ultimate hope of being able to move to Australia. As said above, the Trans-Tasman Travel Arrangement (TTTA), a non-binding immigration procedure applied and supported by both governments of New Zealand and Australia, allows Australians and New Zealanders to travel to, live and work for an indefinite period in one another's country without restriction.

In two years from now I'll be able to get a kiwi passport, I want to go Brisbane. I've always wanted to go to Australia, I'll open a business there. I don't know what kind of business yet, but I want to have my business. Work is too hard here in New Zealand (Molu Tavita).

Overall, though a concern about the future impacts of climate change and its current impacts was generally present in the migration decision, this driver was not always a decisive one, and economic and family factors were also significant drivers. Labelling this migration flow as 'environmental migration' has to do with migrant's own perception of the motives of his/her migration. At the macro-level, this labelling is also a political and deliberate choice, guided by policy strategies, which will be discussed in the following section.

3.1.3. Policy responses

a. Vulnerability and adaptive capacity

Policies and measures for adaptation to the impacts of sea-level rise and climate change have not always included migration as a coping strategy: in 1999, following the signing of the Kyoto Protocol, the National Communication of Tuvalu to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), envisioned adaptation projects, the improvement of information and education on climate change and the development of renewable energies, as well as some policies by sector, but there was no mention of migration.

It is only in recent years that the Tuvaluan government has started to envision migration as an adaptation strategy, and has started to encourage emigration as a way of 'giving people a choice before it is too late', but refuses to adopt the idea of planning a full evacuation of the island. However, this emigration policy also fulfills two other goals: alleviating population pressure, and increasing the income from remittances. Overall, Tuvalu's policy regarding adaptation to climate change remains somewhat unclear and erratic at times. A national adaptation plan was in the process of being drafted at the time of research.

b. Migration as a risk for sustainability

Tuvalu's adaptation strategies are consistently presented through the frame of environmental migration. Farbotko has already shown how this constant portrayal as victims of climate change could disempower the people themselves, and prevent them from developing adaptive strategies and coping capacities. Barnett and Adger (2003) also note that 'rates of international migration from atoll countries threatened with climate change may pass a critical threshold that constitutes danger for a society.'. Historically, migration has contributed to the resilience and development of Tuvalu, but Barnett and Adger argue that 'ultimately a threshold may be reached which pushes the social system from previously sustainable international migration into complete abandonment.' The authors go on to identify two specific dangers related to massive migration flows:

1) A loss of confidence in the future by people themselves can undermine the sustainable use of current resources, since future resource availability wouldn't be a concern. The activities of the French NGO 'Alofa Tuvalu' can serve as an example of this danger: the goal of 'Alofa Tuvalu' is to foster sustainable development in Tuvalu, inter alia through the development of renewable energies and the sustainable use of resources. As reported by Fanny Héros, an administrator of the association, a criticism often faced is that such a project would be worthless, since the country would be doomed to be flooded anyway.

2) A reduction of foreign aid and investment, if investors are no longer convinced that the atolls would be able to sustain human life in the future. This risk is also identified by Connell, and is definitely a concern of the Tuvaluan government, eager to foster future development projects and increase international support.

These reasons can partly explain the rebuttal by the Tuvaluan government of the option of resettling the whole population. Furthermore, this idea would clash with the views of the majority of the population, who refuse to accept the idea that Tuvalu might eventually cease to exist. The government is thus trying to find a fine balance between the risk of abandonment and a sustainable migration policy. No example illustrates this better than the negotiation of Tuvalu's inclusion into the Pacific Access Category scheme in 2002. The Prime Minister of New Zealand, Helen Clark, had offered an initial quota of 300 migrants to the then Prime Minister of Tuvalu, Saufotu Sopoanga, who admitted that he had asked for a reduction of the quota to 75 migrants, because he was afraid that the island would 'empty itself too quickly'.

The case of the small, neighbouring island state of Niue is very relevant in this regard: emigration from Niue has been so important that the population left on the island is now currently about 1,500, threatening its very existence. 'They're desperate to attract some migrants, they don't even have enough players to form a national rugby team', said John Connell. Unsurprisingly, Niue made an offer to Tuvalu to take some of its population.

c. National sovereignty and climate justice

Barnett and Adger (2003) rightly observe that there's little difference between the people and the state itself when it comes to environmental vulnerability: 'small atoll countries have a high degree of ethnic homogeneity and high population density, meaning there is little political distance between the people and the nation-state.' In the case of a disappearing of Tuvalu, the international community would be confronted with an unprecedented case. As said above, a massive emigration could also lead to the same result and threaten national sovereignty.

Compensating for the physical loss of a country seems a daunting task, and would require mechanisms of climate justice to be implemented. The difficulty to assess this cost in monetary terms can also represent a crucial challenge for climate change economics and the cost-benefit analysis of mitigation.

Tuvalu has consistently advocated the moral obligations for the international community to compensate for the damages induced by climate change. In this regard, a too early resettlement might also weaken Tuvalu's case for compensation. All Pacific Island countries seem conscious of the risk to their national sovereignty, and the Alliance of Small Island States (AOSIS) has been emphasizing this risk for years. It should also be noted, for example, that Pacific countries insisted that maritime zones and airspaces should be retained under international law 'as a useful asset for displaced people' at the 1999 regional workshop on the implementation of UNCLOS,¹² held in Tonga.

In recent years however, Connell observes that there has been 'a shift from responsibility to litigation,' with Tuvalu claiming compensation and reparation for environmental damages that could have been solved domestically. Connell described an increased tendency to blame the global system rather than foster solutions to environmental issues, leading him to the conclusion that climate change had become for Tuvalu a 'garbage can' that could be used to encompass all environmental issues and divert attention from the challenges of economic development and adequate strategies that could mitigate current environmental problems.

3.2. In New Zealand

3.2.1. Migration patterns of Tuvaluans in Auckland

a. Migrants' residence of origin in Tuvalu

Of all study respondents, 19 indicated that their original places of residence in the atolls of Tuvalu were in the rural area, whereas the rest has indicated an urban origin. The atoll nation of Tuvalu is comprised of 9 islands. Those who indicated 'urban' are migrants of Funafuti origin— the main island of Tuvalu. In contrast, those who indicated 'rural' are primarily migrants of the 8 other outlying islands, consisting Nanumea, Nui, Nukufetau, Nukulaelae, Vaitupu, Nanumanga, Nuitao and Niulakita.

¹² United Nations Convention on the Law of the Sea.

Funafuti, being the capital island of Tuvalu, may have been regarded as the urban area by questionnaire participants because of its distinctively privileged setting as the political centre of the nation, which has a much higher socio-economic level in terms of living standards. However, it is impractical to differentiate 'the urban' from 'the rural' in a microscopic atoll where a difference between urban and rural barely exists.

Overall, the migration of Tuvaluans to New Zealand might be regarded as a typical 'rural-to-urban' international migration, considering the differences of socio-economic development stages between Tuvalu and New Zealand.

b. Environment as one driving factor of the move

Questionnaire results reveal that environmental problem(s) had affected the respondents' decision to move from Tuvalu to New Zealand. However, when asked at what point in their migration history environmental problems had affected their decisions to move, the response varied greatly. An overwhelming majority responded that their move was in part motivated by environmental problems and the environment affected their initial decisions to become a migrant. Also significant is that 11 responded that their move was followed by their family members who had already moved away because of the environmental problem(s). As multiple selections are allowed, 10 opted for both of the above choices. This also confirms that family factors play a significant role, both in relation to and in addition to the environmental factors in migration decision-making.

c. Environmental factors in migration decisions

Questionnaire participants were further instructed to detail their migration reasons specifically in the context of environmental problems. The responses were relatively identical. Sea level rise and climate change were the most repeated phrases expressed by the respondents. However, there was some variation when further questioned about how the rising sea level or climate change had affected their move. Seawater flooding during the high tide was the most commonly known environmental problem noted by the respondents. Also directly related to sea level rise is the accelerated coastal erosion and dying plantations caused by salinization. In addition, there are also several responses of indirect influences of climate change that point to the changing fishing conditions and noticeably changing weather patterns.

Other reasons for migration are based on emotional and psychological effects that lead to anxiety, disappointment, hopelessness and even resentment over the concerns of climate change and its unpredictability in affecting Tuvaluans' atoll homeland and people. Although the wording of Tuvaluan migrants' responses is different, the environmental effects on migration decision-making is fairly consistent.

d. Migrants' non-return and absence from New Zealand

Even though the respondents have already relocated to New Zealand from Tuvalu, 3 remained sceptical about the effects of environmental change in

New Zealand. They expected that future environmental problems in New Zealand would make their families want to migrate again to a different location or country, whereas the majority (22) said that this was not the case. However, when asked whether they are planning to move away from the current place of residence within New Zealand, 7 responded yes.

The explanations are largely related to the job opportunities and all of them have considered Australia as their next migration destination once they are qualified for New Zealand citizenship.

Eleven responded that they were not planning to move away, while others remained indecisive. The respondents decided to stay in New Zealand, as the adverse environmental push factors that affected Tuvalu were insignificant or not present in New Zealand. However, both lack of sufficient funds for a second or further move and a well-settled extended island family in New Zealand were also stated as reasons.

When asked to record chronologically all of the places or countries to which Tuvalu participants' families have migrated, many have migrated more than once. The number of moves averages 4 times (the highest was 8 times) from their first place of residence throughout their life. This also confirms the very unique and common 'migratory' nature of Tuvaluans, which is common among most Pacific Islanders. Their move may not necessarily be environmentally driven and could be due to other factors, such as schooling, marriage, employment, medical and familial reasons. Often, the environmental problems could be present in the place they migrated to. Even though the respondents were aware of the existing environmental problems in the migration destinations, these problems might not always have been the dominant concern. Due to limited opportunities and options in a confined island environment, environmental problems might have been downplayed in the migration decision-making.

e. Migration of Tuvaluan respondents' families

Twenty-one responded positively that members of their family have also migrated or resettled. The majority 18 (72%) affirmed that their family members had migrated from Tuvalu to a location near the respondents' current place of residence in Auckland, New Zealand. This result is also evidently supported by Tuvaluans' cultural emphasis on closely connected familial, island community and kinship ties as well as the traditional extended family household. This also explains the typical ethnic cluster phenomenon of the migrant communities in the host country, New Zealand.

Moreover, 16 (64%) specified that their family members were residing abroad in another country in the Pacific, including (in order of numbers from high to low) Fiji, Australia, Nauru, Niue and Tokelau (of New Zealand), Kiribati and the United States. Ten specified that their family members were settled in another place in New Zealand, such as Wellington. This is followed by the smallest number of responses (36%) in which the family remained in the original place of residence in Tuvalu.

A high number of positive responses were given to all of the three common explanations for migration, including earning money (24), schooling and education (23) and starting a family (20). When further questioned if any help, including financial assistance was provided to the family by the person(s) who has/ have moved away, sending money regularly or occasionally ranked the top with 21 responses. This indication of strong financial support from migrant family members is easily understood, as the remittance culture has always played an important role in the economic structure of island societies, including Tuvalu. Very few respondents (5) indicated material or other kinds of support, namely tools and spiritual or religious supports through churches.

3.2.2. Policy responses in New Zealand

Migration to New Zealand is currently possible through two migration schemes, as discussed in Section 1.3. Under the Pacific Access Category Tuvalu has an annual quota of 75 migrants, which wasn't topped in either 2005 or 2006¹³. Immigrants need to meet very stringent conditions (see Section 1.3) before they can move to New Zealand, Once these immigrants are settled in New Zealand, they can apply to bring other family members under the Family Sponsored Stream. The other agreement is the seasonal migration scheme, that allows Tuvaluans (and other Pacific islanders) to come and work (typically in the agricultural sector) for six or nine months, before workers are sent back home with their wages. It is yet too soon to assess how Tuvaluans have take advantage of this programme.

New Zealand doesn't have migration plans with Tuvalu other than the schemes that already exist. Even though some Ministers and high-level officials have repeatedly claimed they would welcome Tuvuluans in New Zealand in case of a major disaster, no such plan exists.

Should the worst happen, I guess we'd send a boat to get them. It's clear that we won't let them down, but we don't plan any relocation scheme, we have migration agreements already that Tuvaluans can use if they want to, but Tuvalu is not drowning yet, so I think it wouldn't be appropriate to have this kind of policy for now (Don Wil, NZ Aid).

The situation is indeed difficult: on the one hand, neither the Tuvaluan nor the New Zealand governments are willing to consider a full evacuation process. But the vulnerability of the island countries is such that any extreme weather event would result in massive casualties if a prior evacuation is not undertaken.

The New Zealand government is nonetheless supportive of the Tuvaluan community in Auckland, and has provided different subsidies to allow them to organize cultural events or bilingual schooling. It also used to have a

¹³ There were 16 successful applicants in 2005, and 22 in 2006 (source: Ministry of Foreign Affairs)

tolerance policy for over-stayers who were later regularized through the Pacific Access Category scheme. Recent accounts however indicate that some over-stayers have recently been deported to Tuvalu.

3.2.3. The Tuvaluan community in New Zealand

The majority of Tuvaluans migrated to New Zealand before the year 2000 and not necessarily for reasons related to climate change. However, the issue of climate change was a common theme in their minds and something that they are already aware of and/ or very concerned about.

The research has clearly shown that with an increasing number of Tuvaluan migrants coming to settle in New Zealand in recent years through different migration schemes, such as the Pacific Access Category visa scheme, a large number of Tuvaluans have indicated that their move to New Zealand is partially due to climate change, rising sea levels and for the betterment of life for future generations.

a. Statistics on Tuvaluans in New Zealand

According to the latest Census published by Statistics New Zealand in 2007, there are officially 2625 Tuvaluans currently living in New Zealand, comprising the 7th largest Pacific Island ethnic group in New Zealand. However, with the unreported and illegal over-stayer Tuvaluans whose visas have expired, the total number could reach approximately 3000 Tuvaluans in New Zealand.

b. New Zealand citizenship acquisition through birth in New Zealand

It should be noted that there are also many New Zealand born "Kiwi" children born to Tuvaluan parents with New Zealand citizenship and holding New Zealand passports, but living in Tuvalu. Prior to the change in the "Citizenship Act 1977" of New Zealand in January 1st 2006, children born in New Zealand, Cook Islands, Niue and Tokelau islands acquire New Zealand citizenship automatically at birth, whereas Tuvaluan parents are not eligible to live in New Zealand after their temporary visa expires. This has resulted in an ironic and difficult situation that Tuvaluan babies are New Zealand citizens, but as a result of the status of their parents, they are not able to live in New Zealand and they will have to stay in Tuvalu with their parents until they reach adult age.

c. Tuvaluans' places of residence in New Zealand

The majority of Tuvaluans in New Zealand live in greater Auckland, accounting for 80.3% of the total Tuvaluan population in New Zealand. They are concentrated particularly in the West Auckland region, including the suburbs of Henderson, Massey, Ranui and Waitakere areas. New Zealand's capital, Wellington, is home to the second largest group of Tuvaluans with 12.7% of the total Tuvaluan population. Most Tuvaluans live in the North Island, while less than 2% of Tuvaluans live in the South Island of New Zealand.

d. Practices of Tuvalu community-based culture in New Zealand

Community-based culture is still evident among the Tuvaluan community in New Zealand, mainly through their church activities, island celebration functions and sports events. However, such cultural activities are not as strong as back home in the islands due to different life styles and financial pressures of living in New Zealand. Whilst the traditional Tuvaluan culture does still exist, it has been blended with New Zealand culture. The dispersed nature of Tuvaluan settlement in New Zealand has also made the community-based culture not as apparent as back in the island.

e. Connections to other Polynesian communities in New Zealand

Tuvaluans in New Zealand share a lot of common concerns with other Polynesian communities and the relationship with other Polynesian communities remains strong. All Pacific Island groups in New Zealand face similar struggles with housing, employment and health issues. It is also worthwhile noting that the inter-marriage between Tuvaluans and other Polynesians has further enhanced the strong ties between Tuvaluans and other Polynesian groups, such as Samoa, Tonga and Maori populations in New Zealand.

f. Perceptions of the climate stakes for their home country

Tuvaluans who live in New Zealand share a common concern of the future of their island home in light of possible climate change and are very aware of the trouble and difficulties that their families face back on the island. Tuvaluans have clearly indicated in their responses their fear that their island country is in danger or at risk of being submerged under the seas. However, this common fear is not limited to the young and educated Tuvaluans. The uneducated and elderly Tuvaluans also have shown their knowledge of the impacts of climate change on their islands and have heard from families and/or have personally experienced flooding situations and coastal erosion on the islands. It is a topic that Tuvaluans living in New Zealand have discussed at their church gatherings and special functions.

3.3. Analysis of findings

3.3.1. Social, Political, Economic and Environmental Factors Influencing the Migration Decision

Respondents were also asked to assess the relative importance of several 'push' migration factors in their decision to migrate. These push factors are assembled from four broad perspectives of social, political, economic and environmental concerns.

Overall, social factors were 'very important' to Tuvaluan respondents' original decision to migrate. Almost all social factors received more than 50% of the 'very important' responses, including: no school available for children,

insufficient health care service, no relatives and friends, no community life and family reasons.

In contrast to social factors, political and/or conflict factors had little or no significance to Tuvaluan respondents' original decision to migrate. Although religious conflict and conflicts over natural resources were both identified by 6 respondents, these remain very minor influencing factors.

Ninety-eight percent of Tuvaluans are Christians. The religious conflicts are imperceptible, except in minor differences over church groups. In addition, 5 responded 'very important' on conflicts over natural resources. This could have been attributed to the extreme limitations of land and water that are in great disproportion to the Tuvaluan populations living within the confined atoll environment.

The importance of economic factors in Tuvaluan questionnaire participants' initial decision to move is highly evident. All indicated 'very important' including: not enough income, unemployment, lack of satisfaction with the livelihood, unavailable work related to personal skills, and the impossibility to earn a decent living in the environment. Amongst economic factors, the lack of land for farming or grazing bore little importance.

Environmental factors are undeniably one of the most significant impetuses that have affected Tuvaluan respondents' decisions to migrate. Five environmental factors that emphasized the current environmental state of Tuvalu have all received higher than 80% of the 'very important' responses, including poor water quality, poor soil quality, water shortage/ drought, sudden natural disaster, such as flooding and storm surges and slow environmental degradation.

Without any rivers or lakes, the only source of fresh water across all of the atolls in Tuvalu is rainwater that the islanders collect in water tanks. Scarcity of water is further compounded by increasing island populations that demand greater water consumption.

The formation of Tuvalu atolls is primarily based on coral reefs which barely hold any soil, making farming on the atolls extremely difficult. This also translates to the high response rate for unreliable harvest. Furthermore, Tuvalu atolls continuously suffer twin water problems that consist of freshwater shortage and saltwater flooding. Low elevation of atolls makes it much easier for frequent storm surges.

All migrant respondents in Auckland identified environmental problem(s) as one of the reasons affecting their decision to move. A follow-up question was asked if the respondents would return to Tuvalu atolls if the environmental situation of their former place of residence has improved. The result shows that the majority responded negatively.

Reasons for non-return vary from family to family. However, the common responses include that children were born, grew up and educated in New

Zealand, difficulties of obtaining employment in Tuvalu, lower wages and living standards in Tuvalu compared with New Zealand and the unknown future environmental state of Tuvalu.

In contrast, those who wish to return emphasize a much closer familial attachment to the islands where families, especially parents, are still living on the atolls, as well as the obligations to land ownership which are passed down as ancestral lands. However, it is important to note that such a return was considered only for periodic or short-term visits rather than leaving New Zealand permanently.

It is apparent that Tuvaluans are currently migrating voluntarily, even if their move could have been related to the push of adverse environmental problems. Migration is seen as a risk-reduction strategy for the Tuvaluan migrants' future. Uncertainties about the future seem to be pre-eminent migration drivers, even more than the actual environmental problems.

All respondents replied that they still have family or friends in their former place of residence, and all also responded positively that their family and friends were facing environmental problems in their former place of residence. An overwhelming majority had received help or would trust the help from the church (religious organisations) and island community group (ethnic organisations), if any problems existed, whereas only 2 respondents replied negatively that they had not received help or would not rely on the help from the above organisations. Depending on the situations of each migrant family and individual, the kinds of help vary greatly from physical labour and financial contributions to emotional or spiritual support. Many indicated that they had received help from island community groups for immigration purposes, such as signing sponsorship for the migrants, helping seek employment in New Zealand, or even filling in the immigration application forms. The close familial connections and kinship ties help ease the many difficulties and smooth the complications that a migrant normally faces in the process of resettlement. All of the Tuvaluan respondents acknowledged that they received help from the Christian Church of Tuvalu (Te Ekalesia Kelisiano) groups and home island community groups.

3.3.2. Livelihoods, Environment and Migration

This section aims to understand the interrelationships between livelihoods, environment and migration. In order to assess how environmental changes may have affected the ways that Tuvaluans make their livings on the atolls, questionnaire participants were asked about their livelihood situations before undertaking migration to New Zealand. Some 40% of respondents had previously held positions in the public sector, including the central government, local island councils and schools. This is followed by respondents in the service sector, such as shopkeepers, restaurants and tourism sector. An equal proportion was previously unemployed in Tuvalu. It is important to note that none of the respondents identified themselves as coming from the agricultural sector, since farming and vegetable gardening on

the atolls are generally not considered a significant livelihood practice. Home gardening is extremely limited on the atolls.

Respondents were instructed to further elaborate on how problems of the environment might have affected their livelihoods or the ways that they support themselves and their families. The discussions uncovered that hardly any of the respondents' livelihoods were directly affected by the problems of environmental change. In contrast with other environmentally driven migration patterns in other world regions, Tuvalu presents a unique case that the impact of environmental change has not affected the migration decisions because of the impact on making a living. Tuvaluans' primary source of income is rarely environmental or natural resource based, such as agriculture and farming. However, the environment has impacted directly through the living conditions as in flooding and coastal erosion. Like the economy of many island states, that of Tuvalu's is operated through migration, remittance, aid, and bureaucracy (MIRAB) (Boland and Dollery 2005). Most Tuvaluans are employed in the public sector of the government agencies with support of remittances from overseas families.

Unlike other tropical South Pacific travel destinations, tourism has never been significant in Tuvalu. In recent years, however, as a result of widespread interest in the effects of climate change on island environments, Tuvalu is experiencing unprecedented growth in so-called 'climate change tourism' with increasing numbers of media reporters, researchers and adventure tourists visiting Tuvalu to observe 'king tide' flooding caused by rising sea levels for news materials and studies (Rosenberg 2007, ABC Radio Australia 2007). This unexpected tourism boom brought by environmental change could have been beneficial to some on Tuvalu's atolls through the local hospitality industry and earning foreign exchange.

However, although largely relying on foreign imports of foodstuffs, Tuvaluans do harvest some crops, such as tropical fruits, taro, breadfruit and coconuts. As small-scaled home gardens are the predominant agricultural activity in Tuvalu, all respondents indicated that most crops were primarily for self-consumption, rather than production for market sales. Also, a majority indicated that their crop yield declined in the last few years.

Livestock, such as pigs and chicken, are generally an important part of the diet in Tuvalu, especially for special ceremonial or festive occasions. Meat consumption in Tuvalu mainly relies on foreign imports of frozen chicken. However, being able to keep livestock, such as pigs, often symbolizes wealth and higher socio-economic status in the island community. Most respondents raised livestock in their former place of residence.

Animal husbandry is insignificant in Tuvalu. No respondents indicated that they are completely dependent on their livestock to support their lives, as the largest amount of food and income came from other sources. About half of the respondents affirmed that their livestock declined in the last few years.

Traditionally, fish (including shellfish) has been the main component of diets of Tuvaluan islanders. Although fishing remains a significant practice in

Tuvaluan daily lives, the diet of younger Tuvaluan generations has changed as a result of the increasing convenience of and dependence on foodstuff imports from abroad. Most respondents indicated that they are mostly dependent on fish for consumption and/or sales, but did have other sources of food and income. There are fish markets or street vendors for private sales of fish on the atolls of Tuvalu. However, the sharing culture of Tuvalu has enabled the social custom that most fresh fish caught from the sea are either consumed privately or distributed generously as gifts to their family relatives and church pastors.

Finally, most respondents were happy with the services that were available in Funafuti, including energy, water, transport, health care, education, public services and markets. A majority of respondents had access to financial services, (including loans, health insurance) before migration. Such services included informal borrowing from family members, formal services from banks and remittances. No respondents received compensation or financial assistance for their migration to New Zealand that was caused in part of environmental problems. All respondents have migrated voluntarily even if environmental change represents one of the influencing push factors in their migration decision-making.

4. Conclusions and Future Research

Overall, migration from Tuvalu to New Zealand is not as straightforward as it is often presented. Views on the role of climate change in migration in Tuvalu remains contrasted and sometimes conflicting, while the motives of those who emigrated to New Zealand were not merely environmental, but included economic and social factors as well.

The migration process between Tuvalu and New Zealand is far more complicated than it seems and is often described in the media. The dominant approach is an alarmist one, where flows of refugees would be leaving the rising sea-levels of Tuvalu to seek refuge in New Zealand. On the external level, both countries have an interest to put forward this approach: Tuvalu can gather support around its plight, and New Zealand promotes its position amongst Pacific countries.

The view on the internal level contrasts radically with the one that plays out beyond the realm of domestic policies. First, most Tuvaluans are unwilling to leave their country, and believe that Tuvalu will not necessarily disappear. Second, those who have migrated to New Zealand did so for other reasons as well, which included economic opportunities and family ties. Even though environmental factors affected their decision to migrate, the key factor seems to have been an uncertainty regarding the future of their country, and their migration can often be characterized as a risk-reduction strategy for the family. Even in what seemed to be an obvious case of environmental migration, the relationship between environmental change and migration flows could not be characterized as a direct, causal relationship. On the contrary, it appears that environmental migration as a concept is a product of individual perceptions and interests, as well as of domestic and external policies. This

doesn't mean that the threat of climate change is not real, or that environmental factors do not play a role in migration behaviour, but rather that the importance of such factors – environmental migration as a concept – is a social and political construct.

Governmental policies have taken a dual approach, reflecting a two-level policy subsystem. On the international level, the Tuvaluan government has successfully marketed its country as the first victim of climate change, and has called for international help. Its policy regarding emigration however, is penetrated by a sceptical approach, and seems to be equally concerned with alleviating the overpopulation problem and increasing remittances. Massive emigration flows could represent a threat for the country as well, and Barnett and Adger state that 'the result of lost confidence in atoll-futures may be the end of the habitability of the atolls.' This loss of confidence might well be the result of uncertainties regarding the future of the country. Many Tuvaluans who had emigrated to New Zealand did so because of the uncertain future of Tuvalu, as a risk-reduction strategy for their families' future, expected changes seemed more important than current environmental degradation. In this regard, the future policies that will be designed by the Tuvaluan government to address climate change and migration will prove crucial to reduce these uncertainties, and thus the threat faced by the country. Such uncertainties are reinforced by the competing approaches endorsed by the government at different levels of policy-making.

Furthermore, the constant characterization of Tuvaluans as potential environmental migrants, or 'refugees', can enclose them into a relativist trap and prevent them from developing adequate adaptation strategies. This categorization can also result in a loss of confidence, and therefore, as in the case of Katrina, our categorization process needs to be questioned here.

As for New Zealand and Australia, they seem to have adopted a 'wait and see' approach, based on the implementation of ad hoc policies, should these become necessary. For now, the approach of both countries is dominated by a reactive perspective towards migration, and neither of them has planned for any proactive migration policy. As expressed by one interviewee, this implies the risk that 'one day, when the waves come, the help will come too late'.

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Appendix 1: List of interviewees

Experts and officials

	Name	Place	Function
1	Susie Saitala Kofe	Funafuti	Chair, NGO Alofa Tuvalu
2	Nala Ielemia	Funafuti	Wife of the Prime Minister
3	Matia Toafa	Funafuti	Former Prime Minister
4	Tito Isala	Funafuti	Historian
5	Semese Alefaio	Funafuti	Tuvalu Association of NGOs
6	Saufatu Sopoaga	Funafuti	Former Prime Minister
7	Tataua Pese	Funafuti	Red Cross
8	Eseta Lauti	Funafuti	Red Cross.President of local branch)
9	Lalwa Silafaga	Funafuti	Radio journalist
10	Puafitu Faaalo	Funafuti	Professor
11	Enele Sopoaga	Funafuti	Former Ambassador at the UN
12	Panapasi Nelesone	Funafuti	Secretary to the Governor
13	Kelesoma Saloa	Funafuti	Secretary to the Prime Minister
14	Avafoa Silu	Funafuti	Secretary for Foreign Affairs
15	Enate Evi	Funafuti	Director of Environment Agency
16	Salanoa Tinilau	Funafuti	Reverend
17	Daniel Liao	Funafuti	Resident Ambassador of Taiwan
18	Pulafagu Toafa	Funafuti	Tuvalu National Council of Women
19	Pasemeta Sateko Talaapa	Funafuti	EU-NZAid In-Country Coordinator
20	Michael Goldsmith	Hamilton	University of Waikato
21	John Campbell	Hamilton	University of Waikato
22	Don Will	Wellington	NZ Aid
23	Brett Davies	Wellington	Immigration New Zealand
24	Gareth Hughes	Wellington	Climate Coordinator, Green Party
25	Ruth Laugesen	Wellington	Journalist, Star Times
26	Kaipati Tekavei	Auckland	Pastor, Tuvaluan community
27	Paani Laupepa	Auckland	Former Tuvalu Interior Minister
28	Paul Spoonley	Auckland	Massey University
29	Jocelyn Carlin	Auckland	Journalist - Photographer

Non-migrants.in Funafuti) and migrants.in Auckland)

Non-migrants

1. Eti Eseta
2. Risasi Finikaso
3. Penieli Metia
4. Utala Ktaloka
5. Luisa Kakamua
6. Sakala Tekavatoetoe
7. Suilia Toloa

8. Kunitia Tekaa
9. Lolani Ioapo
10. Simoe Foilape
11. Nofoalofa Petero
12. Oketopa Tinilau
13. Tomalu Talu
14. Ani Hemokoa
15. Molu Tavita
16. Peo Tefono
17. Nouala Ofati
18. Laumua Taulialia
19. Selau Hofeni

Migrants

1. K. Lekasa
2. E. Molu
3. T. Talafour
4. S. Pauna
5. O. Alefaio
6. L. Poti
7. F. Tapegea
8. T. Vaiafua
9. S. Haulangi
10. T. Penaia
11. U. Malaga
12. P. Potea
13. E. Tavita
14. E. Passi
15. P. Vakafa
16. M. Esela
17. H. Tolova
18. K. Faaula
19. S. Tufala
20. S. Lisati
21. T. Kainano
22. V. Kolone
23. I. Semaia
24. M. Nuuese
25. S. Ionatana