



# THE MOBILITY-WILLING AND THE STEADFAST STAYERS

A SURVEY ON MOBILITY-WILLINGNESS AND  
RECENT AND PLANNED MOBILITY IN TONGA AND  
SAMOA IN THE CONTEXT OF CLIMATE CHANGE

**PACIFIC CLIMATE CHANGE MOBILITY RESEARCH**

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## PRODUCT OVERVIEW

Survey One is the first of two surveys run in Tonga and Samoa as part of 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.

The intent of Survey One was to collect quantitative data on Tongan and Samoan people's beliefs and perspectives regarding climate change and future mobility (and/or staying in place). The survey was also used to collect some data on recent or planned internal mobility (e.g., intra-island movement) and the drivers of that movement, as well as planned overseas mobility in the short- to medium-term (the next five years) including destination preferences.

For comparison, Survey Two (underway at the time of writing) focuses on mobility decision-making, and importantly, some of the the impacts of mobility.

Data collection in Tonga ran from March 2023 – July 2023, and in Samoa from May 2023 – August 2023 with final numbers being 290 participants in Samoa and 305 participants in Tonga. Collection efforts covered populations on each of the populated islands of Tonga (Tongatapu, Ha'apai, Vava'u and 'Eua) and Samoa (Upolu, Savai'i, Manono and Apolima) and the researchers via our partners sought balanced sampling where possible (e.g., age, gender, location). Partners reported participation in the survey across the full spectrum of the Tongan and Samoan community, including government employees, Members of Parliament, farmers and fisherfolk, students, at-home carers, tradespeople, those in the private sector, those in media and more.

The survey took an average of eight minutes to complete when done via the online link, and closer to 12-15 minutes to complete when it was filled out in paper form. The survey itself was broken into two main sections. After some demographic information was collected, the first section focused on participants beliefs and perspectives regarding climate change, mobility, and the future. It started with a question on what climate change means to them, which was then followed by 10 statements (e.g., 'climate change means me/my family will need to leave our home at some point in time') which participants were invited to respond to with 'strongly agree' through to 'strongly disagree'. The second section was focused on recent and planned mobility, including questions on recent and planned mobility (internal and overseas) in the last, and in the coming five years. All questions were translated into Tongan and Samoan. The full set of questions posed to our participants is included in the appendix.

Given the large data capture, the researchers focused on drawing out the 'story' in this data for this report - including points of worthwhile comparison between the results in Tonga and in Samoa and exploring age and gender trends. In addition, the researchers looked into some interesting anomalies or apparent inconsistencies in responses which turned out a few new hypotheses (e.g., of possible pent-up desire to move in Tonga), and in other cases, has provided additional evidence for what the researchers have been hearing anecdotally (e.g., on land availability). Finally, analysis has identified some areas that warrant further exploration through upcoming research (e.g., confirming specific climate change impact drivers for those reporting climate change mobility in the recent past).

Like all research efforts, there were some limitations to the exercise and a number of learnings by the researchers which will be carried into Survey Two. These limitations are covered in the Methodology, Limitations and Context section. The report starts with a high-level summary of insights for policy makers.

The research team wishes to thank our partners in Tonga and Samoa for their generous support on this survey, including Velata Tonga Incorporated, and Tepora Wright.

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## HIGH-LEVEL SUMMARY OF INSIGHTS FOR POLICYMAKERS

In terms of **who** is or may be more mobile in future, overall, Samoans appear to be more mobile, have higher intentions to be mobile, and are less inclined than Tongans to want to stay in place even if life got harder.

- More Samoans than Tongans reported moving internally in the last five years and more Samoans than Tongans are planning to move overseas in the coming five years. Tongans and Samoans are planning internal mobility in the coming five years at very similar rates.
- More Tongans than Samoans reported that 'life is easy right now', and Tongans felt stronger about remaining in Tonga as long as possible than Samoans felt about remaining in Samoa, even if life got harder. About two-thirds of Tongans (compared to about half of Samoans) agreed or strongly agreed that even if their home was destroyed in a storm they would find a way to stay.

Further, in Tonga, there was a gender difference seen in likelihood to be mobile and likelihood to stay; females more than males were more inclined to be mobile and males more than females were more inclined to stay. In Samoa, there was no discernible difference between genders and proclivity to be mobile or remain in place. In terms of age, in Tonga those in the 34-45 year age group appeared more likely to be mobile, whereas for Samoa, those in the 18-24 year age group were more likely to be mobile (with a staggering half of those in the 18-24 year age group reporting plans to move overseas in the next five years).

Differences are seen between Tongans and Samoans in **where** they are inclined to move, including apparent differences in preferences (or capacity) to move internally versus overseas given the need and opportunity.

- Given the opportunity now, more Tongans were open to moving to New Zealand than moving elsewhere in Tonga, while those in Samoa felt similarly about moving within Samoa and moving to New Zealand.
- Given a hypothetical future situation where it was considered unsafe to remain at home, given options, Tongans showed a stronger inclination to move overseas compared to somewhere else in Tonga. The opposite was true for those in Samoa who showed a stronger inclination to move elsewhere in Samoa in this situation than moving overseas.
- In terms of planned internal mobility, the predominant 'direction' of movement for those in Tonga was described as urban to rural, followed by coastal to inland. Important climate-relevant context here is that urban areas in Tonga are relatively low-lying. In Samoa approximately 70% of planned internal mobility was to be coastal to inland.

New Zealand is the clear destination of choice for those in Tonga and Samoa, for those planning overseas mobility in the coming five years, as well as in response to questions on hypothetical overseas mobility given the need and opportunity.

- In addition, more than half of participants in Tonga and Samoa answered 'agree' or 'strongly agree' to the statement 'if I/my family was given the chance now to live in New Zealand, I would leave my current home and move there'.

In terms of **why** people have or plan to be mobile, escaping the impacts of climate change was the reason most commonly given for future internal mobility for both Tonga and Samoa. Tongans feel more strongly than Samoans that climate change will necessitate moving in the future, and report climate change as a recent driver and future driver of mobility more commonly.

- About 90% of Tongans and Samoans reported they are worried about climate change, though Tongans expressed stronger levels of concern than Samoans.
- There may be connections between level of worry, understandings of climate change and recent events in Tonga, with a much higher proportion of those in Tonga believing that volcanic eruptions and/or tsunami are manifestations of climate change. Further exploration as to the specific climate change impacts driving this mobility (reported past and planned mobility) is warranted.



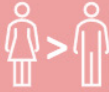



The survey data also suggests that there may be an unmet desire (or need) for mobility for a subgroup in Tonga that wasn't seen in Samoa. This hypothesis is based on a moderate proportion of participants in Tonga strongly indicating they would both move to New Zealand or elsewhere in Tonga now given the opportunity. Also, given the strength of desire for mobility noted in response to hypothetical mobility statements, the level of recent or planned mobility reported didn't correspond with this strength of inclination.

These findings are explored in more detail in the Key Insights section later in the report.

# HIGH-LEVEL SUMMARY - INFOGRAPHIC

The infographic below summarises some of the key findings from Survey One, including some of the high-level findings of 'who' in Tonga and Samoa are more or less mobility 'willing', as well as summary stats on recent and possible near-future climate mobility. More detail on these insights and more follows.

## HIGH-LEVEL: THE WHO, WHY AND WHERE OF CLIMATE-RELATED MOBILITY IN TONGA AND SAMOA

	TONGA 	SAMOA 
<b>WHO</b>	More open to be mobile 'Mobility-Willing' <sup>1,3</sup>  35 – 44 years <sup>7</sup>	 18 – 24 years
	More likely to stay 'Steadfast-Stayers' <sup>2,3</sup>  45 years +	 45 – 54 years
<b>WHY</b>	Moved internally in the last 5 years due to climate change 4% of all respondents / 26% of all who moved	2% of all respondents / 6% of all who moved
	Plan to move internally next 5 years due to climate change 7% of all respondents / 39% of those planning to move	6% of all respondents / 33% of those planning to move
<b>WHERE</b>	Internal mobility versus cross-border given the need and option <sup>4</sup> Less inclined to move, when do move, more likely overseas <sup>5</sup>	More inclined to move, when do move, more likely internally <sup>5</sup>
	Overseas destination preference <sup>5</sup> ~3/4 reported New Zealand, followed by Australia	~1/2 reported New Zealand, more closely followed by Australia

1. More open to be mobile considers a range of mobility related statements in the survey, including hypothetical mobility statements and recent and planned mobility. Mobility here is considered in the sense of moving 'permanently' to live somewhere else (internal mobility or overseas)  
 2. Based on responses to questions "even if life got harder, I want to stay in [Tonga/Samoa] as long as possible" and "even if our home was destroyed in a strong storm, I wouldn't leave my home/homeland"  
 3. Note that further disaggregation of the data brings further insights on analysing gender and age together (rather than analysing gender and age separately), including in looking at inclination to move internally versus overseas  
 4. Based on responses to four questions (1) "if I/my family was given a new place to live now, in a different village or island, which was safe, I would leave my current home and move there" (2) if I/my family was given the chance now to live in New Zealand, I would leave my current home and move there" (3) "if in future it isn't safe to stay at home, and I had somewhere different to live in [Tonga/Samoa] (in a different village or island) I would leave my current home and move there" and (4) "if in future it isn't safe to stay at home, and I had the opportunity to live in a different country I would leave my current home and move there"  
 5. Based on reported target destination for planned overseas mobility in the next five years



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## KEY INSIGHTS FROM THE DATA

This section covers some of the key insights from Survey One, with a focus on the 'who', 'why', and 'where'.

In terms of exploring the 'who', some high-level characteristics have been identified of those who appear to be more mobile or open to mobility scenarios (the 'Mobility-Willing') as well as some characteristics of those that may be more likely to stay in place ('Steadfast-Stayers') including in the face of climate change drivers. Identifying the more 'Mobility-Willing' and the 'Steadfast-Stayers' have been based on both the strength of positive or negative sentiment towards a range of mobility statements as well as reported plans for mobility. A summary infographic for the 'Mobility-Willing' and the 'Steadfast-Stayers' is provided covering some of the high-level findings.

Insights on the 'why' of mobility include what the data is saying on climate change mobility drivers, as well as a new hypothesis on a few subgroups of participants that may be facing barriers to mobility despite a possible desire (or need) to move. 'Where' insights include analysis of data on the direction of planned internal mobility (e.g., urban to rural, coastal to inland) as well as overseas destination preferences.

### THE MOBILITY-WILLING IN TONGA AND SAMOA

For the 'Mobility-Willing', researchers looked at who was disagreeing with statements about staying in place in spite of worsening or unsafe conditions (e.g., even if life got harder, I want to stay in Tonga/Samoa as long as possible), those agreeing with hypothetical statements about moving internally or overseas given the need and opportunity (e.g., If in future it isn't safe to stay at home, and I had somewhere different to live in Tonga (in a different village or island) I would leave my current home and move there), and those reporting plans to move in the coming five years.

In terms of age, within Tonga we saw those in the 35-44 years age group being the most willing to move internally given the opportunity 'now' as well as move overseas in future, if it were not safe to stay. In Samoa, the younger age group of 18-24 years were most open to hypothetical opportunities for mobility, now and in future, and were planning mobility - internally and overseas - at the highest rates.

When just looking at gender, the researchers noted that in Tonga, females were most open to hypothetical mobility opportunities (internal and overseas) and are also planning mobility in the next five years more than males. There didn't appear to be a material gender difference in Samoa (noting however that for hypothetical statements regarding future mobility internally or overseas if it were not safe to stay, slightly more males than females in Samoa agreed with this statement). What was most surprising was the very similar responses seen between males and females in Samoa for both mobility willingness and preference to stay (sometimes having the exact same results or there being a 1-2% difference).

In analysing the data for gender and age together however, further insights emerged. For Samoa, males in the 18-24 years range were most likely to be open to or planning *internal* mobility. When looking at *overseas* mobility however, while 18-24 years was still the age group most inclined to move, there was no difference seen between males and females. In Tonga, females in the 35-44 years age group were most likely to be open to or planning internal mobility, while males in the same age range were most open to or were planning overseas mobility.

In considering location, compared to representation in the overall cohort, a higher proportion of those in Tonga from Ha'apai - an island recognised as being exposed to relatively higher climate change risks - appeared to be Mobility-Willing.

Data was also collected on highest education level and profession/job type. Those who reported themselves to be office workers, shop workers, business owners or professionals were more highly represented in what we might consider the 'Mobility-Willing' group across both Tonga and Samoa. This group was also on average more highly educated than the population average for Tonga and Samoa. In Tonga, compared to the overall participant group, the 'Mobility-Willing' were slightly less educated than the cohort average, and in Samoa, slightly higher educated than the cohort average.

## THE STEADFAST-STAYERS IN TONGA AND SAMOA

For the 'Steadfast-Stayers' researchers looked at who was agreeing with statements about staying in place in spite of worsening or unsafe conditions, those disagreeing with hypothetical statements about moving internally or overseas given the need and opportunity, and those reporting they do not have plans to move in the coming five years. In terms of age, within Tonga we saw those in the 45+ years age group being the more likely to want to stay, in Samoa, this age group was more specifically the 45-54 year age group.

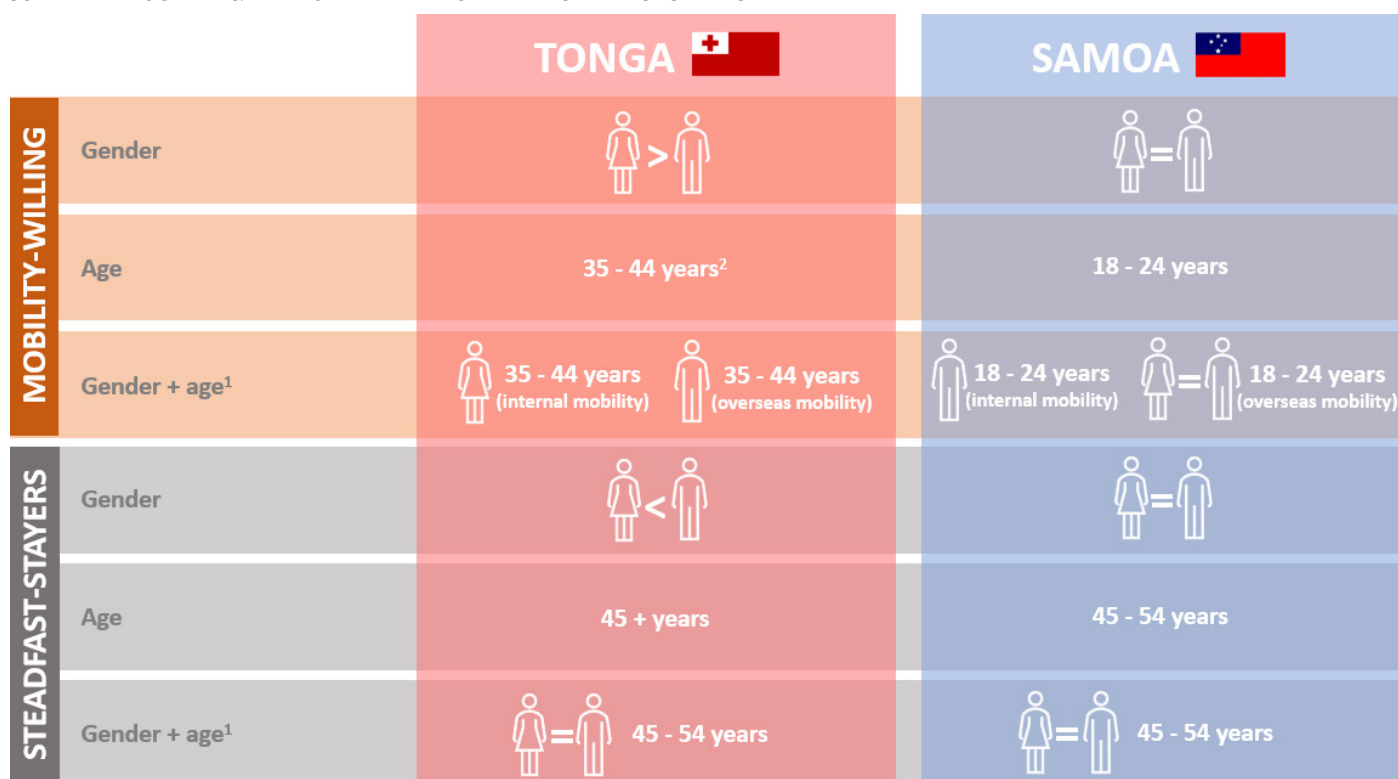
When just looking at gender, in Tonga, in response to hypothetical statements of moving internally or overseas if it were no longer safe to stay at home, males more commonly disagreed or strongly disagreed with these statements. In response to other statements regarding staying in place (e.g., 'even if life got harder I would stay in Tonga as long as possible') more males in Tonga agreed with these statements than females. Males also agreed more commonly than females to the statement about rebuilding their home if it were destroyed in a storm and/or finding some way to remain. In terms of mobility planning, males were less likely to be planning internal or overseas mobility in future than females.

In considering gender in Samoa, like with the 'Mobility-Willing', there was no clear gender difference in those more likely to want to stay in place, or who are not planning mobility (noting however that for the statement 'even if life got harder I would stay in Samoa as long as possible', slightly more females than males in Samoa agreed with this statement).

In analysing the data for gender and age together however, the gender difference fell away for Tonga and for both Tonga and Samoa, the subgroup least likely to/or to want to move for Tonga and Samoa was the 45-54 year age group, with no difference noted male to female.

In both Tonga and Samoa, the picture was mixed in terms of patterns around professions or jobs, however the data did show a lower or slightly lower educational level for those considered 'Steadfast-Stayers' compared with cohort averages.

### SUMMARY INFOGRAPHIC: THE MOBILITY-WILLING AND THE STEADFAST-STAYERS



1. Note, sample sizes became quite small for some gender, age subgroupings.  
 2. Special mention to 25-34 years age group which also had a regularly strong showing in Tonga data.

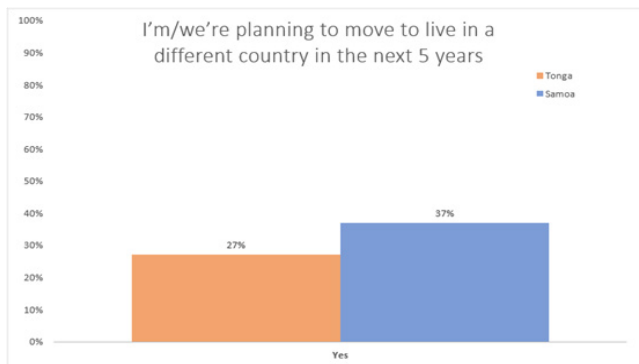


## PREFERENCE FOR NEW ZEALAND, AUSTRALIA A STRONG SECOND FOR SAMOA

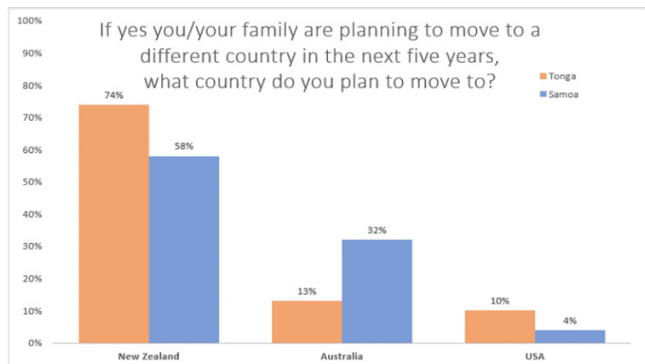
In terms of overseas mobility, as shared earlier in this report, New Zealand featured as the destination of choice for participants in both Tonga and Samoa. 80 participants in Tonga (27%) and 99 participants in Samoa (37%) indicated they plan to move to a different country in the coming five years. Of those 80 in Tonga, 74% stated that New Zealand is their planned destination. In Samoa, 57 participants (58%) stated New Zealand is their planned destination. This preference is supported by data reported in this research team's first product ('Recent Shifts, Future Signals') where data from New Zealand, Australia and the USA show that New Zealand has been on average the destination of choice for those moving from Tonga and Samoa to live 'permanently' overseas in the last decade or so.

Participants in Samoa showed a stronger preference for Australia than those from Tonga, with just over 30% saying they plan to move to Australia. Those in Samoa who identified Australia as their planned destination, their main reason was 'good work opportunities' and 'good education opportunities', followed by 'family are there'. For those in Samoa and Tonga who identified New Zealand as their planned destination, 'family are there' was the most common main reason given. Those from Tonga were planning to move to the USA at higher rates than those from Samoa, though still low numbers overall.

TONGA VS. SAMOA: PLANS FOR OVERSEAS MOBILITY



TONGA VS. SAMOA: PLANNED OVERSEAS DESTINATION





## HIGHER PROPENSITY IN SAMOA FOR INTERNAL MOBILITY, LOWER FOR TONGA

Given a hypothetical situation where it was deemed unsafe in future to remain at home, those in Tonga appear more open to overseas mobility compared to internal mobility than those in Samoa where the figures are almost reversed (see infographic below). Those in Tonga have moved internally at lower rates than those in Samoa have in the last five years. Looking forward, in Tonga there is no uptick in numbers planning internal mobility, whereas there is in Samoa.

Over a third of participants in Samoa, and a quarter of those in Tonga are planning overseas mobility in the next five years.

SUMMARY INFOGRAPHIC: DIFFERENCES IN INCLINATION TO MOVE INTERNALLY COMPARED TO MOVING OVERSEAS

	TONGA 	SAMOA 
If given the opportunity, would move <u>internally now</u>	49%	51%
If given the opportunity, would move to <u>New Zealand now</u>	56%	52%
If in <u>future</u> it is not safe to remain at home, would move <u>internally</u>	52%	67%
If in <u>future</u> it is not safe to remain at home, would move <u>overseas</u>	68%	53%

Note, figures above account for both 'strongly agree' and 'agree' responses. Some reflections on possible rationale for this difference is discussed next.

## POSSIBLE INTERNAL MOBILITY BARRIERS FOR THOSE IN TONGA

As seen on the previous page, there are differences in inclination to move internally. Some relevant insights include:

1. Similar numbers in Tonga and Samoa agreed or strongly agreed with a statement about taking up an opportunity to move internally 'now', however, in Tonga a much higher proportion responded 'strongly agree' (20%) compared to Samoa (7%)
2. There was little-to-no change in the proportion of those in Tonga who would hypothetically move internally now given the opportunity and need compared to in the future, while there was a clear uptick in the proportion of those in Samoa who would move internally in future if needed
3. Despite more people feeling strongly about taking an opportunity to move internally, those in Tonga have a lower rate of recent internal mobility and there was no increase in the proportion of those planning to move internally in the future

This tension in the data could suggest that those in Tonga perceive or are experiencing barriers to internal mobility, and that this is beyond what is perceived (or experienced) in Samoa.

Anecdotal evidence would suggest that perceived or actual issues with land availability in Tonga could be a mobility barrier. Research participants have expressed in talanoa and in workshops that there is a lack of land availability and/or land access for subsistence food production or for relocating. Anxiety has been expressed by a few around land availability, particularly on islands of higher relative elevation (e.g., 'Eua) given expectations that those islands may continue to host internally displaced people. Others have shared concerns around emerging leasing and/or gifting practices that some believe could further threaten land availability for Tongans in future.

In contrast, in Samoa the researchers have often heard from talanoa and workshop participants that there is 'plenty of land', and that land availability will not be an issue for mobility in the foreseeable future (services connection and other practical considerations aside). In a women's workshop in Samoa, it was noted that inter-village mobility is uncommon (except following marriage or a major disaster event) but that the options are available for mobility within a village's given land, land that often includes elevated sections. Having options to move to higher ground within a given village's allotment may ease barriers/perceived barriers to future internal mobility in Samoa.

A number of participants in Tonga who completed Survey One on paper also took the opportunity to explain some of their responses in writing. Up to 10 participants indicated that they are not planning to move within Tonga in future however they still circled the type of mobility (e.g., coastal to inland), and the reason for mobility (e.g., escape the impacts of climate change). One written explanation translated into the following: *"My apologies. I feel I need to explain my situation. I am very aware that we live in a place that is not safe. We have no other options, nowhere else to move. Also, I am the eldest in the family and I feel I must stay as I am responsible to my parents, and my younger sibling who is not married"*. This participant resided in Paa-'a-tangata (Popua, Tongatapu) – an area well-known locally to be highly vulnerable to high tides and storm surges, as well as one of the key areas identified at-risk in future inundation models<sup>1</sup>.

Other than land, there could be social barriers to internal mobility. Workshops have revealed concerns in Tonga around the impact of mobility on relative status on entering a new village/community. One woman raised an example about where she would sit in church if she moved somewhere else in Tonga – she had worked her way up to a certain position in her church, and she was concerned about how she may be relegated to a 'lesser' location, or even be left outside, if she were to start over elsewhere in Tonga, discussing the social shame that would come with that situation. In other engagements, others in Tonga have been less specific but have mentioned things like '[in other places] they won't know me' (including their established status, and perhaps their role/s within their current context).

In Samoa, a small group of participants provided responses to two statements related to staying in place that were seemingly in tension. About 6% (18 participants) of the Samoan cohort responded 'disagree' to the statement about remaining in Samoa as long as possible, but responded 'agree' or 'strongly agree' to rebuilding or finding a way to stay if their home was destroyed in a strong storm. This tension could be explained by participants responding to a more specific choice, however the question of rebuilding or finding a way to stay even if one's home was destroyed does call on the participants to consider practical matters, including what alternate options they may, or may not have. The sample size is small and so characteristics of this group were not explored in detail though the researchers note there didn't appear to be a gender, age or location pattern, but the group did have a lower average educational level compared with the cohort average.

1. Asian Development Bank (2021). *Pacific Disaster Resilience Program: Multi Hazard Disaster Risk Assessment, Tongatapu Hazard Assessment Report*

## POSSIBLE OVERSEAS MOBILITY BARRIERS FOR THOSE IN TONGA

Considering overseas mobility, the survey results also reveal a large contingent of those in Tonga who would move to New Zealand 'now' given the opportunity, with 30% of participants responding 'strongly agree' to that statement. This compares to just 12% in Samoa. Considering possible barriers to overseas mobility, while survey participants did not prioritise visa matters as a main reason for destination selection (see question 19), in a recent future scenarios workshop in Tonga, participants shared that current immigration settings are considered tight and loosening setting abroad would have an effect on outbound mobility for Tonga. This was caveated however, stating that mobility would likely still be circular with people opting to return to Tonga in the medium term. In Samoa, this was not the sentiment, with participants stating that Samoa has access to a range of overseas mobility channels already and that loosening immigration policy won't necessarily impact mobility levels for those in Samoa.

## PENT-UP DESIRE (OR NEED) TO MOVE IN A SUBGROUP IN TONGA

As noted, there are indications that some in Tonga (possibly more than in Samoa) are facing mobility barriers. The researchers noted that there was a group of participants in Tonga who might have a pent-up desire or need to move. This group (about 15% of the total cohort) both strongly agreed to statements about moving somewhere else in Tonga now, and moving to New Zealand now given the opportunity. In contrast, only 3% of the Samoa cohort said they would move within Samoa or to New Zealand now, given the opportunity.

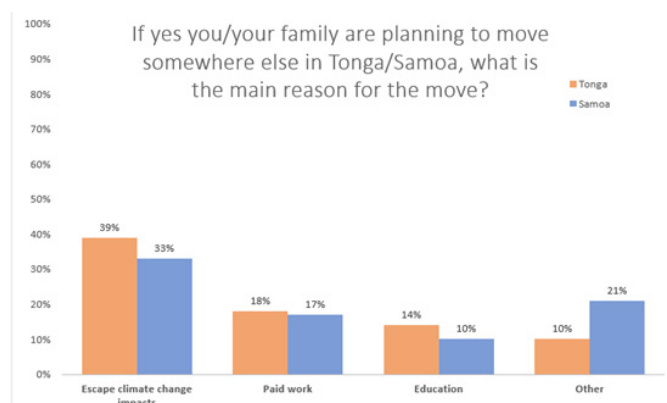
Importantly, the researchers note that of those who responded 'strongly agree' to both hypothetical opportunities to move internally and/or to New Zealand 'now', over half were from areas identified as of particular inundation risk in future<sup>1</sup>. These areas include Kolomotu'a, Kolofo'ou and Popua. There were no patterns of note in this group re: gender, though there was a strong representation of those in the 35-44 year age group.

## CLIMATE CHANGE IS A MOBILITY DRIVER

As previously stated, climate change mobility is already happening in Tonga and Samoa, potentially to a greater extent in Tonga, and is the number one reported driver for future internal climate change mobility by participants in Tonga and Samoa. For the 16% of participants in Tonga who have moved internally in the last five years, one quarter said they moved to escape the impacts of climate change. For the 28% in Samoa who have recently moved within Samoa, 6% reported climate change as the main reason for mobility. In terms of future mobility, 20 participants in Tonga and 16 participants in Samoa reported plans to move in the next five years to escape the impacts of climate change.

Additional data from the survey could add to this picture in terms of the 'direction' of movement. For planned (future) internal mobility, in Tonga the most common direction of planned mobility was 'urban to rural' followed by 'coastal to inland'. Possible climate-related context for this 'urban to rural' direction includes that the main town area in Tongatapu is relatively low-lying, with people who reside there reporting more common and sustained flooding following e.g., heavy rain. The theme of planning to move to higher land (e.g., Matakieu'a) comes through in some of the comments in the survey. Of the 20 participants in Tonga stating that future internal mobility is to escape the impacts of climate change, 40% characterised this movement direction as urban to rural, another 40% characterised it as coastal to inland. In contrast, 70% of those from Samoa planning internal mobility due to climate change describe the direction as coastal to inland. This suggests there could be a link between urban to rural direction and climate change mobility for those in Tonga (noting relatively small sample size). Following this logic, researchers note that a total of 19 participants in Tonga report urban to rural mobility but only six of these listed climate change as the main reason (i.e., climate impacts could be broader than reported). For those reporting plans for coastal to inland mobility (6% of all participants in Samoa, 4% of all participants in Tonga) we cannot be sure of the contribution of climate change on this direction of movement, however this will be explored further with participants in other research activities.

TONGA VS. SAMOA: CLIMATE CHANGE AS A FUTURE INTERNAL MOBILITY DRIVER



1. Asian Development Bank (2021). Pacific Disaster Resilience Program: Multi Hazard Disaster Risk Assessment, Tongatapu Hazard Assessment Report

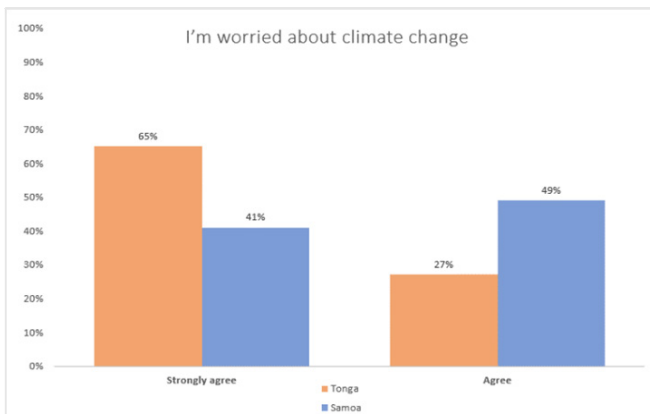
## RECENT EVENTS, UNDERSTANDING OF CLIMATE CHANGE, AND THEIR POSSIBLE INFLUENCE ON BELIEFS, WORRY AND REPORTED PLANS

The people of Tonga and Samoa have faced major, destructive natural disaster events for thousands of years. Beyond tropical cyclones, earthquakes, volcanic eruptions and tsunamis are and will continue to be a feature of living in these places. The 2022 Hunga Tonga-Hunga Ha'apai eruption, record-breaking in many ways, occurred just over a year before data collection for this survey commenced and would still be fresh in the minds of many participating in this exercise. In Samoa, the devastating September 2009 tsunami would have also been in the minds of many, though perhaps less acutely for some.

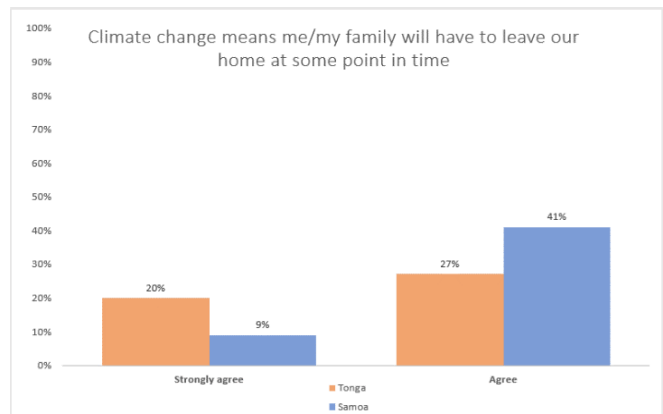
One of the first questions in Survey One asks participants to share what climate change means to them, with options to choose from (e.g., changing seasonal patterns, sea level rise, stronger storms). From the responses we see that there is room for improvement in people's understanding around the manifestations of climate change in Tonga and Samoa. Survey participants in Tonga showed a greater understanding of some of the key manifestations of climate change for their nation and people than Samoa, however they also showed a higher level of misunderstanding of climate change manifestations - with nearly 40% of participants believing that climate change would or has led to more tsunamis and volcanic eruptions. On exploring this with a couple of participants, some reported that this connection was drawn as recent events (e.g., the Hunga Tonga - Hunga Ha'apai eruption and subsequent tsunami) were noted as happening in concert with observed climate changes. A few people in both Tonga and Samoa also believed that earthquakes could be a climate change impact.

Participants in Tonga expressed a higher degree of concern regarding climate change than their counterparts in Samoa. It is possible that recent traumatic natural disaster events and misunderstandings about the role of climate change in these events could have influenced responses, for instance inflating numbers around reported recent climate change-driven mobility, or planned mobility. Future research activities will seek to follow up a number of people in Tonga and Samoa who indicated they have moved, or plan to move due to climate change to understand what sits behind some of these numbers.

**TONGA VS. SAMOA: CONCERN ABOUT CLIMATE CHANGE**



**TONGA VS. SAMOA: BELIEFS ON CLIMATE CHANGE AND MOBILITY**



## TONGA - SUMMARY OF COUNTRY-SPECIFIC INSIGHTS

Survey participants in Tonga showed a greater understanding of some of the key manifestations of climate change for their nation and people than Samoa (e.g., more commonly identifying stronger storms, sea level rise), however they also showed a higher level of misunderstanding of climate change manifestations - with nearly 40% of participants believing that climate change would or has led to more tsunamis and volcanic eruptions. A few people in both Tonga and Samoa also shared in comments that earthquakes could also be a climate change impact.

Climate change mobility is already happening in Tonga and was the main reason provided for recent internal mobility. Climate change also featured as a significant driver for planned future mobility in Tonga. Of those who reported plans for future internal movement, the most common direction of movement was from urban to rural, followed by coastal to inland. Context here includes anecdotal evidence that some are moving out of urban centres in order to grow food given the high cost of purchasing food. Other context is the fact that the main town centre in Tongatapu is relatively low-lying with people who reside there reporting more common and sustained flooding following e.g., heavy rain. This theme of planning to move to higher land (e.g., Mataki'eua) is seen in some of the comments in the survey.

As has been highlighted earlier in this report, those in Tonga showed a lower overall proclivity to be mobile compared with those in Samoa, reported a higher level of ease or comfort in life than those in Samoa and expressed a stronger feeling towards wanting to remain in place even under worsening or unsafe conditions. In saying this, there appears to be a sub-group of people (representing 10-15% of the Tonga cohort) with a pent-up desire to move - with the same people indicating that they would move internally or overseas now or in future given the opportunity.

Females, and those in the 34-45 years old age range showed the strongest inclination for mobility and most commonly indicated mobility plans (approximately half of participants in this age range reporting plans to move overseas in the coming five years). Conversely, males and those in the 45 years + age range showed the greatest proclivity to remain in place.

Those who would consider moving overseas given the need and opportunity, as well as those planning overseas mobility in the coming five years indicated a strong preference for New Zealand as a destination country (approximately three-quarters of those planning to move overseas in the next five years). Based on survey data, those planning or more likely to move, including these looking to New Zealand are relatively highly educated and more likely to be in a professional or business type role. The most common reason given for choosing New Zealand was the presence of family.



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# TONGA - SURVEY RESULTS

## WHO WAS SURVEYED?

305 participants in Tonga total took part in Survey One between March 2023 and August 2023.

Of those who participated:

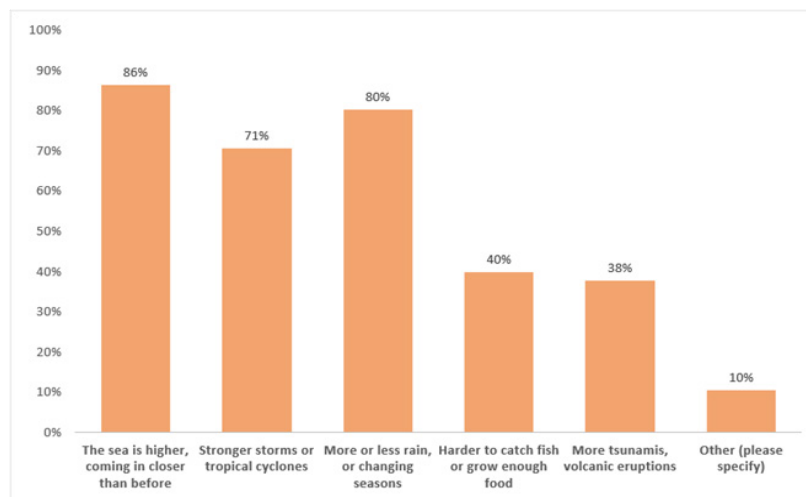
- 91% of Survey One participants lived in Tongatapu. Approximately 7% were from Ha'apai, 1% from Vava'u and 0.5% from 'Eua. There were no participants from Ongo Nui. This doesn't quite represent the spread of population in Tonga. Tonga Statistics Department 2021 census data shows ~74% of the population in Tongatapu, 14% in Vava'u, 6% in Ha'apai, 5% in 'Eua, <1% in Ongo Nui. The lower representation in our survey of those from Vava'u, 'Eua and Ongo Nui was a function of access and data collection methods; all data was collected in person, not over phone or through sending a survey link. Good sampling of Ha'apai was achieved by one of our research partners traveling to Ha'apai to engage participants in June/July 2023
- On gender, 37% of participants reported themselves as male and 63% as female. No participants identified as 'other' nor selected 'prefer not to say' in response to this question. No participants skipped this question
- On age, about 12% of participants were 24 years or younger, and about 15% were 65 years or older. The age group with the highest representation was 55-64 years (22%) followed by those in the 25-34 years age group (19%). This represents a slightly 'older' capture of the population, where the median age is currently 22 years old.
- For approximately 50% of participants, finishing high school was their highest education level. Approximately 15% of participants reported a bachelor's degree as their highest education level, with 4% having master's and 1% having PhD as their highest qualification. In addition, nearly 17% of participants selected 'other' as their highest education level, with the majority of those selecting 'other' holding a diploma (commonly e.g., Diploma of Teaching, Diploma of Business, Diploma of Accounting or Diploma of Agriculture). This suggests that the sample for Survey One had higher educational attainment than the population average, particularly in counting the 'other' category (2021 census data shows ~17% of the population in Tonga have tertiary education as their highest education level, Tonga Statistics Department)
- 27% reported their work as 'professional' (e.g., teacher, nurse, lawyer), 20% as at-home carer/housekeeper/homemaker/housewife (frequently characterised as 'tauhi api'), approximately 4% as farmer or fisher person and 18% as 'other'. 'Other' frequently included those still studying, those employed through the Church, and tradespeople, including labourers.

## TONGA - BELIEFS AND PERSPECTIVES

**Question one - What does climate change mean to you? (Ko e haa e 'uhinga e feliuliuaki e 'ea ki a koe?). Select all that apply (fili e ngaahi tali kotoa 'oku tonu). 299 answered.**

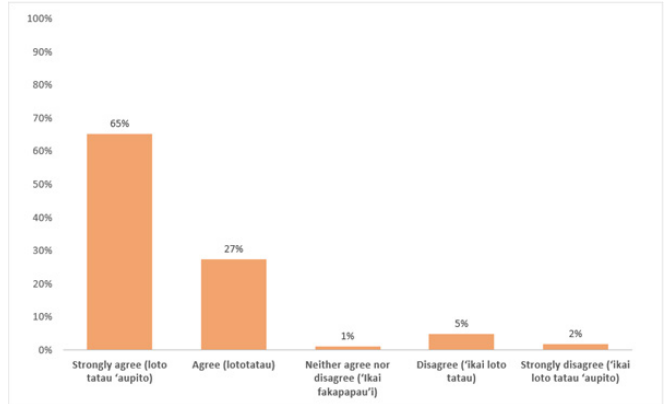
The results of this first question shows a good appreciation for the projected / known impacts of climate change for Tonga. Sea level rise was most commonly noted as a manifestation of climate change. Changing seasons and/or rain patterns and stronger storms/ tropical cyclones was also commonly noted. However, a significant number of participants (38%) believed that climate change is or will contribute to an increase in frequency of tsunami and/or volcanic eruptions. On exploring this with participants in Tonga, some reported that this connection was drawn as recent events (e.g., the Hunga Tonga – Hunga Ha’apai eruption and subsequent tsunami) were noted as happening in concert with observed climate changes. For those who responded to ‘other’, responses were as follows. Of these, there were two mentions that could be considered to have religious or spiritual underpinning (responses 9, 10, 14 below). Seasonal change was connected to challenges with growing certain staple foods (response 12 and anecdotal data from our partners running the survey in Tonga). Unless stated otherwise, each response was only mentioned in the survey by one participant:

1. More hot days
2. Warmer summers and colder winters
3. Hotter days get hotter, less cool days
4. Colder
5. Hard to predict the seasons / overlap of seasons / unreliable weather (multiple participants)
6. Flood and beach erosion
7. More earthquakes (two participants)
8. Extreme environmental damage caused by people trying to change the natural landscape
9. Change caused by the evil acts of man, including from burning plastic trash, the smoke affects the ozone layer
10. Almighty Will
11. Intense cyclone
12. Unpredictable seasons making planting indigenous food (like 'ufi) too hard
13. Continuously raining heavily
14. Everything, everywhere will change. From the skies to the heavens, to the underworld. Everything is upset, all that we are used to – nature, even the spiritual world is upset
15. Do not conform to the idea of climate change



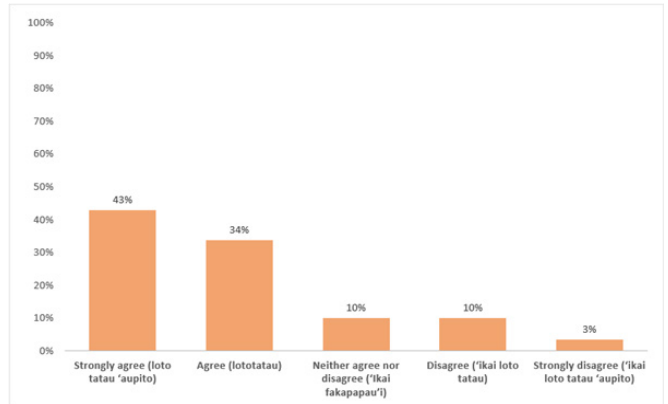
**Question two – I'm worried about climate change ('oku ou loto mo'ua pe tokanga ki he ngaahi me'a oku hoko tu'unga mei he feliuliu'aki e 'ea). 296 answered.**

There was clear concern regarding climate change shown in these responses – about 2/3 of participants answering 'strongly agree' and a further 27% agreeing with this statement. 8% of participants neither agreed nor disagreed, disagreed or strongly disagreed. The level of concern noted in Tongan participants was stronger than what was observed in the responses of Samoan participants (41% of participants 'strongly agreed' with this statement in Samoa).



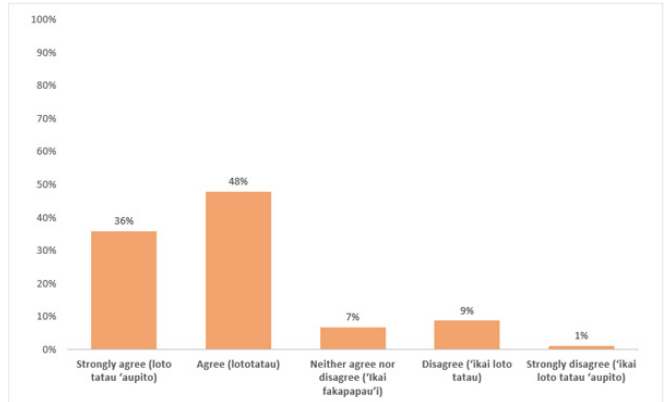
**Question three – Even if life got harder, I want to stay in Tonga as long as possible (tatau ai pee ka toe faingata'a ange e mo'ui 'I Tonga, teu kei fie nofo pee au 'i Tonga pe ko e haa pe hano loloa 'e lava keu nofo ai). 299 answered.**

Approximately 3/4 of participants in Tonga responded 'strongly agree' or 'agree' to this statement. Compared to participants in Samoa, participants in Tonga appeared to feel more strongly 'for' this statement with a much higher proportion answering 'strongly agree' than in Samoa. One quarter of participants neither agreed or disagreed (10%), disagreed (10%) or strongly disagreed (3%) with this statement. Question six below also provides some further insight on this as the statement asks participants to consider a more specific scenario.



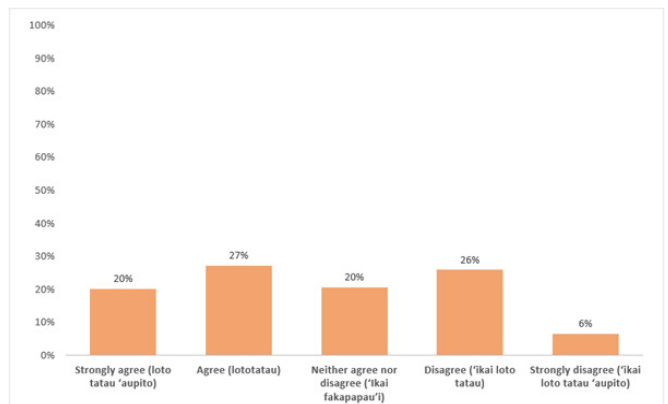
**Question four – Life is easy right now – my family have work/ study, plenty to eat, and are comfortable (fakafiemalie pe nofo I Tonga he ngaahi 'aho ni. 'Oku ngaue hoku famili mo ako, 'oku lahi e me'atokoni pea nonga e me'a kotoa). 299 answered.**

Noting the many drivers of mobility and particularly many indirect drivers of climate change-related mobility (including food, water security), this statement tests the current levels of 'comfort' of participants. About half of participants agreed with this statement and 36% strongly agreed. 17% of participants neither agreed nor disagreed, disagreed or strongly disagreed with this statement.



**Question five – Climate change means me/my family will have to leave our home at some point in time (tu'unga meihe feliuliu'aki e 'ea, kuo tukupau ke hiki hoku famili mei homau 'api/nofu'anga 'I he kaha'u). 298 answered.**

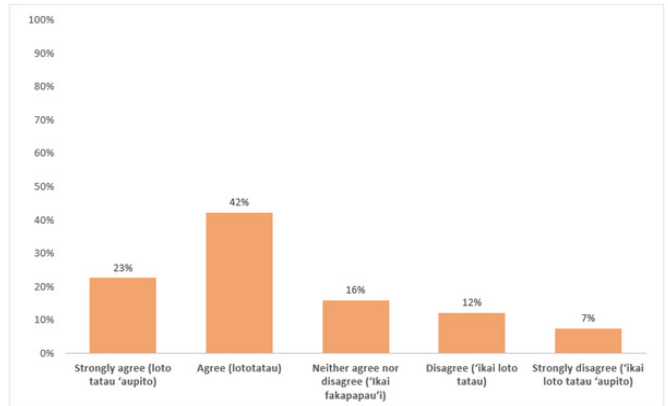
Responses to this statement were quite spread in Tonga. One-fifth of participants strongly agreed that they/their family will need to leave home in future due to the impacts of climate change. 6% strongly disagreed. About one-quarter each way either agreed or disagreed. In aggregate nearly half of participants seem to believe that they/their family will need to leave home in future due to climate change. One third disagreed/strongly disagreed.





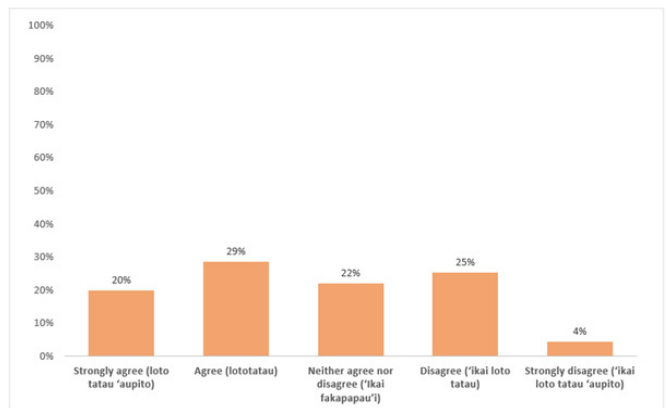
**Question six – Even if our home was destroyed in a strong storm, I wouldn’t leave my home/homeland (e.g., I would rebuild, or find a way to stay) (ka neongo ka haveki ha’a matangi lahi homau ‘api/ nofo’anga, he ‘ikai pe te u hiki au ki ha fonua kehe; hange ko ‘eni, teu toe langa pee, pe’e fai ha feinga ki ha toe fa’ahinga founa keu nofo pee). 297 answered.**

In a follow-up question to question three, a more specific future scenario was proposed to test the participant’s current ‘unconditionality’ around remaining at home. We see a total drop in those answering strongly agree and agree from 77% (question three) to 65% here. Within that there is a notable drop in those responding, ‘strongly agree’ (from 43% in question three to 23% here). This question does offer a more specific scenario for participants to respond to and may demonstrate some flexibility in some participants who might otherwise appear to want to remain in place. The research team notes that the questions are not necessarily asking the same thing – question three refers to a desire to stay in Tonga, whereas this question is more focused on a specific example, where other practical considerations could have been brought into the response (e.g., what alternate options they may have other than to rebuild). Looking into who is responding in what way to this question and question three, researchers note that a few in Tonga responded ‘disagree’/‘strongly disagree’ to remaining in Tonga as long as possible, but ‘agree’/‘strongly agree’ to rebuilding/finding a way to stay. This *could* hint at a lack of options or choice (<5% total cohort).



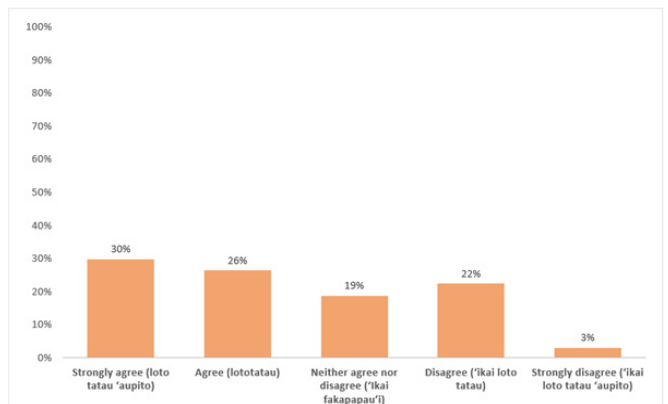
**Question seven – If I/my family was given a new place to live now, in a different village or island, which was safe, I would leave my current home and move there (kapau ‘e ‘omai ha ‘api ki a au pe ko hoku famili he taimi ni, ‘I ha kolo pe motu kehe ka ‘oku fiemalie ange ia mo mama’o meihe ngaahi fakatu’utamaki faka natula, teu hiki mei hoku nofo’anga ki ai). 297 answered.**

Just under half of participants reported that they would move now if they were afforded somewhere new to live in Tonga, 20% strongly agreeing. Anecdotal evidence suggests there are material current issues with land availability for both living and farming, as well as some sectors of the population who are particularly land insecure. These results provide an interesting insight into internal mobility willingness either way (and complements results in the later part of the survey around plans for future mobility).



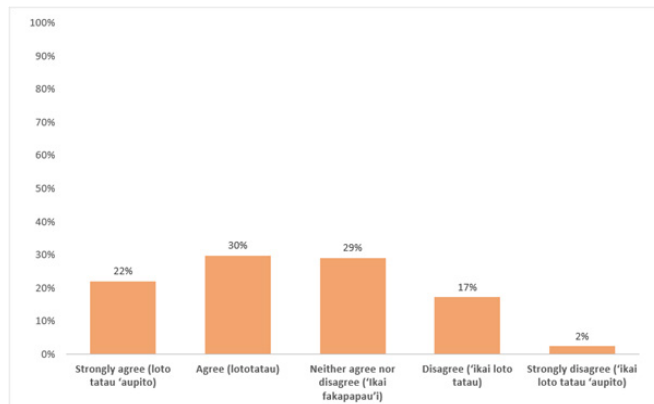
**Question eight – If I/my family was given the chance now to live in New Zealand, I would leave my current home and move there. (kapau ‘e fakangofua au mo hoku famili ke mau nofo ‘I Nu’u Sila, teu hiki leva mei hoku ‘api/nofu’anga ki ai). 300 responses.**

Over half of participants in Tonga answered that they would move to New Zealand now if they were afforded the opportunity. Interestingly, a slightly higher number of participants appeared to be open to a move to New Zealand now than somewhere else in Tonga now. The strength of sentiment here is interesting to note (including in comparison to Samoa) – though about the same proportion of people agreed or strongly agreed to this statement in Tonga, the showing of ‘strongly agree’ is a lot higher than seen in the results for Samoa. It is important to note that the interpretation of ‘move’ would not have always been one of permanence. One quarter disagreed or strongly disagreed (only 3% strongly disagreed).



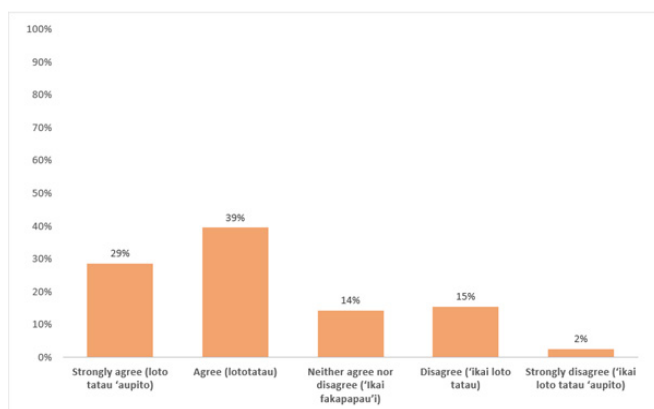
**Question nine - If in future it isn't safe to stay at home, and I had somewhere different to live in Tonga (in a different village or island) I would leave my current home and move there. (kapau e fakatu'utamaki, keu kei nofo pe hoku 'api/nofa'anga he kaha'u pea 'oku 'i ai ha faingamalie keu nofo haa tafa'aki kehe 'o Tonga (kolo pe motu kehe), teu hiki ki ai mei hoku 'api lolotonga). 297 responses.**

Only a slightly higher number of participants agreed or strongly agreed with this statement compared to question seven ('If I/my family was given a new place to live now, in a different village or island, which was safe, I would leave my current home and move there'). Less disagreed or strongly disagreed when considering a future scenario requiring mobility with the main shift in numbers seen in the 'neither agree nor disagree' category.



**Question 10 - If in future it isn't safe to stay at home, and I had the opportunity to live in a different country I would leave my current home and move there. (kapau e fakatu'utamaki, keu kei nofo pe hoku 'api/nofa'anga he kaha'u ka 'oku toe 'i ai e faingamaalie keu nofo 'i ha fonua kehe, teu hiki mei hoku 'api/fonua 'o nofo ai). 294 responses.**

Nearly 70% of participants in Tonga agreed/strongly agreed with this statement about future overseas mobility (compared with just over 50% who agreed/strongly agreed to the statement regarding future internal mobility). Only 2% strongly disagreed. Less participants were on the fence ('neither agree nor disagree') regarding future overseas movement compared to future internal movement.



**Question 11 - As you chose 'strongly agree' or 'agree' to the previous question, please drag the countries below into your order of preference (at the top is the most preferred to move to, at the bottom is the least preferred to move to). (kapau na'a ke fili e 'loto tatau 'aupito' pe 'lototatau' ki he fahu'i 'i 'olunga, kataki 'o kiliki he ngahi fonua o tohu 'o fakaholoholo hifo mei 'olunga (fonua oku ke fie hikihaha ki ai), ki he fakamuimui 'a ia e taupotu ki lalo taha). 209 answered.**

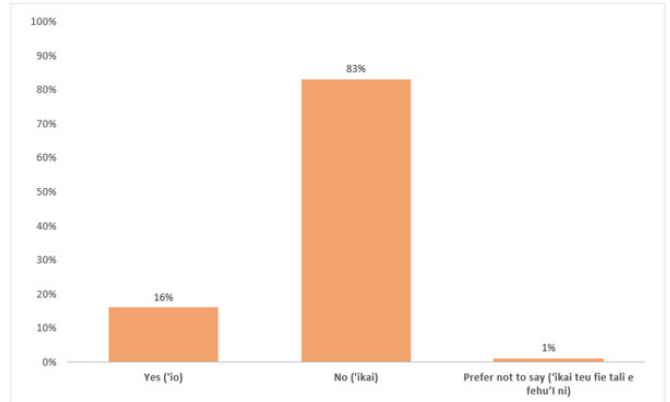
In considering a hypothetical situation where an opportunity arose to move overseas in future, participants from Tonga ordered countries based on their preference. New Zealand was clearly most commonly ranked in the number one spot. This preference is closely reflected in what we see further in the report in terms of future plans for international mobility. Australia and the USA were tied in this hypothetical exercise as the second most common destination of the options ranked first. Note, a number of participants who completed the survey on paper only ranked their first preferred or their first two or three preferred countries. The default order of the countries on Survey Monkey therefore has a strong showing in the overall results and the researchers would encourage the reader to more focus on the first (1st) selection result over the order of the total set.

	1 <sup>st</sup> choice		2 <sup>nd</sup> choice		3 <sup>rd</sup> choice		4 <sup>th</sup> choice		5 <sup>th</sup> choice	
<b>New Zealand</b>	66.99%	140	18.18%	38	13.88%	29	0.96%	2	0.00%	0
<b>Australia</b>	14.83%	31	64.11%	134	20.10%	42	0.96%	2	0.00%	0
<b>United States of America</b>	14.83%	31	16.27%	34	57.42%	120	10.05%	21	1.44%	3
<b>Fiji</b>	2.39%	5	1.44%	3	8.61%	18	81.34%	170	6.22%	13
<b>Other</b>	0.96%	2	0.00%	0	0.00%	0	6.70%	14	92.34%	193

## TONGA - RECENT AND PLANNED MOBILITY

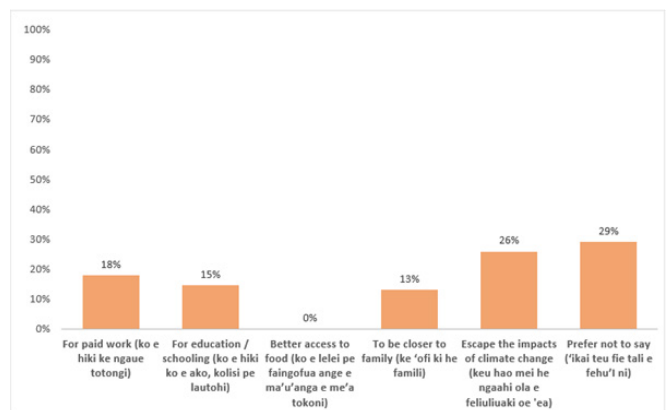
**Question 12 - In the last 5 years I've/we've moved to live somewhere else within Tonga. (I he ta'u e 5 kuo hili, kuou pe kuo mau hiki mei homau 'api ki ha 'api kehe 'i Tonga). 294 answered.**

16% of participants reported internal mobility within Tonga in the last five years, compared to 28% of participants in Samoa. It was not qualified in the survey whether this was within a village, intra- or inter-island, or even whether this was within someone's/family existing land allocation/s.



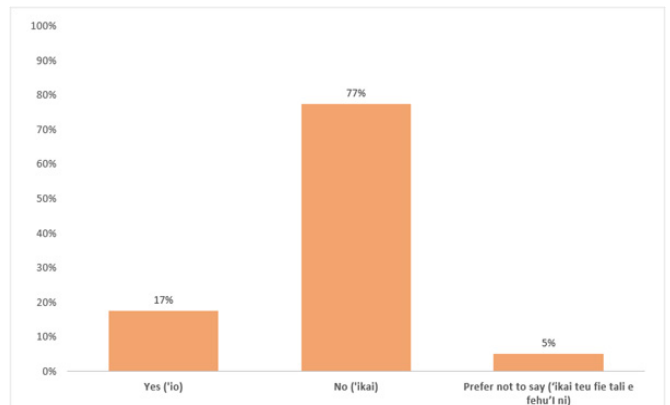
**Question 13 - If yes to the previous question, what was the main reason you / your family moved? (Kapau na'ake tali 'io ki he fehu'i ki mu'a, koe ha na'ake fie hiki ai mo ho famili)? 62 answered (note total answers were 195 though 133 of these were 'not applicable' - this data was removed).**

Internal mobility in the last five years, where a reason was given, was most commonly to 'escape the impacts of climate change'. Targeted follow up of those who indicated they have moved recently due to climate change will provide more details and context to these figures (e.g., what specific climate change impacts drove the mobility). Mobility 'for paid work' and 'for education/schooling' were the next most common reasons given for mobility. Note, the research team took out all responses of 'not applicable' so as not to skew the look of the results and to support comparison exercises between this question and question 16.



**Question 14 - I'm/we're planning to move to live somewhere else within Tonga in the next 5 years (na'aku pe/oku mau palani ke hiki ki ha fetu'u 'e taha 'I Tonga pe hee ta'u 'e 5 ka hoko mai). 293 answered.**

A similar proportion of participants who have recently moved internally plan to move internally in future. Like in question 17 (I'm/we're planning to move overseas in the next five years'), 5% of participants responded 'prefer not to say'. It's possible that the true figure of planned internal mobility could be higher than this.



**Question 15 - If yes you/your family are planning to move somewhere else in Tonga, what best describes the future move? (kapau na'a ke palani ke hiki kiha feitu'u kehe i Tonga ni ko e haa 'a e feitu'u lelei keke hiki ki ai he kaha'u)? 52 answered.**

The most common direction of future internal movement was 'urban to rural', followed by 'coastal to inland'. Anecdotal evidence suggests some are moving out of urban centres in order to grow food given the high cost of purchasing food. Other context is that the main town centre in Tongatapu is relatively low-lying with people reporting more common and sustained flooding following e.g., heavy rain. This theme of moving to higher land is seen in some of the comments below.

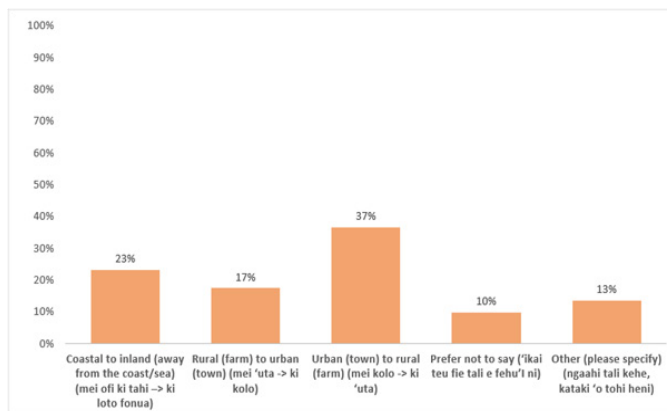
Those reporting plans for mobility 'coastal to inland' currently reside:

- Tongatapu: Hala'o Vave, Fasi, Fasi moe afi, Nukunuku, Lavengamalie Tofoa, Sopu
- Ha'apai: Hihifo, Lotofoa, Pangai

Those reporting plans to move 'urban to rural' in Tongatapu include people from Kolomotu'a, Ha'ateiho, Halaleva and Hala 'o Vave

Those who responded 'other' reported the following:

- Move to higher land (Mataki'eua) / moving to Mataki'eua (two respondees) (*note - this area is relatively elevated in Tongatapu*)
- Work issue and my kid's study
- Anywhere my family's future is secure
- Move from lower area to higher area
- Better opportunity or future
- From Tongatapu to New Zealand (*misinterpretation of question*).

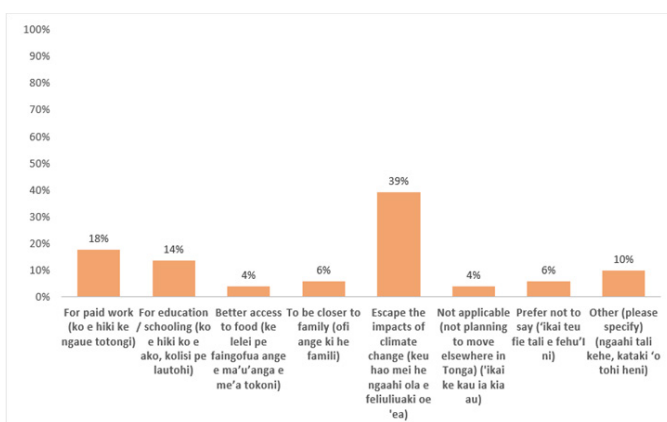


**Question 16 - If yes you/your family are planning to move somewhere else in Tonga, what is the main reason for the move? (kapau na'a ke palani ke hiki kiha feitu'u kehe i Tonga ni, ko e haa ha'o uHINGA ki ai?). 51 answered.**

The most common reported reason for future internal mobility is to 'escape the impacts of climate change'. This driver was also the most common driver for recent mobility (see question 13). The 20 participants who answered 'escape the impacts of climate change' as their reason for future internal mobility currently live in the following places in Tongatapu: Ha'ateiho (four participants), Kolomatu'a (four participants), Tofoa (three participants), Nukunuku, Sopu, 'Anana, Houma, Navutoka, Niutoua. The remaining three live in Ha'apai.

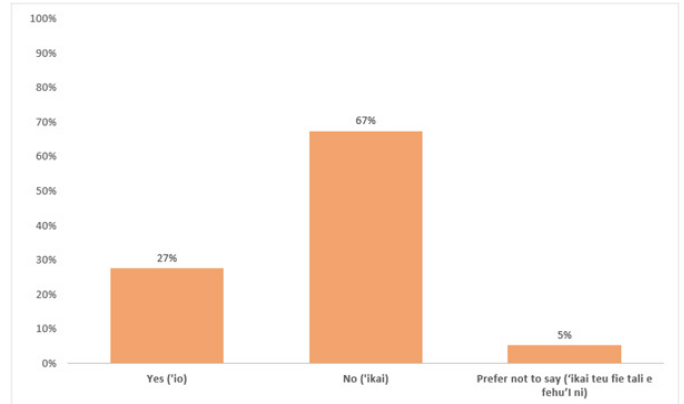
While there is some alignment with climate change inundation risk areas identified by modelling done in Tongatapu<sup>1</sup>, even with a relatively small sample size, there is a broad location spread of those impacted enough by climate change to be planning mobility.

Note, some surveys were completed on paper in Tonga, and some participants took the opportunity to note multiple reasons in writing, not just the main reason. On Survey Monkey, the response was limited to one. Where 'escape the impacts of climate change' was given as a reason for future mobility on the paper surveys, the research team made the decision to enter this as the main response in order have this data captured. Where 'escape the impacts of climate change' was selected by the research team over other responses, the other responses in these instances were 'for paid work', 'for education/schooling' and 'to be closer to family'. It is possible also that those using the electronic form may have multiple reasons for mobility meaning that at times climate change was not selected as the top reason though could be a contributor.



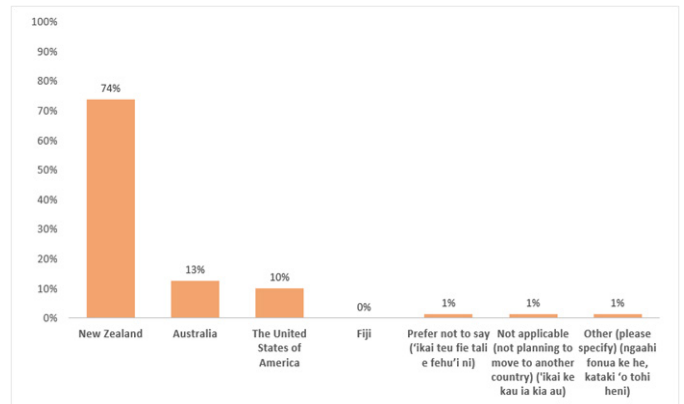
**Question 17 - I'm/we're planning to move to live in a different country in the next 5 years. ('Oku ou pe 'oku mau teuteu mo palani ke mau hiki ki ha fonua kehe he ta'u 'e 5 ka hoko mai). 291 answered.**

Just over one quarter of participants reported that they are planning to move to a different country in the coming five years. 5% responded 'prefer not to say' so it is possible the true figure could be higher. When looking at the ages of those responding 'yes', we note that those aged 35-44 years are planning overseas mobility at the highest rate, with nearly half in this age group (48%) responding 'yes' to this question.



**Question 18 - If yes you/your family are planning to move to a different country in the next five years, what country do you plan to move to? (kapau leva 'oku ke teuteu mo palani kehe hiki ki ha fonua kehe 'i he ta'u e 5 ka hoko mai, ko e haa e fonua 'oku ke teu pe palani kehe hiki ki ai)? 80 answered.**

Of those reporting plans to move to a different country in the coming five years, three quarters stated that New Zealand is the planned destination. Quite far behind in second place, 13% of respondees stated that Australia is their planned destination. No participants in Tonga reported plans to move to Fiji. One participant answered 'other' with their response being 'Palau' with 'family are there' given as the reason.



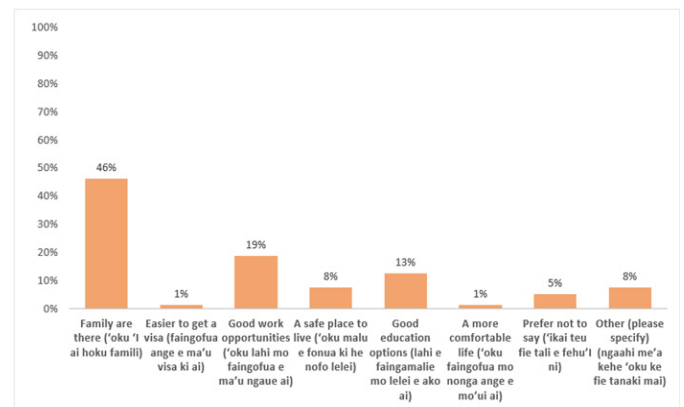
Of those planning to move from Tonga to New Zealand in the next five years:

- ~One third were male (slightly lower than overall male representation in the survey) and ~40% were tertiary educated (higher than the cohort and the Tongan population average)
- Over 90% were currently of working age (18-64 years), with a relatively higher representation of those in the 18-24 year and 25-34 year age groups. There was relatively lower representation of those in all age groups 45 years and older.

**Question 19 - If you selected a country in the previous question, why this country? (kapau na'a ke fili ha fonua he fehu'i 'i 'olunga, ko e haa e 'uhinga lelei na'a ke fili ai ia)? 80 answered.**

The overwhelming driver for country selection for those reporting future overseas mobility plans was family (46%). This was most closely followed by 'good work opportunities' (19%) and 'good education options' (13%). Considerations of safety factored in more for participants in Tonga than Samoa. Visa considerations were not prioritised. The 8% who selected 'other', most commonly used this response to select multiple drivers:

- family are there and a good education
- all of the above
- safe place and good education (two respondees).





# SAMOA - SUMMARY OF COUNTRY-SPECIFIC INSIGHTS

While there is some understanding of the specific manifestations of climate change for Samoa, like in Tonga, there is room for improvement, including on connections made between climate change and tsunamis, volcanic eruptions and earthquakes.

Climate change mobility is already happening in Samoa, and though possibly to a lesser reported extent than those in Tonga it was identified as the number one reason for future internal mobility (in the next five years).

As has been highlighted earlier in this report, those in Samoa showed a higher overall proclivity to be mobile compared with those in Tonga, having moved internally at higher rates (28% of participants report having moved internally in the last five years) than those in Tonga. For planned (future) internal mobility, 70% characterised the direction as coastal to inland. It is hard to know at face value the contribution of climate change to this figure (e.g., sea level rise or erosion) and the contribution of other factors (such as a devastating history of tsunami) but the researchers intend to follow up with participants to understand further.

Based on survey responses, those in Samoa are also planning to move overseas at much higher rates than those in Tonga (37% of participants indicating they plan to move overseas in the next five years). Those in the 18-24 years old age range showed the strongest inclination for mobility and most commonly indicated mobility plans (approximately half of participants in the 18-24 years age range reporting plans to move overseas in the coming five years). In contrast to Tonga, the data did not show a material gender difference between those more likely to be mobile and those more inclined to remain in place.

About half of those in Samoa who reported plans to move overseas in the next five years stated New Zealand as their destination country. The most common reason given for choosing New Zealand over other countries was the presence of family, as well as good work opportunities. Australia was the planned destination for more Samoans than Tongans, and those planning to move to Australia cite good work opportunities as the main reason. One participant from Samoa identified China as their planned destination. As previously noted, based on survey data, those planning or more likely to move, including these looking to New Zealand are highly educated relative to the population, and more likely to be in a professional or business type role.

## SAMOA - SURVEY RESULTS

### WHO WAS SURVEYED?

290 participants took part in Survey One in Samoa between May 2023 and August 2023. Of those who participated:

- 72% of Survey One participants lived in Upolu and approximately 25% were from Savai'i. 2% were from the island of Manono and 1% from Apolima Tai. Access to participants across all four inhabited islands of Samoa was possible through the research approach taken by our partner – including social media recruitment and phone interviews. This final mix is closely representative of the spread of population in Samoa. Samoa Bureau of Statistics 2021 population data showed ~78% of the population in Upolu and about 22% in Savai'i
- 47% of participants reported themselves as male and 53% as female. No participants identified as 'other' nor selected 'prefer not to say' in response to that question however five chose to skip that question
- ~20% of participants were 24 years or younger, and ~4% were 65 years+. The age group with the highest representation were those in the 25-34 year age group (28% of participants)
- For approximately 58% of participants, finishing high school was their highest education level. Approximately 29% of participants indicated tertiary level education as their highest education level. In addition, 9% of participants selected 'other' as their highest education level, with the majority of those selecting 'other' holding a diploma or tertiary level certificate. Others indicated they were still studying. This suggests that the sample for Survey One had higher educational attainment than the population average of ~15% (Samoa Bureau of Statistics, 2021).
- 25% reported their work as 'professional' (including teacher, nurse, lawyer etc.), 30% as at-home carer/housekeeper/home-maker/housewife, 13% as office worker, approximately 11% as farmer or fisher person and 6% as business owner.

## SAMOA - BELIEFS AND PERSPECTIVES

**Question one - What does climate change mean to you? (O lea lou silafia ma sou manatu i suiga o le tau?). Select all that apply (Li'o mai vaega e taua mo oe). 276 answered.**

The results of this first question show a satisfactory understanding of some of the manifestations of climate change in Samoa. Less participants in Samoa selected sea level rise, stronger storms or tropical cyclones and changes in rain or season patterns compared with participants in Tonga. Though 10% of participants in Samoa thought that more tsunami and volcanic eruptions were a result of climate change, this was significantly less than the ~40% of participants in Tonga.

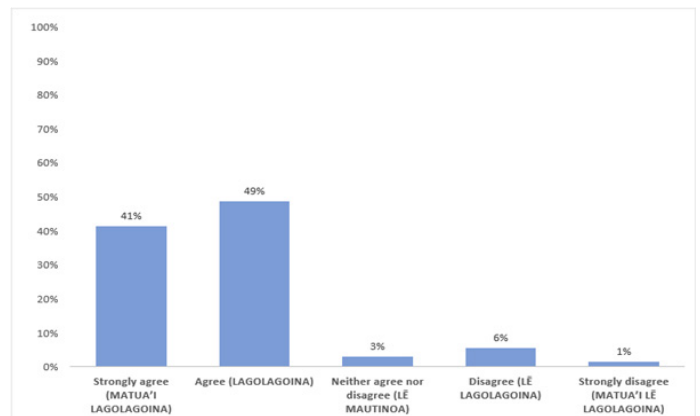
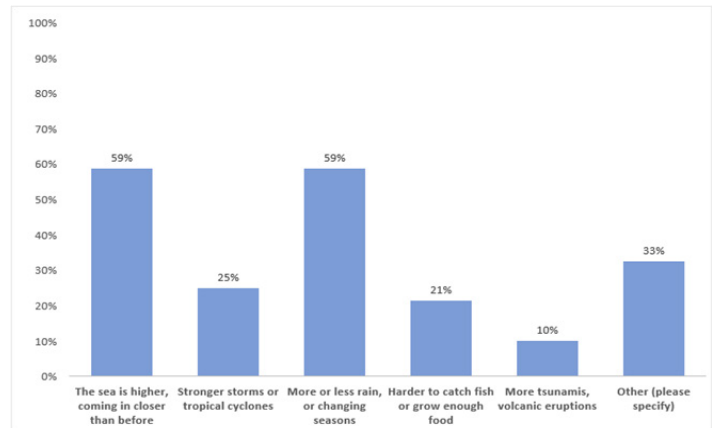
90 participants responded 'other' to this question, with a significant consensus on higher temperatures/hotter days (and the impact on people's capacity to work outside). Unique to Samoa was the mention of disease by a number of participants.

The full list of responses are as follows:

1. Much hotter than before / so hot / too hot to do much work outside / people want air conditioning in their homes now (64 participants)
2. Flooding / flooding from heavy rain (15 participants)
3. Impacts on flora and fauna / earth seems less fertile / less harvest for cocoa (five participants)
4. Change in weather patterns / fruiting seasons have changed; people move away from planting to look for other work / earth is dryer (seven participants)
5. Invasive species (two participants)
6. Impacts on health / more disease / more disease especially affecting kids (seven participants)
7. Pollution / the air is not pure / flu from airborne pollution (three participants)
8. Landslides (two participants)
9. Less rainwater available (one participant)
10. When the tide goes out, no longer can travel to other islands, we used to be able to (one participant)

**Question two - I'm worried about climate change (Ou te popole ona o fesuia'iga o le tau). 271 answered.**

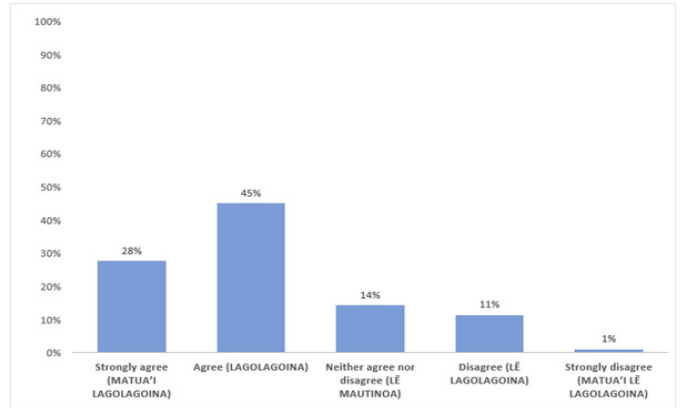
90% of participants in Samoa indicated that they were worried about climate change. In terms of the strength of this sentiment, it was pretty balanced between 'strongly agree' and 'agree'. In comparing the strength of sentiment, participants in Tonga seem to have a higher degree of worry (65% strongly agree in Tonga versus 41% in Samoa).





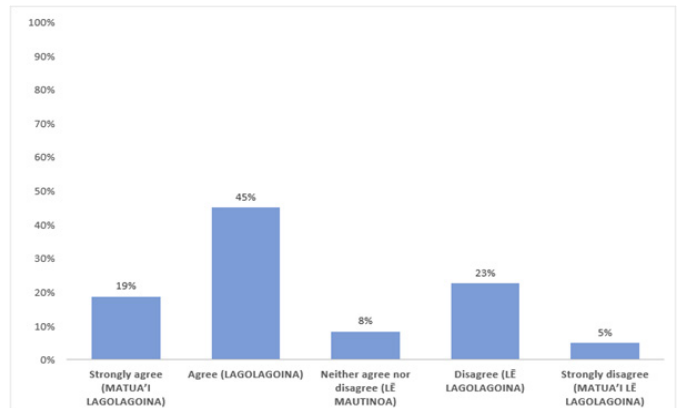
**Question three - Even if life got harder, I want to stay in Samoa as long as possible (Ou te fia nofo pea i Sāmoa tusa lava pe atili ona faigatā le olaga). 270 answered.**

The results of this question fed into findings on 'Steadfast-Stayers'. 73% of participants in Samoa agreed or strongly agreed with this statement. 12% disagreed or strongly disagreed (similar to Tonga). Question six below also provides some further insight on this desire to stay in place, asking participants to consider a more specific scenario.



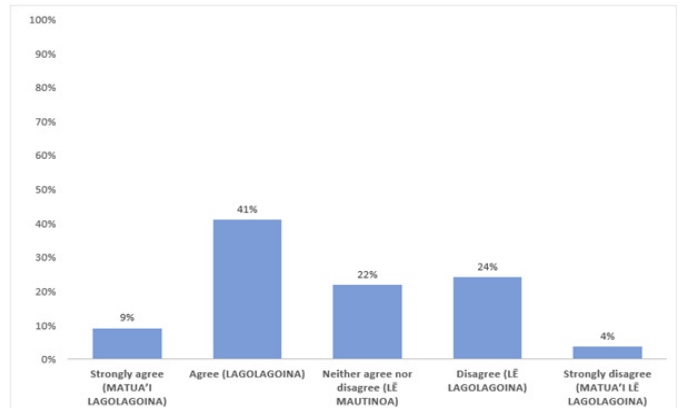
**Question four - Life is easy right now – my family have work/study, plenty to eat, and are comfortable (O lo o faigofie le olaga I le taimi nei – o lo o faigaluega ma a’o’oga lo’u aiga, o lo o lava le fa’asoa ma mea’ai, o lo o ola fiafia foi). 261 answered.**

Noting the many drivers of mobility and particularly many indirect drivers of climate change related mobility (including food, water security), this statement sought to test the current levels of ‘comfort’ of participants. About 2/3 of participants either agreed or strongly agreed with this statement, with 19% strongly agreeing. 28% of participants disagreed or strongly disagreed with this statement.



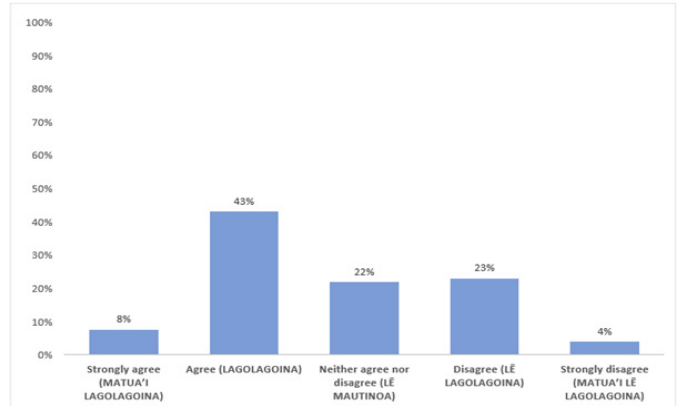
**Question five - Climate change means me/my family will have to leave our home at some point in time (E tatau ona sui le mea e nonofo ai le matou aiga pe afai e tele fesuia’iga o le tau). 273 answered.**

Responses to this question show a bit of a spread in perspectives. While half agree (or strongly agree) with this statement, nearly one-third disagree (or strongly disagree) and over 20% were on the fence. The totals of ‘agree/strongly agree’ to ‘disagree/strongly disagree’ was similar in Tonga, though there was a stronger showing of ‘strongly agree’ in Tonga (20% compared to 9% here).



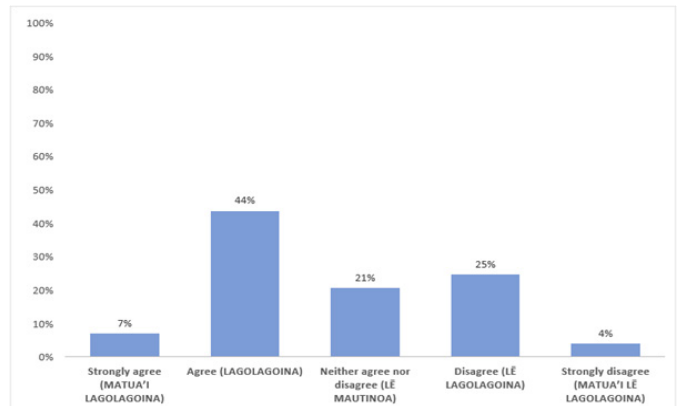
**Question six – Even if our home was destroyed in a strong storm, I wouldn't leave my home/homeland (e.g., I would rebuild, or find a way to stay) (Ou te le alu ese ma le mea lea ou te nofo ai, tusa lava pe leaga lo'u fale I se afa). 273 answered.**

In a follow-up question to question three, a more specific future scenario was proposed to test the participant's current 'unconditionality' around remaining in place. We see a total drop in those answering 'strongly agree' and 'agree' from 73% (question three) to just over 50% here. Within that there is a notable drop in those responding 'strongly agree' (from 28% in question three to 8% here). While this question does offer a more specific scenario for participants to respond to, the research team also notes that they are not necessarily asking the same thing – question three refers to a desire to stay in Samoa (as long as possible), whereas this question is more focused on a specific home/homeland (i.e., in theory, the option remains in this scenario to relocate in Samoa). Looking into who is responding in what way to this question and question three, researchers note that 18 people in Samoa responded 'disagree' to remaining in Samoa as long as possible, but 'agree' to rebuilding or finding a way to stay. This *could* hint at a lack of alternate options or choice for this group of 18 (6% total cohort).



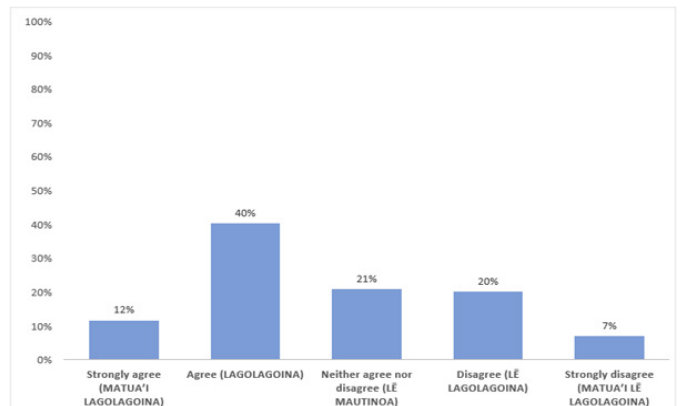
**Question seven – If I/my family was given a new place to live now, in a different village or island, which was safe, I would leave my current home and move there (Ou te si'itia e nofo i seisi nu'u po o seisi motu pe afai e maua le avanoa ma se nofoaga saogalemu i seisi alalafaga). 272 answered.**

Just over half of participants reported that they would move now if they were afforded somewhere new to live in Samoa. The survey doesn't go into the reasoning behind this though it could provide a further clue as to the current level of 'comfort' of participants in terms of where they are currently residing. It could also speak to other factors (e.g., desire to own private property or to move away from shared family land - something mentioned often in comments, see questions 15, 16). These results provide an interesting insight into internal mobility willingness (and complements results in the later part of the survey around plans for future mobility). The same proportion of participants disagreed or strongly disagreed with this statement in Tonga.



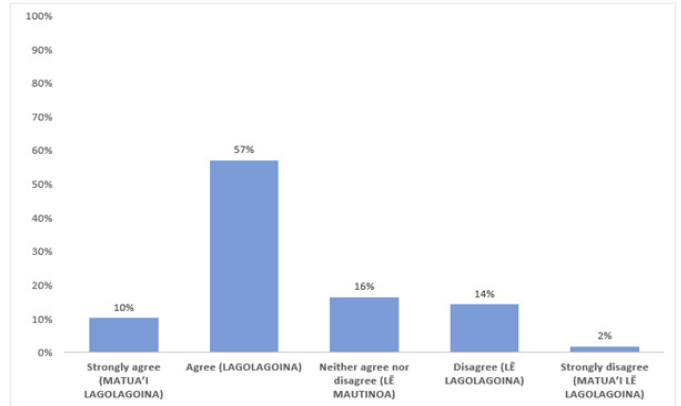
**Question eight – If I/my family was given the chance now to live in New Zealand, I would leave my current home and move there. (A iai se avanoa i le aso lava lenei e mafai ai ona ou nofo/matou nonofo i Niu Sila, ou te alu/matou te ma lo'u aiga i Niu Sila). 273 answered**

Just over half of participants responded 'agree' or 'strongly agree' to this statement, of which 12% strongly agreed. This compares to 30% of participants in Tonga strongly agreeing. 27% disagreed or strongly disagreed, and the rest were on the fence.



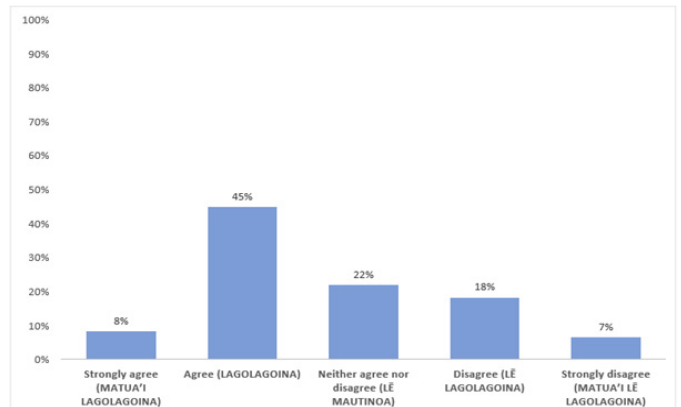
**Question nine - If in future it isn't safe to stay at home, and I had somewhere different to live in Samoa (in a different village or island) I would leave my current home and move there. (Afai e le saogalemu le nofoaga o lo o o'u nofo ai i le lumanai, ae e iai seisi vaega o Samoa e mafai ona ou nofo ai, ou te alu ese ma le mea lea ou te nofo ai ae ou alu iai i le nofoaga lena). 273 answered.**

Closing in on three-quarters of participants in Samoa responded agree or strongly agree to this statement – a clear increase compared to the question about internal mobility now (see question seven). Participants in Samoa showed a comparatively higher willingness towards future internal mobility compared to those from Tonga (52%).



**Question 10 - If in future it isn't safe to stay at home, and I had the opportunity to live in a different country I would leave my current home and move there. (Afai e le saogalemu le nofoaga o lo o o'u nofo ai i le lumanai, ae e maua le avanoa ou te nofo ai i seisi atunuu, ou te alu ese ma le mea lea ou te nofo ai ae ou alu iai i le atunuu lena). 274 answered.**

In comparison to future internal mobility (see previous question), participants in Samoa seemed less willing to consider future international mobility with just over 50% answering agree or strongly agree. For reference, 68% of participants in Tonga answered agree or strongly agree to this statement.



**Question 11 - As you chose 'strongly agree' or 'agree' to the previous question, please drag the countries below into your order of preference (at the top is the most preferred to move to, at the bottom is the least preferred to move to). (Afai na e filifilia le 'Matua'i lagolagoina' po o le 'lagolagoina', fa'atulaga mai atunuu nei i le 1 - 5. 1 = E pito sili ona e fia nofo ai. 5 = E mulimuli lava ona e fia nofo ai pe a fa'atusatusa i isi atunuu i le lisi). 124 answered.**

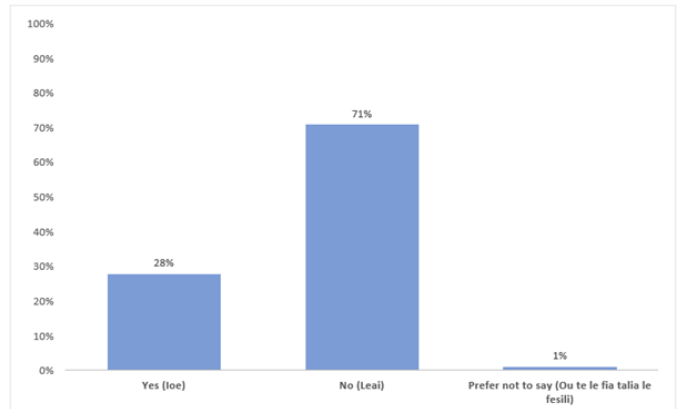
In considering a hypothetical situation where an opportunity arose to move overseas in future, participants from Samoa ordered countries based on their preference. New Zealand was most commonly ranked in the number one spot but this was closely followed by those ranking Australia in the top spot. This preference pattern is quite closely reflected in what we see in terms of future plans for international mobility. One difference is that the USA came up a little more frequently in this hypothetical exercise than it did in reported plans for overseas mobility in the short- to medium-term. Note, some participants only ranked their first preferred or their first two or three preferred countries. The default order of the countries on Survey Monkey therefore has a strong showing in the overall results and the researchers would encourage the reader to more focus on the first (1st) selection result over the order of the total set.

	1 <sup>st</sup> choice		2 <sup>nd</sup> choice		3 <sup>rd</sup> choice		4 <sup>th</sup> choice		5 <sup>th</sup> choice	
<b>New Zealand</b>	48.39%	60	36.29%	45	13.71%	17	1.61%	2	0.00%	0
<b>Australia</b>	31.45%	39	51.61%	64	12.90%	16	4.03%	5	0.00%	0
<b>United States of America</b>	12.10%	15	9.68%	12	41.94%	52	33.06%	41	3.23%	4
<b>Fiji</b>	5.65%	7	2.42%	3	31.45%	39	57.26%	71	3.23%	4
<b>Other</b>	2.42%	3	0.00%	0	0.00%	0	4.03%	5	93.55%	116

## SAMOA - RECENT AND PLANNED MOBILITY

**Question 12 – In the last 5 years I've/we've moved to live somewhere else within Samoa. (Na sui le mea ou te nofo ai/ nonofo ai lo'u aiga i totonu o le lima tausaga talu ai). 269 answered.**

Nearly 1/3 of participants reported they have moved internally in Samoa in the last five years. This is a lot higher than the rates of recent internal mobility seen in the Tonga data.

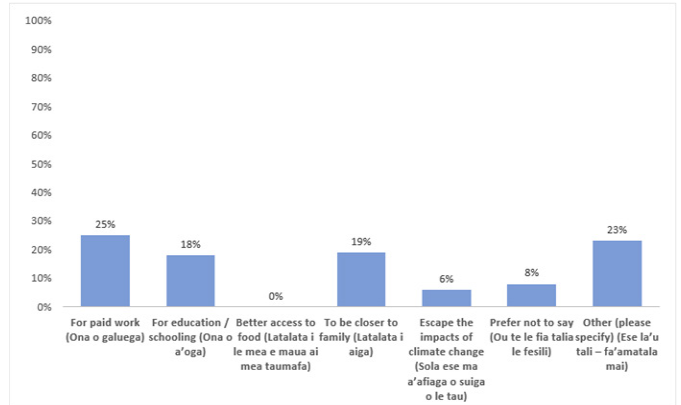


**Question 13 – If yes to the previous question, what was the main reason you / your family moved? (Afai na e tali mai i le IOE, aisea na sui ai le mea e te nofo ai/ nonofo ai lou aiga?). 216 answered.**

While there was a showing of climate change as a driver of recent mobility (6% of those who reported internal mobility in the last five years identified climate change impacts as the driver), the most common reasons (outside of 'other') were for paid work, to be closer to family and for education and schooling.

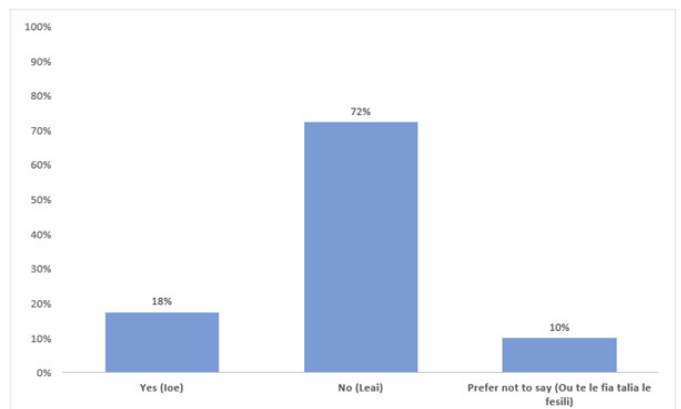
19 participants answered 'other'. Unless otherwise stated, each below was mentioned by one participant:

- I got married and had to move and stay with my husband / I got married and moved to my husband's family (two participants)
- Moved to take care of my family land (two participants)
- Problems within family / family disputes / family matters (four participants)
- Changed family environment
- Moved back from overseas
- [Move to] private land/home
- Bought our own land / purchase of freehold land / got our own property and set up a church / moved to our own property from family communal land (four participants)
- More space for my family
- No answer (two participants)



**Question 14 – I'm/we're planning to move to live somewhere else within Samoa in the next 5 years (O lea e iai le fuafuaga e sui le mea ou te nofo ai/ nonofo ai le matou aiga i totonu o Samoa i le isi 5 tausaga i le lumanai). 268 answered.**

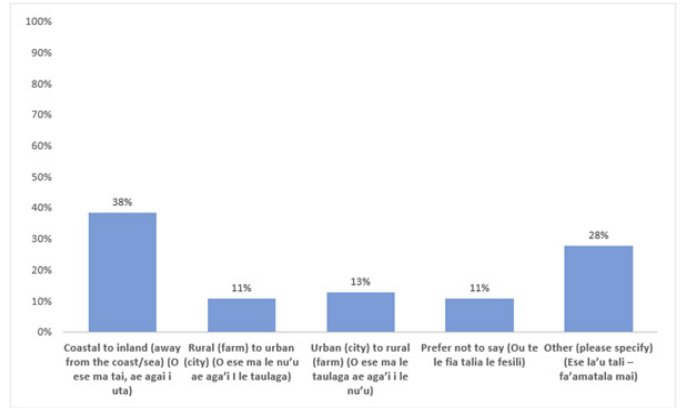
About 1/5 of participants in Samoa indicated plans to move internally in the next five years (interestingly this is quite a bit less than the mobility rate reported by participants for the last five years at 28%).



**Question 15 – If yes you/your family are planning to move somewhere else in Samoa, what best describes the future move? (Afai na e tali mai I le IOE, o lea le fa’amatalaga e talafeagai ma au fuafuaga?). 47 answered.**

The key ‘direction’ of planned internal mobility in Samoa was coastal to inland. This was followed by ‘other’. These 13 ‘other’ responses were:

- Somewhere it’s safe
- Somewhere permanent for my family / looking for a permanent home (three participants)
- Want to live on my own land not [with] my parents (two participants)
- Move to my husband’s family
- Move to Upolu
- Move to [my] own property
- Change my village
- I might go live with my partner’s family in the future
- Moving from rented place to a bought property

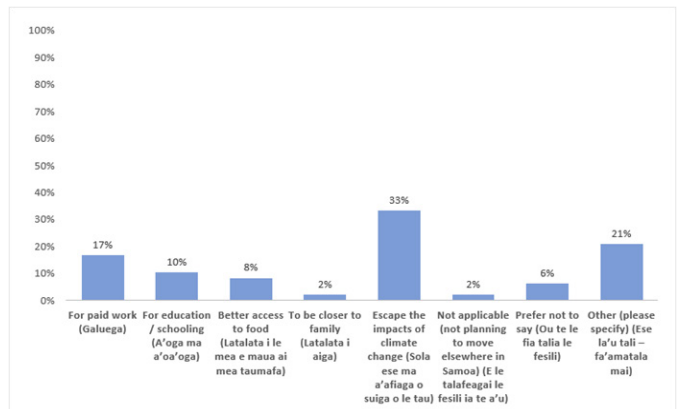


**Question 16 - If yes you/your family are planning to move somewhere else in Samoa, what is the main reason for the move? (Afai na e tali mai I le IOE, o a mafua’aga o le a sui ai le mea tou te nonofo ai ma lou aiga?). 48 answered.**

Like in Tonga, the key reason provided for future internal mobility was ‘escape this impacts of climate change’. One third of participants who reported plans for internal mobility identified this as the main driver.

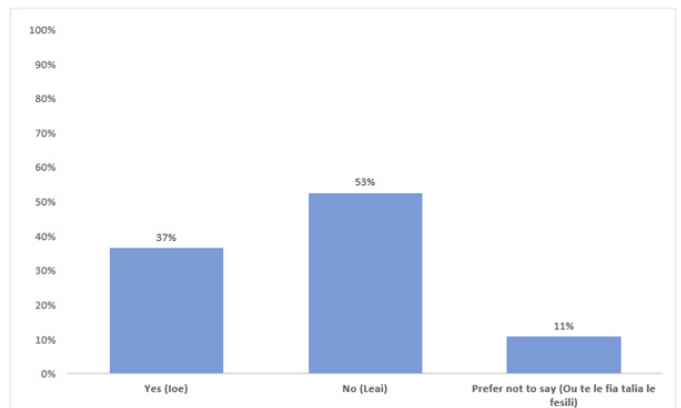
This was followed by ‘other’ (see below) then ‘for paid work’, The 10 participants who responded ‘other’ provided the following:

- Somewhere permanent/need a permanent place (four participants)
- Move to own land/look for my own place to live/moving to bought property away from communal property (four participants)
- To be with my partner
- More space for my growing family, away from extended family



**Question 17 - I’m/we’re planning to move to live in a different country in the next 5 years. (O lo o iai le fuafuaga ou te/matou te me’i i seisi atunuu e nofo/nonofo ai I le isi 5 tausaga). 268 answered.**

Over 1/3 of participants reported plans to move overseas in the coming five years. Important to note that context and interpretation comes into these responses. Our partner who supported data collection in Samoa noted that some participants answering yes to this question volunteered that the mobility would not be permanent – enough time to support their children into education or new work before they intended to return to Samoa. Either way, it is a large proportion of participants answering yes to this question (compare with 1/4 of participants in Tonga).



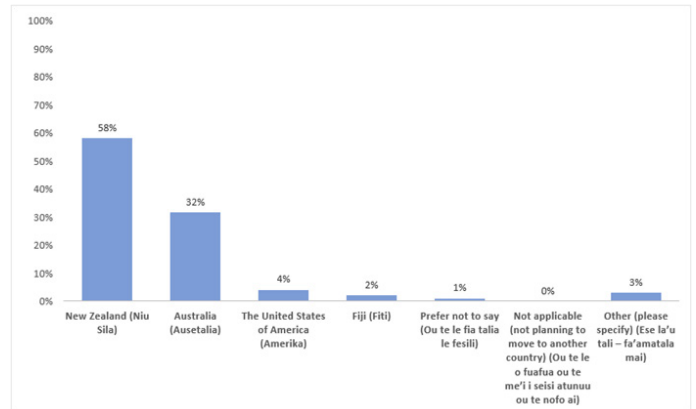
**Question 18 - If yes you/your family are planning to move to a different country in the next 5 years, what country do you plan to move to? (Afai na e tali mai IOE, o lea le atunu'u na e te fuafua e te me'i iai). 98 answered.**

For those planning to move internationally in the coming five years, New Zealand was identified most as the future destination of choice. This was followed by Australia with about 1/3 of those planning an overseas move planning to move to Australia.

Three participants answered 'other'. These responses were:

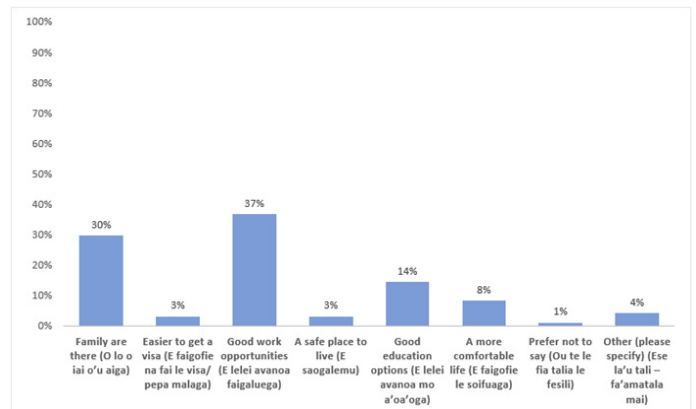
- Wherever work takes us
- Europe
- China

Of those planning to move to New Zealand in the next five years ~half were male and ~40% were tertiary educated (similar to cohort average and a lot higher than the Samoan population average)



**Question 19 - If you selected a country in the previous question, why this country? (Afai na e filifilia se atunuu i le fesili 27, aisea ua e filifilia ai lenei atunuu)? 98 answered.**

The most common reason given for choosing the destination of choice was 'good work opportunities' followed by 'family are there'. Visa considerations and perceptions of relative safety barely factored.



# METHODOLOGY, LIMITATIONS AND CONTEXT

## DATA COLLECTION APPROACHES

### TONGA

Our partners in Tonga collected Survey One responses in person, recruiting participants through their broad personal and professional networks. Interest was gauged through initial outreach (either via phone call or in-person), the Participant Information Sheet (translated into Tongan) was shared, and the consent form (also translated into Tongan) was completed.

This personal approach to data collection reflects the relational reality in Tonga – with motivation to participate stemming from existing relationships or prospective participants knowing and trusting our partners on the ground. One of our partners travelled to Ha'apai and surveys were completed during that time. This meant that approximately 7% of participants were those from Ha'apai reflective of the fact that approximately 6-7% of Tonga's total population is based in Ha'apai (Tonga Statistics Department, 2021). Our partners targeted some people who were travelling from Vava'u and 'Eua to participate while they were in Tongatapu though participation rates from those islands were not reflective of the population in Tonga (0.5% participants were from 'Eua while the population in 'Eua is 5% of Tonga total, and ~1% of participants were from Vava'u while the population in Vava'u is ~6% of Tonga total).

There were also attempts to target data gathering to those residing in relatively higher climate change risk areas – areas such as Kolomotu'a, Kolofo'ou, Maufanga and Paa'a-tangata where modelling has indicated inundation risk is relatively high in the coming decades. Participants in Tonga were not provided payments or gifts for completing the survey, though where practical we attempted to run survey collection alongside other research activities that did include a mea'ofa (koha) and/or catering (e.g., the women's workshop and youth workshop).

### SAMOA

Our partner in Samoa took a different approach to data collection, utilising social media promotion as well outreach through their personal networks. This approach allowed for broad engagement across locations and ensuring a diverse mix of backgrounds participated in the process in Samoa.

Following social media promotion, group information sessions were run virtually first for those who indicated interest in participating to provide context on the research and the survey, and to provide an opportunity to receive any questions. Surveys were then conducted over phone for approximately half of the participants. Some participants chose to complete the survey via a link independently. Our partner also collected survey data in-person with their known network. The approximate mix of collection methods were phone-based survey (where the questions would be asked and entered by our research partner) ~50%, in-person survey completed on a device or paper format ~30% and independently completing the survey via a shared link ~20% of participants.

For recruitment that happened over social media, the consent process was typically completed through verbal or written (typed) consent once the prospective participant had participated in the information session, or, had the Participant Information Sheet (translated into Samoan) read out to them. For surveys that were completed in person, a written copy of the Participant Information Sheet was provided, and a paper copy of the consent form was completed. Those who completed the survey independently were asked to complete and return a copy of the consent form.

Throughout the process of data collection, the research team provided regular updates to our partner in Samoa on the gender and age mix of participants to support a balance of participation that reflected, where practical, the Samoan population (e.g., Samoa's age distribution). In Samoa, a small token of thanks was provided to participants in the form of a WST\$5 phone credit voucher.

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## LIMITATIONS

1. One major limitation/consideration for the results of this survey is the interpretation of 'moving' and even 'moving to live'. Our partners in both Samoa and Tonga reported some differing interpretations of this that came to light partway through data collection. Some participants did not tie permanence to these statements of moving from home or moving to live elsewhere – a number volunteering that their plans to move overseas would be for a set time period before they intend to return back to Samoa or Tonga. This was noted particularly for the older age groups in Samoa (40 years and above) who volunteered that planned overseas mobility in the next five years or so would be to support children overseas, to help their children into better education or work opportunities but that they intended on returning to Samoa after that.
2. Along a similar vein, the interpretation of 'planning' to move was relatively open to participant interpretation. The researchers were intentional to specify future *planning* (versus 'wish' or 'desire') in order to capture a more focused picture of who might be moving in the short- to medium-term. However, there will undoubtedly be a spectrum of planning meant by the participants responding to this.
3. As data was disaggregated and some targeted analyses were run (e.g., disaggregating for gender and age), some sample sizes dropped below 30. Where this happened, limited analysis was run on these cohorts. When sample sizes dropped below 20 analysis was typically not run. This meant that for gender and age analysis for example, age groups 65 years and older, and 17 years and younger were discounted from comparative analysis. Small sample sizes are called out explicitly for the attention of the reader in relevant sections.
4. Those who responded 'agree' or 'strongly agree' to the question 'if in future it isn't safe to stay at home, and I had the opportunity to live in a different country I would leave my current home and move there' were asked to place a small set of countries into an order of preference (from most preferred to move to, to least preferred to move to). A number of participants who completed the survey on paper only ranked their first preferred or their first two or three preferred countries. The default order of the countries on Survey Monkey therefore has a strong showing in the overall results and the researchers would encourage more focus of the reader on the first selection result over the order of the total set.
5. A few of the earlier participants in Tonga skipped some questions within the survey, when completing the survey on paper, particularly for the couple of times survey responses were collected in group settings (i.e., our partners were not available for one-on-one oversight of the survey to point out missed questions). Question skipping appeared to be accidental with the survey being printed double-sided and one page of questions being missed in a few instances.
6. On paper surveys, given the ability to select more than one response, a few participants from Tonga (<20) instead of giving their main reason, gave more than one reason for e.g., choosing a particular destination country. In these instances the researchers used their best judgement (e.g., where something was clearly marked as the main reason but others were indicated with ticks or dashes the researchers took what appeared to be the 'main' reason), in other instances our partners were asked to share their interpretation of the main reason for the particular participant.
7. On paper surveys, some (<20) gave multiple reasons for previous mobility in the last five years or planned mobility in the next five years. Only one response is possible on Survey Monkey. The researchers would like the reader to note that where there was more than one reason given on paper surveys and climate change impacts was a reason given for recent or planned mobility, this was the one reason entered on Survey Monkey. Whether or not it was the main reason in the mind of the participant, the researchers believed it important for this driver to be captured. Where there was more than one reason given and climate change impacts was not one of those reasons, the researchers followed the same approach shared in point two above.
8. Gender options presented were relatively binary – the question was open ('what is your gender?') however in both Samoan and Tongan, the translation led towards a binary response (e.g., are you female or male). The options participants had to choose from were female, male, prefer not to say or other (please specify). Our partners in Tonga and Samoa were asked to support honest responses to this question and to provide a verbal overlay for participants that e.g., they could identify as a gender other than female or male. For future surveys, a more inclusive range of options will be presented with more specific options provided to better support participants identify themselves as they wish.
9. The average educational attainment of the participants in both Tonga and Samoa was relatively high, higher than the population averages. There could well be an impact on some of the findings from Survey One because of this, assuming that those with higher education levels could have greater resource (social, financial) access. Possible impacts could include influencing beliefs around mobility options, strength of sentiment around rebuilding (given access to resources), current level of comfort etc.



10. The gender mix of participants in the Samoa survey was relatively balanced (53% female to 47% male). In Tonga, there was a stronger showing of female participants. This was likely influenced by a couple of factors – our partners in Tonga are well-regarded women in the community and their networks tend to be more women-dominant. Culturally, our partners there would have felt more comfortable approaching and working one-on-one with females, or males and females in mixed settings (e.g., in an office or other workplace environment). Over the course of data collection this lent itself to an overall stronger showing of females to males. We also collected survey data as an adjunct activity during our group talanoa exercises with women (an activity we did not replicate for men)
  - The differences in gender mix needs to be considered, including in comparing results between Tonga and Samoa. If gender factors into the responses we are seeing (e.g., if males or females are more likely to move internally or internationally etc.), we could be seeing a slight skewing of these results relative to what we might've seen in a fully representative sample of the population
11. In Samoa, our partners supporting data collection noted that the paper form of the survey was quite text heavy and following the questions on the survey, including identifying which questions were to be completed based on previous responses was harder than on the digital platform. This may have led to some missed questions. The text heavy look of the paper survey was noted as potentially challenging for those with existing literacy issues; our partners reflected that simply increasing font size in future would improve the experience for participants if paper survey was to be used again.
12. The first iteration of the survey in Tonga had a misinterpretation in one of the questions (question 10) which was remedied as soon as it was identified for all following surveys. This affected that one question as well as the follow up question in the first seven surveys that were completed in Tonga. This misinterpretation could have resulted in issues with the response to that one question (and the follow up question depending on the response) if the Tongan translation was taken over the English presentation of the question. Researchers could not know for sure, therefore on entering the data from those affected paper surveys, the researchers decided to skip the response to that question and the subsequent. The questions affected in those seven were:
  - Question 10 - If in future it isn't safe to stay at home, and I had the opportunity to live in a different country I would leave my current home and move there
  - Question 11 - As you chose 'strongly agree' or 'agree' to the previous question, please drag the countries below into your order of preference (at the top is the most preferred to move to, at the bottom is the least preferred to move to)

## CONTEXT

1. It is worth noting that Samoa has more elevated land compared to Tonga. In addition, the land tenure systems between the two countries differ quite significantly. In Samoa, villages can have land that includes both coastal land and inland 'high land'. The capacity to retreat, and/or live more flexibly across the village's land comes through somewhat in some of the responses in this survey (e.g., high prevalence of future plans for coastal to inland movement in Samoa).
2. Our partner in Samoa conducted a number of surveys over phone and thus was able to capture additional nuance beyond the limits of the survey questions, noting the following:
  - The younger age groups seemed most enthusiastic and open to mobility and opportunities overseas (as came through in the results)
  - The strong showing of Australia as the destination of choice (particularly compared to Tongan participants) was reportedly driven by family already present in Australia. However, it was also noted that there was a perception of a higher standard of living in Australia compared to New Zealand, including better work prospects. Approximately half of those in Samoa who indicated overseas mobility plans identified New Zealand as the planned destination however through conversation it was noted that at times New Zealand was seen as a 'stepping stone' to Australia.
  - As already mentioned in the Limitations section, it was noted that of those who reported plans to move overseas to live in the coming five years (nearly 40% in Samoa), a number didn't mean move to live *permanently* - sharing that they plan to move to e.g., support their children into education or jobs but then intend to return to Samoa to live after a few years.

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3. About 3/4 of those in Tonga reporting plans to move overseas in the coming few years gave New Zealand as the planned destination, with over half stating the main reason for choosing New Zealand is that 'family are there'. For those in Samoa, 39% of those reporting New Zealand as the planned destination stated that family was the main reason (other common reasons were for work and education opportunities). When looking at the reasons for choosing other destinations, for Tongans choosing Australia, family was still the most common main reason. For those in Samoa however, those choosing Australia most commonly reported good work opportunities as the driver. This mobility drive towards family is a theme that has come up often in other research activities for this work, and is a recognised worldview for Tongans - that people are considered an extension of fonua (land) and therefore wherever family are that is your land, your home. It is a worldview that is shared, however the results of this survey does suggest it manifests strongly particularly for those in Tonga.

## NEXT STEPS

While Survey One sought to gather data that could inform insights on the future scale, nature and drivers of mobility, unexpected findings in the results, including responses that were in apparent tension offer a number of areas for the researchers to follow up. This includes groups who may have a pent-up desire or need for mobility, those with potentially limited options or choice around mobility, and those who have indicated plans to move internally to escape the impacts of climate change. The researchers will follow up with these groups as much as possible for the remainder of this work, though there is likely further scope to explore the context/s of these findings further.

Survey Two will commence data collection in November 2023 and will be predominantly focused on decision-making the impacts of mobility. This survey will have a shorter run and will be targeted towards those with direct experience with mobility (environmental drivers where possible e.g., recent and historical volcanic eruptions and tsunamis which have displaced communities in Tonga and Samoa).

Key results from Survey One will be summarised into a one- to two-page handout to be shared with all participants in Tonga and Samoa who provided follow up contact details to the research team. Those who did not have or share an email address (many provided a phone number) will be followed up where possible in person by our partners in Tonga and Samoa.

# APPENDIX

SURVEY QUESTIONS, RATIONALE. Note, questions were translated into Tongan and Samoan.

#	QUESTION	RATIONALE
1	What does climate change mean to you?	Survey participant understandings of the manifestations of climate change, allowing insight into possible gaps in knowledge. Use as a lens in considering driver of other survey responses.
2	I am worried about climate change	Gauge the level of concern of participants and compare levels of concern between participants in Tonga and Samoa. Use as a lens in considering driver of other survey responses.
3	Even if life got harder, I want to stay in [Tonga/Samoa] as long as possible	Sample the level of 'unconditionality' in participants desire to remain in-country. Use as input to characterisation of 'Steadfast-Stayers'.
4	Life is easy right now – my family have work/study, plenty to eat, and are comfortable	Noting the many drivers of mobility and indirect drivers of climate change related mobility, seek to test the current levels of 'comfort' of participants (i.e., gauge high-level if there are levels of discomfort/insecurity around food, work etc.).
5	Climate change means me/my family will have to leave our home at some point in time	Test existing assumptions about future climate change mobility, begin to understand who may be on the path to planning, and who may be currently closed to the idea. Note: the research team believes there were some responses that reflected a desire not to have to move, rather than a belief necessarily for or against.
6	Even if our home was destroyed in a strong storm, I wouldn't leave my home/homeland	Doubling back to question three, adding a specific example to test the strength of desire to remain in place. In contrast however, this question could hint at immobility of some - e.g., those who disagree with question 3, but agree with this question may have limited options other than to rebuild.
7	If I/my family was given a new place to live now, in a different village or island, which was safe, I would leave my current home and move there	Test current willingness, desire (or need) to move internally. Another possible test of current comfort/security levels (see question four). Compare both between responses in Tonga and Samoa.
8	If I/my family was given the chance now to live in New Zealand, I would leave my current home and move there	Test current willingness, desire (or need) to consider a move, and a move to New Zealand. Understand the 'who' of those who would move to New Zealand given the opportunity. Compare responses in Tonga and Samoa.
9	If in future it isn't safe to stay at home, and I had somewhere different to live in [Tonga/Samoa] (in a different village or island) I would leave my current home and move there	Gauge beliefs about the future need to move, plus future willingness to move internally if it were deemed unsafe to stay. Compare answers to 'now' mobility questions and these future-focused questions.
10	If in future it isn't safe to stay at home, and I had the opportunity to live in a different country I would leave my current home and move there	Gauge beliefs about the future need to move, plus future willingness to move overseas if it were deemed unsafe to stay.
11	As you chose 'strongly agree' or 'agree' to the previous question, please drag the countries below into your order of preference (at the top is the most preferred to move to, at the bottom is the least preferred to move to)	Understand current preferences for overseas destinations to move to.

#	QUESTION	RATIONALE
12	In the last 5 years I've/we've moved to live somewhere else within [Tonga/Samoa]	Gather data on recent internal mobility. Compare rates of mobility between Tonga and Samoa.
13	If yes to the previous question, what was the main reason you / your family moved?	Understand mobility drivers for those who recently underwent internal mobility, including 'escape the impacts of climate change'.
14	I'm/we're planning to move to live somewhere else within [Tonga/Samoa] in the next 5 years	Gauge the degree of planning towards internal mobility in the short- to medium-term. Note: researchers considered whether to test desire for future mobility versus planning but settled on planning as the more relevant metric for policy and planning. Some written responses on paper survey indicated a desire to move now and in future but that there are practical (and cultural) barriers preventing this.
15	If yes you/your family are planning to move somewhere else in [Tonga/Samoa], what best describes the future move?	Understand the nature of planned future movement (e.g., coastal to inland, rural to urban etc). Depending on results, identify possible climate induced movement (beyond those explicitly saying mobility is to escape the impacts of climate change).
16	If yes you/your family are planning to move somewhere else in [Tonga/Samoa], what is the main reason for the move?	Understand the drivers of planned future movement. For those planning internal mobility due to climate change drivers, note location of these participants.
17	I'm/we're planning to move to live in a different country in the next 5 years	Gauge how many are currently planning for overseas mobility in the short- to medium-term. Aim to differentiate from wish or desire (or need) to move to capture those who have plans (and a pathway or capacity) (see Limitations for researcher notes on 'planning')
18	If yes you/your family are planning to move to a different country in the next five years, what country do you plan to move to?	Understand current destination preference or target for overseas mobility in the short- to medium-term.
19	If you selected a country in the previous question, why this country?	Understand the main contributing reason for choosing the overseas destination for future mobility, gather some high-level insights into population priorities in mobility decision-making.



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