



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

MOVING FUTURES

THE SCENARIOS

CLIMATE CHANGE MOBILITY RESEARCH
TONGA AND SAMOA

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PRODUCT OVERVIEW

This product fits into a broader research effort on the future of climate change mobility in the Pacific, enabled by New Zealand's climate finance through the International Development Cooperation (IDC) Programme. In July and August 2023, a full-day future scenario workshop was run in both Tonga and Samoa. The researchers benefitted from the support and guidance of our in-country research partners - partners who have built reputations within country through their own in-community service - to identify participants for the workshops.

Participants were taken through an intensive day-long process of scenario development and exploration to design and detail four possible futures - set in the year 2050 - for each Tonga and Samoa.

Scenario development was utilised as a key research activity for a number of reasons. Firstly, it is a useful way to explore people's knowledge base, their beliefs, assumptions, and insights in a creative way. By supporting participants to consider what may be possible in the future (as opposed to what may be likely or even desired), participants can explore the range of possible futures as well as the implications of those possible futures without limitation. Through this process researchers were able to achieve many things, including:

- Sharing with a range of community leaders the latest projections and data on possible changes affecting Tonga and Samoa specifically
- A deeper understanding of participant assumptions about change forces more likely to impact the future of mobility for their country and their people
- Insights on participant conclusions about some of the impacts of these change forces (on e.g., social, economic, cultural, environmental aspects of different futures) as well as inherent prioritisation of some of these impacts. With some participants we could explore second order impacts as well
- Insights on participant assumptions about the impact of different futures on mobility scale and direction, and in some cases, the underpinning logic behind these assumptions
- A deeper understanding of participant beliefs about risks and opportunities in possible futures
- Capturing hints of broader sentiments held by others in the community (noting that while participants were selected to ensure a strong mix of age groups, gender, geographic and profession backgrounds, there were ~15 participants in each of the workshops)
- Documenting a series of priority actions identified by participants as 'no regrets' irrespective of the future realised.

Participants came with a range of professional backgrounds, including media, government (local and national), teaching, sport, humanitarian, local and village leadership, as well as student and youth representation. A number of government ministries were represented in the workshops in both Tonga and Samoa. There was a mix of ages and genders represented in our participants, including two who identified as transgender. It is important to note that where employed, the views shared by these individuals do not necessarily represent the views of their employer.

The process began with some context setting and then the 'breathing in' phase of the day where targeted information on future projections (e.g., inundation projections) was shared with each of the participants, as well as quotes and themes gathered through visualisation processes run with some of the participants prior to the workshop (see product 'The Visions'). Participants were then guided through a process of prioritising change forces, placing two change forces in tension (as a set of axes in a matrix) to create four possible futures, and then detailing out and exploring those futures in smaller groups. More information on this scenario process is provided in the 'why scenarios and some notes on methodology' section as well as the 'overview of process' section.

This product leads with a summary of insights for policy makers. Following that, the researchers share a more detailed set of themes and insights garnered from the future scenarios. An overview of the scenario process is shared before moving into the future scenarios themselves. First, a summary of the four futures designed and detailed in Tonga is presented, followed by additional detail of each of those four futures. Next, a summary of the four futures designed and detailed in Samoa is shared, followed by additional detail. The product wraps with some final reflections from the researchers and images taken during each of the workshops.

Our grateful thanks and acknowledgements go to our participants in Tonga and Samoa, as well as our in-country research partners - Velata Tonga Inc., the Samoa Education Network (SEN), and Dr. Tea Tepora Wright.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the participants and authors, and do not necessarily reflect the views of the New Zealand Ministry of Foreign Affairs and Trade.



SUMMARY OF INSIGHTS FOR POLICYMAKERS

The future scenarios process took a creative and relatively indirect approach to access participant's beliefs about the impact of change forces on their future/s, and specifically, implications for people mobility. A range of forces were considered by the participants, including combinations of weaker or stronger economies, tighter or looser immigration policies in places like Aotearoa New Zealand, Australia and the United States, and the progress of climate change by 2050 (from 'as projected' to 'extreme climate change').

The thematic analysis in the next section provides a detailed overview of critical themes and insights raised through this process. This summary of insights for policymakers provides a higher-level synthesis of the findings most directly relevant to future mobility, considering possible who, how, why and where factors. The insights shared are relevant to Tonga and Samoa unless otherwise stated.

In terms of **who** might be moving in different futures, participants seemed aligned on the role of financial resourcing - those who cannot afford to adapt to progressive climate change (e.g., home repairs, changing income source) would be driven to move before those with adaptation capacity. They believed that there will be a sub-group of climate impacted people who will not have the funds or family to relocate internally or overseas and will have to remain in place. In Tonga, participants believed women will have less options, and may face poorer outcomes in future given they are unable to own land under current land laws. The elderly and those with physical disabilities would face barriers to initial mobility as well as resettlement options due to their limitations. Elderly folk would also face unique barriers to moving based on deep connections between their identity and their land of origin, finding it very difficult to leave and overcome the emotional and spiritual toll of separation from their land and history.

Both major urban centres in Samoa and Tonga are particularly low-lying. Regarding **reasons for moving** in future, participants were made aware of the latest inundation maps that suggested many would have to leave areas of Nuku'alofa and Apia for higher areas by 2050. A range of reasons for mobility in different futures were explored, going beyond people fleeing coastal or lowland inundation. Participants shared beliefs around environmental degradation disrupting food production and income sources, driving mobility from rural to urban centres. Participants in Samoa drew tight connections between food insecurity and mobility, believing it to be a current risk and a certain driver of high flows of people from villages to urban centres if trends continue. In Samoa as well, participants considered the impact of environmental degradation on cultural degradation e.g., no longer earning a living from nature and having to prioritise efforts for income generation over participating in cultural pursuits. Participants thought that the degradation of the environment as a foundation of village security could lead to more self-interest in decision-making by some village leaders. This could lead to people developing a cynicism towards those systems and leadership, breaking down village cultural systems and amplifying mobility into urban areas, possibly led by youth.

Much was discussed about the **direction of mobility** in a range of futures. In futures with extreme climate impacts participants in Tonga saw internal mobility directed towards higher island groups like Vava'u, 'Eua and the Niuas. In terms of rural and urban flows, as already highlighted, participants saw rural to urban flow increasing to seek out work if climate change impacts further reduced people's capacity to grow food to both eat and earn a living. Participants also noted a reverse flow, where escaping coastal and lowland inundation would initially drive urban to rural mobility, with families in Tonga and Samoa converting plantation land to land for housing. Participants believed this could impact food production and food security which could then drive some people back out of rural settings to try to find work in urban centres. In other futures, particularly where food security had been invested in and improved, participants believed that rural to urban movement would slow and in fact flip as people return to being able to live off the land sustainably and profitably. Participants in Samoa didn't see many reasons in their futures for higher levels of overseas mobility, however in Tonga participants believed that where large numbers of people had to leave low-lying areas, there would likely be resistance from people occupying higher land. Participants thought that with host community hostility, and current land laws and availability issues, many would opt to move overseas instead, seeing it as the easier option - particularly if they had family to facilitate that movement.

How people would move could differ between Tonga and Samoa. Under most conditions, those in Samoa seemed to agree that people would move as a family and would seek to resettle as a family. This would be influenced in part by the land tenure system in Samoa where village land would often allow relocation to upland or inland areas without separation of the family or even the village. In Tonga, participants believed that in the event of an area needing relocation, families would go through multiple levels of separation. First, the family would leave the village group. The family would also likely separate members across a number of family houses, possibly across different areas. Then finally, receiving families would also sometimes separate, with some members leaving to accommodate new family members. The exception in Tonga would be if people could be moved as a community between the same noble's (or the King's) land, as happened with some small communities following the Hunga Tonga-Hunga Ha'apai eruption. Participants also discussed the risks of cultural loss and 'absorption' from mobility. The researchers think this risk is heightened in Tonga's mobility futures given the separation/s involved in mobility and resettlement. Finally, participants in Tonga believed with progressive climate change and the option for easier mobility overseas, mobility would still be predominantly cyclical (excepting those leaving who don't have the option to return due to damage or inundation).

SUMMARY INFOGRAPHIC - MOBILITY ASSUMPTIONS BY FUTURE SCENARIO

The following infographic provides a high-level view of the general mobility assumptions within each of the four future scenarios developed in Tonga, and the four developed in Samoa.

The infographic is to be treated as a rough overview of some of the mobility features (e.g. internal mobility vs. cross-border) of the different scenarios however the true richness of the scenarios and their mobility features, as well as the critical context of these features is to be found in the descriptions of the scenarios themselves.

The darker the orange, the stronger the relative mobility. The grey indicates no change relative to now, or, that the feature was not mentioned by the participants in that scenario.

	SCENARIO TITLE	SCENARIO FORCES	ASSUMED MOBILITY RESPONSE				COMMENT
			INTERNAL	CROSS-BORDER (OUT)	CROSS-BORDER (IN)	CROSS-BORDER CIRCULARITY	
TONGA	FUTURE ONE: NOFO 'I TONGA (STAY IN TONGA)	Climate change as projected, tighter immigration policy	Dark Orange	Light Orange	Grey	Grey	Many seek higher land however desperation is not high enough to drive irregular migration.
	FUTURE TWO: LUSIA KI TAULANGA (STRUGGLING TO REACH SAFE HARBOUR)	More extreme climate change, tighter immigration policy	Dark Orange	Light Orange	Grey	Grey	Many seek higher, arable land. The few who can cross the border (legally or not), do.
	FUTURE THREE: HIDDEN TREASURE	Climate change as projected, looser immigration policy	Light Orange	Dark Orange	Light Orange	Dark Orange	Foreign workers flow in to fill gaps. Those in low-lying or coastal areas move permanently.
	FUTURE FOUR: SIU 'AE TAVAKE (THE SEARCHING TAVAKE)	More extreme climate change, looser immigration policy	Dark Orange	Dark Orange	Light Orange	Light Orange	Some try internal mobility first, due to conflict and limited land access, find cross-border easier.
SAMOA	FUTURE ONE: NAFANUA	More extreme climate change, stronger economy	Dark Orange	Light Orange	Light Orange	Grey	Climate degradation drives rural to urban flow, with additional pull from work opportunities.
	FUTURE TWO: MANANA'O FAALUPE O ELEELE NAUMATI (LONGING FOR FREEDOM)	More extreme climate change, weaker economy	Dark Orange	Dark Orange	Light Orange	Grey	Many move inland and upland within village borders. People with the means, cross the border.
	FUTURE THREE: TUA'OLOA	Climate change as projected, weaker economy	Dark Orange	Dark Orange	Light Orange	Grey	Rural-urban, cross-border flow in search of income. Diaspora return for alternate industries.
	FUTURE FOUR: SAMOA MANUIA	Climate change as predicted, stronger economy	Light Orange	Grey	Dark Orange	Grey	High numbers of the Samoan diaspora return for the lifestyle, renewed culture and prosperity.

THEMATIC ANALYSIS OF THE SCENARIOS

The scenario process and the outputs of the workshops in Tonga and Samoa delivered a rich collection of insights under a range of themes relevant to the future of climate change mobility. These insights were gathered from activities across the day, including the rich detailing of the future scenarios, as well as follow up activities discussing risks, opportunities and 'no regrets actions'.

The researchers have added some reflections where indicated to make relevant connections or provide context.

Land and identity are inextricably linked and will prove a barrier to mobility and a barrier to successful integration in future host communities.

Participants in both Samoa and Tonga frequently raised points around the tight bonds between land and identity, particularly for older generations. They felt that it would be a significant barrier to decisions to move, either internally or overseas. This was made more challenging if ancestors for example were buried on their land. Participants talked about land being their heritage and culture, and asked how one would separate themselves from their own heritage. The sentiment that people are not just *of* a land, but that they *are* the land was a sentiment taken a step further in discussions in the Tonga workshop. Participants in one group were talking about how when new people walk past in a neighbourhood and questions are asked about 'who' they are, the response is typically to name a village e.g., "that's Kolomotu'a" or "that's Ha'afeva" - their origin land, not their names, are their identifier. With that land and location identifier is information for others on the kind of people they are – their values, expected behaviours etc. Participants believed these differences may prove to be a challenge for some in integrating into other areas, the trauma of disconnection from a part of one's identity paired with differences in worldviews, behaviours and values could spark tension and conflict. The loss of this diversity is also explored in a separate theme.

How people move, and resettle, will likely differ between Tonga and Samoa.

In Samoa, it was believed that most mobility would be done as a family, even when they believed that extreme climate change pressures might result in a narrowing down of the family unit, the common assumption was that mobility would still happen together. In part this could be explained by land tenure systems in Samoa – mobility if done internally would commonly happen within a family village's land which often (though not always) offers options of inland and/or upland retreat. In other research activities, people have made clear that family and extended family living in Samoa remains commonplace and that this would translate into mobility (and resettlement) approaches too. In Tonga, participants discussed a different situation, where families relocating from one area would likely split up and distribute themselves across a number of extended families in other areas. In addition, those hosting families would also likely split up to accommodate incoming family. This has significant implications for the future, including the possible impact on culture.

Cultural loss or dilution is a probable outcome of future mobility - from unity in diversity to monoculture for efficiency.

Across Tonga and Samoa there are clear, known and respected distinctions between people of different islands, areas, and villages. Differences participants described included language, value systems and behaviours (e.g., more outgoing, talkative people in one village, more introspective people in another). These differences support social sense-making and participants described a 'unity in diversity'. However, participants highlighted risks of cultural diversity loss, cultural dilution and cultural absorption as a result of different degrees of future mobility. They believed that this would be driven by a few things. Firstly, a disconnection from land of origin, and with it a loss of language and stories directly tied to that land. Secondly, the physical loss of land which would remove people's ability to e.g., grow plants like pandanus used for cultural practices like weaving. Thirdly, a few participants identified the risk of cultural diversity (in e.g., language, values) being lost to the hegemonic culture of where they resettle, particularly where villages and families are divided in the process of mobility and resettlement. Many may lose the incentive to continue to practice, speak or act differently to those they are newly surrounded with, instead subscribing to an ever-growing monoculture. Lastly, participants believed that trends they are already seeing in society that concern them, like increasing levels of individualism, would continue if people continue to be mobile - particularly overseas, where they are influenced by 'western' values and priorities.

Land availability is of concern, particularly inland and in higher areas and review of land tenure systems need to start soon in order to get it right. Given barriers to internal movement, some will view overseas mobility as the easier option.

In Tonga in particular, participants saw the land tenure system as a major risk factor for future outcomes. Participants believed that land availability would be at the heart of many negative outcomes they saw in the future/s and suggested that this was a complex but necessary area to review in the context of progressive climate change. Starting the process of review soon would be critical – "it will take many years to make sure it gets done right".

Participants reflecting on the absence of a relocation or displacement policy believed that land tenure review would be needed before a policy of that nature would be meaningful or even actionable.

Intensification of climate stressors will lead to higher levels of internal mobility and resultant tensions and conflict between people relocating and those receiving them. Some may opt to move overseas due to challenges navigating land systems.

Participants believed that while family will continue to provide shelter wherever they can, the tolerance of receiving communities will drop as more people moving inland or to higher land. The main driver for tensions and possible conflict would likely be land access for both growing food and for housing. In Tonga, some participants believed that the administrative difficulty of accessing different land internally, paired with likely growing hostility from receiving communities would drive decisions to relocate overseas instead. For those with close family already overseas, the perception was that overseas mobility would be the easier option. In Tonga and Samoa participants believed that increased climate change impacts plus additional pressures such as a weaker economy or tighter immigration controls overseas would lead to more domestic violence, pointing to survey results taken during COVID-19 lockdowns when pressures and uncertainty were high.

Food security is a concern and it will have an outsized impact on internal and overseas mobility. People need better support to improve food security at a household level.

Participants in Tonga and Samoa, but particularly Samoa were concerned about current levels of food insecurity due to climate change impacts, particularly higher temperatures and soil erosion. They believed that greater food insecurity would have a direct impact on internal mobility, driving families to move to urban centres in search of other opportunities to access food. In a range of scenarios in Samoa, greater food security led to a steep reduction in urban drift, and greater food *in*security drove higher urban drift (and some overseas mobility as well). Food insecurity was not just discussed in the context of direct climate change impacts, but also indirect. Multiple future scenarios in Tonga and Samoa described a retreat to reside on plantation land (typically inland). Participants concluded that apart from excessive heat, disrupted seasons and tropical cyclone damage to crops, the conversion of land from food growing to residential would also increasingly impact food security.

Climate change understanding generally is very poor and people in the community don't have the understanding they need to plan or prepare.

Participants in Tonga and Samoa believed that the average person in the community has a low level of understanding of climate change and it's impacts on them. They believe that public communication on climate change is not easy to understand, is not specific enough to Tonga or Samoa (or at a more granular village level), does not support decision-making or motivate action for adaptation. Most of the participants in the Tonga and Samoa workshops believed an important action would be large-scale and ongoing public awareness campaigns for the community on current climate change impacts as well as future projections. Further, they suggested that practical training or demonstrations of impacts and adaptation techniques (e.g., farming demonstrations) would be well received and beneficial. Participants in Samoa took it a step further again, stating that practical support should be given to complement the awareness raising, such as providing food growing tunnels/greenhouses or much easier application processes for adaptation grants or lending.

Climate impacts may deepen inequality, forcing mobility for some, and immobility for others. Desperation may lead to new businesses in people smuggling and/or an intensification of human trafficking.

In Samoa, participants believed climate change impacts would be unevenly experienced, with those most reliant on the land for food and a livelihood being more likely to have to move to seek out alternate sources of food and/or income. Others felt that those with the least resources would be without any options of adaptation, including mobility, and would have to remain in place. One group highlighted that those with resources would be able to not only adapt-in-place but benefit from changes brought about by climate impacts. One group in Tonga detailed a future where some developed new factories and businesses which exploited those who had lost their traditional forms of income.

In Tonga and Samoa, the perception was that the cost of travel overseas, even to New Zealand, would be a real barrier for many even if they had a need and option to move, and felt that having family overseas to sponsor initial travel was critical. For those unable to adapt-in-place sufficiently and who lack overseas or internal mobility options, participants in Tonga examining the more extreme future scenario believed that desperate people may be at higher risk of trafficking and others may turn to smugglers to get them to alternate locations.

Aside from monetary barriers to mobility, not owning or controlling land, the weakening of family ties, as well as cultural and spiritual ties to land may underpin some immobility.

Participants in Tonga believed that land ownership and control would be a factor in immobility, particularly for those who do not, or cannot, own land (e.g., women). Those without land lacked decision-making rights in some instances, and more so, lacked leverage, choice and security in future scenarios of heightened mobility. In both Samoa and Tonga, participants relayed beliefs that older generations in particular will be resistant to move due to their deep identification with the land. In saying this, participants did not see this particular barrier as insurmountable. In Tonga, participants believed those with physical disability would have higher immobility risks as would those who have no close family around and who 'see no alternative place that is safer for them'. Extended family were seen as a critical enabler of mobility in Tonga and Samoa. A narrowing down of the family in response to increased financial and environmental stressors could have meaningful impacts on (im)mobility for those needing to move in future (see next theme).

A likely response to more difficult times will be the narrowing down of the family unit to “immediate needs, immediate family”.

Many participants in Samoa and Tonga thought that with increased climate stressors (and particularly when paired with additional change forces like a weakened economy), that support for family in Tonga and Samoa would narrow to that of immediate needs and immediate family. Weakening of social systems of support could have many flow on implications for mobility. Participants identified things such as the likelihood of family in Tonga or Samoa - or overseas family - taking in family members from Samoa or Tonga, or the length of time that family might be hosted by extended family, and the ongoing availability of remittance funds for adaptation efforts, including for food security.

In a climate changing future, remittances are not assured.

Participants in Tonga and Samoa suggested there could be significant future drops in remittances. Moderate drops were suggested in futures where extreme climate impacts were playing out globally. Participants thought that extreme climate impacts would reduce overseas families disposable income through global economic impacts and challenges with meeting their own adaptation costs. Similar to the previous theme on the ‘narrowing down’ of the family in tough times, participants believed this tighter view of family would impact remittance sending levels to a degree as well. Moreso, participants tended to agree that remittance sending would be significantly impacted in scenarios where there was mass overseas mobility. As family were increasingly united overseas, there was little reason or incentive to continue returning money to Tonga or Samoa.

The clearest ‘no regret action’ identified by both Tonga and Samoa workshop groups was the need for large scale and ongoing community education and awareness raising to reduce risks and maximise opportunities from anticipated mobility.

Both groups believed that climate change literacy was still very low in the general population, particularly for those in rural and village areas, and that rolling out awareness campaigns would be a critical first step to support decision making and action. Participants in Tonga and Samoa emphasised the importance of information being easy to understand, relevant and specific to a national, island and even village level, and including practical elements, such as demonstrations and training to support farming and fishing adaptation. Participants also emphasised the need for awareness campaigns and training to be ongoing and updated regularly with the latest data and analysis relevant to the area.

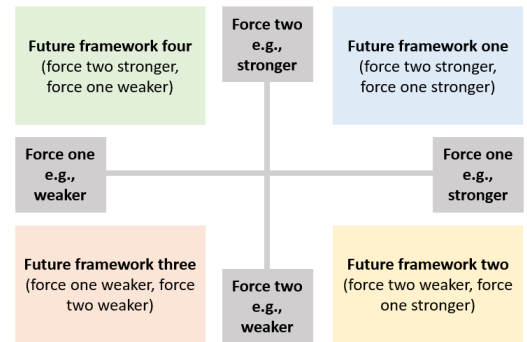
The impact of changing immigration policy, particularly loosening it, is not straightforward and cyclical movement will remain an important feature of mobility.

In Samoa, not one participant believed that loosening or tightening immigration policy to places like New Zealand, Australia, or the United States would make a material difference on mobility levels in future. On testing this, participants believed that they have access to a range of channels for mobility already and quotas are not being met – thus opening up channels (or even tightening them) would not have a great impact in and of itself¹. Others expressed a level of cynicism about the motivations of other nations (i.e., that it would be to plug labour gaps in lower paid work) if they were to loosen immigration settings or offer new pathways. Another shared that “so long as people here have assets to take care of, they will never leave”. The researchers do wish to highlight that these perspectives are not consistent across the population, with other research activities suggesting that immigration settings are a factor in mobility decision-making and indeed a significant and costly barrier for some in Samoa. In contrast to Samoa, participants in Tonga believed that loosening (or tightening) immigration settings would impact mobility in future more than any of the other change forces presented (e.g., change forces like a strengthened or weakened economy, geopolitical (in)stability etc.). Participants also agreed that with loosened immigration policy, mobility would still be predominantly cyclical – either short trips to see family, or short- to medium-term trips for work or study opportunities. The one exception to that in the context of the scenarios developed in Tonga was those permanently displaced from their home or land – their mobility would be permanent due to a lack of options to return. One group noted that people in Tonga are very much aware of the immigration settings and options available to them, more so than those in other Pacific nations. That may reflect greater current immigration-based barriers compared with Samoa, or for those open to mobility, a stronger interest and preference to be mobile cross-border (as indicated by survey results, see Survey One).

1. Note, this was the expressed belief of some of the participants in the Samoa workshop. Published information suggests that demand for residency visas has been consistently high (Radio New Zealand, 2017, see: <https://www.rnz.co.nz/international/pacific-news/334409/record-numbers-of-samoans-apply-for-nz-quota#:~:text=Under%20the%20system%201100%20places%20are%20offered%20to,manager%2C%20Geoff%20Scott%20says%2015%2C263%20applications%20were%20received.>), that application numbers can be in excess of ten times the number of places offered and that places have been offered that meet the annual cap for e.g., the Samoan Quota (Immigration New Zealand, 2023, see: <https://www.immigration.govt.nz/about-us/media-centre/news-notifications/2023-samoan-quota-ballot-results>). In saying that, a report from 2016 suggests that even though the full capped number of places are offered, many cannot take up the places due to not securing a job and between 2009 and 2016, the number of places taken up were below the quota number (Radio New Zealand, 2016, see: <https://www.rnz.co.nz/news/national/301386/nz-quota-for-samoans-not-filled-for-six-years>).

WHY SCENARIOS, AND SOME NOTES ON METHODOLOGY

The creation of future scenarios by participants in Tonga and Samoa was a key activity in this research program. Variations of future scenario planning processes have been used in many contexts globally for many years. Not just a tool for corporate strategy, future scenario planning has been used in numerous social science and political settings where uncertainty, and risk, is high and issues are complex and heavily intertwined. The researchers themselves have used future scenario planning to support prioritisation, decision making and risk mitigation in a range of settings, including in global sustainable finance, local and state government strategic planning and public health operations. The researchers also tested and refined the methodology with a diverse group of Pacific peoples a decade ago, informing the approach taken in this effort. The scenario development process used overlaid two major change forces – change forces which were determined to have a high level of uncertainty and were likely to have high impact on future mobility. Placing these two forces on two different axes delivers a framework for four future scenarios (see image).



Representation of how two change forces are placed in tension to create frameworks for four future scenarios.

Future scenario planning asks participants to consider the possibilities in their futures, and not pass judgement on the likelihood of those events. It also asks participants to step outside of what they may wish for their futures. Removing the bounds of judgement and desire leaves plenty of room for people to share their thinking openly without feeling like they necessarily have to agree with or argue for any of their positions taken.

Critically, this process taps into the imagination of participants, and within that, reveals knowledge and assumptions that might otherwise remain unaccessed. The imagination of participants, paired with other information like personal experience or second-hand knowledge also supported thinking on second and third order impacts of possible future changes.

By stimulating the imagination of participants, scenario planning has the potential to be an even more powerful tool. ‘Seeing’ futures – with all their positive and negative features – is establishing what some scenario planning experts and practitioners describe as ‘memories of the future.’¹ These future memories can help us to recognise and make sense of signals in the events around us and can cue action to pursue or avoid further steps along a path to the hypothesised futures. By sharing these visions with others in the group, different future iterations are stored in the collective memory of others, amplifying the potential to guide decision-making and actions in the future.

Culturally and socially, the scenarios process works in Tonga and Samoa for several reasons. Steeped in oral tradition, and skilled in storytelling, the researchers felt there was a natural ease to the development and exploration of different hypothetical futures. The participants caught on quickly to the process and were able to reach impressive levels of detail in a relatively short period of time. Beyond following the guidance of the researchers to define and explore the social, economic, cultural, religious, political and environmental aspects of their scenarios, they also developed role plays and other performances, shared dances and one even wrote and shared a journal entry from her future self. While the process and initial framework for identifying four futures was provided to the group, the remainder of the thinking and direction of the day was very much participant-led. Working in small groups people had adequate time to sit in their own space as they needed, contribute when they wanted, and listen and absorb when they didn’t. The indirect nature of the approach in drawing out knowledge also likely sat well with the participants.

The researchers sought another outcome from running this process in Tonga and Samoa. The leaders who took part - business and media leaders, community leaders and village chiefs, women’s group leaders, youth leaders, teachers, church leaders, government ministry staff, emergency and humanitarian workers and members of parliament – learned a process they can carry into their own lives and professional practices. Participants are also afforded the space to listen and learn from each other’s experiences and perspectives.

One limitation of this ‘deductive’ approach to future scenario development is that it allows for the consideration of two major change forces (only). In reality, many change forces and variables will interplay to arrive at our future. In saying that, participants were actively encouraged to consider other factors and forces at play, supported by materials the researchers prepared and provided participants with projections of population and environmental changes to 2050, and information on migration and economic trends.

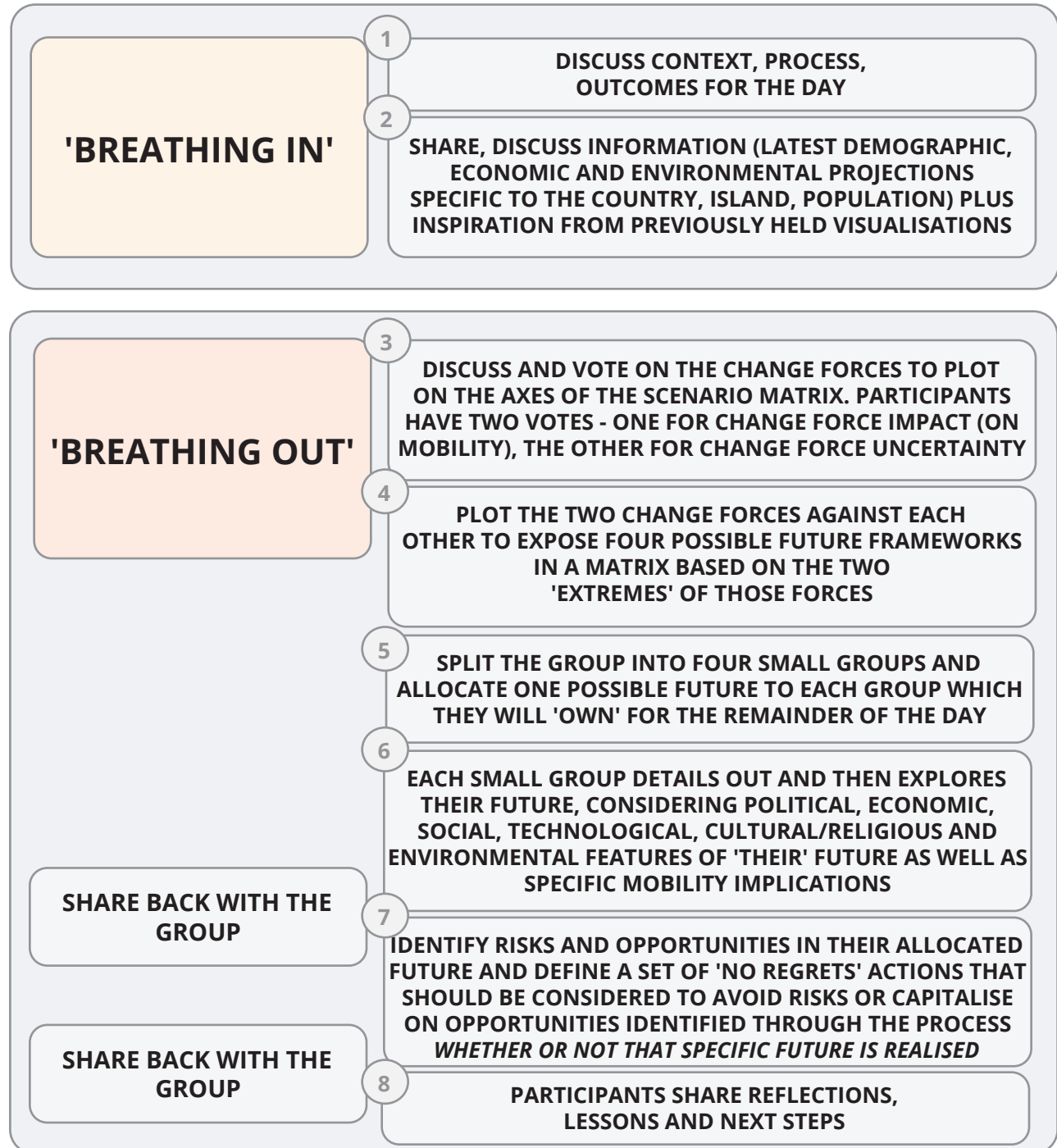
Some reflections of participants following the full day workshop was that it was an emotional, intensive but powerful experience. Many suggested that others in leadership and the community more broadly would benefit from participating in a session like this to help them understand the range of risks and opportunities in their futures, and their role in them. One suggested that having the workshop over two days would be even better, allowing people to process some of their thinking and push the bounds on future possibilities even further on day two. A number said they would take their ‘future memories’ into their work and home life and would be thinking through what their role could be, particularly in avoiding some of the more negative aspects of what they had ‘seen’.

A reflection from the researchers for future sessions include leaning away from expecting detailed note taking and the completion of workshop templates in favour of audio and video recording of rich and nuanced discussions and presentations.

1. van der Heijden. (2002). *The Sixth Sense: Accelerating Organizational Learning with Scenarios*.

OVERVIEW OF PROCESS

The following provides a high-level overview of the process taken during the full-day futures scenario workshop held in Tonga and Samoa. For the development and delivery of this process, inspiration has been taken particularly from the work of Adam Kahane¹ with adaptations made based on researcher experience in applying this process over the last decade.



1. Kahane, A. (2012). *Transformative Scenario Planning. Working Together To Change The Future.*



TONGA: CHOOSING THE CHANGE FORCES

The first step in the scenario development process that required active input from the participants was the selection of the change forces to plot on the axes of the scenario matrix (see step three on the process infographic).

Given the focus of this research effort, the first axis was suggested and agreed with the group to be a spectrum of climate change severity; from 'climate change as projected' to 'more extreme climate change'. The participants were provided an outline of what each of these could mean, with 'as projected' being the mid-to-higher range of current projections^{1,2} to 2050 for sea-level rise (+0.5 metres), temperatures (+0.5 degrees Celcius) and stronger tropical cyclones. 'More extreme climate change' pushed beyond current expected scenarios to consider sea-level rise of up to two metres, mean temperatures of two degrees Celcius higher or more, and much more destructive tropical cyclones.

On agreeing the first axis, six other change force options were presented to the participants. These change forces were inspired by desktop research and findings from earlier research activities (workshops, talanoa) in both Tonga and Samoa. They were:

1. Economic growth (or decline)
2. Immigration policy [overseas] (tightening or loosening)
3. New technology
4. Corruption in leadership (an increase or decrease)
5. Regional instability (e.g., from geopolitical forces)
6. Other (where participants were invited to offer other forces they felt would have a higher impact or had higher uncertainty)

The participants were given two different coloured post-it notes to vote. The neon green was a 'vote' for the change force they believed would most impact mobility if it were to change, the pink was a vote for the change force they felt held the highest uncertainty in their future/s.

In Tonga, by far the change force of perceived greatest *impact* on future mobility was **loosened or tightened immigration policy** with approximately 80% of participants voting for this. The force that came in second for impact was economic growth (or decline). The researchers note that there is a stark difference in this outcome compared to the outcome in the workshop run in Samoa where there was not one vote for loosened or tightened immigration policy as a force likely to impact future mobility. The researchers also wish to note a possible connection to survey one in this research program where a hypothesis was presented of a possible sub-group in Tonga with a pent-up desire to move (e.g., who may be currently facing mobility barriers).

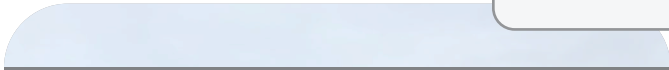
The force that was perceived as having the highest *uncertainty* for the group was regional instability (approximately 50% of the votes).

The following page provides a summary of the four futures defined by the group on contrasting these forces in a matrix. Further detail on each of the futures is provided in the pages after.

1. CSIRO and SPREP. (2021). 'NextGen' Projections for the Western Tropical Pacific: Current and Future Climate for Tonga. Final report to the Australia-Pacific Climate Partnership for the Next Generation Climate Projections for the Western Tropical Pacific project. 2. Asian Development Bank. (2021). Pacific Disaster Resilience Program: Multi Hazard Disaster Risk Assessment, Tongatapu Hazard Assessment Report

TONGA: THE FUTURES - ONE PAGE SUMMARY

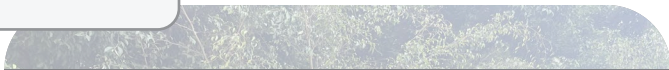
TIGHTER IMMIGRATION POLICY



**NOFO 'I TONGA
(STAY IN TONGA)**
*CLIMATE CHANGE AS PROJECTED,
TIGHTER IMMIGRATION POLICY*



More (need to) stay in Tonga and move to higher ground with resultant land issues (overcrowding, property disputes) and challenges with community integration. People grow isolated from family abroad and need to be more resourceful with farming and repair as remittance and aid funding drops. Efforts are made to return people to Tonga's foundational values in order to stabilise the population.

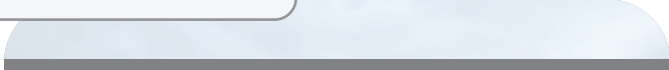


**LUSIA KI TAULANGA
(STRUGGLING TO REACH SAFE HARBOUR)**
*MORE EXTREME CLIMATE CHANGE,
TIGHTER IMMIGRATION POLICY*



Many try to move to higher land - 'Eua, Vava'u, Niua. The population grows due to lower outmigration, and there are significant mental health and social issues. There's more individualism and corruption as people become desperate. Human trafficking increases. Remittances drop as climate costs are felt globally, families turn to subsistence living to survive but it is harder to grow and catch food.

CLIMATE CHANGE AS PROJECTED



HIDDEN TREASURE
*CLIMATE CHANGE AS PROJECTED,
LOOSER IMMIGRATION POLICY*



Tonga remains a country with unrealised potential, with significant overseas migration of the younger population. Foreigners move in to fill the gaps. The economy weakens while remittances increase due to family numbers overseas. Cyclical migration continues to be a feature and permanent overseas mobility is mostly for those who had resided coastally.

MORE EXTREME CLIMATE CHANGE



**SIU 'AE TAVAKE
(THE SEARCHING TAVAKE)**
*MORE EXTREME CLIMATE CHANGE,
LOOSER IMMIGRATION POLICY*



Mass migration overseas and from coastal communities inland and to higher land due to sea level rise and coastal erosion. Inland communities become defensive. Some movement overseas is cyclical aided by easier movement though most don't stay in Tonga. The few that do stay will have limited resources to survive and face mass destruction.

LOOSER IMMIGRATION POLICY

TONGA: THE FUTURES - THE DETAIL

FUTURE ONE - NOFO 'I TONGA (STAY IN TONGA)

CLIMATE CHANGE AS PROJECTED, TIGHTER IMMIGRATION POLICIES IN NZ, AUS, USA

GROUP MEMBERS

The group who worked on this future scenario comprised a number of community leaders, some in their later years of life affording them invaluable insights into Tongan life, traditions and changes over time. Group members included for example a Member of Parliament, a leader of a women's group (and wife to a previous government minister), a church minister, and a renowned Pacific educator.

THE TITLE

A reference to the fact that more people have less choice but to stay in Tonga, but more so, it references the ultimate shift back to traditional value systems that encourage people to stay and reconnect, and encourage some Tongans overseas to return,

DETAILED DESCRIPTION OF FUTURE ONE

A lack of planning has left Tonga in a vulnerable state. Many are confused and disorientated with the significant changes they have faced in the last few decades. The environment has broken down and the landscape has changed significantly. Many coastal areas are now mostly underwater, many roads that were main roads are impassable. Buildings in low lying areas are partially submerged and others closer to the coast have been lost to the sea. The government has done what they can to protect some infrastructure and raise some critical roads, dredging solid material nearby though their resources are limited. In other areas people have done what they can, moving solid rock and sand manually to try to maintain connections between communities. Youth who would have otherwise travelled overseas for work remain in Tonga and some take on these physical jobs. Others who have only known life working in New Zealand and Australia struggle to adapt to their new reality. In some areas this dredging and shifting of solid rock and material further challenges local seafood stocks and exacerbates hazard risks for those on the coast.

For many villages the predominant mode of transportation has shifted to boats - motorised boats for those who can afford it, paddle boats for those physically able. Those who are older, in poor health or who don't have the means to raise their property or surrounding roads and paths become more isolated. People no longer go walking to just drop in to see family and friends. People lose touch with family locally, relationships weaken.

Those who can afford to try to raise their houses with solid rock, concrete blocks or poles. Many cannot afford durable material that stands up to the corrosiveness of sea water - many houses sit in puddles of stagnant water year-round, or have become too dangerous to live in. Where it becomes untenable to remain, some seek relocation to areas of higher land. In Nuku'alofa, people negotiate with family to take them in, in areas like Ha'ateiho. Villages split up in order to move in with their respective families, relocating families split up in order to spread themselves between family houses, and receiving families split up in order to best accommodate those moving in. Some families get rid of their pigs and chickens to make room on the land for extra family. People move from other low-lying islands into Nuku'alofa too. Tensions and conflict arise as diverse Tongan cultures meet enmasse and attempt to come together. With the stressors of significant change, a reduction in means for many families and limited options to be mobile, differences between those moving and those receiving come to the fore. Where once there was unity in diversity - recognition and respect for many differences in language, values and behaviours, those relocating feel pressure to conform to the hegemonic views and practices of their host community and quite quickly, Tonga's cultural diversity narrows. Some have more difficulty than others adjusting to their new environment - particularly those moving from fishing communities inland to farming communities, or vice versa. In some areas, new informal settlements crop up.

Across Tonga there are differences in perspectives on how to best adapt to the environmental (and social, cultural) changes, as well as how to best manage land access and resource sharing. Frustrations are present at many levels - between those moving and those receiving, between communities and nobles, and even between the King and his nobles. Politically, trust in leadership has deteriorated as people see less and less evidence of leaders fulfilling their obligations to the people. People hold resentment towards their leaders for what they see as a lack of planning for changes they should have seen coming. Individualism spikes as aid funding peters out and remittances drop dramatically as people are severely limited in their capacity to move overseas to work. People implore their government representatives to negotiate better access to places like New Zealand and Australia to reconnect with their family there. Weakened connections with family overseas leads to physical health issues, mental, emotional and spiritual breakdown of many and the family structure is further eroded. As people move from coastal and low-lying areas inland they are forced to occupy land that was their family plantation. Food growing land becomes residential and food production drops steadily. In addition, many don't have access to the new tools needed to grow food in their climate impacted environment. Food insecurity and dependence on imported food grows, with health and economic repercussions. Control over food production and provision becomes concentrated on a select few and any profits go overseas.

Perhaps one of the starkest impacts however is cultural - people lose their means to grow and raise food, and thus their means to give, gift and bargain. This leads to cases of true poverty in Tonga - for a person is only poor when they have nothing to give away¹. Cultural practices of weaving cease as pandanus growing is deprioritised, but also as others lose the means to trade for these crafted goods.

Technologically, a reduction in privacy leads to family conflicts being aired. Once a source of great shame, people become desensitised to such conflicts and family harmony is no longer seen as a priority. Diaspora overseas scan for opportunities in remaining land in Tonga and negotiate in private with some nobles to purchase or lease land long term. Technology has continued to replace the in-person teaching of family and misinformation continues to confuse and divide those in Tonga.

However, after years of challenges and social and cultural deterioration, by 2050, Tonga's leadership (from government through to Church and other community leaders) have come together to initiate a significant program of work to reinvigorate Tonga's traditional values.

Values like faka'apa'apa'aki (mutual or two-way respect), feveitoka'iaki (fulfilling one's or one's group's unique obligations), tauhi vaha'a (the outcome of fulfilling one's unique obligations and living one's values), loloto (humility and generosity) and vahevahe mai (sharing) are revisited and adapted for application in their new reality. Large scale re-education campaigns, village meetings and other events seek to kick-start a 'return to self' for Tonga, and stabilise a population that has become untethered from its foundations. People reach a level of acceptance, including of their incapacity to move overseas and decide instead to use it as an opportunity to recreate Tonga, rebuild it from the inside out - starting with their relationships with each other.

SUMMARY OF MOBILITY IMPLICATIONS

As dictated by the scenario parameters, overseas mobility in this future is severely limited. The group recognised that while many will do their best to adapt their housing and repair what they can, ultimately, many people will need to move inland and to higher ground. Overall the group believed mobility (internal) would be a lot higher in this scenario as people relocate to live but also move often to find work and other opportunities. Given the topography of Nuku'alofa, mobility for relocation will focus on some relatively small areas (Mataki'eua, Ha'ateiho etc.) for those hoping to stay close to family and close to town. Families will split up and be placed among different family in receiving villages. New, possibly informal settlements will be established on higher land if formal channels prove too difficult. Others will look for opportunities to relocate to other islands like Vava'u and 'Eua though they would meet challenges with land availability there too. How people get around would change, with people favouring boats for transport of people and goods though the effort involved would limit more 'spontaneous' mobility which typically supports strong family relationships.

RISKS AND OPPORTUNITIES IN FUTURE ONE

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- Flooding and areas underwater, heat extremes, tropical cyclone damage and subsequent rebuilding issues, marine life and crops affected leading to food supply issues

WHO IS MOST AT RISK AND WHY

- People in low-lying areas and those who reside coastally
- Vulnerable people, like those with disability and the elderly, particularly because of heat risks

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- A lot of domestic movement, inland and to higher ground and the establishment of new settlements - formal and informal
- Land issues - overcrowding, division and redivision of land, disputes over land and property
- Deserted and abandoned areas
- Limited access for many to health services, schools and other social amenities because of relocation, but also because of cyclone and flood damage

OPPORTUNITIES

- Relocating internally will mean for some that they can resettle in a safer environment
- This could be the impetus to develop new settlements and design and create new communities - well-designed communities based around all the necessary amenities and with fit-for-purpose infrastructure.

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- Both those relocating but also everyone else as lessons and improvements are shared out among other communities

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- People will be more mobile - moving to where the opportunities are. There will be more interaction of different people, leading to new relationships and the diversification of the genetic pool in areas - improvements in genetic resilience
- New interactions will also lead to new ideas, new opportunities and new solutions

FUTURE TWO - LUSIA KI TAULANGA (STRUGGLING TO REACH SAFE HARBOUR)

MORE EXTREME CLIMATE CHANGE, TIGHTER IMMIGRATION POLICIES IN NZ, AUS, USA

GROUP MEMBERS

The group who worked on this future scenario comprised a diverse mix of backgrounds, including people in the insurance industry, media and government (including someone involved in pre-departure training for workers leaving for New Zealand).

THE TITLE

A Tongan proverb, and the title of a song that refers to seafarers' struggles through stormy weather to reach land. It recognises that the travel to safe harbour is difficult, there's destructive waves and wind, but there is still hope for survival.

DETAILED DESCRIPTION OF FUTURE TWO

Much coastal land has been lost, the majority of Nuku'alofa town is inundated and low-lying villages have been evacuated permanently. Higher land is overcrowded, and land once used for growing food to feed families and earn a small income has been converted - formally or informally - into land for displaced peoples.

It is a future that is environmentally devastated. Key infrastructure has been inundated or destroyed, including the Popua Power Station, and parts of Vaiola Hospital has had to close down causing many challenges over the years. Most fishing grounds have also long been destroyed, reef coral no longer grows and farming is extremely difficult - cyclone damage, sea water infiltration and frequent and persistent flooding events has eroded the soil and makes ploughing nearly impossible. Most families don't have access to tractors that are fit-for-purpose for these new conditions and family plantations sit idle and empty. Just a few large plantations continue to be productive - company held land run by those who can afford the latest crops and the latest equipment to keep farming. The majority of that food is exported, or sold at very high prices to the locals who can pay. Many live on a diet poor in nutrients and variety.

Strictly limited outmigration, particularly impacting youth and young adults, has led to a bump in births and the population of Tonga has climbed for the first time in decades.

Villages located on higher ground, across all island groups but particularly in Tongatapu, are overcrowded and chaotic. There is little land available for resettlement. People who have access to family plantation land relocate there, dismantling and attempting to rebuild their house, or setting up makeshift shelters with what material they can find. Services are often not connected and disease and other health issues arise for some relocated families. The conversion of many plantations to land for housing further impacts local food production. Some people with family connections outside of Tongatapu - higher island groups like 'Eua, Vava'u and the Niuaus - move there, though they move as a nuclear family, splitting up extended families between islands.

Some do find solace in their move - reconnecting with the land of their ancestors and returning in a way to a more simple life, subsistence farming, and living within one's means. Old skills, like food preservation, are taught and shared in some communities and some find strength in their new communities.

For lower-lying island groups, like Ha'apai, many families have made the difficult decision to send their young children to live on other islands with extended family for education or more commonly now, for work.

Remittances fall steeply as the number of overseas workers is cut dramatically and those who do move have limited ongoing contact with family and feel the pull of obligation less and less. A few people still move overseas, mostly those with spouses located in places like Fiji.

People who leave rarely return for fear of not being able to leave again. Some families and individuals become desperate over time, taking desperate measures to get overseas by any means they can.

Many natural areas irreversibly damaged by climate change have been reclaimed with man-made structures to make them semi-usable - often filling these new areas with large factories. Some large food production and importation businesses take advantage of people's need for any work, building new processing factories for food export, and employing Tongan people for little pay and with little rights. Exploitation is tolerated if only for the fact that most lack any other work options. Financial stressors and the pressures of experiencing extreme physical and social change has led to a spike in mental health issues, domestic violence and family and marriage breakdowns. High unemployment has translated to higher levels of crime, and drug use is more prevalent than ever as people seek an 'out' any way they can.

Culturally and historically, many sites have been lost, like some of the ancient tombs, and the Sia heu lupe at Popua - the 600+ year old site that signals Tonga's creation myth. A lack of available land to grow pandanus plants has meant that many weaving skills have been lost and as a result that critical role of women in Tongan society was been lost with it. Even the language has started to change; unique words relevant to unique areas have been forgotten. Words tied to different cultural practices, to different areas now abandoned, words tied to fishing techniques and areas, and farming are all in the process of being lost. A focus on the here and now, and on mere survival for some, has led to more individualism in society. People turn inwards, caring for their nuclear family and disregarding the needs of the extended family. Less and less attention is paid to cultural and traditional obligations.

Technology offers a critical connection to family abroad though limited in-person connection has impacted the strength of those relationships. Factories that have set up and grown in Tonga invest in technological infrastructure, including connectivity, that has some flow on benefits to the broader population.

Politically, desperation has shifted the focus of leadership to the short-term and immediate outcomes with less consideration of long-term implications. As aid funding drops globally, alliances are formed with those nations willing to give the most, deprioritising the alignment of values, standards and relationships. The influence of nations like China grows.

SUMMARY OF MOBILITY IMPLICATIONS

In this future, mobility options are limited - both internally (owing to higher population levels, and less available and/or arable land as well as land tenure policies), and overseas. A few with the means are still able to move overseas, particularly those with spouses in other countries, and they leave with the understanding they will likely not return. Others become desperate and make desperate and risky attempts to move, possibly feeding a new human smuggling industry. Those who remain are faced with an environment that is in pieces. Those with family land and family members in higher-set island groups like 'Eua, Vava'u and the Niuas relocate there for safety but also because that land remains in adequate condition to grow food. Many who move to these places do their best to return to a subsistence way of living, some even finding safety and solace in this return to old ways.

Those with no family on other higher islands, or without spouses overseas seek safe-haven in vacant land inland, or in now overcrowded land plots on Tongatapu like Mataki'eua.

Some stay in place, even in the face of clear danger, some choosing to (like some older folk with deep ties to their land) and those with disabilities who are physically unable to leave, who have no close family around and who see no alternative place that is safer for them.

RISKS AND OPPORTUNITIES IN FUTURE TWO

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- The loss of land - and limited options for the resettlement of displaced people

WHO IS MOST AT RISK AND WHY

- People that live in the greater Nuku'alofa coastal area
- Landowners of areas (e.g., inland and higher land) that would be targeted by those displaced
- Women (who don't own land) and widows who have no other land away from at risk areas (e.g., the Nuku'alofa coastal areas or particularly low-lying areas)

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- People will be forced to significantly adapt their way of living to survive in that environment, and if they cannot, they will have to move
- Human traffickers may target those without options. Human smuggling may become a tool some use who live in affected areas and who cannot move inland or upland and who have no clear channels to move overseas

OPPORTUNITIES

- Economic opportunities e.g., establish policies to encourage big businesses to set up in Tonga

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- Local workers through employment
- Business owners
- Tongan government (revenue raising through e.g., taxes)

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- It might lessen the pressure on some people to move, lessening the likelihood they would seek options, including risky ones, to find opportunities elsewhere

FUTURE THREE - HIDDEN TREASURE

CLIMATE CHANGE AS PROJECTED, LOOSER IMMIGRATION POLICIES IN NZ, AUS, USA

GROUP MEMBERS

The group who worked on this future scenario comprised mostly staff from a range of government ministries, including Tourism, Fisheries, Agriculture, Forests and Farming, and the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC).

THE TITLE

Tonga's great potential remains unrealised as it's people apply their energy, attention and dreams in other lands.

DETAILED DESCRIPTION OF FUTURE THREE

A future where climate change progressed as currently projected, leaving some housing underwater in low-lying areas like Tukumotua and Popua, and parts of Kolomotu'a, parts of Kolofo'ou and Maufanga experiencing discreet flooding. Areas of cultural and social significance in Nuku'alofa town are regularly inundated, including the area around the Royal Palace.

Marine life has been heavily impacted as has the communities who depend on it. Ocean temperatures and acidity has rendered a lot of the nations coral reefs lifeless. The areas where some reefs survive are closed to locals - they can no longer enter the water there or collect food for their family.

With the 'door' to overseas destinations opened further in this future, there is a spike in overseas mobility, however mobility is predominantly cyclical - people moving for periods of time to work and see family before returning to Tonga. The freer movement enables movement out and encourages movement back. Those in low-lying areas and who resided coastally in Tongatapu and in island groups such as Ha'apai are the exception to the rule - faced with the fact or the likelihood that they cannot return to their land they look at options to permanently migrate as a family overseas. Youth in particular take advantage of the opportunities afforded by more open immigration policies in NZ, Australia and the USA.

The absence of many Tongan youth for extended periods has had a cultural impact. A 'missing generation' left a gap in the chain of knowledge and practice sharing between elders, parents and youth. Youth raised between Tonga and other countries brought in new values, beliefs and perspectives - some that complement traditional values, and some, like individualism, did not. Living between nations had other impacts - changing food preferences, a loss of language and even changing how people choose to dress. Many of these changes have caused tension within families.

In light of freer movement, and more people having more options overseas, more nations and companies seek out training partnerships, establishing new facilities in Tonga. Nations and companies compete to attract talent, offering upskilling opportunities that have moved past narrow options of mostly manual work to 'higher-skilled', and higher paid, work.

Not all take the option to be mobile however, even cyclically, as their commitments in Tonga hold them in place. Commitments like their work, businesses or looking after other assets. Climate change impacts have not progressed to the point where all industries have been impacted and many still have work and businesses to run in Tonga.

Across a given year though, lower numbers of working aged Tongans remaining in Tonga starts to really show in the lack of land cultivation. More foreigners are now in Tonga, including workers from China and the Philippines, brought in by the government to try to plug gaps in large infrastructure builds and repairs, and critically, in agriculture and food production.

And while informal agricultural exports continue at similar levels, catering to the strong overseas Tongan population, GDP drops. Previous key contributors to the nations GDP - agriculture, fisheries and tourism have all been impacted by climate change. Whale migration patterns and behaviours have become less predictable and the once strong whale-watching industry in Tonga folded years ago. Cluster businesses that supported the industry, including accommodation and some hospitality services folded with it.

Remittances however continue to grow as workers cycle in and out of Tonga and families have the means to make repairs and adapt their housing to climate impacts. Workers overseas send and bring back new equipment, and some bring back new knowledge and techniques to support family-level adaptation. Many families with multiple family members working overseas realise an improvement in their standard of living - not just able to adapt to environmental changes, but making improvements to their properties and facilities, expanding their house footprint and accessing new communication technology that allows them to be even more connected with those overseas. They donate generously to their Church and new Church facilities have been built across Tonga including new sports and community centres. Some families in more exposed areas pool their money and build up local roads and paths, and establish or repair other local climate infrastructure like sea walls. Diaspora living overseas permanently also continue to contribute financial and in-kind support to family in Tonga as with lots of frequent interactions, relationships and a sense of obligation remains strong.

Politically there are less people overall to 'govern' in Tonga, though the focus has turned more deliberately to connecting with overseas workers and the permanent diaspora. New units and departments are established both to oversee the health, safety and rights of workers overseas, to coordinate contributions, and to better coordinate with other governments receiving Tongans, including for cultural and social support when needed.

SUMMARY OF MOBILITY IMPLICATIONS

With the 'door' to overseas destinations opened further in this future, there is a spike in overseas mobility, however mobility is predominantly cyclical - people moving for periods of time to work and see family before returning to Tonga. The freer movement enables movement out and encourages movement back. Those in low-lying areas and who resided coastally in Tongatapu and in island groups such as Ha'apai are the exception to the rule - faced with the fact or the likelihood that they cannot return to their land they look at options to permanently migrate as a family overseas. Youth in particular take advantage of the opportunities afforded by more open immigration policies in NZ, Australia and the USA. Not all take the option to be mobile, even cyclically, as their commitments in Tonga hold them in place. Commitments like their work, businesses or looking after other assets. Climate change impacts have not progressed to the point where all industries have been impacted and many still have work and businesses to run in Tonga. More foreigners are now in Tonga, including workers from China and the Philippines, brought in by the government to try to plug gaps in infrastructure repairs and agriculture.

RISKS AND OPPORTUNITIES IN FUTURE THREE

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- Not being able to meet the cost of climate change adaptation

WHO IS MOST AT RISK AND WHY

- Particularly women, children and the elderly who may not have the means to support themselves
- Those in poverty, who don't have the money to adapt their housing or their surroundings (including for food production)
- Those with lower education levels who won't be able to access the information they need to react or access resources that could be made available

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Those lacking the capacity to adapt, or continue to adapt to progressive change will be more likely to move.

OPPORTUNITIES

- More opportunities for employment (overseas)

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- Younger generations, those who are working age
- the physically fit, educated

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- More opportunities and a greater ease of movement leads to higher mobility overseas, though this movement may be largely cyclical

FUTURE FOUR - SIU 'AE TAVAKE (THE SEARCHING TAVAKE)

MORE EXTREME CLIMATE CHANGE, LOOSER IMMIGRATION POLICIES IN NZ, AUS, USA

GROUP MEMBERS

The group who worked on this future scenario included youth leaders from the Tongan National Youth Congress, as well as representation from the Ministry of Education.

THE TITLE

"The Tavake is a bird. It's seen sometimes close to shore but it's nature is to go in search of new horizons, deep into the open ocean".

DETAILED DESCRIPTION OF FUTURE FOUR

A future of mass destruction. Flooding events are significant and frequent, crop and coastal land is severely eroded. All biodiversity is affected, with many species of plants, crops and livestock not surviving extreme temperatures and new diseases run rampant. A number of low-lying villages have been abandoned due to sea level rise and persistent flooding, and many schools, banks, the wharf, the Royal Palace, old Vaiola hospital and 'New' Parliament House have been partially or fully abandoned due to damage.

Socially there is significant disruption too. More than three-quarters of the population are forced to relocate, or raise or otherwise adapt their housing to higher sea levels and cyclone threats. Initially, many seek to relocate internally. Overwhelmed with newcomers, communities inland have become defensive of their space and no longer welcome new faces. Progressive challenges with land availability, paired with the hostility of some receiving communities, many families organise themselves to move overseas instead. With borders more relaxed than they once were, overseas mobility is seen as the easier option. Whole families move together as parents of school age children want to remain close, and older children coax their aging parents and grandparents to accompany them overseas so they can be cared for and catered to there. Remittances into Tonga drop off sharply as those who move overseas no longer have close family who remain in Tonga, and diaspora who were already overseas have mostly brought their family over to them.

Back in Tonga the economy flails. Agriculture, fisheries and tourism industries are hit hard by the impacts of extreme climate change. Key infrastructure that would otherwise support the local economy - factories, storage centres, transportation routes have been partially or fully destroyed. Those who would otherwise contribute their knowledge or skills to the local economy have moved overseas.

Up to five constituencies have been lost as whole villages have emptied out, and either moved out or moved in with others. Politically, a significant restructure of the local government has had to happen with some political lines redrawn in haste and decisions around responsibilities and accountabilities still unclear for many.

The distinct lack of a displacement or relocation policy in government before this mass movement occurred is a point of ongoing contention for many in the community. Now, in the midst of change and disruption it is difficult to get all aligned on a way forward. Land tenure rules were considered too complex, too embedded to address a couple of decades ago and so they weren't.

For those who remain in Tonga, land is the number one issue. Access to land for housing, access to remaining arable land to grow food.

Stand offs and conflicts are common within villages as families challenge each other for space, for access to remaining land, water sources and sea resources. Land, left vacant by those who left for overseas and who no longer return remittances is taken over informally by extended family or strangers. With time, tribal intermarriage starts to lessen some conflicts and perceptions of differences for some.

Those who have no choice but to relocate suffer from the loss of their land. A loss of land is associated with a loss of identity for many.

Before this mass disruption people would often be identified by others by their fonua, the land where they are from. If a group of people walked past and someone would say "who is that?", a common response would be "that's Maufanga or that's Ha'afeva or that's Tongaleleka" - the people were the land, and the land was the people. Forced displacement broke the bond that generations of people had with place. In turn, people lost part of their identity, but also, others lost a means to sense-make socially.

Some resisted moving for many years before giving in. A few refused to break the bond and remained until they passed.

For those who relocated overseas, they face a tragic combination of a loss of self from a complete rupture from land, but also a loss of cultural values, increasingly diluted in their new host nation. Old family practices, stories and teachings are lost as the context of their lives shifts significantly.

Technology has had a mixed role in this future. The sharing of updated projections of climate change impacts led to some pre-emptive movement out of Tonga for some families for safety reasons. There were some positive impacts, like a reduction in uncertainty about what the future held. Those with interest, who could make sense of the information presented, were motivated to share the information further and take some preparatory steps which certainly improved outcomes for some.

ADDITIONAL RICHNESS

One of the members of this team also drafted a short story, written in the form of a journal entry, projecting herself forward into this future. Below is the transcript of the diary entry she shared during the workshop.

OLIVE'S JOURNAL ENTRY

April 3, 2050

We're in Kolomotu'a. It's about 3am and Mum and I were still up staring at the candlelight, trying to keep warm.

We'd just finished moving most of our furniture upstairs.

I could hear the radio saying that Tropical Cyclone Harlow had just been upgraded from category four to five.

Fear struck me as I looked outside and saw the heavy rain and strong winds hitting our verandah. Flooding it. Some water had started to enter around our front door but Mum used some clothing rags to seal around it, and around some window gaps.

I heard a loud cry from the neighbour - our neighbour with four children. Water had flooded their house and they had nowhere to run to. We invited them in and give them dry clothes.

It only took a few hours for the water to catch up to us and get into our living room. Mum said we have to pack some essentials and flee to the Church hall near Havelu. We struggled through the rain and flood to get to Havelu, and when we got there it was already packed.

Havelu's Town Officer told us to try to find some space to settle down. Everyone was drenched and were very cold.

After the cyclone passed we returned home and saw our house completely destroyed. Any remaining belongings were nowhere to be found.

So we had to return to Havelu hall, and we asked the Town Officer for help. We had nothing left.

It's been a month and we still haven't heard from the government on any plans to help us, on where we could relocate to. We hear that a lack in displacement policy really slowed the process down.

Communication was cut for most of that time, and with Dad overseas we weren't able to reach him to ask for some money to help us get by.

It has been very uncomfortable in this new place. We don't know anyone else in this area. Some people are helpful in Havelu but when we went outside the other day to plant some of our plants, the neighbours said we weren't supposed to be planting in that area because that is their piece of land.

We don't have any money - our only source of income was selling the food we could grow on our farm back in Kolomotu'a.

Fortunately Dad finally contacted us through the Town Officer's phone and he had some good news. He has prepared for us to move over to New Zealand to be with him and my baby brother. He said the visa application process was very easy and everything is ready for us.

I was happy, but I saw Mum's tears falling down her face. She was struggling with the idea of letting go of our home and her garden. Her garden which was grown by her parents and their parents before that. Mum felt like she was leaving her parents behind, they are buried in our backyard. This is where she grew up. Her safe haven. Her heritage. Kolomotu'a is her home, her identity. How does one leave their heritage?

Dad encouraged her. He said, 'in order to survive, we need to expect change. Even though help is far from home, this is necessary for our survival'.

June 1, 2050

We're settled in New Zealand, but I can't help but think about the others who we left behind in Tonga. I hope they can afford to relocate as well. We were lucky that Dad was here already and could support us. But what about others, like our neighbours, who don't have anyone overseas to support them?

SUMMARY OF MOBILITY IMPLICATIONS

Families from lower-lying and coastal areas initially attempt to relocate internally. Competition with host communities inland or on higher land creates challenges for many displaced families who are denied the ability to plant food or settle with a level of permanence. Lack of clarity, or transparency around plans for resettlement, and long delays from the government pushes many families to look overseas. For those displaced, mobility overseas is ultimately seen as the easier choice and for those with the means, especially those with immediate family overseas already, mass overseas mobility ensues. Whole families relocate.

Those without the financial means to travel look at options to relocate internally though there are progressive challenges with integration and there is much social division.

RISKS AND OPPORTUNITIES IN FUTURE FOUR

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- Cultural erosion (loss of identity, attire, traditions, beliefs) and a loss of land, biodiversity and ecosystem breakdown

WHO IS MOST AT RISK AND WHY

- Children are most vulnerable to cultural erosion, leaving them more exposed to outside influences and foreign culture
- The elderly are most at risk in terms of the loss of land - they have a strong connection and bond with the land which is difficult to break

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Adaptation to the significant change in this future - both environmentally and culturally - will be very challenging.
- Displaced people - both internally and overseas - will face new struggles with identity, mental health, as well as practical challenges around lifestyle, food, language barriers etc.

OPPORTUNITIES

- People will have access to better academic and employment opportunities overseas
- People (able to travel) will also have better access to healthcare resources and services

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- The general population, but particularly children and youth for education, healthcare and employment opportunities, and particularly healthcare for the elderly

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Higher mobility of those seeking out these opportunities (particularly youth and working age groups)

TONGA: 'NO-REGRETS' ACTIONS

The final step in this process was to identify a set of 'no regrets actions'. The purpose of this step was to ensure participants felt that opportunities still exist to shift the direction of their futures - particularly given the heavy nature of discussions, and to collect a set of actions that are truly 'no regrets' - that even if none of these futures actually play out, taking these suggested actions would still be of some benefit. In Tonga there was alignment on a couple of the ideas. In particular, three of the four groups identified the need to run large scale and ongoing dialogues with the general population to improve understanding of climate changes underway and expected in the future. It was important to the group that this information was specific to impacts in Tonga. This gap or need is supported by other research findings, where approximately 40% of survey one participants showed knowledge gaps about the general manifestations of climate change. Unique ideas included running practical education sessions 'out in the field' educating on e.g., agricultural changes and adaptation techniques. Another idea raised by two groups was to more deeply embed climate change education into the schooling curriculum. The need for relocation and displacement policies, and a review of Tonga's land laws also came up throughout the day and in this specific activity.

Idea one - run an ongoing community dialogue to raise awareness on local impacts and changes

Nationwide public consultations and conversations on what changes are expected in the future (specifically) under what time horizons. Focus on the impacts of the change - where, how, when. Target influential leaders, including Church and other community leaders. Include practical sessions 'in the field' such as farming and marine or coastal demonstrations. Include the latest adaptation knowledge to support early thinking on preparation needs across levels of the community - from individuals and families to businesses and government. Include internal and external experts across different climate change impact topics.

Points the group emphasised: this should be an ongoing effort - too many programs are one-offs and don't have the follow through or staying power that is needed. Information should be communicated in a way that is relevant and makes sense to the audience. Information must be updated regularly as understandings develop.

Benefits identified: empower people with the relevant and specific knowledge to support planning and action. Facilitate mental preparedness for change. Improve understandings of both risks and stimulate thinking on opportunities (i.e., could be innovation and economic benefits). Strengthen partnerships with a range of internal and external climate change experts. Support sustainable thinking through education (e.g. through marine management topics).

Idea two - government and other leaders begin focused efforts to plan for future change, and ramp up dialogue with a range of development partners and aid donors to support a coordinated plan

Government representatives as well as other influential community leaders come together to create a plan for a climate change impacted future for Tonga. This group lead a series of consultations across the nation, as well as with overseas diaspora to understand priorities, gaps and seek feedback on potential actions. Broad national consultation includes a focus on the relatively vulnerable (e.g., those residing in geographically vulnerable areas) as well as likely receiving communities and land owners (e.g., those with higher land in Tongatapu and on higher island groups). Once consultations are done, begin outreach to existing and new development partners and aid funders, aiming for support of a coordinated (national) plan. Potential aspects of the plan could include negotiating land (purchase or trade) in other countries as a long term option to access as a 'last resort'.

Benefits identified: Being transparent with the intent and deliberate in the broad and purposeful engagement of the community will build mutual trust. Starting early means more options are still available to discuss before major changes happen. Existing and new partners (including other nations) will be reassured of the focus and direction demonstrated by Tonga's leadership. Diaspora with the means to support can also be leveraged in a coordinated and focused way.

Idea three - begin work on relocation and displacement policies, including consideration of land tenure implications for Tonga

Possibly linked to idea two, or an action unto itself, begin the long task of developing internal relocation and displacement policies for a climate change impacted future. Consider examples from other nations, draw on lessons from displacement and relocation events in Tonga (e.g., post Hunga Tonga-Hunga Ha'apai eruption) and engage those impacted by relocation to support holistic planning. Consider accessing local and international experts. Within the context of this outcome, review land tenure systems in Tonga, including how to make them more fit-for-purpose in a climate changed future.

Points the group emphasised: the participants emphasised the need for significant changes in land laws to make them fit for purpose in a climate changed future, and believed it would be a necessary precursor to actioning any meaningful relocation and displacement policies (see idea two)

Benefits identified: Support coordinated and timely internal mobility during and after sudden environmental events, as well as mobility driven by slow onset hazards like sea level rise. Support practical and mental preparedness and reduce risks of delays and conflict.

Idea four - deepen and embed climate change and adaptation topics into the schooling curriculum

Develop the schooling curriculum further to include a focus on climate change impacts and its specific effects on Tonga and the region. Include preparedness techniques, combine lessons with science, art, language, technology and other topics to deepen understandings about the risks and the opportunities. Focus on solutions and actions and encourage the involvement of parents in leading family discussions around adaptation and planning / having a 'Plan B' for the family (e.g., for income generation or living location).

Points the group emphasised: participants believed it is important to educate the younger generation to prepare their minds, empower them with relevant and actionable information, and equip them with the knowledge they will need to survive and thrive in the future.

Benefits identified: the younger generation (who will face greater impacts of climate change) understand the issues and are aware of the risks as well as the opportunities. Through the involvement of parents, families are more prepared and take ownership of their future/s.



SAMOA: CHOOSING THE CHANGE FORCES

The first step in the scenario development process that required active input from the participants was the selection of the change forces to plot on the axes of the scenario matrix (see step three on the process infographic).

Given the focus of this research effort, the first axis was suggested and agreed with the group to be a spectrum of climate change severity; from 'climate change as projected' to 'more extreme climate change'. The participants were provided an outline of what each of these could mean, with 'as projected' being the mid-to-higher range of current projections¹ to 2050 for sea-level rise (+0.5 metres), temperatures (+0.5 degrees celcius) and stronger tropical cyclones. 'More extreme climate change' pushed beyond current global scenarios to consider sea-level rise of up to two metres, mean temperatures of two degrees celcius higher or more, and much more destructive tropical cyclones. This change force was also suggested in order to maintain consistency with the process run in Tonga.

On agreeing the first axis, six other change force options were presented to the participants. These change forces were inspired by desktop research and findings from earlier research activities (workshops, talanoa) in both Tonga and Samoa. They were:

1. Economic growth (or decline)
2. Immigration policy [overseas] (tightening or loosening)
3. New technology
4. Corruption in leadership (an increase or decrease)
5. Regional instability (e.g., from geopolitical forces)
6. Other (where participants were invited to offer other forces they felt would have a higher impact or had higher uncertainty)

The participants were given two different coloured post-it notes to vote. The neon green was a 'vote' for the change force they believed would most impact mobility if it were to change, the pink was a vote for the change force they felt held the highest uncertainty in their future/s.

In Samoa, the change force of perceived *greatest impact* on future mobility was **economic growth (or decline)** with approximately 40% of participants voting for this. The force that came in second for impact was 'other'. Some suggestions in 'other' included cost of living overseas (suggesting a force bringing more diaspora back to Samoa) and overseas cultural influences.

The researcher noted that in stark contrast to the results in Tonga, **not one of the participants in Samoa voted for changes in overseas immigration policy as a high impact future mobility driver**. The participants were asked about this later in the day with the following reasons given:

1. The perception that people in Samoa already have a range of immigration options available to them and some believed that these quotas are not met currently (i.e., the demand is not there)
2. One believed that changes to policy would never happen or that any changes would not be lasting (providing an example of historic immigration policy changes in New Zealand for Pacific peoples which were retracted)
3. Another believed that immigration policy is just a money maker for receiving countries like New Zealand and Australia, perhaps suggesting a perceived degree of temporariness in any future arrangement or temporariness in any future immigration offer itself
4. Another asserted that "as long as people have family [land] assets to take care of here, they will never leave".

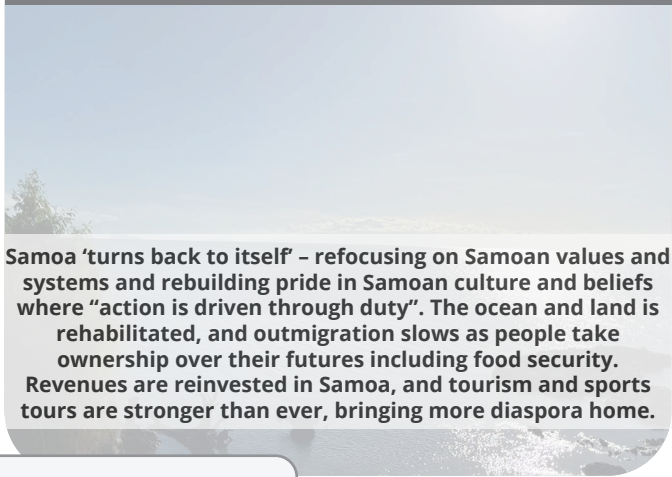
The forces perceived as having the highest *uncertainty* for the group was tied across a number of forces including regional instability, corruption in leadership and growth (or decline) in the Samoan economy.

The following page provides a summary of the four futures defined by the group on contrasting these forces in a matrix. Further detail on each of the futures is provided in the pages after. It is important to note that the drivers of the strengthened or weakened economy was not discussed or defined and participants were asked to accept the state at face value for the sake of the exercise.

1. CSIRO and SPREP. (2021). 'NextGen' Projections for the Western Tropical Pacific: Current and Future Climate for Samoa. Final report to the Australia-Pacific Climate Partnership for the Next Generation Climate Projections for the Western Tropical Pacific project.

STRONGER SAMOAN ECONOMY

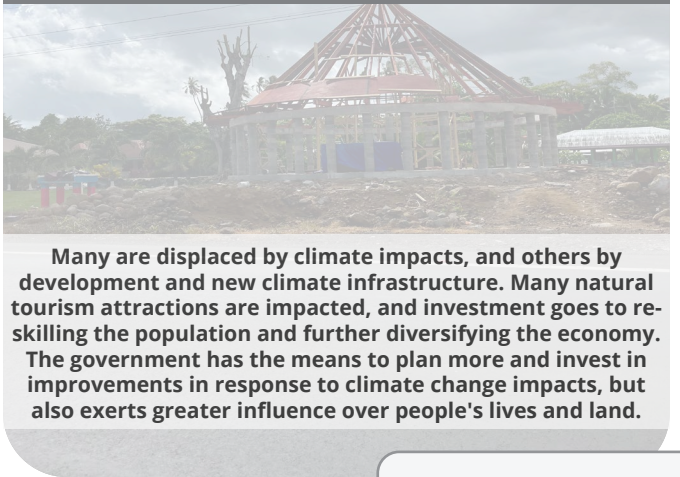
SAMOA MANUIA
*CLIMATE CHANGE AS PROJECTED,
STRONGER SAMOAN ECONOMY*



Samoa 'turns back to itself' – refocusing on Samoan values and systems and rebuilding pride in Samoan culture and beliefs where "action is driven through duty". The ocean and land is rehabilitated, and outmigration slows as people take ownership over their futures including food security. Revenues are reinvested in Samoa, and tourism and sports tours are stronger than ever, bringing more diaspora home.

CLIMATE CHANGE AS PROJECTED

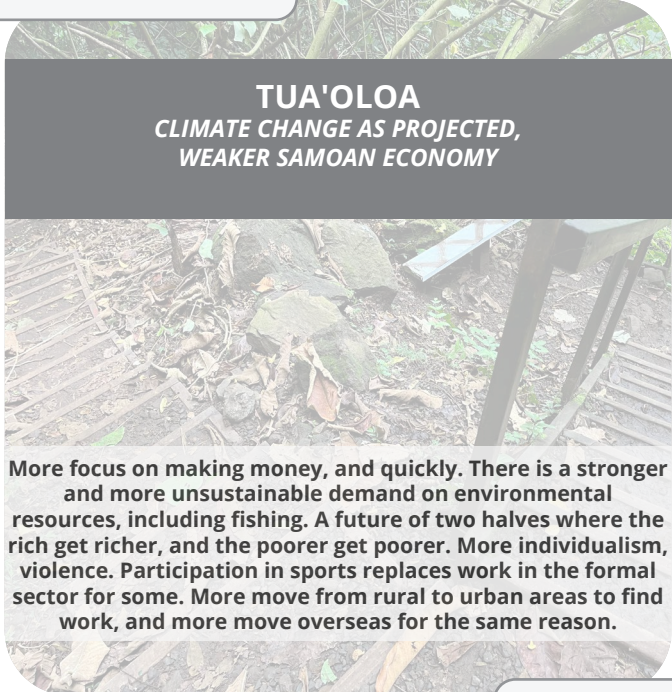
NAFANUA
*MORE EXTREME CLIMATE CHANGE,
STRONGER SAMOAN ECONOMY*



Many are displaced by climate impacts, and others by development and new climate infrastructure. Many natural tourism attractions are impacted, and investment goes to re-skilling the population and further diversifying the economy. The government has the means to plan more and invest in improvements in response to climate change impacts, but also exerts greater influence over people's lives and land.

MORE EXTREME CLIMATE CHANGE

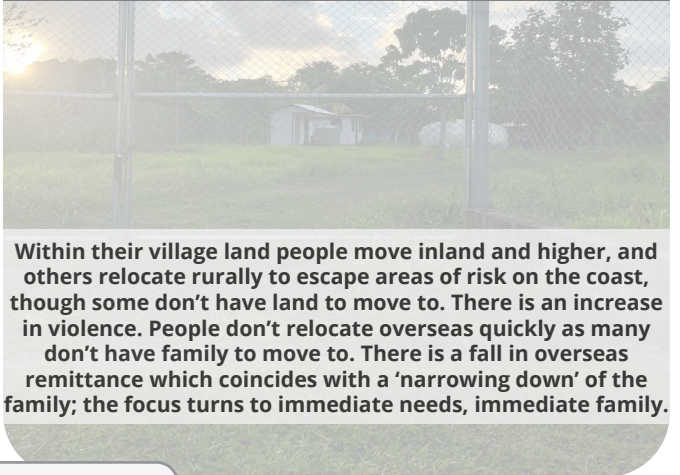
TUA'OLOA
*CLIMATE CHANGE AS PROJECTED,
WEAKER SAMOAN ECONOMY*



More focus on making money, and quickly. There is a stronger and more unsustainable demand on environmental resources, including fishing. A future of two halves where the rich get richer, and the poorer get poorer. More individualism, violence. Participation in sports replaces work in the formal sector for some. More move from rural to urban areas to find work, and more move overseas for the same reason.

WEAKER SAMOAN ECONOMY

**MANANA'O FAALUPE O ELEELE NAUMATI
(LONGING FOR FREEDOM)**
*MORE EXTREME CLIMATE CHANGE,
WEAKER SAMOAN ECONOMY*



Within their village land people move inland and higher, and others relocate rurally to escape areas of risk on the coast, though some don't have land to move to. There is an increase in violence. People don't relocate overseas quickly as many don't have family to move to. There is a fall in overseas remittance which coincides with a 'narrowing down' of the family; the focus turns to immediate needs, immediate family.

FUTURE ONE - NAFANUA

MORE EXTREME CLIMATE CHANGE, STRONGER SAMOAN ECONOMY

GROUP MEMBERS

The group who worked on this future was diverse, including for example a village chief, a consultant and counsellor as well as someone who works in fire and emergency in Samoa.

THE TITLE

A reference to an important goddess in Samoan mythology, a goddess of war as well as healing, who was revered for her skill and strength in particular.

DETAILED DESCRIPTION OF FUTURE ONE

A future that is prosperous economically for Samoa, but for those living it, it remains a hard life. The land is 'scorched'. Extreme climate change has led to the degradation of significant areas of rural land, particularly impacting those living in villages that were once fully immersed in subsistence farming and fishing. Now, they struggle to farm and fish in the ways they used to and many living on the coast have shifted their homes further inland. Some considered moving overseas but know that other countries are no better off; all over the world people are facing harsh new environmental realities.

Climate change impacts have affected some of Samoa's key tourist attractions, including places like To Sua (trench) and once worldclass marine sanctuaries. Sightseeing businesses have folded across Samoa, as well as the accommodation, food, transport and equipment hire businesses that supported them. Tourism is no longer a key contributor to the country though the economy thrives through other means. Foreign investment is much more common now than aid and hits an all-time high. The government is flush with funding to respond to and pre-empt some of the most challenging impacts of climate change. Climate change infrastructure projects are well underway, raising land in urban areas, building new road networks, bridges and resilient buildings which creates significant employment nationally, particularly in urban areas. As well as large scale projects, the government has experimented with stimulating small business ventures in Samoa and the economy diversifies - with service-based businesses such as gyms, boarding and private schools popping up in town to support new workers with money to spend.

New programs are established to reskill workers to support new infrastructure builds, but also to target those who previously depended on work in traditional agriculture, fishing and the now defunct tourism industry. Some are upskilled in new technologies that enables new forms of agriculture that can withstand the new climate-changed environment. Foreign investment supports research and development hubs and Samoa is growing its profile as a leader in resilient and sustainable agriculture.

New education partnerships are established and foreign investment supports the further development of communication and technology infrastructure, supporting remote working arrangements as well as new service-based global industries. Churches previously in the villages relocate their buildings to urban land in order to maintain and capture more membership, and they partner with government and new educational institutions to deliver some of these upskilling and leadership programs.

Renewable energy projects, particularly solar farms and household installations have also been scaled up to support a population that is ever urbanising and an economy that continues to thrive.

Politically, central government is more influential than ever. Some express concerns about the increased power of the government, and the influence it is having socially and culturally. Significant land arrangements are negotiated with village Matai (chiefs) for access to land for development and some villagers grow concerned that the priorities of their village leadership is shifting. New laws around land and development are passed through government and these laws continue chipping away at previously autonomous governance within villages. With greater influence of the government, and concerns about the loyalties of their leadership, some begin resisting the inputs of their Matai. Village systems, and the families themselves begin breaking down. Cultural breakdown follows as village practices and rules are adhered to less and less. Cultural disruption and family division, combined with the significant deterioration of their environment drive many living in rural areas to begin to look to move to urban areas. Pushed by changes, and pulled by opportunities for education, employment and better access to things like healthcare, rural to urban drift ramps up to levels not seen before. Youth are influenced by the lifestyles they see others living in urban areas and they are often the ones to move first.

Significant urban mobility has material cultural and religious impacts. Many are tempted by the availability of new entertainment venues like nightclubs. The usual support system of extended family and their previous church community is absent and some fall into unhealthy and unproductive lifestyles.

SUMMARY OF MOBILITY IMPLICATIONS

A consistent mobility theme in this future was a ramping up of rural to urban flows. This was driven by push forces of environmental degradation limiting the capacity of villagers to maintain subsistence lifestyles, as well as the disruption of cultural systems in the villages that would have otherwise served as a powerful stay factor. Pull factors such as more education, employment and lifestyle opportunities convinced many to make the move to growing urban centres.

The group didn't see a great increase in overseas mobility in this scenario believing that people would recognise that harsh climate change impacts would be global, and owing to the strong economy, Samoa would have a lot still to offer - employment, education and business - to those who remained.

RISKS AND OPPORTUNITIES IN FUTURE ONE

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- The loss of control of land, the breakdown of autonomous systems of governance and the increase in power of the government to change the rules

WHO IS MOST AT RISK AND WHY

- Families in villages who may lose their lands to development interests, infrastructure builds (for climate change adaptation or otherwise)

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Spiritual disconnection and cultural system breakdown leading to a weakened village governance system that could cause some to reject traditional leadership and leave villages
- Displacement of whole families directly impacted by land acquisition for climate infrastructure and other development

OPPORTUNITIES

- Increase people's motivation and capacity to create new businesses and contribute to a growing economy

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- Youth
- Whole families and villages who commit to building their capabilities or skills

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Much higher levels of rural to urban mobility than we have seen before, seeking out training and work opportunities

FUTURE TWO - MANA'ONA'O FA'ALUPE O 'ELE'ELE NAUMATI (LONGING FOR FREEDOM)

MORE EXTREME CLIMATE CHANGE, WEAKER SAMOAN ECONOMY

GROUP MEMBERS

The group who worked on this future included a consultant involved in resilient agriculture, a teacher, an elder and previous government worker.

THE TITLE

A reference to a well-known love song in Samoa, where the artist speaks about a lost love, accepting that they found love elsewhere but also wondering what could have been done to stop them from going.

DETAILED DESCRIPTION OF FUTURE TWO

A desperate future, where many are directly exposed to severe climate impacts. Villagers in rural areas who resided coastally have been displaced and have had to move inland and upland. Many villages have lost large areas of land to erosion. Some villages do not have inland or highland areas to retreat to and these villages break up one family at a time as people seek shelter with family members in other areas. Those who have been able to move inland have no choice but to set up makeshift homes on land once used for planting and food production. Changes in land use combined with the destructive impacts of stronger cyclones, extreme heat events and less predictable seasons, food production and food security within many villages becomes a serious issue. Many families lose their only income source as they are no longer able to grow sufficient food to eat, let alone any extra to sell. Local products that once filled the market are replaced with imported goods of varying quality.

Economically Samoa has gone backwards. Inequality is exacerbated with the rich finding ways to adapt and maintain levels of control in the new environment and those with the least falling further into poverty. Productivity is at an all time low. Overseas aid into Samoa has all but dried up as nations globally struggle with the impacts of extreme climate change and it is increasingly difficult to attract foreign investment as key infrastructure, including transportation routes and communication technology becomes harder and more costly to repair with each devastating tropical cyclone.

Socially, high uncertainty, financial pressures, and trying to feed the family under harder and harder environmental conditions leads to an uptick in domestic violence. Those displaced inland have ongoing issues with critical services connection, like water and power. Many develop a sense of victimhood, and emotional and mental health issues are widespread. There are limited resources and help available. With little option, many begin to narrow their focus to caring for immediate family only - the mentality that many begin to subscribe to is 'immediate needs and immediate family'. Heads of family turn away from obligations to care for extended family members in Samoa and conflicts within family groups become more common. Within villages, systems of governance are eroded as people narrow their view of family and culture starts to suffer as it is practiced less and less. In terms of family overseas, remittances continue but at much lower levels as families overseas also buy into a new view of immediate needs and immediate family. The needs of extended family in Samoa are deprioritised.

Some people with close or immediate family overseas opt to move overseas and chance life there. Many do not have family abroad, or family who can take them in and they remain in Samoa. Long and arduous immigration processes puts others off attempting to leave.

Church membership and participation drops as well as people struggle financially and have to cut off their church offerings.

Desperation in the general population is reflected politically. Some criticise government for initial decisions some saw as short-sighted, prioritising quick payouts over longer-term outcomes. Some believed that corruption and conflicts of interest were prevalent, especially in the early years of these extreme climate change impacts. Conflicts within government reached a peak and with the threat of total political, and social, breakdown the motivation arose for major changes. These changes were positive in many respects, enabling more coordinated and purposeful reform of some laws to help Samoa and its people adapt to the extreme impacts of climate change. With limited funds, repair efforts and any development plans go through tight prioritisation criteria, with prioritisation going to those projects that secure basic safety needs, such as communication and the transport of food and water between communities.

SUMMARY OF MOBILITY IMPLICATIONS

Those who can relocate within their village land inland or upland move away from the coast and into rural areas in order to escape sea level rise risks and significant land erosion. Some do not have village or family land inland to retreat to and face real challenges, often having to negotiate with extended family elsewhere to allow them to stay for short or longer periods of time. Some people with immediate family already overseas choose to leave Samoa and chance life there. Many do not have close family overseas however and many extended family have closed ranks focusing on 'immediate needs and immediate family', less commonly welcoming family to stay.

RISKS AND OPPORTUNITIES IN FUTURE TWO

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- A loss of all forms of resources - economic, social (capital, strength and cohesion), environmental, spiritual

WHO IS MOST AT RISK AND WHY

- Working people, particularly farmers and those most closely reliant on the land/ocean and its produce

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Those previously reliant on the land will have to move to find other opportunities for self and family security
- Not all people will be able to afford to move internally or overseas to seek out new land or new income streams. Some people without resources will have to remain.

OPPORTUNITIES

- Opportunities to take new approaches to stabilising and growing the economy, including environmental and technological innovation. There will be high motivation for change and solutions

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- All / the general population

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Some may be encouraged to move to where new opportunities are (working age people)

FUTURE THREE - TUA'OLOA

CLIMATE CHANGE AS PROJECTED, WEAKER SAMOAN ECONOMY

GROUP MEMBERS

The group who worked on this future included a development expert, youth, a member of a civil society organisation, and an athlete.

THE TITLE

Defined as a traditional term for a type of wind in Samoa. Tua'oloa was described in the workshop as a mixed wind and partly 'confused'. Other writing on traditional ecological knowledge in Samoa describes Tua'oloa as a 'bad wind' with one folklore associating it with death¹.

DETAILED DESCRIPTION OF FUTURE THREE

A future of two halves - where those with money and resources can maintain (or even improve) their lifestyles, able to adapt to change where needed and remain in place, while those going without face a range of new challenges and choose mobility to seek out work or safety elsewhere. The other divide in this future is the loss of some traditional ways of life and income generation but the emergence of new opportunities for work and social connection through sports and non-traditional industries.

The economy overall has weakened, and many are preoccupied with making money. A focus on money-making has led to more conflicts in the community over traditional money-making resources, particularly land. People seem more individualistic.

Necessary fixes to roads, bridges and communication infrastructure are done as cheaply as possible and often do not last. A lack of funds prevents the government from investing in more long-term but costly infrastructure improvements and much of the key infrastructure in Samoa remains vulnerable to progressive climate change impacts.

Politically, many struggle with what they perceive as a lack of integrity amongst some leaders who do not prioritise what is best for all and instead appear to prioritise their own agendas. People lament the deteriorating infrastructure and the unregulated overuse of resources particularly by businesses. Development as a whole is less environmentally friendly as people across the board look to fill financial gaps with what resources they can.

Environmentally there is greater demand on ecological resources. Higher demand is driven in part by climate change impacts which has increased the scarcity of arable land as well as reduced fish catch. Demand is also being driven by those working to derive an income from natural resources and there are few incentives and even less regulation to manage the sustainability of these resources. Overfishing is widespread and the variety of fish is now limited to one or two types. Financial pressures on households puts pressure on local businesses to provide cheaper options to consumers which leads to even greater exploitation of resources and corner-cutting.

To plug some gaps the government borrows more and increases taxes, further challenging households. Price caps are also not common, and the prices on essential food items and services have soared. In spite of these challenges, the people of Samoa continue to hustle - finding innovative ways to make an income and equally, finding unique ways to live within their means. Families shift to a focus on affordability and prioritising spending that is best for the family. Small businesses continue to operate locally, and some new ones pop up. People find new ways to grow food to eat and sell.

The divide between the rich and the poor in this future becomes clearer through observing people movement. More people from rural areas without the resources to adapt to climate change impacts move into town looking for work and other opportunities. People also move away from some of the more traditional sectors of work, including those that have less certainty now, or which take longer to generate income (e.g., agriculture) and seek out work that can pay faster money - including new forms of work in entertainment. More people are now seen living on the streets in town. Others unable to adapt sufficiently to the changes around them also move overseas for work opportunities and with the hope of an easier life there.

Across the community, participation in sport has grown and with the downturn of the economy, many who lost jobs have turned to sports participation as an alternative. Sports events are big business and many now organise their time around sports game attendance. New opportunities come up for high potential athletes to secure well-paid sporting contracts in Samoa, attracting some diaspora home, and new industries emerge to support a burgeoning local sports and entertainment economy.

Samoa value systems endure for now, and cultural practices largely continue though participation decreases as other things - like earning an income - is prioritised. Over time, less participation in cultural practices starts to reveal a loss of traditions and values across Samoa that could have an impact for generations to come.

1. Lefale, P. (2010). *Ua 'afa le Aso - Stormy weather today: traditional ecological knowledge of weather and climate. The Samoa Experience.*

SUMMARY OF MOBILITY IMPLICATIONS

A focus on making money, and making money quickly drives many to move from rural locations into town. With a weak economy, less work, failing infrastructure and an increasingly deteriorated environment, there is an uptick in the number of people moving overseas looking for work and hopeful for an easier life. Stimulation of the sporting industry in Samoa incentivises some youth to stay, and starts to attract some of the diaspora into Samoa. This future was described as a future of two halves and it is likely that those with access to more resources to maintain (or improve) their lifestyle in the face of these economic and environmental changes would be more likely to remain in place than those going without.

RISKS AND OPPORTUNITIES IN FUTURE THREE

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- A high cost of living causing consumer access challenges to services and products.

WHO IS MOST AT RISK AND WHY

- People with less financial means ('poor')

WHAT COULD THESE RISKS MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Increase motivation to move overseas (for those who can pay for the travel) or move into urban areas as people seek out opportunities to make money

OPPORTUNITIES

- Increase participation in sports (beyond rugby!) and non-traditional sectors (including entertainment), diversifying options to make money. Greater participation in sports could also improve the health and healthy lifestyles of the community

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- Youth and their families
- Athletes and those with high potential
- Those who would work in supporting industries (events, sports health, marketing and promotion, nutrition etc.)

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- Sporting and other promotional contracts locally could encourage the return of some of the diaspora to Samoa, and reduce the 'drain' of talent overseas, or that initially, some go temporarily overseas for development before returning to work (and play) in Samoa.

FUTURE FOUR - SAMOA MANUIA

CLIMATE CHANGE AS PROJECTED, STRONGER SAMOAN ECONOMY

GROUP MEMBERS

The group who worked on this future included a leader in the sports sector and a member of a range of boards, an employee of the Samoan Red Cross, a church pastor and a member of a local NGO.

THE TITLE

Samoa manuia - a blessed, prosperous Samoa where the future is bright.

DETAILED DESCRIPTION OF FUTURE FOUR

A happier, safer, and more prosperous Samoa. People are rich financially but are also rich in their culture, language, and family relationships.

Outside the streets are clean. Climate change impacts progress as projected but there has been high investment in protecting and rehabilitating the land and the sea. The sea is cleaner than it has been in decades, and fish stocks are tracked and well-managed.

People have a better understanding of their environment and how they can be involved in protecting their home in future. The broader environment is green and people have decorated their homes, their community buildings with bold colour.

People are more active, taking it upon themselves to cultivate and beautify their land and the population is healthier. Thinking back to where they were two decades ago they feel they have risen above great hardships and are now much more resilient.

Employment is high and a greater proportion of the working population are white collar workers. There is much less crime.

Culturally there has been a dedicated effort to reinvigorate the family unit and the practicing of Samoan values. This has been heralded as the foundational act that has enabled such positive change. Strong village protocols have been reinstated and there is great pride in the practice and protection of Samoan values and beliefs. Within the villages, religious leaders hold critical positions and are active and productive within the community, helping hold together family and village units. There is a commitment throughout the population to prioritise practices and lifestyles which work for Samoa.

Economically, Samoa has invested well in innovation - sustainable poultry and other meat farming industries have expanded and these efforts complement a thriving local agricultural sector. Owing to quick thinking and investment, key tourist attractions have been maintained and the tourism sector has continued to grow. Sports tours (local, regional and global) are at an all time high. Revenue received by government has been reinvested back into enabling further growth.

Politically, Samoa boasts a stable and focused government. Confidence in the government's financial position encourages them to be innovative with their policies, prioritising benefits to all and with the aim of further stimulating the economy. Investment in the education system continues and the curriculum is both tailored and relevant to Samoa, and integrates - and celebrates - Samoan culture, values and other knowledge. Most describe the government as strong and fair.

Samoa has access to and uses the latest technologies however Samoa also maintains a national technology strategy - ensuring that technology applied in Samoa fits Samoa's context and protects Samoa's people and priorities - 'we are not at the whim of the world - we select and pick what works for us, what enables Samoa to grow and benefits Samoa for Samoa'.

SUMMARY OF MOBILITY IMPLICATIONS

In a future where Samoa has returned to its values, systems and structures and is thriving economically, culturally, socially and environmentally (within the limits of projected climate change impacts), migration into Samoa becomes net positive. Diaspora seek out the opportunities in Samoa, they seek out the innovation, the safety and the revitalised cultural systems that make Samoa unique and strong. A robust cultural and social system that has a strong sense of self encourages Samoans to stay and contribute to a strong and bright Samoa.

RISKS AND OPPORTUNITIES IN FUTURE FOUR

On detailing their future scenario, the group was also asked to zone in on a key risk and opportunity in that future, and think through some implications, including the impact of that risk and opportunity on people mobility. Note, many other risks and some opportunities were identified in the process of detailing the future scenario.

KEY RISKS

- This group did not believe there were risks to highlight in this future, just opportunities.
- On further discussion they acknowledged that there would be climate change risks though this was seen as an opportunity - an opportunity to improve preparedness levels for times of crisis.

OPPORTUNITIES

- Innovation and growth for greater food security in Samoa.

WHO COULD MOST BENEFIT FROM THIS OPPORTUNITY?

- All people of Samoa.

WHAT COULD THESE OPPORTUNITIES MEAN, INCLUDING FOR PEOPLE MOBILITY?

- There would be a decrease in urban migration from rural areas as people are supported with adaptation and take ownership of their food security and their futures.

SAMOA: 'NO-REGRETS' ACTIONS

As with the process in Tonga, the final step in this process was to identify a set of 'no regrets actions'. The purpose of this step was to ensure participants felt that opportunities still exist to shift the direction of their futures - particularly given the heavy nature of discussions, and to collect a set of actions that are truly 'no regrets' - that even if none of these futures actually play out, taking these suggested actions would still be of some benefit. In Samoa, like Tonga, there was clear alignment between all groups that more efforts are needed to improve the general population's understanding of the impacts of climate change. Participants believed one of the key goals of awareness and education campaigns would be to support community and household decision-making (e.g., on adaptation efforts, mobility decisions etc.). Two groups were aligned on the idea of investing more in food security in Samoa, going beyond awareness-raising about climate change to pragmatic support like the provision of greenhouses/tunnels, or easier access to small finance for adaptation projects for villages and households.

Idea one - run awareness campaigns to raise awareness of local climate impacts and changes

Nationwide public awareness campaigns focused on empowering the grassroots community (i.e., reach beyond government and other white collar workers) with the knowledge needed to make decisions or take action. Awareness campaigns should include information that is easy to understand and importantly, is specific to Samoa. Groups saw the benefit of having a practical element to these trainings, possibly including demonstrations on different farming techniques, or the use of new equipment or tools etc.

Points the group emphasised: People have been talking about the term climate change in Samoa for two decades but most people, particularly those in villages, farmers, those most directly affected are not aware of the risks most relevant to them or what actions they should be thinking about taking. This awareness campaign needs to be far-reaching, but also practical and specific to Samoa's context.

Benefits identified: Support decision-making and planning and motivate action across the Samoan population. Reduce the risks of climate change impacts by empowering people with knowledge they can use.

Idea two - complement awareness campaigns with practical support and easier funding access for households to improve their food security

Moving beyond equipping people with knowledge and techniques, invest in practical solutions at the district, village and household level to remove adaptation barriers. Groups believed support to strengthen food security across communities should be the initial priority. Ideas included easier processes to apply for small grants or interest-free loans to purchase tools, equipment or even climate resilient crops. Another specific idea was supporting districts, villages or households by providing a number of food growing 'tunnels' or greenhouses.

Points the group emphasised: Knowledge isn't enough. People need practical help to access the resources or tools they need.

Benefits identified: help people to help themselves, removing initial barriers to building adaptation capacity and/or resilience within villages and communities. Offset cost of living pressures by supporting home-grown food and facilitating income generation for those growing enough to sell as well. Improving food security at a village level will likely reduce rural - urban mobility.

Idea three - look for and invest in large scale food production solutions for Samoa

While building food security at the district, village and household levels, also level up capacities and infrastructure for national level food security. Aim for food production at scale, but also consider opportunities to have a research and development focus. Research and development could include experimenting with non-traditional approaches to growing food, but also testing different crops for durability which can then be distributed to district/village/household level farms (see idea two)

Benefits identified: Reduce food insecurity risk and reduce dependence on imports. Investing in food security at a national level may help stimulate the economy, creating jobs and upskilling opportunities.

Idea four - for those identified as being of higher risk of climate change displacement, target practical support (finance, budget, other)

Based off the latest exposure mapping for Samoa and e.g., inundation scenarios, identify villages with higher relative risk. In combination with greater awareness raising and education of the population, target and tailor support to those at higher risk of future displacement with planning resources, including financial, budget or other family or village-based practical planning.

Points the group emphasised: There will be a long lead time for good planning and a range of barriers to work through. Some may not have to plan for their own mobility but the support/hosting of family that may relocate to their land or home in the future.

Benefits identified: Give families/villages the tools they need to begin thinking through practical requirements, particularly if relocation (internal or overseas) may be the path taken.

Idea five - explore ways to revitalise interest in, and the practice of Samoan values to help restore the family unit and build social resilience to upcoming change/s

Seek out ways to more broadly and deeply integrate knowledge sharing on the history, practice and benefits of traditional value systems. Consider channels like church, schools/the schooling curriculum, and self- or family-directed learning (online and/or in-person)

Points the group emphasised: "Samoa is people based, and the strength of Samoa is in its people"

Benefits identified: Develop strong and contextual leadership, improve social cohesion and improve social resilience to stabilise the population and guide against social division in the face of significant climate change-driven disruption.

Idea six - invest in a new national sports industry

Seek funding partnerships and create a bold pathway to build a new national sports industry.

Benefits identified: strong incentive for youth to stay in Samoa, stimulate economic growth for Samoa and provide new work opportunities in sectors new to Samoa.

LIMITATIONS AND ADDITIONAL RESEARCHER REFLECTIONS

LIMITATIONS

1. Time restrictions: The process is a full one. There are benefits to compacting the process into one day, including attendance (see reflections below) but also momentum. Each step feeds directly into the next with this process and flowing through each step in one day does support a useful level of momentum. The trade-off is that it doesn't provide much time for participants to sit with information and reflect. Time is also not afforded for analysis on possible second (and third) order impacts which would be valuable information to capture. It would be valuable to test this process over two days to allow for this. With more time it could be possible to stress test some of the thinking for internal consistency, to allow more cross-group input, and even to consider other change force combinations.
2. A focus on two change forces (only): as suggested in the notes on methodology, a drawback to this 'deductive' approach to scenario development is that only two major change forces can be placed in tension to create the future frameworks. In reality, many major change forces will interplay in our future/s. This can be mitigated through active encouragement to explore other forces at play, which we did with dedicated time to read and absorb population, economic, migration data at the start of the workshop. A benefit of the deductive approach is that it is quick to teach and can still land some rich and nuanced insights in a short amount of time.
3. Choice of climate change for one of the axes: some scenario purists may argue that climate change does not have enough inherent uncertainty to have it as one of the change forces (recall change forces are typically selected for high impact and high uncertainty). The researchers did go back and forth on this however decided to include it. There is still uncertainty in understandings of how quickly and severely climate change may progress, and uncertainty more specifically for Tonga and Samoa about the impact on aspects of tropical cyclone behaviour and rainfall. Including it as a change force also 'forced' focus on climate impacts - a specific focus of this research.

ADDITIONAL RESEARCHER REFLECTIONS

1. The process is an intensive one for researchers and participants. The heavy nature of the topics and the severe and devastating implications for participants themselves and their families is draining to consider and discuss over the course of a full day. Through the consent process and in the provision of the information packs to each of the participants, researcher contact details and other advice on options to debrief were provided. The in-country research partners also represented another avenue for participants to follow up with should they have had questions. However, the researchers think future processes should build in a follow-up meeting with all participants. This could provide space for reflections or ideas they missed out sharing, firming up thoughts on actions or otherwise.
2. At the start of the workshop participants were asked to share one word to describe how they were feeling, and were also asked to share a reflection at the end of the workshop. At the start of the workshop, most shared words like excited, curious, or nervous (e.g., about whether they would be able to contribute valuably to the day). At the end of the day, participants shared thoughts about the critical and timely nature of these discussions, how they feel the burden of obligation to take action given new knowledge, and how they felt grateful to have been part of a process like this. One participant from Samoa shared that she entered the workshop feeling cynical, particularly given other experiences with climate change discussions led by outside parties which came across as directive and without a Samoan lens. She said she was happy with this process, that it was unique in that it allowed participants to lead the discussion and the outcome. Another said it was the most engaging approach to discussing climate change she had experienced.
3. A recent study covering multiple countries and over 2000 participants has shown important links between creativity and a creative mindset, and motivation to take action on climate change. These researchers found that creative individuals displayed more future-oriented thinking, open-mindedness, perseverance, and opportunity spotting. This bodes well for the use of this futures scenario process not just as a tool for data gathering, but as a means to engage leaders and possibly support outcomes of action.
4. As was suggested by one participant in Tonga, a workshop of this nature would be best run over two days. There would be a practical barrier to overcome in expecting the diverse range of participants required for these workshops to be able to commit so highly, particularly those in significant leadership positions. That longer length of time is likely needed, and yet so is the presence and commitment of people of relative influence and leadership. The researchers felt like that was a trade-off that had to be made this time around - have a shorter time commitment or have less access to a diverse group, including those in leadership positions.
5. As mentioned earlier in the notes on methodology, the researchers reflected that future processes would lean less on the use of workshop templates to capture detailed written notes and instead set up for more comprehensive video and audio data capture. The researchers did make provisions to have research partners placed around the groups but even so, the richness in the discussions, the ideas raised and left behind in the journey to their conclusions could never be captured sufficiently in written notes on the day.
6. Future visualisations were run for a select few (about one-third) of workshop participants prior to the workshop (see product 'The Visions'). The purpose of that process was to provide space for highly imaginative exploration of future possibilities, to dive deeply into individuals beliefs and assumptions about the future, and to capture some creative inspiration to share with the workshop participants. Researchers noted that those who took part in the visualisation process prior to the workshop seemed to show an even higher degree of engagement with the workshop process and took a lead in many of the activities. In other words, taking part in the visualisation process prior to the workshop seemed to materially impact buy-in to the follow on workshop. Researchers did not attempt the ~one to two-hour process of one-on-one visualisations with all 30+ workshop participants for resourcing reasons, however if in future it is a possibility to run the process with more people ahead of the workshop it would likely deliver even higher participant engagement.

SOME IMAGES FROM THE WORKSHOPS

TONGA, JULY 2023



SAMOA, AUGUST 2023





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