

**KIRIBATI ADAPTATION PROGRAMME (KAP)
STAGE II**

BASELINE STUDY REPORT 2008

**SURVEY OF PUBLIC AWARENESS OF AND
ATTITUDES TOWARDS CLIMATE CHANGE ISSUES
AND CHALLENGES**



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I owe special thanks to my Deputy, Ms Turang Teuea and data collectors/interviewers for their kind cooperation and self-dedication in the successful completion of the survey. See photo of the whole team on the front cover back row (left to right): Tatoa Kaiteie, Turang Teuea, Etita Iabauri and front row (left to right): Katinata Tabee, Bweneata Kaoti, Mererin Iaokim.

Also thanks to Steve Hogan for his design of the Excel spreadsheets, data input and processes and programming to generate the statistical tables shown in the appendices. Last but not the least, thanks to key senior officials at MELAD and MISA together with Island Council staff, for their collaborative and timely assistance during our survey visits to their ministries and their islands.

Tatoa Kaiteie (National Consultant)
Kiribati Adaptation Programme Stage II

ABBREVIATIONS

AMAK	Aia Maea Ainen Kiribati (National Women's Association)
CC	Climate Change
KAP	Kiribati Adaptation Programme
MFED	Ministry of Finance and Economic Development
MFMRD	Ministry of Fisheries and Marine Resources Development
MISA	Ministry of Internal and Social Affairs
MOE	Ministry of Education
OB	Office of Te Beretitenti
PUB	Public Utilities Board
SA	Situation Analysis
USP	University of the South Pacific



Interviewing in Makin Island



Interviewing in Kuria Island

Terms

Adaptation	Adaptation means doing something new or different to what you or your community did in the past in order to adapt to climate change
Baseline survey	A baseline survey is a description (using both quantitative and qualitative data) of the current status of a particular situation in this instance public knowledge of and attitudes towards climate change issues and challenges. The results from a baseline survey can inform the government of Kiribati of the areas of need in public awareness and behaviour adaptation in the future. Subsequent annual surveys can then be used to monitor progress
Berm	The first ridge of land on a coastline
Climate change	Climate change is the gradual warming of the earth's atmosphere caused by emissions of heat-absorbing greenhouse gases, such as carbon dioxide and methane. The term is generally used to reflect longer-term changes, such as higher air and sea temperatures and a rising sea level. WB 2000
Climate variability	Climate variability reflects shorter-term extreme weather events, such the El Niño Southern Oscillation (ENSO) and the La Niña Southern Oscillation (which results in drought conditions in Kiribati). While there is some evidence that climate variability will increase as a result of climate change, many uncertainties remain. WB 2000
Gender desegregated data	Data that can be separated into male and female. This is now required in all surveys.
Peri-urban	Areas and villages adjoining towns ie the rest of S Tawara not including Betio, Bairiki and Bikenibeu
Social capital	A collective term for the processes between people which establish networks, norms and social trust and facilitate co-ordination and co-operation for mutual benefit (Cox 1995:15)



Data entry in Tamana overnight



Betio urban shoreline at risk

EXECUTIVE SUMMARY

This report summarises the data collected by the Baseline Survey Teams from February to April 2008. The purpose is to provide a picture of knowledge and adoption measures currently undertaken in a sample of locations: Tamana, Makin, Kuria, North Tarawa and South Tarawa in 2008. This data may then be used to:

- inform KAP and Government of Kiribati programmes on climate change
- measure the impact of future programmes.

Enhanced public understanding, goodwill, support and commitment will be vital in engaging the people of Kiribati to participate in the development and implementation of short and long term plans to adapt to climate change.

The Kiribati Adaptation Programme (KAP) Phase II is co-funded by the Government of Kiribati, the Global Environmental Facility (GEF), AusAID and NZAID and administered by the World Bank.

Outputs of the National Consultant (Tatoa Kaiteie, Team leader)

The outputs of the assignment included:

1. Collate raw data from each annual survey (input 1, 2008, input 2, 2009)
2. Provide a written report at the end of each survey (input 1, 2008, input 2, 2009) including a:
 - summary of the survey process
 - analysis of the findings
 - evaluation of the survey tools
 - recommendations for improvements for future surveys.

General findings

Existing thoughts, feelings and learning about climate change

There appears to be an awareness of climate change in the islands visited, but little in-depth knowledge of the potential impacts in the long and short term. 46% of those interviewed indicated that they thought it is more important to live for today than to worry about climate change in 50 years time. People are feeling fearful, worried, concerned and sad. They worried about the impact of climate change especially on their children and grandchildren. However, the majority feel that everyone can do something. Though they were not sure what that would be exactly at this stage.

How people learn about climate change

An overriding 83% of respondents wanted information about climate change delivered by the Kiribati radio government AM station. The results indicate that Government radio is by far the most cost effective way of information dissemination and educating people about climate change and the medium chosen by those interviewed as the most convenient to learn about climate change. The problem was penetration of radio to the most remote islands.

Next in importance were newspapers (though little penetration in Tamana and Makin) and then DVDs (with almost zero penetration in Makin and Kuria). However, DVDs

are extremely useful teaching aids during consultations/workshops. For example, titles like “Ten things you and your family can do to adapt to climate change”.

It would be useful to have a Media Task Force comprising KAP, Government Departments, Climate Change Action Group, NGOs to coordinate media messages about climate change.

Consultations/workshops are regarded as the most effective ways of bringing about adaptation in behaviour (together with laws and their effective implementation). To date there have not been many consultation/workshops on climate change and related environmental issues on the islands visited.

Adaptation measures on climate change

People say they are willing to cooperate and teach each other new skills, but lack of resources eg aggregate to build walls to the detriment of wave cut platforms and reefs. However, the cultural value of “bwain te utu” where knowledge and skills are regarded as the property of the family may need to be addressed. Care of the environment will be an on-going issue in preserving and improving the quality of life and health in Kiribati especially in S. Tarawa.

The questionnaire was administered at the end of a long drought and ongoing water problems were recognised as serious.

Three quarters of those interviewed said they are prepared to move overseas if necessary.

The central government & local government

11% of the people interviewed had attended a consultation/workshop offered by the government/KAP/school.

The administration of a Baseline Survey is an awareness raising activity in itself. Comments like:

“We are waiting for the government to tell us what to do”

“The survey makes us believe the government is now doing something”

indicate that the actual process of engaging people in the questionnaire has raised expectations that some action by the Government will follow.

Causes of climate change

Regarding age, one third of the 15-17 and 18-33 age groups thought that climate change was caused by the burning of fossil fuels about a quarter thought it was due to deforestation. The understanding of the 50-65 and over 65 age groups was substantially lower. This last point is important as the unimwane, community leaders (older men) may know the least about climate change, yet have power to sway community opinion.

Recommendations regarding awareness raising about climate change adaptation

It is recommended that:

Communicating results of survey to the public

- the results of the survey should be presented on Kiribati radio and a series of awareness raising programmes and stories of adaptation to climate change be regularly aired

Coordination of CC messages to the public

- the “Climate Change Public Awareness Team” comprising KAP, Government Departments, Climate Change Action Group, NGOs to coordinate media messages about climate change (this group originally met on 8th January 2008).
- there is agreement on the 5-10 key messages about CC adaptation so that all ministries are sending the same messages.

Targeting of public awareness

- awareness and adaptation campaigns are targeted at leaders (government, unimwane, unaine, AMAK, rorobuaka, church, youth, climate change action groups to support messages and community programmes related to climate change adaptation
- church leaders especially are targeted for their leadership and ability to generate “social capital” ie volunteerism, networking and collaboration
- church leaders are encouraged to collaborate to dispel myths eg “There will be no second flood” and to encourage care of the environment eg “We must look after God’s garden; God is the landlord and we are the tenants”
- regular radio up dates on climate change news and adaptation strategies from Ministerial level and above, KAP staff, KAP consultants etc
- continued funding for a local media person within KAP II and III to coordinate multi media releases related to climate change adaptation

Radio access

- aid is sought to expand radio access to all islands as this is vital for education about climate change and also notification of bad weather events
- the Government of Kiribati investigate NGO projects involved in distributing wind up and solar radios. This would also aid access to English language programmes. This will be particularly important in disseminating information about disaster management plans. The distribution of these radios should focus on women and vulnerable groups

- community consultations need to raise awareness of the need for community responsibility for the care of shared communal spaces eg water catchment areas, reefs, beaches, berms etc. The care of these spaces need to be monitored

DVD production

- a DVD be produced on “Adaptation to climate change” eg “Ten things you, your family and community can do to adapt and reduce the risks of climate change in the short and long term”, to be used in workshops and distributed to all government agencies, island councils, schools etc. These ten messages could then be reinforced by radio and newspaper stories, posters, workshops etc.
- a DVD be produced on “Stages of understanding about climate change” to include the following: “shock”, “denial”, “anger”, “depression”, “acceptance” and “action”. See background paper Hogan (2008c).

Recommendations regarding the survey process

Timing

It is recommended that:

- the survey in 2009 should be conducted towards the end of that year to give time for the GOK/KAP public awareness programmes to have some impact.
- attention is given to training of interviewers in future years ie allow a minimum of seven working days for preparation and practice in and outside the training room
- forms from each interviewer are regularly checked both during training and during formal data collection to ensure that data is correctly recoded and completed

Recruitment and selection of team leaders

- the team leader and deputy leader must be interviewed and given an exercise to demonstrate ability to use Excel spread sheets at that interview

Liaising with islands and/or communities before conducting questionnaire

- when contacting islands and/or communities by phone or letter it is vital to ensure that the purpose of the visit is made clear. That is, the survey team wish to meet with villagers on a one-to-one basis *not* on a one-to-whole maneaba village meeting basis.

Monitoring by National Consultant and Deputy Coordinator

- the Survey Team Leader and Deputy regularly check the coding of interviewers especially with regards to Questions 17 and 26.

Monitoring by KAP management

- the survey team leaders ie the National Consultant and Deputy Coordinator report weekly to Mr Kautuna Kaitara, Project Coordinator, as was requested in the “Pilot Baseline Study Report” (Hogan 2008d). The monitoring of progress

is vital to the successful completion of the Surveys in the allotted time. Additionally, it is necessary for Mr Kautuna Kaitara, Project Coordinator to meet with the National Consultant and Deputy Coordinator separately to check that each is performing their duties satisfactorily. If there are issues between the two people they are unlikely to tell the project director when interviewed together.

Completion of survey work and contracts

- all files must be fully completed (eg all word documents and Excel files) and submitted and checked before the National Consultant and Deputy Coordinator are paid
- end of survey reports must be completed satisfactorily before the Team Leader is paid.

Computer back ups

- all word documents and Excel files must be backed up in the KAP office.

Climate change adaptation requires cooperation at all levels. It will require sharing of knowledge and skills between families and communities which is contrary to “bwain te utu” ie “property of the family”.

The peoples of I-Kiribati, however, are adept at working together collaboratively (“ibuobuoki”) with high levels of discipline and determination. This is illustrated by the building of maneabas, organisation of cultural events involving large numbers of people in highly practised and complex singing, dancing, drumming (Whincup 2001). There are numerous rituals and protocols to show respect and strengthen relationships. The question is how can these potentially high levels of cooperation be best harnessed for climate change adaptation between families, communities and government ministries?

BACKGROUND INFORMATION & CONTEXT OF THE SURVEY

The capital of Kiribati (Tarawa) is less than three (3) meters above sea level and has an average width of only 450 metres over a length of 30 Km. Approximately 50,000 people live in Tarawa which is about half the total population of Kiribati. To reduce Kiribati's vulnerability to climate change, climate variability and sea level rise resulting from Climate Change, the Government of Kiribati (GOK) in conjunction with the Kiribati Adaptation Programme (KAP) are undertaking an adaptation of the program in three stages:

Phase I: Preparation (2003-2005, already completed). This phase began the process of mainstreaming adaptation into national economic planning and identified priority pilot investments for Phase II. It also involved an extensive process of national consultation. The project was closely linked with the preparation of the 2004-07 National Development Strategy and Ministry Operational Plans.

Phase II: Pilot Implementation (2006-2009). This current phase is the focus of this TOR. Its objective is to implement pilot adaptation measures, and consolidate the mainstreaming of adaptation into national economic planning.

Phase III: Expansion (2009-2015). This phase is planned to gradually scale up the investments piloted under Phase II to cover all major islands and vulnerable sectors of Kiribati.

The current stage that is Phase II is co-funded by the Government of Kiribati, the Global Environmental Facility, AUSAID and NZAID and administered by the World Bank. The key objective of this Phase is to diagnose climate-related problems and design and promote, through public awareness and consultation strategies, cost-effective adaptation measures.

At the same time KAP II will continue the integration of climate risk awareness and responsiveness into economic and operational planning within the Government of Kiribati. There are two key objectives of the assignment. Firstly, the essential need to establish a baseline of public awareness of and attitudes towards climate change and its major implications.

This is important so that with respect to awareness/information dissemination are effectively known and so changes in those attitudes and levels of awareness can be effectively gauged throughout the course of the project and beyond.

Secondly, given these attitudes and levels of awareness, it is important to design and implement approaches to building public awareness of and participation in climate change that are culturally sound, logistically sustainable and cost-effective in attracting and retaining support, at local, island and national levels.

SUMMARY OF THE SURVEY PROCESS

Interviews & timeline of baseline study

The questionnaire was designed December 2007-January 2008 and discussed with all relevant government departments and members of the KAP Steering Committee. The pilot was then tested and refined after visits to Nabeina, North Tarawa and Nanikai, South Tarawa (Hogan 2008d). In January, a Deputy Team Leader was recruited and

the four other interviewers were trained in February, 2008. Two teams of three were formed and they worked concurrently from late January to the end of April.

The interview teams visited Makin, Kuria, North and South Tarawa and Tamana (See Appendix 1). They achieved very closely the stratified target sample sizes by island (See Appendix 2) based on the Census data (Tekaieti 2005).

The dates of island visits are shown in Appendix 3.

Additionally, a KAP Consultation Team (led by Dr Temakei Tebano and Rosalind Kiata) whose task was to focus on Climate Change/Sea Level Rise Awareness followed the Survey Team and visited Tamana, Beru, Onotoa, N. Tarawa, Makin, Butaritari. It will be interesting to measure the impact of the KAP team and to compare the changes in awareness on the islands of Tamana, Makin and N. Tarawa when the Annual Survey is repeated in 2009.

Baseline survey

A baseline survey is a description (using both quantitative and qualitative data) of the current status of a particular situation in this instance public knowledge of and attitudes towards climate change issues and challenges. The results from this survey can inform the Government of Kiribati of the areas of need in public awareness and behaviour adaptation in the future. Of major importance will be the results of the subsequent Annual Surveys which KAP will undertake which will inform the Government of Kiribati on the various degrees of success of their awareness and adaptation programmes.

Methodology

The survey:

- was designed as a predominantly quantitative study so that it may be replicated in years to come and thus allow comparison of data over time
- used stratified random sampling according to age and occupation based on the 2005 census data (Tekaieti 2005).
- was conducted only on Tamana, Makin, Kuria, North Tarawa and South Tarawa because of time and monetary constraints.

Interviewers used:

- the “Instruction manual for the national consultant and deputy coordinator” and “Instruction manual for interviewers”
- a Daily Log proforma to monitor progress towards the stratified targets on a daily basis
- excel spreadsheets for systematic data collection from the questionnaire
- linked excel spreadsheets to generate tables and graphs automatically for this report
- excel rather than more sophisticated statistical analysis programs such as SPSS was used in order to minimise the amount of staff training required and ease replication of this survey in years to come. Excel (as a standard component of all versions of MS Office) is widely available and many people have skills in its usage.

The organisation of this report

In the first section comments will be made on the general findings from each question as a percentage of each island as shown in tables in Appendix 4. For tables relating to Questions 18, 19 20, 28, 29, 30, 35 see Appendix 6. The later section in this report on “Gender desegregated data” relates to the tables in Appendix 5.

Data has been included in simple tables in black and white as KAP II at the time of writing does not have a colour printer and coloured photocopying costs are prohibitive.

It may be useful to print this document in two sections keeping the Appendices separate to enable cross referencing with the text.

ANALYSIS OF FINDINGS

Abbreviations

Q= Question

* indicates respondents were invited give a number of replies to one question.

A. ABOUT YOU: BACKGROUND INFORMATION (Q 1-5)

The research team came very close to achieving the target population profile, see Appendix 2.

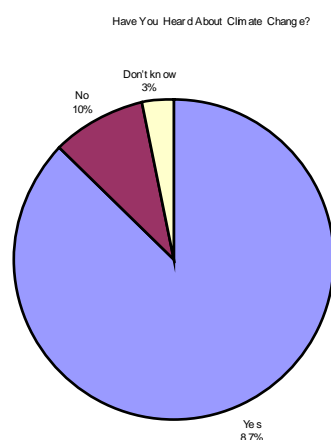
B. THOUGHTS ABOUT CLIMATE CHANGE (Q 6-12)

The administration of a Baseline Survey is an awareness raising activity in itself. Islanders are contacted by radio and government officials and they obviously talk about impending visitors before their arrival (and after departure).

Q 6. Before this interview, had you heard about climate change?

87% of respondents had heard about climate change. Residents of S. Tarawa had the highest awareness (92%); Makin, Kuria and N Tarawa were close behind with over 85%. However, Tamana respondents stood out as having much lower (61%) awareness.

Figure 1 Knowledge of climate change



Q 7*. What have you *already* heard about the possible *future* effects of climate change in Kiribati?

Whilst those interviewed appeared to have some awareness of climate change, few were fully aware of the wide range of implications of the effects of climate change on the environment, island infrastructure and their health and wellbeing.

¾ thought it would get hotter, just over half thought that there will be “less rain” and that “trees may die” and that there would be “sea level rise”. (The first comments may have been influenced by the impact of the La Niña, the cool current which had brought prolonged drought at the time of the interviews ie (February-April 2008). In Tamana less than 1/3 of those interviewed thought the sea level would rise.

22% of all interviewed were aware of increase in saltwater encroachment into the groundwater lens and wells. Over 40% in N Tarawa compared to 4% in Tamana. (Perhaps because salination is already a problem in N. Tarawa?)

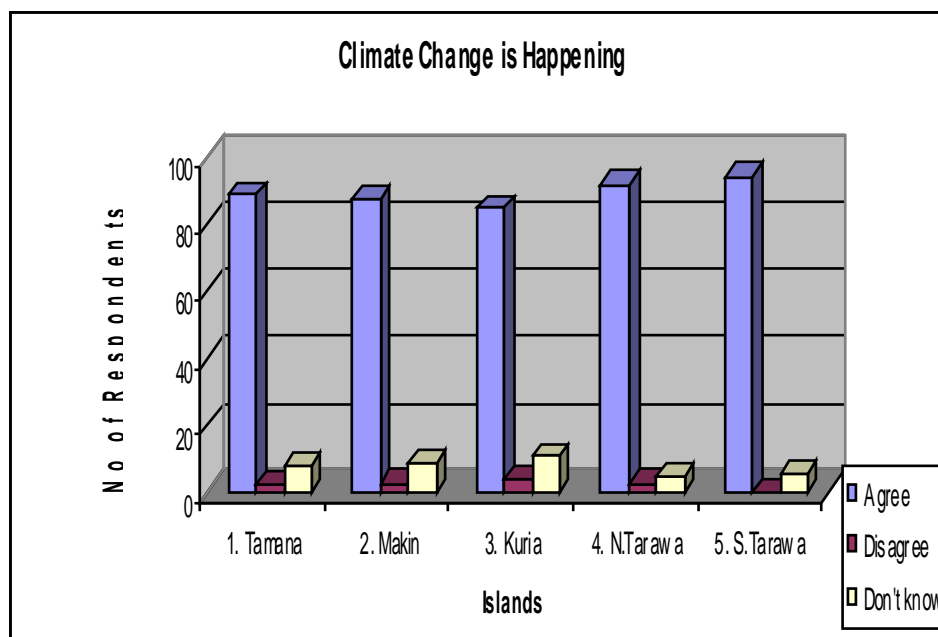
Only 11% overall were aware of the potential negative impact on fish stocks. However, over 31% of respondents in Kuria were aware of the potential negative impact on fish stocks (perhaps because this was already happening?)

Overall only 8% of respondents were aware of potential increase in disease and increased possibility of damage to buildings. Only 3% were aware of possible impact of coral bleaching

Q 8. Climate change *is* happening

Respondents were now being educated about climate change by the questionnaire itself and 89% of Tamana respondents now agreed that it was happening. 92% of N and S Tarawa respondents now agreed that climate change was happening.

Figure 2 Climate change is happening



Despite this high response, however there were islands where unimwane were in denial and even verbally attacked the team leader in maneaba during a traditional welcome. The unimwane asked about relocation in the questionnaire. The team leader reported being scared and wanting to run out of the maneaba when the unimwane sternly said:

“You are a new generation we’ve lived here thousands of years. You’re immature. We’ve had problems like this before, it’s just climate trends, it will be OK....I don’t trust the government, maybe this is just a plan to make us relocate away from our island”

The team leader repeated the purpose of the visit was not to get the people to move merely to gather information.

In another village an old woman said:

“Climate change isn’t really happening. The scientist are just trying to scar us”

Denial was also strong from a religious perspective. One church missionary said:

“God has planned and created Kiribati, so he wouldn’t let it sink beneath the waves?”

Q 9. CC is affecting the people of *this* island already

85% of respondents believed their island was already being affected by climate change. Kuria was the highest with 90% agreeing and Tamana the lowest with 79% agreeing with the statement.

Q 10. Every *individual* can do something to adapt to climate change

Over ¾ of those interviewed agreed that each individual can do something to adapt to climate change. So there is awareness that each individual has responsibility and capacity to do something. However, it cannot be assumed that they know the full range of adaptation strategies. Nor can it be assumed that these strategies will be implemented. But it is encouraging to the government to know that the majority are willing to adapt in some way. However, they will also have to target information to the other quarter who either “disagree” or “don’t know” what to do.

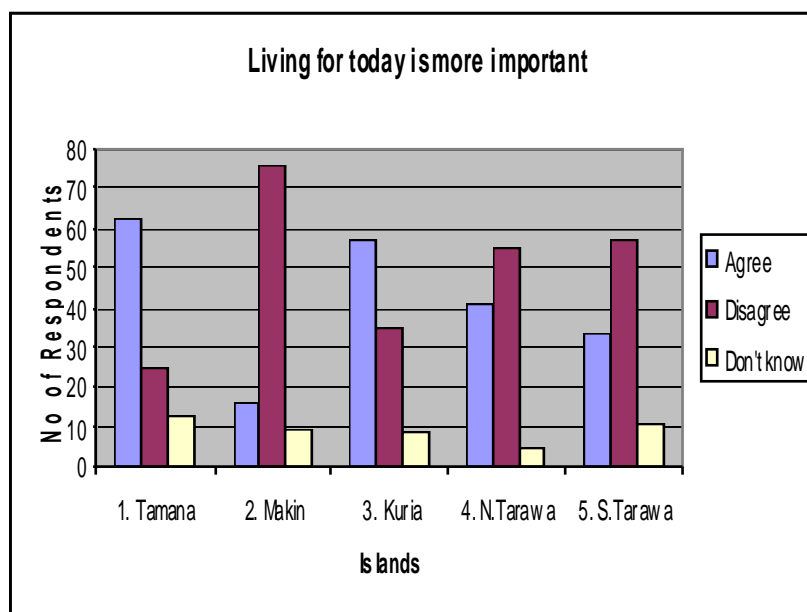
In Kuria almost 90% of respondents answered that every individual can do something to adapt to climate change.

The peoples of I-Kiribati are adept at working together collaboratively (“ibuobuoki”) as evidenced by the building of maneabas, organisation of cultural events involving large numbers of people in highly practised and complex singing, dancing, drumming and catering. There are numerous rituals and protocols to show respect and strengthen relationships. The question is how can these potentially high levels of cooperation be best harnessed for climate change adaptation between families and government ministries?

Q 11. Living for *today* is more important than worrying about the effects of Climate Change in 50 years time (“n na katia”)

In I-Kiribati culture it is commonly believed that there is the value of “N na katia” ie it is important to live for today. However, when asked, “living for today is more important than worrying about the effects of climate change in 50 years time”, 54% disagreed. However, the government will need to focus on methods to convince the other 46% to raise their awareness of the need to adapt and plan for the future changes in the short and long term.

Figure 3 Living for today is more important than worrying about the effects of Climate Change in 50 years time



There were also big variations in responses from island to island for example; it was noticeable that 63% of respondents from Tamana 57% of respondents from Kuria agreed that living today it is more important than worrying about the effects of climate change in 50 years time. The most forward looking island appeared to be Makin where 76% of respondents disagreed with the statement.

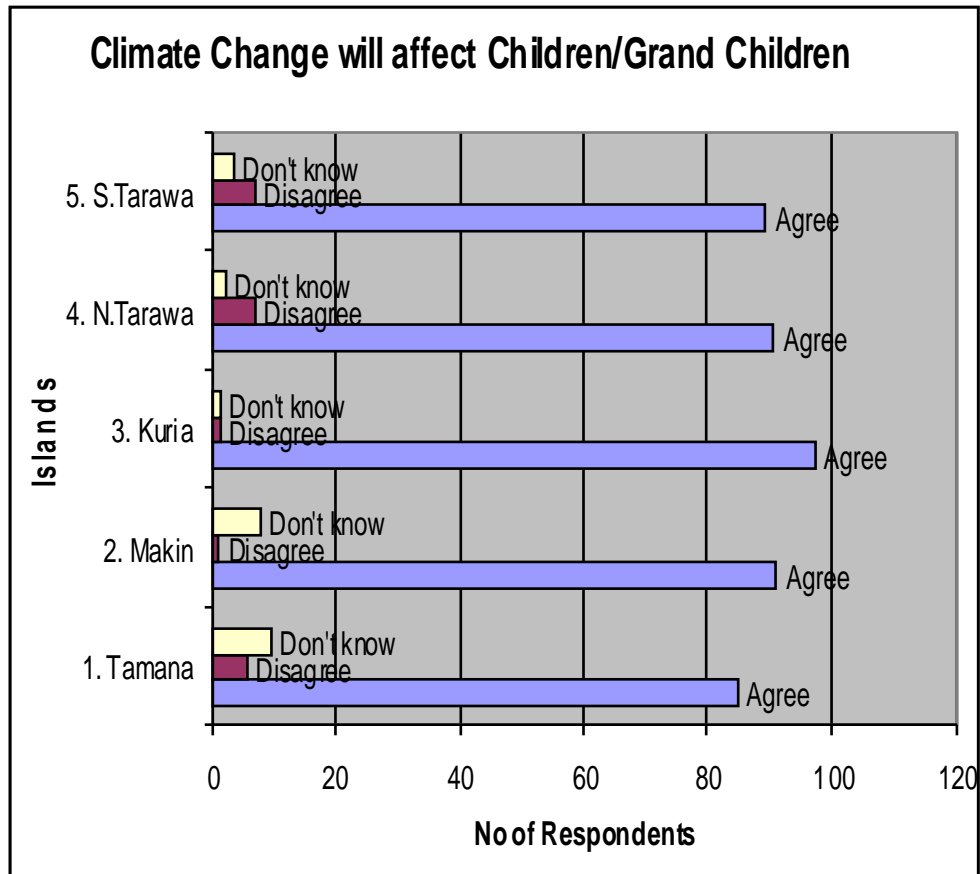
Q 12. Climate change will reduce the quality of life of my children & grandchildren in the *future*

In the I-Kiribati culture, children are highly treasured as “gifts from God”. 90% of those interviewed agreed they were very concerned about the impact of climate change on the quality of life of their children and grandchildren. However, in Tamana 15% either disagreed or didn’t know whether climate change would affect their children or grandchildren.

This strong feeling for the well-being of the current and future generations of children will be an important and useful focus for future climate change awareness raising and adaptation campaigns.

In the southern islands eg Tamana people are forward looking because of past food shortages so they have developed special methods for long term coconut storage “Te okai”. Can these skills be shared with and adapted by other islanders?

Figure 4 Climate change will affect children/grandchildren



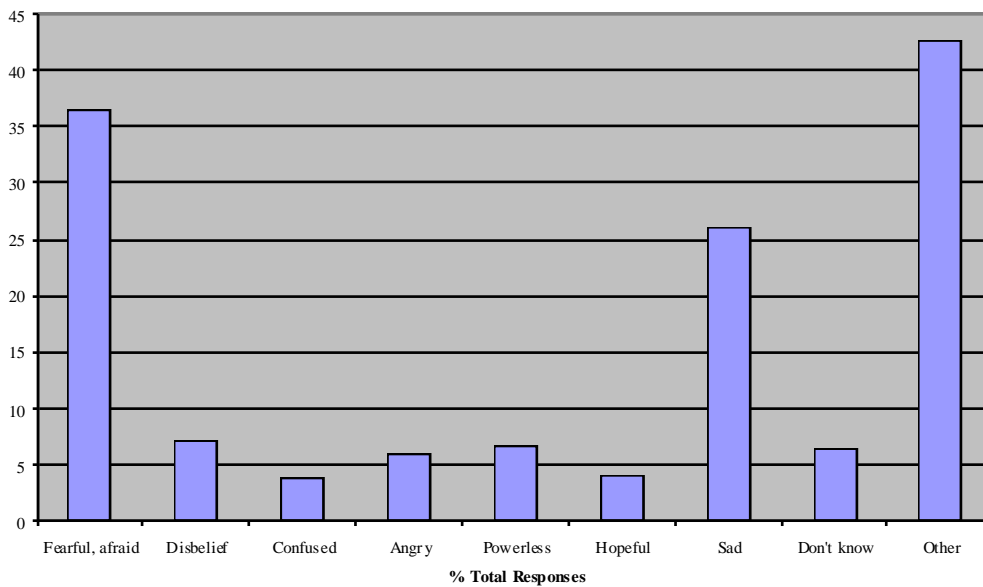
C. FEELINGS ABOUT CLIMATE CHANGE (Q 13)

Q 13*. How do you feel about climate change?

The major feelings reported were fear and sadness.

Over a third of those interviewed were reported feeling fearful about climate change with the greatest fear in Tamana (56%). The “other” category on the right below is surprisingly large. In this category the words “worried” ie “raraoma” and “concerned” ie “tabeaian ga” predominated.

Figure 5 Feelings about climate change



The peoples of Kiribati are justifiably very proud of their country and culture and over a quarter of those interviewed reported feeling sadness at the thought of losing their islands and culture.

In Tamana over 10% reported disbelief, confusion and anger. Elsewhere, “anger” was surprisingly low and only 6% overall reported feeling angry. However, it is interesting that overall only 4% felt “hopeful” whereas in Tamana 13% felt hopeful perhaps indicating that their lack of awareness is also linked to denial that climate change is happening.

It is interesting to note that only 7% of those interviewed reported feeling powerless with regards to the impact of climate change. This may be because many are unaware as yet of the widespread potential problems in store.

Behaviour modification programmes will need to acknowledge and take into account the feelings of people.

D. HOW PEOPLE LEARN ABOUT CLIMATE CHANGE (Q 14-22)

Q 14 *. Do you make use of any of the following media at home/maneaba/church/school?

By far the highest media penetration at the time of writing is achieved via radio with 89% of those interviewed having access to radio in their lives. Radio stands out as the most cost-effective way of educating people about climate change at the present time. Only 2% had access to CB radios.

The next most important medium was newspapers with over half those interviewed in North and South Tarawa having access to newspapers. 42% of those respondents in Kuria also had access to newspapers. However, few respondents in Tamana and Makin had access to newspapers.

Only a quarter of those interviewed had access to DVD, none in Makin, a surprising 35% in Tamana and only 4% in Kuria. Given the lack of number of DVD players at this time in Kiribati and the difficulties of safe storage and retrieval of discs, this medium whilst very useful in workshops may not be the most cost effective way of regularly updating information about climate change at this time.

Only 8% of those interviewed, had access to TV with the majority of 12% in South Tarawa and no people interviewed in Tamana had access to TV

9% of those interviewed in S. Tarawa had access to computer/internet, but this will increase in years to come.

Q 15 *. Through which media have you heard about CC?

All islands received most information about climate change via the Kiribati government AM station. Over 88% of those interviewed had access to this medium.

Just under a third of those interviewed reported hearing about climate change via newspapers however, this medium had most penetration in North and South Tarawa.

One third of those interviewed had access to newspapers, but only 4% in Makin and 13% in Kuria.

Almost a quarter reported learning about climate change from family members and friends.

Overall only 8% of those interviewed had about climate change in many other meetings. However, in Tamana over a quarter reported that they heard about climate change in many other meetings.

Whilst street theatre is very popular in Kiribati, only a few people interviewed in Tamana (4%) reported seeing street theatre with messages about climate change. No one on the other islands reported any street theatre on climate change.

Only 4% of respondents overall received information about climate change and the church with the highest being Tamana 18% and Makin and South Tarawa.

Of note is that overall almost 0% heard about climate change from the Island Development Committee. Less than 1% of respondents in Tamana and North Tarawa heard about climate change from the Island Development Committee. No respondents from South Tamana, Makin or Kuria reported hearing about climate change from their Island Development Committee.

Additionally, a small number of respondents from Betio added that they heard about climate change from the METT. In N Tarawa one person heard about climate change from foreigners and teachers.

In rank order, respondents preferred information about climate change via:

- radio AM (government) (83%)
- maneaba meetings (38%)
- TV and newspapers (36%)
- DVD and newsletters eg KAP 28%.

Q 16*. By which of the following methods would you like to receive information about Climate Change and adaptation methods?

An overriding 83% of respondents wanted information about climate change delivered by the Kiribati radio government AM station.

Over one third wanted information by via Kiribati TV (despite not all having access yet). As licenses are expensive, many who have TVs also have a DVD player, but do not access the TV channels.

Just over a quarter wanted information on DVDs about climate change. Just under 50% of respondents in Tamana and Makin requested DVDs. However 0% of respondents in Makin had access to DVDs. However, in Tamana, a surprising 35% of respondents reported access to DVD.

Radio is the most effective medium of mass communication by the government and the most preferred by respondents.

Additionally respondents from Betio requested information about climate change from consultants and specialists from overseas. (This could perhaps be achieved through radio interviews).

Q 17. Have you recently attended a consultation, workshop or school lessons on Climate Change or biodiversity (fisheries/agriculture/water linked to CC)?

(11%) of those interviewed had attended a consultation/workshop on climate change or biodiversity issues eg fisheries, agriculture, water linked to climate change. Of those 13 % were male and 10% female.

In raw figures (Appendix 6) only 92 respondents out of the total 837 had recollection of consultations or workshops on climate change or associated topics. These comprised: 9 on Tamana, 12 on Makin, 9 on Kuria, 19 on N Tarawa and 43 on S Tarawa.

At this stage in the interview if the respondent said “no” or “don’t know” the interviewers were directed to go to Q 21. However, despite the instruction in the questionnaire and the training manual to tick N/A ie not applicable there were many coding errors. The questionnaire and the training manual have been edited to minimise the likelihood of this happening in future years.

Q 18. If “yes” who organised the events? (Go to Appendix 6 Q 18)

The majority of respondents could not remember which government department was responsible for organising events.

In Appendix 6 Q 18 there is evidence of consultation/workshops by MELAD and schools in every island. There is no evidence of MOWPU and only one person on Kuria recalled consultation/workshops by KAP and two people by the Church in S Tarawa.

Additionally, in the open ended questions, respondents from Betio mentioned workshops by the Taiwan Technical mission. In Makin, respondents mentioned events organised by the “councillor”.

Q 19*. What did you learn about ways to adapt to CC?

(Repeat “adaptation” definition) (Go to Appendix 6 Q 19)

Those who did attend workshops appeared to learn very little. A third of attendees reported learning to plant mangroves. There was little or no awareness to:

- avoid damaging reefs (2%)
- look after the berm area of beaches
- not mine aggregate.

10% reported that they learnt nothing.

Q 20 *. What did you do as a result of the workshop to adapt to CC?

(Go to Appendix 6 Q 20)

Overall, only 4% had informal talks with friends. 1% had meetings with villagers and another 1% gave talks in schools.

3% overall had meetings with island council. 35% overall reported that they did nothing.

The question needs to be asked whether consultations/workshops are actively engaging the participants in learning using adult learning strategies. Workshops are less likely to result in learning (and behaviour change) if they:

- are designed as a result of needs analysis
- are lecture-based
- do not include group discussion, action planning and ongoing monitoring of agreed changes.

Q 21 *. If funding is *not* available and you needed help (physical and skills) to adapt your environment that are too difficult to do or solve alone, how would you go about it?

The I-Kiribati culture is built on the collective help and support between extended family members. 46% of respondents said they would first go to get help from family members.

Additionally some use reciprocity, “I request young men for their assistance and then provide food for them”.

There needs to be awareness raising about the availability of government and KANGO, NGO grants and dissemination of ideas on how these may be best spent. We cannot assume that community participation will always bring forth the most useful adaptation measures. Each will vary according to the location, local problems and issues. Stories of successful projects could be usefully disseminated over the government radio.

Q 22*. If you learnt new information/skills about adaptation to CC, would you be prepared to share with others outside your family?

It was encouraging to see that 88% of those interviewed said they were willing to share new skills about adaptation to climate change for no payment.

This is interesting since the value of “tauanibai” results in no co-operation between families to teach each other new skills which may give them a competitive advantage later. However, it is hoped that people will unite and cooperate to buy time and a better quality of life in what remaining time there is in Kiribati.

E. ADAPTATION TO CLIMATE CHANGE SHORT & LONGER TERM

Q 23*. What have you done *already* to adapt to climate change?

Almost 50% of respondents have done nothing to adapt to climate change.

19% say they are taking care of trees and bushes and planted coconuts and pandanus trees. (Presumably this is normal practice but the impact of CC will make this even more important. 12% mentioned they have built sea walls of coral and driftwood. 3% have built sea walls of cement and sand bags. 8% have planted mangroves.

There were many additional comments “I have insufficient understanding on this”

Additionally respondents from Betio said, “I don’t burn waste and hardly dispose of waste into the sea” ie there was some awareness of the need to change behaviour in order to look after the environment as much as possible.

Q 24*. Have you already planned to do any of these things in the *future* ie next 5 years to adapt to climate change?

32% of respondents plan to plant trees along the shoreline (including 49% in Tamana). 27% plan to look after trees and bushes (42% in Tamana).

26% want to install rain water tanks (however this is less important in Makin where rainfall is higher and more reliable).

Because of water shortages at the time of the survey 22% of S Tarawa respondents talked of the need to conserve water.

32% of respondents in Tamana and again N Tarawa were planning to build walls of coral and driftwood. Only 12% were planning to stop mining aggregate and 7% were planning to stop damaging reefs.

This indicates the need for supplies of cheap building materials mined from specially selected place in the lagoon by the government and for the enforcement of regulations against aggregate mining.

25% currently have not made any plans to adapt to climate change in the future.

Additionally respondents from Betio said:

“We are waiting for the government to tell us what to do” Comments like this indicate that the actual process of engaging people in the questionnaire has raised expectations that some action will follow.

Q 25*. If necessary, in the long term, would you be prepared to move with your family to?

19% overall were prepared to move their houses way from the beach including 40% in Tamana

22% overall were willing to move to another island in Kiribati (47% in Tamana and only 4% in Kuria)

However 74% overall were willing to move to another country (81% from S Tarawa were there is the highest overcrowding pressure on resources.

F. EXTREME OR UNUSUAL WEATHER EVENTS

26. Have you recently experienced any *extreme/unusual weather events* for example, freak storms, wave washing over walls and causeways?

56% reported that they had not experienced extreme/unusual weather events.

27. If “yes”, please describe the most recent significant event

In S. and N. Tarawa and Makin there were many reports of freak storms resulting in:

- strong winds, heavy rainfall and storms
- overtopping of causeways, wells, pig sties and babai pits
- flooding of homes
- corrugated iron roofs being blown away
- collapse of houses and bridges
- taro and breadfruits dying due to saline intrusion
- coconut trees fell over

Q 28*. How did you get a warning (through which media)?

(Go to Appendix 6 Q 28)

Only 34% of the 41% who reported they had experience an extreme weather event heard about it by radio overall. In S. Tarawa 48% heard by radio. Then there is a significant drop in radio penetration to the islands of Tamana (21%), Makin (21%), and Kuria (29%) N. Tarawa (28%).

57% overall had no warning.

It may be worth investigating NGO projects involved in distributing wind up and solar radios.

Q 29. What did you do during the event?

(Go to Appendix 6 Q 29)

67% stayed where they were and only 14% moved to a perceived “safer” location.

Q 30*. What did you do as a result of the event? (in the long term)

(Go to Appendix 6 Q 30)

44% did nothing.

12% built a sea wall, (mostly in Tamana, N and S Tarawa), 9% planted trees along the coast. 4% had to abandon houses and move.

Only 1% covered their wells as a result of extreme weather events.

Many (in the open ended responses) reported verbally the need to rebuild, replace and reinforce their homes repeatedly. In Betio, Makin N and S Tarawa numerous respondents commented that they needed to:

- strengthen and/or rebuild houses
- increase the height of buia/ki a kia
- cut some trees down that may fall on houses.

Q 31*. What do you do if there is a lack of water/drought?

During drought, 37% dig new wells. 29% get water from the government. 25% got to the nearest potable well. 22% covered their wells and buy desalinated water.

Only 3% repaired leaks in taps/pipes. Currently this is the responsibility of the Ministry of Works and Public Utilities, however at the time of writing it was difficult for staff to keep up with the demand. It appears urgent for the TAFE college to run courses in basic plumbing skills to stem the water wastage. Additionally there is a need to educate and encourage the public to take more responsibility for careful water usage.

Q 32. Is there a “disaster management plan” in place in your village/island?

64% thought there was no disaster plan and 32% did not know whilst 5% thought there was a disaster plan.

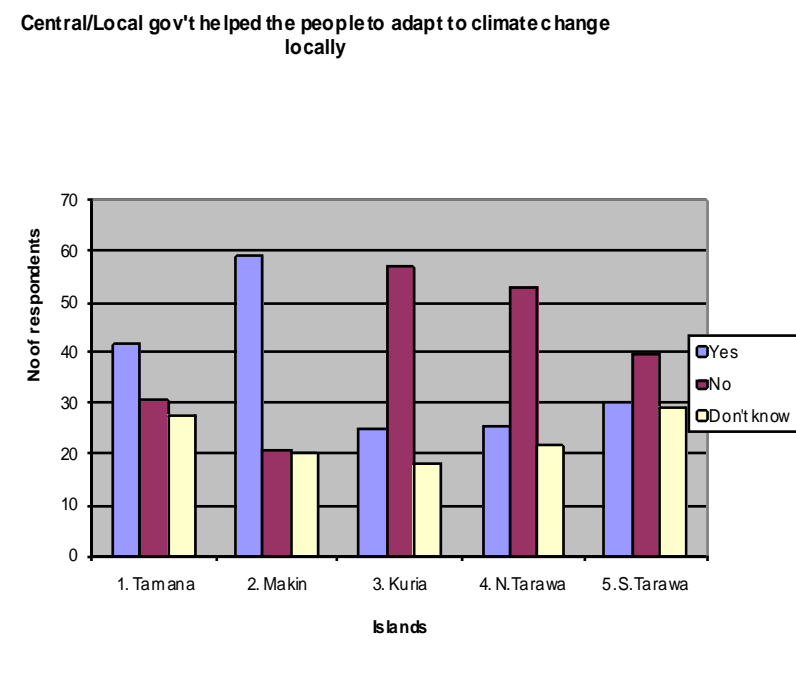
Currently there is need for the government to develop a disaster plan for each island. SOPAC has undertaken to support this initiative.

E. THE CENTRAL GOVERNMENT & LOCAL GOVERNMENT

Q 33. The central/local government are doing things to help us to adapt to climate change locally ie on this island. If “agree” please give examples

42% did not think that the central/local government were doing things to help them to adapt to climate change locally ie on their island and 25% did not know what was being done. Only 33% overall believed that something was being done.

Figure 6 Central/local government is helping people to adapt to CC locally



Additionally respondents from S Tarawa Teoraereke, Betio commented on:

- the distribution of water tanks and freshwater from the PUB
- building of sea walls by the government to prevent erosion
- planting of mangroves by the government
- planning by the Taiwanese technical mission
- desalination of sea water
- information on water management

In N Tarawa the Ministry of the Environment came to our village to teach us ways to overcome erosion and Ministry of Works repaired damaged bridge

Additionally in Makin respondents referred to work by the local council and councillor.

Q 34. The central/local government has *already consulted* us to enable us to identify our areas of concern about CC on our island. If “agree” please give examples

11% thought they were consulted by the government regarding climate change adaptation strategies. However, 61% overall did not feel consulted; 28% did not

know. The most consultation appears to have occurred in Tamana (25%) and Makin (23%). The lowest areas were Kuria (74% no consultation) and N Tarawa (68%).

Additionally, some respondents added this survey made them feel “consulted”. In Makin there were many responses commenting on the government and councillor cooperating well with the people on climate change issues (in the open ended questions).

H. CAUSES OF CLIMATE CHANGE

Q 35 * What do you think are the causes of climate change?

(Also see Appendix 4 Q 35)

Overall 31% thought CC was caused by burning fossil fuels and 16% by deforestation, 43% did not know and 26% said “other” which included:

- CC is God’s decision
- CC is caused by building of causeways
- I don’t believe in CC
- CC is caused by bombing the ocean
- CC is caused by the movement of the moon.

When comparing the causes of climate change with leadership positions, youth leaders had the highest awareness ie 41% thought climate change was due to burning fossil fuels and 25% due to deforestation. However, the “don’t know” and “other” responses were extremely high in all categories.

It will be important in future years that leaders in government, the Churches, AMAK and the traditional leaders ie rorobuake, unimwane and unaine are fully conversant with information on climate change.

36. Do you have anything you would like to add about any climate change issues?

This was an open ended question. The majority of comments were requests for the government to take action to:

- solve village problems eg provide more water tanks, build public toilets
- prevent problems caused by climate change
- build walls
- prevent mining of aggregate
- raise awareness in their village on what to do to adapt
- relocate people overseas
- pass laws to punish those who exacerbate problems caused by climate change eg mining aggregate and cutting down mangroves
- manage human ground waste
- prevent burning of waste and thereby contributing to climate change.

Many respondents appreciated the survey as they had learnt about things to do to adapt to climate change. Others comments that they found it interesting:

“The survey makes us believe the government is now doing something” ie there are expectations on the islands visited that there will be follow through by the Government.

In Makin, Betio and Teaoaraereke many respondents added:

“This survey is very important for the future generations in Kiribati”

Some asked to hear about the results of the survey. This could be best achieved via the radio.

“We would like the government to take urgent decisions towards combating problems caused by climate change, so far there has been much talk and little action”

Our government should request big countries to reduce their production and pollution

“We need people to cooperate to sustain the cleanliness of our environment”

GENDER DESEGREGATED DATA

Gender has been reported as a significant factor in climate change adaptation and disaster impact management (Brody, Demetriades & Esplen 2008). The interviewers maintained a good gender balance of the 837 respondents 48% was male and 52% were female.

The summary of responses by male/female can be seen in Appendix 5 xxx. Of the 837 people interviewed the education levels were similar (Q 2). In Q 4 it was noticeable that 7% of men had a leadership position in government (only 1% of women). 18% of men had leadership position in the church and 9% of women. So it will be important in future to work through AMAK networks and leaders to involve women in adaptation strategies.

Q 6. Equal number of men and women had heard about climate change (86% and 88 respectively)

Q 7. Men were slightly less informed than women about were about to be impact of climate change and saltwater intrusion into lens and wells. Only 8% of both men and women had knowledge that climate change will increase disease. Only 5% of men and 2% of women you about the impact on coral bleaching. Only 12% of men and 9% of women knew that fish stocks may decline.

Q 10. 81% of women and 74% of men agreed that every individual can do something to adapt to climate change.

Q 11. Over half of men and women interviewed disagreed with the statement that living today is more important is the planning tomorrow. The government will need to focus on the other 50% who will need to adapt in the short and long-term.

Q 12. 93% of women and 87% of men were concerned that climate change will impact on their children and grandchildren. This concern may be of use in government education programmes focusing on behaviour change.

Q 13. there were no significant differences in feelings that climate change. 41% of men and 33% of women reported feeling fearful. And 21% of men and 31% of women reported feeling sad.

Q 14. Slightly fewer women have access to radio (94% men, 84% women). If there are aid agency is willing to provide windup radios to the more isolated islands, it may be useful to distribute these via AMAK to women.

Q 15. Radio and newspapers were slightly less accessible to women.

Q 17. 13% of men and 10% of women interviewed had attended workshops on issues related to climate change. It will be important in the future to ensure that women are actively encouraged and supported to attend workshops.

Q 22. Both men and women agreed they would share new skills but no payment (87% and 88% respectively)

Q 23. 50% of men and 45% of women have so far done nothing to adapt to climate change.

Q 25. 80% of men and 69% of women said they would be prepared to move to another country if necessary. However 24% of women and 19% of men were prepared to move to another island in Kiribati.

Q 26. 59% of men and 54% of women reported that they had not experienced any unusual weather.

Q 28. Only one female and no males of the total 937 interviewed reported that they had heard about unusual weather forecasts via CB radio.

Q 30. In the open ended questions many respondents reported on the ongoing costs for having to strengthen and rebuild rooves and homes after extreme weather events

Q 31. During drought only 2% of men and 3% of women reported that they repaired leaks intact and pipes about a third go to the government to help.

Q 33. Over one third of men and women believe the government is trying to do things to help them to adapt to climate change locally

Q 35. 36% of men and 27% of women thought that climate change was caused by the burning of fossil fuels. 16% of men and women thought it was caused by deforestation.

EVALUATION OF THE SURVEY TOOLS

The questionnaire worked well in that men, women and teenagers were able to think, reflect and voice their opinions personally to the interviewer. In a larger group context some may not have had an opportunity to speak.

The survey team did an excellent job in meeting the stratified target samples by island (based on the census and described in (Hogan 2008d) see Appendix 2.

There were coding errors in Questions 18, 19, 20 where interviewers were asked to circle N/A if respondents answered “no” to Question 17 [17.2] that they had not attended a consultation, workshop or school lesson on CC or biodiversity. The instructions in the questionnaire have been adapted as a result.

There were also coding errors in Questions 28, 29, and 30 where interviewers were asked to circle N/A if respondents answered “no” to Question 26 [26.2] that they had not recently experienced any extreme weather events.

RECOMMENDATIONS FOR IMPROVEMENTS FOR FUTURE SURVEYS

Modification of the questionnaire

The questionnaire has been modified and an updated version can be seen in Appendix 7. The main changes are:

- deletion of [6.3] don't know; [7.16] other; [23.13] other ; [24.14]; [25.5] not sure; [32.3] don't know
- stronger instructions to the interviewers in Question 17 ie

(IMPORTANT If you circle 17.2 no you MUST circle N/A in answers 18.10, 19.10, 20.10)

- stronger instructions to the interviewers in Question 26 ie

(IMPORTANT If you circle 26.3 you MUST circle N/A in answers 28.8, 29.4, 30.10)

The stronger instructions for Q 17 and 26 have also been added to the:

- “Instruction manual for interviewers” (Hogan 2008a)
- “Instruction manual for the National Consultant & Deputy Coordinator” (Hogan 2008b)

NB These modifications need to be added to the I-Kiribati versions of the questionnaire.

The question numbers have been kept the same in order to make comparisons easier in future years.

Monitoring of interviewers

The survey team needs to be monitored by KAP Head Office Managers and Survey Team Leaders. For example:

- interview forms need to be checked to ensure that interviewers are coding all responses (some responses were added in under the “other” heading which should have been coded) As these were not checked, unnecessary errors were repeated
- to ensure that all files are completed (eg all word documents and Excel files must be submitted before team leaders are paid
- end of survey reports must be completed satisfactorily before the Team Leader is paid.

Monitoring of team leaders

It is important for KAP management to talk to the Team Leader and Deputy Team Leader separately as well as together as if one is not pulling his/her weight it would be difficult to say in front of the other.

Supervision of translation of open ended questions

The survey team submitted the word files of open ended responses for:

- Makin
- N. Tarawa
- Betio
- Other locations in Tarawa peri urban.

The survey team did not submit the Word files of translated open ended responses for:

- Tamana
- Kuria
- Bairiki
- Bikenibeu.

There appears to a need for close supervision of the future Surveys by KAP II management.

Capacity building

Before undertaking the next survey capacity building for the Team Leader and Deputy Leader may be required in:

- questionnaire instruction (ie the need to monitor the interview team regularly and check their data coding
- report writing
- use of excel.

Recruitment of Team Leader

The Team Leader needs to have sufficient experience in training and leading a team and be able to demonstrate use of excel spread sheets at the interview stage.

Aggregate mining

In this questionnaire there was little awareness about the problems caused to ecosystems and sea defences by aggregate mining. This is understandable as it has not been targeted yet as there has been little alternative up to now.

On June 19, 2008, the European Union (EU) will provide Euros 2.2 million (US\$3.38 million) to support sustainable dredging in Kiribati. A Contribution Agreement for the Tarawa Aggregate Mining Project was signed by Pacific Islands Applied Geoscience Commission (SOPAC), Kiribati's Minister for Fisheries and Marine Resources and the Finance Secretary.

The project will address the increasing demand of for sand and gravel on South Tarawa, and at the same time would also try to address the problem of coastal erosion that is now becoming a major environmental issue in the capital and the rest of the islands in Kiribati. A survey by SOPAC found that households in Tarawa plus small companies and government ministries have removed 70,000 tonnes of sand and gravel from South Tarawa's fragile coastal line. (<http://kiribati-news.newslib.com>)

APPENDIX 1 ISLANDS VISITED BY SURVEY TEAM 2008



APPENDIX 2 STRATIFIED TARGET SAMPLE SIZES BY ISLAND

Male - by age group	Targets				
Island	Makin	Tamana	N.Tarawa	S.Tarawa	Kuria
Total male target	45	34	87	202	35
15 to 17	5	3	12	20	3
18 to 49	31	22	60	149	24
50 or over	9	9	15	33	8
Breakdown of S.Tarawa	Total	Betio	Bairiki	Bikinibeu	Other
Total male target	202	64	14	31	94
15 to 17	20	6	1	3	9
18 to 49	149	47	10	23	69
50 or over	33	10	2	5	15

Female - by age group	Targets				
Island	Makin	Tamana	N.Tarawa	S.Tarawa	Kuria
Total female target	45	38	93	218	37
15 to 17	5	3	13	22	3
18 to 49	31	25	63	160	26
50 or over	9	11	16	36	8
Breakdown of S.Tarawa	Total	Betio	Bairiki	Bikinibeu	Other
Total female target	218	68	15	33	101
15 to 17	22	7	2	3	10
18 to 49	160	50	11	25	74
50 or over	36	11	2	5	16

Male - by employment group	Targets				
Island	Makin	Tamana	N.Tarawa	S.Tarawa	Kuria
Total male target	45	34	87	202	35
Cash employee	10	7	18	79	7
Village work	26	19	50	51	20
Unemployed	6	6	8	45	5
Student (15 or over)	3	2	11	28	3
Breakdown of S.Tarawa	Total	Betio	Bairiki	Bikinibeu	Other
Total male target	202	64	14	31	94
Cash employee	79	25	5	12	37
Village work	51	16	3	8	23
Unemployed	45	14	3	7	21
Student (15 or over)	28	9	2	4	13

Female - by employment group	Targets				
Island	Makin	Tamana	N.Tarawa	S.Tarawa	Kuria
Total female target	45	38	93	218	37
Cash employee	5	4	10	50	4
Village work	22	19	46	61	18
Unemployed	14	13	20	77	13
Student (15 or over)	3	2	16	30	2
Breakdown of S.Tarawa	Total	Betio	Bairiki	Bikinibeu	Other
Total female target	218	68	15	33	101
Cash employee	50	16	3	8	23
Village work	61	19	4	9	28
Unemployed	77	24	5	12	35
Student (15 or over)	30	9	2	5	14

APPENDIX 3 INTERVIEW PLANNER: DATES & DESTINATIONS

	1	2	3	4	5	6	7	8	9	10	11
	Jan 28	Feb 4	Feb 11	Feb 18	Feb 25	Mar 3	Mar 10	Mar 17	Mar 24	Mar 31-Apr	Apr 7
Baseline Survey Team A 3 people	Recruitment & training of survey teams	Recruitment & training of survey teams	Tamana	Data entry translation	Data entry translation North Tarawa	North Tarawa	Data entry translation	South Tarawa	South Tarawa	South Tarawa	Data entry translation
Baseline Survey Team B 3 people	Recruitment & training of survey teams	Recruitment & training of survey teams	Kuria	Data entry translation	Data entry translation North Tarawa	North Tarawa	Data entry translation	Makin	Data entry translation	South Tarawa	
					28 th	7 th			24 th	31 st	8 th
KAP Consultation- CCA/SLR Team					Tamana visit	Tamana visit			Beru visit	Beru visit	Onotoa visit

Ongoing awareness raising by the KAP Consultation – CCA/SLR team after finish of Baseline Study

	12	13	14	15	16	17	18	19	20	21	22
	April 14	April 21	April 28	April 30	May 5	May 12	May 19	May 26	June 2	June 9	June 16
KAP Consultation – CCA/SLR	Onotoa visit					North Tarawa	North Tarawa				

	23	24	25	26	27	28	29	30	31	32	33
	June 23	June 30	July 1	July 8	July 15	July 22	July 29	Aug 5	Aug 12	Aug 19	Aug 26
KAP Consultation – CCA/SLR	Kuria	Kuria				Makin	Makin/ Butaritari	Butaritari			Maiana

	34	35	36	37	38	39	40	41	42	43	44
	Sept 3	Sept 10	Sept 17	Sept 24	Sept 31	Oct 1	Oct 8	Oct 15	Oct 22	Oct 29	Nov 6
KAP Consultation – CCA/SLR		Tab South		Marakei				North Tarawa capacity building and project development		Tamana capacity building and project development	

	45	46	47	48	49	50	51	52	53	54	55
	Nov 13	Nov 20	Nov 27	Dec 4	Dec 11	Dec 18	Dec 25	Jan 1, 2009			
Consultation – CCA/SLR	North Tarawa capacity building and project development		Tamana capacity building and project development								

APPENDIX 4 SUMMARY BY ISLAND

AS % OF TOTAL NUMBER OF RESPONSES FOR EACH ISLAND

Questions	Num	Island					
		1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Total number of questionnaires		72	90	72	182	421	837
Male/Female	B	% of island total	% of island total	% of island total	% of island total	% of island total	
Male	B.1	47	51	49	48	47	48
Female	B.2	53	49	51	52	53	52
Location	C						
Lagoon side	C.1	64	53	79	68	32	49
Ocean side	C.2	3	17	1	8	24	16
Middle	C.3	33	30	19	24	44	35
Age	1						
15 to 17	1.1	In 7	11	8	14	10	11
18 to 33	1.2	26	27	25	30	40	34
34 to 49	1.3	39	43	44	38	34	37
50 to 65	1.4	17	19	15	13	13	14
over 65	1.5	11	0	7	6	3	4
Highest education level	2						
No formal	2.1	14	3	18	3	9	8
Primary	2.2	36	54	32	41	29	35
Secondary	2.3	50	40	47	54	55	52
College/university	2.4	0	2	3	2	8	5
Main employment	3						
Government	3.1	14	12	11	10	10	11
Education	3.2	1	0	0	3	3	2
Church	3.3	0	2	0	1	1	1
Business (own)	3.4	0	3	6	4	7	5
Business (someone else's)	3.5	0	0	0	0	9	5
<i>(Continued on next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
NGO/development	3.6	0	2	3	0	2	1
Home duties	3.7	47	34	44	41	19	30
Village work	3.8	3	16	7	12	7	9
Unemployed	3.9	26	23	21	15	27	23
Retired	3.10	3	0	3	0	3	2
Student over 15	3.11	6	7	6	14	12	11
*Do you have a leadership position	4						
Government	4.1	4	8	6	4	2	3
Church	4.2	4	19	19	16	11	13
Women/AMAK	4.3	0	4	3	2	5	4
Youth	4.4	6	3	4	5	3	4
Cooperative	4.5	3	1	3	0	0	1
Union	4.6	0	0	0	0	0	0
Rorobuake	4.7	13	10	0	6	3	5
Unimwane	4.8	4	8	1	5	3	4
Unaine	4.9	0	2	0	1	0	1
No	4.10	71	51	69	65	80	72
Years on this island	5						
Less than 1 year	5.1	3	7	1	4	4	4
1 to 19 years	5.2	33	26	54	61	65	56
20 to 39 years	5.3	38	42	24	24	27	28
40 or more years	5.4	26	26	21	12	4	11
Heard about climate change	6						
Yes	6.1	61	87	86	88	92	87
No	6.2	32	9	14	12	5	10
Don't know	6.3	7	4	0	1	4	3
<i>(Continued on next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
*Possible effects of CC	7						
Sea level rise	7.1	29	64	65	66	45	52
Increased erosion	7.2	21	81	68	41	34	43
Saltwater into lens & wells	7.3	4	12	33	40	17	22
More storms	7.4	4	0	18	5	4	5
More rain	7.5	0	2	7	2	2	2
Less rain	7.6	44	24	74	70	60	58
Hotter	7.7	43	51	71	74	78	71
More disease	7.8	6	8	15	10	7	8
Trees may die	7.9	50	62	65	59	46	52
Warmer ocean surface	7.10	4	1	3	5	3	3
Coral bleaching/dying	7.11	1	4	6	3	3	3
Fish stocks decline	7.12	6	9	31	15	7	11
Government roads etc damaged	7.13	0	1	8	3	2	3
Private buildings damaged	7.14	1	0	1	2	1	1
Don't know	7.15	22	8	8	5	6	8
Other	7.16	13	0	8	3	5	5
CC IS happening	8						
Agree	8.1	89	88	85	92	92	91
Disagree	8.2	3	3	4	3	0	2
Don't know	8.3	8	9	11	5	7	7
CC is affecting this island already	9						
Agree	9.1	79	80	90	83	87	85
Disagree	9.2	11	12	10	12	5	8
Don't know	9.3	10	8	0	5	7	6
<i>(Continued on next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
Every individual can do something	10						
Agree	10.1	72	73	89	77	78	78
Disagree	10.2	15	19	8	18	13	14
Don't know	10.3	13	8	3	4	10	8
Living for today is more important	11						
Agree	11.1	63	16	57	41	33	37
Disagree	11.2	25	76	35	55	57	54
Don't know	11.3	13	9	8	4	10	9
CC will affect children/grandchild	12						
Agree	12.1	85	91	97	91	89	90
Disagree	12.2	6	1	1	7	5	5
Don't know	12.3	10	8	1	2	5	5
*How do you feel about CC?	13						
Fearful, afraid	13.1	56	38	31	34	35	37
Disbelief	13.2	10	4	8	5	8	7
Confused	13.3	11	7	0	4	2	4
Angry	13.4	14	4	4	8	4	6
Powerless	13.5	8	1	11	10	5	7
Hopeful	13.6	13	1	8	3	3	4
Sad	13.7	21	26	53	30	21	26
Don't know	13.8	3	9	13	6	5	6
Other	13.9	36	36	29	41	48	43
*Do you use media?	14						
Radio	14.1	94	83	94	91	88	89
CB Radio	14.2	7	2	4	2	1	2
Newspaper	14.3	19	9	42	51	52	43
<i>(Continued on next page)</i>							
<i>(Continued from previous page)</i>							

Questions	Num	Island					
		1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
TV	14.4	0	1	4	5	12	8
DVD	14.5	35	0	4	20	32	24
Computer/internet	14.6	0	0	3	1	9	5
None	14.7	3	17	6	4	4	6
*Where heard about CC	15						
Kiribati radio AM (Government)	15.1	89	82	90	89	88	88
Kiribati radio FM	15.2	0	0	1	1	0	1
Overseas radio (eg BBC/ABC)	15.3	1	0	7	1	1	2
CB Radio	15.4	0	1	4	1	0	1
Kiribati TV	15.5	1	0	3	2	5	3
Overseas TV	15.6	0	0	1	3	4	3
DVDs	15.7	15	2	4	5	4	5
Computer/internet	15.8	3	0	1	1	5	3
Newspaper	15.9	22	4	13	37	36	30
Church	15.10	18	1	7	2	2	4
NGO	15.11	0	0	0	1	1	1
Maneaba meetings	15.12	26	8	10	15	2	8
Street theatre/drama	15.13	4	0	0	0	0	0
Posters	15.14	3	0	0	0	0	0
Newsletter (eg KAP)	15.15	4	0	3	2	1	1
Island development committee	15.16	1	0	0	1	0	0
Other people (family, friends)	15.17	26	23	31	23	20	23
Never heard of CC	15.18	6	0	3	3	2	3
Other	15.19	7	9	3	7	5	6
<i>(Continued on next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
*Information delivery methods	16						
Kiribati radio AM (Government)	16.1	97	86	78	79	83	83
Radio FM	16.2	13	0	3	14	13	11
CB Radio	16.3	6	1	7	1	0	2
Kiribati TV	16.4	28	27	21	35	43	36
DVDs	16.5	44	46	6	21	29	28
Computer/internet	16.6	4	0	1	7	12	8
Newspaper	16.7	39	7	39	41	38	36
Church	16.8	10	0	10	3	2	3
NGO	16.9	17	4	6	10	11	10
Maneaba meetings	16.1	47	37	26	43	37	38
Street theatre/drama	16.11	24	1	3	4	3	5
Posters	16.12	11	0	3	3	6	5
Newsletter (eg KAP)	16.13	38	33	11	21	30	28
Other	16.14	4	1	6	3	1	2
Attended workshop etc on CC	17						
Yes	17.1	13	13	13	10	10	11
No	17.2	88	87	86	90	89	89
Don't know	17.3	0	0	1	0	0	0
*Who organised it Go to Q 18 Appendix 6	18						
*What did you learn Go to Q19 Appendix 6	19						
*What did you do from workshop Go to Q20 Appendix 6	20						
*If no funding, how to get help	21						
From family	21.1	50	41	32	45	49	46
Form cooperative	21.2	51	29	29	21	19	24
From church	21.3	29	23	43	37	30	32
<i>(Continued next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
Maneaba	21.4	8	34	28	18	19	20
Government etc	21.5	4	10	10	6	12	9
Don't know	21.6	8	0	22	19	16	15
Other	21.7	0	0	0	2	7	4
*Would you share new skills	22						
For no payment	22.1	93	94	78	88	87	88
For money	22.2	4	2	7	8	5	5
In exchange for goods/services	22.3	1	0	8	1	1	2
No	22.4	1	0	8	3	3	3
Not sure	22.5	1	6	3	1	7	5
*Already done about CC	23						
Planted mangroves	23.1	1	11	6	15	6	8
Planted coconuts/pandanus	23.2	14	32	21	20	15	18
Stopped cutting mangroves	23.3	0	3	3	7	4	4
Looked after trees/bushes	23.4	19	8	26	19	20	19
Built sea walls from coral/driftwood	23.5	7	12	7	22	10	12
Built sea walls from cement/sand bags	23.6	0	6	0	2	5	3
Stopped mining aggregate	23.7	0	3	0	3	3	2
Built new buildings away from beach	23.8	8	0	0	5	6	5
Installed rainwater tank	23.9	0	2	1	3	11	7
Conserved water	23.10	1	0	0	0	10	5
Stopped destructive fishing	23.11	0	0	0	0	0	0
Nothing	23.12	60	43	46	43	49	48
Other	23.13	15	1	4	9	4	6
<i>(Continued next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
*Do in future re: CC	24						
Plant mangroves	24.1	7	17	11	45	19	23
Plant trees on shoreline	24.2	49	41	39	37	25	32
Stop cutting mangroves	24.3	1	7	7	31	12	14
Look after trees/bushes	24.4	42	11	31	32	25	27
Build walls of coral/drift wood	24.5	32	14	25	32	8	17
Build walls of concrete/sand bags	24.6	22	4	10	16	8	11
Maintain sea walls	24.7	32	7	8	26	12	16
Stop mining aggregate	24.8	8	13	32	14	9	12
Build new buildings away from beach	24.9	11	0	6	12	7	7
Install rainwater tank	24.10	25	9	24	27	29	26
Conserve water	24.11	7	1	7	5	22	13
Stop damaging reefs	24.12	4	9	15	4	6	7
Nothing	24.13	32	26	24	16	28	25
Other	24.14	15	0	1	1	4	3
*Prepared to move to:	25						
Further from the beach	25.1	40	11	26	26	12	19
Another island (in Kiribati)	25.2	47	16	4	24	20	22
Another country	25.3	75	74	50	66	81	74
No	25.4	1	8	15	9	5	7
Not sure	25.5	1	7	18	10	7	8
Experienced any unusual weather	26						
Yes	26.1	47	59	43	48	32	41
No	26.2	51	41	57	52	62	56
Don't know	26.3	1	0	0	0	6	3
*If "yes", how did you hear Go to Q28 Appendix 6	28						
<i>(Continued next page)</i>							

		Island					
Questions	Num	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
<i>(Continued from previous page)</i>							
What did you do during the event? <i>Go to Q29 Appendix 6</i>	29						
*What did you as result of event <i>Go to Q30 Appendix 6</i>	30						
*Lack of water/drought <i>Go to Q31 Appendix 6</i>	31						
Is there a disaster plan	32						
Yes	32.1	8	4	6	7	3	5
No	32.2	53	86	88	74	53	64
Don't know	32.3	39	10	7	20	44	32
Govt/local council is doing things	33						
Yes	33.1	42	59	25	25	30	33
No	33.2	31	21	57	53	41	42
Don't know	33.3	28	20	18	22	29	25
Govt/local council has consulted us	34						
Yes	34.1	25	23	7	12	7	11
No	34.2	36	60	74	68	60	61
Don't know	34.3	39	17	19	21	33	28
*What are the causes of CC	35						
Burning fossil fuels	35.1	26	23	22	33	34	31
Deforestation	35.2	24	3	8	15	20	16
Don't know	35.3	38	58	54	38	40	43
Other	35.4	24	20	26	23	29	26

**APPENDIX 5 SUMMARY OF RESPONSES BY MALE/FEMALE
(TOTALS AND PERCENTAGES)**

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
Male/Female	B						
Male	B.1	398	48	398	N/A	N/A	N/A
Female	B.2	439	52	N/A	N/A	439	N/A
Location	C						
Lagoon side	C.1	411	49	201	51	210	48
Ocean side	C.2	132	16	60	15	72	16
Middle	C.3	294	35	137	34	157	36
Age	1						
15 to 17	1.1	90	11	44	11	46	10
18 to 33	1.2	284	34	137	34	147	33
34 to 49	1.3	310	37	142	36	168	38
50 to 65	1.4	117	14	62	16	55	13
over 65	1.5	36	4	13	3	23	5
Highest education level	2						
No formal	2.1	67	8	30	8	37	8
Primary	2.2	293	35	142	36	151	34
Secondary	2.3	438	52	206	52	232	53
College/university	2.4	39	5	20	5	19	4
Main employment	3						
Government	3.1	90	11	67	17	23	5
Education	3.2	19	2	11	3	8	2
Church	3.3	8	1	4	1	4	1
Business (own)	3.4	44	5	19	5	25	6
Business (someone else's)	3.5	38	5	19	5	19	4
NGO/development	3.6	11	1	9	2	2	0
Home duties	3.7	253	30	85	21	168	38
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
Village work	3.8	72	9	69	17	3	1
Unemployed	3.9	194	23	58	15	136	31
Retired	3.10	16	2	12	3	4	1
Student over 15	3.11	92	11	45	11	47	11
*Do you have a leadership position	4						
Government	4.1	29	3	26	7	3	1
Church	4.2	110	13	70	18	40	9
Women/AMAK	4.3	31	4	1	0	30	7
Youth	4.4	32	4	23	6	9	2
Cooperative	4.5	5	1	5	1	0	0
Union	4.6	0	0	0	0	0	0
Rorobuake	4.7	41	5	40	10	1	0
Unimwane	4.8	31	4	30	8	1	0
Unaine	4.9	5	1	0	0	5	1
No	4.10	604	72	242	61	362	82
Years on this island	5						
Less than 1 year	5.1	34	4	17	4	17	4
1 to 19 years	5.2	472	56	214	54	258	59
20 to 39 years	5.3	237	28	126	32	111	25
40 or more years	5.4	94	11	41	10	53	12
Heard about climate change	6						
Yes	6.1	730	87	344	86	386	88
No	6.2	81	10	38	10	43	10
Don't know	6.3	26	3	16	4	10	2
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
*Possible effects of CC	7						
Sea level rise	7.1	435	52	218	55	217	49
Increased erosion	7.2	357	43	185	46	172	39
Saltwater into lens & wells	7.3	182	22	76	19	106	24
More storms	7.4	43	5	20	5	23	5
More rain	7.5	20	2	5	1	15	3
Less rain	7.6	487	58	204	51	283	64
Hotter	7.7	591	71	261	66	330	75
More disease	7.8	68	8	31	8	37	8
Trees may die	7.9	439	52	188	47	251	57
Warmer ocean surface	7.1	27	3	15	4	12	3
Coral bleaching/dying	7.11	26	3	18	5	8	2
Fish stocks decline	7.12	90	11	49	12	41	9
Government roads etc damaged	7.13	21	3	10	3	11	3
Private buildings damaged	7.14	8	1	2	1	6	1
Don't know	7.15	66	8	40	10	26	6
Other	7.16	43	5	20	5	23	5
CC IS happening	8						
Agree	8.1	759	91	349	88	410	93
Disagree	8.2	16	2	10	3	6	1
Don't know	8.3	62	7	39	10	23	5
CC is affecting this island already	9						
Agree	9.1	713	85	332	83	381	87
Disagree	9.2	71	8	36	9	35	8
Don't know	9.3	53	6	30	8	23	5
Every individual can do something	10						
Agree	10.1	651	78	295	74	356	81
Disagree	10.2	120	14	60	15	60	14
Don't know	10.3	66	8	43	11	23	5

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
Living for today is more important	11						
Agree	11.1	313	37	121	30	192	44
Disagree	11.2	450	54	223	56	227	52
Don't know	11.3	74	9	54	14	20	5
CC will affect children/grandchild	12						
Agree	12.1	754	90	347	87	407	93
Disagree	12.2	41	5	19	5	22	5
Don't know	12.3	42	5	32	8	10	2
*How do you feel about CC?	13						
Fearful, afraid	13.1	306	37	162	41	144	33
Disbelief	13.2	59	7	27	7	32	7
Confused	13.3	32	4	12	3	20	5
Angry	13.4	49	6	25	6	24	5
Powerless	13.5	56	7	25	6	31	7
Hopeful	13.6	33	4	13	3	20	5
Sad	13.7	218	26	83	21	135	31
Don't know	13.8	53	6	26	7	27	6
Other	13.9	357	43	168	42	189	43
*Do you use media?	14						
Radio	14.1	746	89	376	94	370	84
CB Radio	14.2	18	2	10	3	8	2
Newspaper	14.3	361	43	172	43	189	43
TV	14.4	65	8	37	9	28	6
DVD	14.5	197	24	92	23	105	24
Computer/internet	14.6	41	5	26	7	15	3
None	14.7	47	6	5	1	42	10
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
*Where heard about CC	15						
Kiribati radio AM (Government)	15.1	735	88	359	90	376	86
Kiribati radio FM	15.2	5	1	4	1	1	0
Overseas radio (eg BBC/ABC)	15.3	13	2	6	2	7	2
CB Radio	15.4	5	1	2	1	3	1
Kiribati TV	15.5	26	3	15	4	11	3
Overseas TV	15.6	24	3	15	4	9	2
DVDs	15.7	41	5	20	5	21	5
Computer/internet	15.8	25	3	16	4	9	2
Newspaper	15.9	249	30	120	30	129	29
Church	15.10	32	4	10	3	22	5
NGO	15.11	6	1	4	1	2	0
Maneaba meetings	15.12	69	8	25	6	44	10
Street theatre/drama	15.13	4	0	2	1	2	0
Posters	15.14	2	0	0	0	2	0
Newsletter (eg KAP)	15.15	11	1	6	2	5	1
Island development committee	15.16	2	0	1	0	1	0
Other people (family, friends)	15.17	189	23	72	18	117	27
Never heard of CC	15.18	22	3	12	3	10	2
Other	15.19	51	6	22	6	29	7
*Information delivery methods	16						
Kiribati radio AM (Government)	16.1	697	83	333	84	364	83
Radio FM	16.2	91	11	39	10	52	12
CB Radio	16.3	13	2	6	2	7	2
Kiribati TV	16.4	304	36	132	33	172	39
DVDs	16.5	238	28	147	37	91	21
Computer/internet	16.6	68	8	39	10	29	7
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
<i>(Continued from previous page)</i>							
Newspaper	16.7	298	36	127	32	171	39
Church	16.8	29	3	11	3	18	4
NGO	16.9	85	10	36	9	49	11
Maneaba meetings	16.10	318	38	167	42	151	34
Street theatre/drama	16.11	40	5	18	5	22	5
Posters	16.12	41	5	17	4	24	5
Newsletter (eg KAP)	16.13	231	28	132	33	99	23
Other	16.14	19	2	12	3	7	2
Attended workshop etc on CC	17						
Yes	17.1	92	11	50	13	42	10
No	17.2	742	89	346	87	396	90
Don't know	17.3	3	0	2	1	1	0
*Who organised it	18						
MFMD	18.1	3	0	2	4	1	2
MELAD	18.2	26	3	18	36	8	19
MISA	18.3	7	1	4	8	3	7
MOWPU	18.4	0	0	0	0	0	0
KAP	18.5	1	0	0	0	1	2
Church	18.6	2	0	1	2	1	2
School	18.7	35	4	13	26	22	52
Don't know	18.8	211	25	105	210	106	252
Other	18.9	18	2	11	22	7	17
N/A	18.10	541	65	248		293	
*What did you learn	19						
Plant mangroves	19.1	43	5	24	6	19	4
Look after mangroves/trees/bushes	19.2	32	4	15	4	17	4
Avoid damaging reefs	19.3	12	1	6	2	6	1
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
<i>(Continued from previous page)</i>							
How to build sea walls	19.4	6	1	3	1	3	1
Maintain sea walls	19.5	10	1	7	2	3	1
Sea wall design - sloping sides	19.6	5	1	1	0	4	1
Not mine aggregate	19.7	14	2	5	1	9	2
Not to build on berm	19.8	2	0	1	0	1	0
Need to cooperate	19.9	9	1	5	1	4	1
Nothing	19.10	13	2	7	2	6	1
Other	19.11	9	1	5	1	4	1
N/A	19.12	746	89	349	88	397	90
*What did you do from workshop	20						
Meetings with island council/govt	20.1	3	0	3	1	0	0
Meetings with villagers	20.2	9	1	7	2	2	0
Meetings with police etc	20.3	3	0	2	1	1	0
Training courses in villages	20.4	2	0	2	1	0	0
New buildings away from shore	20.5	3	0	1	0	2	0
Talks in schools	20.6	5	1	2	1	3	1
Informal talks with friends etc	20.7	31	4	16	4	15	3
Nothing	20.8	34	4	15	4	19	4
Other	20.9	10	1	8	2	2	0
N/A	20.10	746	89	348	87	398	91
*If no funding, how to get help	21						
From family	21.1	383	46	183	46	200	46
Form cooperative	21.2	204	24	120	30	84	19
From church	21.3	266	32	122	31	144	33
Maneaba	21.4	168	20	71	18	97	22
Government etc	21.5	79	9	30	8	49	11
Don't know	21.6	123	15	58	15	65	15
Other	21.7	33	4	14	4	19	4

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
<i>(Continued from previous page)</i>							
*Would you share new skills	22						
For no payment	22.1	734	88	348	87	386	88
For money	22.2	45	5	24	6	21	5
In exchange for goods/services	22.3	14	2	5	1	9	2
No	22.4	24	3	11	3	13	3
Not sure	22.5	38	5	17	4	21	5
*Already done about CC	23						
Planted mangroves	23.1	67	8	36	9	31	7
Planted coconuts/pandanus	23.2	153	18	64	16	89	20
Stopped cutting mangroves	23.3	32	4	18	5	14	3
Looked after trees/bushes	23.4	159	19	61	15	98	22
Built sea walls from coral/driftwood	23.5	101	12	49	12	52	12
Built sea walls from cement/sand bags	23.6	29	3	18	5	11	3
Stopped mining aggregate	23.7	19	2	8	2	11	3
Built new buildings away from beach	23.8	40	5	18	5	22	5
Installed rainwater tank	23.9	57	7	28	7	29	7
Conserved water	23.10	42	5	13	3	29	7
Stopped destructive fishing	23.11	2	0	2	1	0	0
Nothing	23.12	398	48	200	50	198	45
Other	23.13	47	6	28	7	19	4
*Do in future re: CC	24						
Plant mangroves	24.1	190	23	92	23	98	22
Plant trees on shoreline	24.2	272	32	128	32	144	33
Stop cutting mangroves	24.3	120	14	58	15	62	14
Look after trees/bushes	24.4	226	27	93	23	133	30
Build walls of coral/driftwood	24.5	146	17	68	17	78	18
Build walls of concrete/sand bags	24.6	90	11	48	12	42	10
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
<i>(Continued from previous page)</i>							
Maintain sea walls	24.7	134	16	65	16	69	16
Stop mining aggregate	24.8	104	12	48	12	56	Ross
Build new buildings away from beach	24.9	62	7	29	7	33	8
Install rainwater tank	24.10	214	26	92	23	122	28
Conserve water	24.11	111	13	50	13	61	14
Stop damaging reefs	24.12	57	7	34	9	23	5
Nothing	24.13	211	25	108	27	103	23
Other	24.14	28	3	22	6	6	1
*Prepared to move to:	25						
Further from the beach	25.1	157	19	61	15	96	22
Another island (in Kiribati)	25.2	180	22	76	19	104	24
Another country	25.3	619	74	317	80	302	69
No	25.4	56	7	20	5	36	8
Not sure	25.5	67	8	30	8	37	8
Experienced any unusual weather	26						
Yes	26.1	340	41	150	38	190	43
No	26.2	472	56	236	59	236	54
Don't know	26.3	25	3	12	3	13	3
*If "yes", how did you hear	28						
Radio	28.1	118	14	44	11	74	17
CB radio	28.2	1	0	0	0	1	0
TV	28.3	0	0	0	0	0	0
Friends	28.4	5	1	1	0	4	1
Observed changes in sky	28.5	4	0	1	0	3	1
None	28.6	197	24	93	23	104	24
Other	28.7	10	1	2	1	8	2
N/A	28.8	510	61	259	65	251	57
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
<i>(Continued from previous page)</i>							
What did you do during the event	29						
Stayed still	29.1	228	27	96	24	132	30
Went to safe location	29.2	47	6	18	5	29	7
Other	29.3	47	6	18	5	29	7
N/A	29.4	515	62	266	67	249	57
*What did you as result of event	30						
Built a sea wall	30.1	44	5	20	5	24	5
Dismanted house & moved it	30.2	2	0	0	0	2	0
Abandoned house & moved away	30.3	15	2	5	1	10	2
Moved to another island	30.4	0	0	0	0	0	0
Covered wells	30.5	6	1	1	0	5	1
Planted mangroves	30.6	4	0	2	1	2	0
Planted trees along coast	30.7	30	4	7	2	23	5
Nothing	30.8	152	18	75	19	77	18
Other	30.9	111	13	39	10	72	16
N/A	30.10	512	61	260	65	252	57
*Lack of water/drought	31						
Nearest potable well	31.1	213	25	95	24	118	27
Cover wells	31.2	183	22	76	19	107	24
Dig new wells	31.3	307	37	135	34	172	39
Repair leaks in taps/pipes	31.4	24	3	9	2	15	3
Ask church for water	31.5	125	15	41	10	84	19
Get from government	31.6	245	29	123	31	122	28
Buy desalinated water	31.7	189	23	81	20	108	25
Buy imported bottled water	31.8	145	17	56	14	89	20
Never experienced drought	31.9	273	33	130	33	143	33
<i>(Continued on next page)</i>							

Total Questionnaires:	837	All:		Male:		Female:	
Questions	Num	Count	% Total	Count	%	Count	%
<i>(Continued from previous page)</i>							
Is there a disaster plan	32						
Yes	32.1	38	5	20	5	18	4
No	32.2	534	64	252	63	282	64
Don't know	32.3	265	32	126	32	139	32
Govt/local council is doing things	33						
Yes	33.1	275	33	144	36	131	30
No	33.2	349	42	147	37	202	46
Don't know	33.3	213	25	107	27	106	24
Govt/local council has consulted us	34						
Yes	34.1	93	11	64	16	29	7
No	34.2	509	61	217	55	292	67
Don't know	34.3	235	28	117	29	118	27
*What are the causes of CC	35						
Burning fossil fuels	35.1	259	31	142	36	117	27
Deforestation	35.2	137	16	65	16	72	16
Don't know	35.3	356	43	153	38	203	46
Other	35.4	216	26	109	27	107	24

APPENDIX 6 DETAILED RESPONSES TO KEY QUESTIONS

Group C - Response totals by Island - New tables in Master File linked to individual island files

	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Q. 17. Attended workshop on CC	9	12	9	19	43	92
Nos of people who said they attended workshops						

Q.18 Who organised the events? % of the number of people on each island who said they attended a workshop	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
MFMD	0%	0%	0%	5%	0%	1%
MELAD	22%	42%	33%	32%	21%	27%
MISA	22%	8%	0%	16%	2%	8%
MOWPU	0%	0%	0%	0%	0%	0%
KAP	0%	0%	11%	0%	0%	1%
Church	0%	0%	0%	0%	5%	2%
School	22%	17%	11%	26%	58%	38%
Don't know	22%	17%	22%	0%	5%	9%
Other	22%	25%	33%	16%	14%	18%

Q.19 What did you learn about ways to adapt to Climate Change? % of the number of people on each island who said they attended a workshop	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Plant mangroves	11%	25%	11%	47%	40%	34%
Look after mangroves/trees/bushes	0%	0%	11%	5%	21%	12%
Avoid damaging reefs	11%	8%	0%	5%	5%	5%
How to build sea walls	11%	8%	11%	21%	5%	10%
Maintain sea walls	0%	0%	11%	0%	9%	5%
Sea wall design - sloping sides	0%	25%	22%	5%	19%	15%

Not mine aggregate	22%	0%	0%	0%	0%	2%
Not to build on berm	0%	0%	11%	11%	14%	10%
Need to cooperate	11%	17%	33%	5%	9%	12%
Nothing	0%	17%	22%	0%	12%	10%
Other	11%	17%	0%	5%	5%	7%

Q.20 What did you do as a result of attending the event? % of the number of people on each island who said they attended a workshop	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Meetings with island council/govt	0%	8%	0%	11%	0%	3%
Meetings with villagers	22%	8%	0%	16%	5%	9%
Meetings with police etc	0%	17%	11%	0%	0%	3%
Training courses in villages	0%	8%	0%	5%	0%	2%
New buildings a way from shore	0%	0%	11%	0%	5%	3%
Talks in schools	0%	0%	11%	5%	7%	5%
Informal talks with friends etc	67%	8%	33%	21%	40%	34%
Nothing	22%	33%	33%	32%	40%	35%
Other	0%	8%	22%	16%	7%	10%

Q.26 Experienced any unusual weather (nos of people)

34 53 31 87 135 340

Q.28 How did you get a warning (through which media)?	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Radio	21%	21%	29%	28%	48%	34%
CB radio	0%	0%	0%	0%	0%	0%
TV	0%	0%	0%	0%	0%	0%
Friends	0%	2%	0%	2%	1%	1%
Observed changes in sky	3%	0%	0%	1%	1%	1%

None	74%	62%	61%	66%	44%	57%
Other	6%	0%	6%	1%	3%	3%

Q.29 What did you do during the event?	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Stayed still	44%	49%	74%	62%	79%	67%
Went to safe location	12%	17%	13%	14%	13%	14%
Other	41%	8%	10%	22%	5%	14%
N/A	115%	26%	3%	2%	2%	101%

Q.30 What did you do as a result of the event (in the long term)?	1. Tamana	2. Makin	3. Kuria	4. N.Tarawa	5. S.Tarawa	All
Built a sea wall	18%	6%	6%	15%	13%	12%
Dismantled house & moved it	0%	2%	0%	0%	1%	1%
Abandoned house & moved away	12%	0%	0%	8%	3%	4%
Moved to another island	0%	0%	0%	0%	0%	0%
Covered wells	9%	0%	0%	2%	1%	2%
Planted mangroves	0%	0%	0%	3%	0%	1%
Planted trees along coast	35%	6%	6%	9%	3%	9%
Nothing	38%	43%	58%	37%	46%	44%
Other	21%	30%	19%	37%	36%	32%

Q.35 What do you think are the causes of climate change?

Answers broken down according to age group (Q.1) and expressed as percentages of the total number of respondents in that age group.

Q.1 How old are you?	Total in Group	Burning fossil fuels	Deforestation	Don't know	Other
15 to 17	90	31%	24%	26%	32%
18 to 33	284	37%	23%	46%	24%
34 to 49	310	31%	10%	42%	27%
50 to 65	117	15%	12%	46%	23%
over 65	36	28%	11%	50%	17%

Q.35 What do you think are the causes of climate change?

Answers broken down according to employment group (Q.2) and expressed as percentages of the total number of respondents in that employment group.

Q.2 What is your highest level of education?	Total in Group	Burning fossil fuels	Deforestation	Don't know	Other
No formal	67	12%	15%	58%	21%
Primary	293	22%	23%	45%	19%
Secondary	438	36%	25%	30%	24%
College/university	39	79%	46%	3%	56%

Q.35 What do you think are the causes of climate change?

Answers broken down according to leadership position (Q.4) and expressed as percentages of the total number of respondents in that category.

Q.4 Do you have any leadership position?	Total in Group	Burning fossil fuels	Deforestation	Don't know	Other
Government	29	41%	21%	34%	28%
Church	110	32%	5%	45%	22%
Women/AMAK	31	39%	13%	55%	6%
Youth	32	41%	25%	22%	34%
Cooperative	5	40%	20%	60%	0%
Union	0	0%	0%	0%	0%
Rorobuake	41	41%	0%	49%	12%
Unimwane	31	16%	6%	68%	10%
Unaine	5	0%	20%	60%	20%
No	604	30%	18%	42%	28%

CLIMATE CHANGE BASELINE SURVEY

KIRIBATI ADAPTATION PROJECT (PHASE II)

Revised 5 September 2008

* indicates more than one response N/A indicates not applicable

Interviewer _____ Date _____ Start time: _____ Finish time: _____

[A1] Tamana [A2] Makin [A3] Kuria [A4] N. Tarawa
[A5] Betio [A6] Bairiki [A7] Bikinibeu [A8] Other location in S Tarawa _____

Interviewee _____ [B1] M [B2] F Village _____

Location [C1] lagoon side [C2] ocean side [C3] middle of island

A. ABOUT YOU: It helps to know a few things about your background

1. How old are you?

[1.1] 15-17 [1.2] 18-33 [1.3] 34-49 [1.4] 50-65 [1.5] over 65

2. What is your highest completed level of education? (ie passed)

[2.1] no formal [2.2] primary [2.3] secondary [2.4] college/university

3. What is your main employment? (ie things you get paid for?)

Cash work

[3.1] government [3.2] education staff [3.3] church
[3.4] business (yours) [3.5] business (someone else) [3.6] NGO/development

Village work

[3.7] housewife/home duties [3.8] village work fisherman/farmer (subsistence)

Unemployed

[3.9] unemployed [3.10] retired

Student

[3.11] student over 15

***4. Do you have any leadership position/s?**

[4.1] government [4.2] church [4.3] women/AMAK [4.4] youth [4.5] cooperative
[4.6] union [4.7] rorobuaka [4.8] unimwane [4.9] unaine [4.10] no

5. How many years have you lived on this island?

[5.1] less than one year [5.2] 1-19 years [5.3] 20-39 years [5.4] over 40 years

B. THOUGHTS ABOUT CLIMATE CHANGE

6. Before this interview, had you heard about climate change?

(explain in case the terms are unfamiliar)

[6.1] yes [6.2] no

***7. What have you ALREADY heard about the possible FUTURE effects of climate change in Kiribati?**

- [7.1] sea level rise [7.2] increased erosion
- [7.3] intrusion of salt into water lens, wells & babai pits
- [7.4] more storms [7.5] more rain [7.6] less rain [7.7] hotter temperatures
- [7.8] more disease [7.9] trees may die [7.10] warmer surface ocean temperatures
- [7.11] coral bleaching/dying [7.12] fish stocks may decline
- [7.13] government public utilities may get damaged eg buildings, roads, causeways, ports, airports
- [7.14] private businesses and houses may get damaged
- [7.15] don't know

8-10. What are your thoughts about the following statements about CC? I will read a sentence, then please tell me whether you agree, disagree or are unsure

	Agree	Disagree	Unsure
8. Climate CHANGE is happening	8.1	8.2	8.3
9. CC is affecting the people of THIS island already	9.1	9.2	9.3
10. Every individual can do something to ADAPT to climate change	10.1	10.2	10.3
11. Living for today is more important than worrying about the effects of Climate Change in 50 years time (N na katia)	11.1	11.2	11.3
12. CC will reduce the quality of life of my children & grandchildren in the future	12.1	12.2	12.3

C. FEELINGS ABOUT CLIMATE CHANGE

***13. How do you feel about climate change?**

- [13.1] fearful/afraid [13.2] disbelief [13.3] confused
- [13.4] angry [13.5] powerless eg I can't do anything
- [13.6] hopeful ie we can do some things to adapt
- [13.7] sad ie we might lose our culture & lands
- [13.8] don't know [13.9] other _____

D. HOW PEOPLE LEARN ABOUT CLIMATE CHANGE

*14. Do you make use of any of the following media at home/maneaba/church/school?

- | | | |
|--------------|-----------------|--------------------------|
| [14.1] radio | [14.2] CB radio | [14.3] newspaper |
| [14.4] TV | [14.5] DVD | [14.6] computer/internet |
| [14.7] none | | |

*15. Through which media have you heard about CC?

- | | | | |
|--------------------------------|------------------------------|--|---------|
| [15.1] radio Kiribati AM (Gov) | [15.2] radio FM (commercial) | [15.3] overseas radio (BBC/ABC) | |
| [15.4] CB radio | [15.5] TV Kiribati | [15.6] overseas TV channels | |
| [15.7] DVDs | [15.8] computer/internet | [15.9] local newspapers | [15.10] |
| church | [15.11] NGOs | [15.12] maneaba meetings | |
| [15.13] street theatre/drama | [15.14] posters | [15.15] newsletter eg KAP | [15.16] |
| island development committee | | [15.17] people (family, friends, kids) | [15.18] |
| none | [15.19] other _____ | | |

*16. By which of the following methods would you like to receive information about Climate Change and adaptation methods?

- | | | |
|--------------------------------|------------------------------|--------------------------|
| [16.1] radio Kiribati AM (Gov) | [16.2] radio FM | [16.3] CB radio |
| [16.4] Kiribati TV | [16.5] DVDs | [16.6] computer/internet |
| [16.7] local newspapers | [16.8] church | [16.9] NGOs |
| [16.10] maneaba meetings | [16.11] street theatre/drama | [16.12] posters |
| [16.13] newsletter eg KAP | [16.14] other _____ | |

17. Have you recently attended a consultation, workshop or school lessons on Climate Change or biodiversity (fisheries/agriculture/water linked to CC)?

(IMPORTANT If you circle 17.2 no you MUST circle N/A in answers 18.10, 19.10, 20.10)

- | | | |
|------------|------------------------|--------------------------------|
| [17.1] yes | [17.2] no (Go to Q 21) | [17.3] don't know (Go to Q 21) |
|------------|------------------------|--------------------------------|

*18. If "yes" who organised the events?

- | | | | |
|--------------------|---------------|---------------|-------------------|
| [18.1] MFMRD | [18.2] MELAD | [18.3] MISA | [18.4] MPWU |
| [18.5] KAP | [18.6] church | [18.7] school | [18.8] don't know |
| [18.9] other _____ | | [18.10] N/A | |

***19. What did YOU learn about ways to adapt to CC? (Repeat “adaptation” definition)**

- [19.1] must plant mangroves/trees/bushes along coast
- [19.2] must look after mangroves/trees/bushes
- [19.3] must avoid damaging the reefs when fishing (using crowbar for octopus/eels)
- [19.4] how to build sea walls with concrete and sand bags
- [19.5] importance of maintaining sea walls
- [19.6] importance of sea walls having sloping sides/wide bases
- [19.7] must not mine aggregate (reef, shells, sand)
- [19.8] should not build on the berm (first sand dune closest to beach)
- [19.9] everyone needs to cooperate in adapting to CC
- [19.10] nothing
- [19.11] other _____
- [19.12] N/A

***20. What did you do as a result of the workshop to adapt to CC?**

- [20.1] held/attended meetings with Island Council/government departments about CC adaptation strategies
- [20.2] held/attended meetings to enable villagers to identify projects to adapt to CC
- [20.3] held/attended meetings with police/rangers/constables on how to enforce the Environment Act ie enforce environmentally friendly fishing/farming/building strategies
- [20.4] held/attended training courses to teach new skills to villagers
- [20.5] built new buildings away from shoreline (first berm)
- [20.6] gave talks in schools about CC adaptation strategies
- [20.7] had informal talks with friends/others
- [20.8] nothing [20.9] other _____
- [20.10] N/A

***21. If funding is NOT available and you needed help (physical and skills) to adapt your environment that are too difficult to do or solve alone, how would you go about it?**

- [21.1] seek help from own family [21.2] form a cooperative/group with different families
- [21.3] seek help from the church [21.4] discuss & plan within the village maneaba
- [21.5] go to government/island council/island development committee for advice
- [21.6] don't know
- [21.7] other _____

***22. If you learnt new information/skills about adaptation to CC, would you be prepared to share with others outside your family?**

- [22.1] for nothing ie to enable everyone to adapt together
- [22.2] for money [22.3] in exchange for goods/services
- [22.4] no [22.5] not sure

E. ADAPTATION TO CLIMATE CHANGE SHORT & LONGER TERM

Read out:

“Adaptation means doing something NEW or DIFFERENT to what you or your community did in the past in order to adapt to climate change”

***23. What have you done ALREADY to adapt to climate change?**

- [23.1] planted mangroves
- [23.2] planted trees and bushes along shoreline
- [23.3] stopped cutting mangroves
- [23.4] looked after trees/bushes eg watering during drought
- [23.5] built traditional sea walls of coral/driftwood/rubbish
- [23.6] built sea walls of cement/sand bags/rocks
- [23.7] stopped mining aggregate
- [23.8] built new buildings inland from the berm (first dune)
- [23.9] installed rain water tank
- [23.10] conserved/rationed water
- [23.11] stopped damaging the reefs when fishing (using crowbar for octopus/eels)
- [23.12] nothing

***24. Have you already planned to do any of these things in the FUTURE ie next 5 years to adapt to climate change?**

- [24.1] plant mangroves
- [24.2] plant trees and bushes along shoreline
- [24.3] stop cutting mangroves
- [24.4] look after trees/bushes eg watering during drought
- [24.5] build sea walls of coral/driftwood
- [24.6] build sea walls of concrete/sand bags
- [24.7] maintain existing sea walls
- [24.8] stop mining aggregate
- [24.9] build new buildings inland from the berm
- [24.10] install rain water tank
- [24.11] conserve/ration water
- [24.12] stop damaging the reefs when fishing (using crowbar for octopus/eels)
- [24.13] nothing

***25. If necessary, in the long term, would you be prepared to move with your family to?**

- [25.1] a place further away from the beach
- [25.2] another island in Kiribati
- [25.3] another country
- [25.4] no

F. EXTREME OR UNUSUAL WEATHER EVENTS

26. Have you recently experienced any extreme/unusual weather events for example, freak storms, wave washing over walls and causeways?

- [26.1] yes
- [26.2] no (Go to Q 31)
- [26.3] don't know/can't remember (go to Q 31)

(IMPORTANT If you circle 26.3 you MUST circle N/A in answers 28.8, 29.4, 30.10)

27. If “yes”, please describe the most recent significant event:

When did it happen? _____

What happened? _____

***28. How did you get a warning (through which media)?**

- [28.1] radio [28.2] CB radio [28.3] TV [28.4] friends
[28.5] observed changes in the sky/sea [28.6] none [28.7] other _____
[28.8] N/A

29. What did YOU do DURING the event?

- [29.1] stayed put (ie where you are) [29.2] went to a safe location
[29.3] other _____ [29.4] N/A

***30. What did YOU do as a result of the event? (in the long term)**

- [30.1] built a sea wall
[30.2] dismantled house & moved to a safer location
[30.3] abandoned house and moved to a safer location
[30.4] moved to another island [30.5] covered wells
[30.6] planted mangroves along coast [30.7] planted trees/bushes along coast
[30.8] nothing
[30.9] other _____
[30.10] N/A

***31. What do YOU do if there is a lack of water/DROUGHT?**

- [31.1] go to the next nearest potable well [31.2] cover wells
[31.3] dig new wells [31.4] repaired leaking taps and pipes
[31.5] ask to use church rainwater tank [31.6] get water from government
[31.7] buy desalinated sea water [31.8] buy imported bottled water
[31.9] never experienced a drought

32. Is there a “disaster management plan” in place in your village/island?

- [32.1] yes [32.2] no

G. THE CENTRAL GOVERNMENT & LOCAL GOVERNMENT

Please indicate whether you agree, disagree or don't know with regards to the following statements.

	Agree	Disagree	Don't know
33. The central/local government ARE doing things to help us to ADAPT to CC locally ie on this island. If "agree" please give examples a. _____ b. _____	33.1	33.2	33.3
34. The central/local government has ALREADY CONSULTED us to enable us to identify our areas of concern about CC on our island. If "agree" please give examples a. _____ b. _____	34.1	34.2	34.3

H. CAUSES OF CLIMATE CHANGE

***35. What do you think are the causes of climate change? (do not show answers)**

[35.1] burning fossil fuels eg coal, oil, gas, petrol

[35.2] deforestation ie cutting down large forests and burning off

[35.3] don't know

[35.4] other (please note all ideas)*

a. _____ b. _____ c. _____ d. _____

36. Do you have anything you would like to add about any climate change issues?

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