GCCA+
THE GLOBAL CLIMATE CHANGE ALLIANCE PLUS INITIATIVE

Funded by the European Union

SCALING UP PACIFIC ADAPTATION (SUPA)

SPREP
Secretariat of the Pacific Regional Environment Programme

REFRESHER WITH TRIAL COUNTRIES

WORKSHOP REPORT
1 – 2 March 2022

Pacific Community
Communauté du Pacifique

SPREP
Secretariat of the Pacific Regional Environment Programme

USP
THE UNIVERSITY OF THE SOUTH PACIFIC

Contents

List of Abbreviations

AF	Adaptation Fund
CCA	Climate Change Adaptation
EPA	Environmental Protection Agency
EU	European Union
FRDP	Framework for Resilient Development in the Pacific
FSM	Federated States Micronesia
GCCA	Global Climate Change Alliance
GPS	Global Positioning System
IA	Impacts Analysis
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications
NIWA	National Institute of Water and Atmospheric Research
PSIS	Pacific Small Island States project
SPC	Secretariat of the Pacific Community
SPREP	Secretariat Pacific Regional Environment Programme
SUPA	Scaling Up Pacific Adaptation
USP	University of the South Pacific

Executive Summary

Representatives from Tonga, Palau, Federated States of Micronesia, and Cook Islands participated in a two-day virtual workshop organised by SPREP GCCA+SUPA team based in Samoa. The workshop aimed at gathering in-country teams where the field testing of an impact analysis methodology tool has been conducted in areas where interventions focused on resilient agriculture, freshwater security, marine resources and coastal protection measures were implemented.

The target group involved were the national consultants, focal contacts of the department of climate change offices in Tonga, Palau, FSM and Cook Islands. Others who joined include implementing partners USP and SPC national coordinators, research community officers in-country as well as agency officers who supported with the field trial of impact assessment tools on site.

For the two days, 42 participants on day 1 and 32 participants on day 2 took part in the refresher workshop facilitated virtually with use of zoom as the main online tool plus Mentimeter where participants can answer directed questions, Mural for interactive brainstorming session and Slido, online survey regarding the quality of delivery of workshop program. Tofu Creatives also provided live mural of expressions shared during the workshop and participants experience of the field trial of impacts tools and methodology with a set of infographics for trial experiences shared on the first day.

In brief the country trial experiences shared their process in profiling past adaptation activities and the sample of interventions selected for field assessment. Shared experiences include the limited available information in-country when seeking agency support during this data search for profiling history of adaptation; measurements with the utilization of social surveys and the kind of data collected; direct observation with use of checklist for sector-adaptation measures outlines the impact results. Shared experiences highlighted common lessons for instance, adopting some key characteristics from sector-focus interventions measured when planning project design with sustainability in mind. The national consultants also presented on their individual lessons directed more for uptake in national strategic planning processes and which aspects of the IA methodology with its tailored tools seems plausible with need for some training on use of tailored tools.

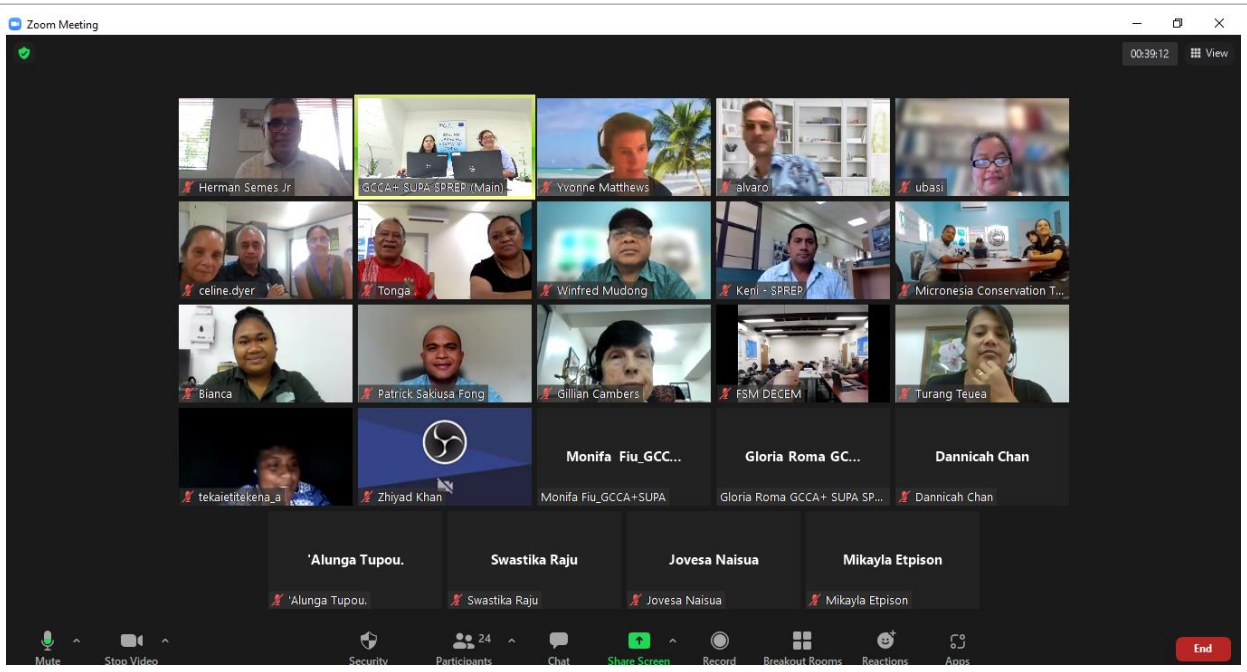


Figure a. Group photograph taken on Day 2 of workshop.

1. Background

The Global Climate Change Alliance Plus Scaling up Pacific Adaptation (GCCA+ SUPA) is about scaling up climate change adaptation measures in specific sectors supported by knowledge management and capacity building. The 4.5-year project (2019-2023) is funded with € 14.89 million from the European Union (EU) and implemented by the Pacific Community (SPC) in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP) and The University of the South Pacific (USP), in collaboration with the governments and peoples of Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu.

Specifically, the GCCA+SUPA project is about strengthening the implementation of sector-based, integrated climate change and disaster risk management strategies and plans. The project is being delivered in a coordinated and integrated manner supported by the three implementing organisations, utilising a people-centred-approach, and involving men, women, elders, youth, persons with disabilities and other vulnerable groups.

GCCA+ SUPA collaborates closely with other programmes and projects in the region, seeking synergies where possible with delivering shared outcomes that contribute to the Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Reduction (FRDP), the Paris Agreement to the United Nations Framework Convention on Climate Change, the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals.

GCCA+ SUPA is one overall action with three key outputs, each delivered by a regional partner working in a collaborative manner.
Output 1. SPREP: Strengthen strategic planning at national levels. An impact methodology designed to assess past adaptation interventions and is being tested in four countries.
Output 2. USP: Enhance the capacity of sub-national government stakeholders to build resilient communities.
Output 3: SPC: Scale up resilient development measures in specific sectors (food security, water security, human health, coastal protection and marine resources).

Climate change, including natural disasters, remains the single most important priority for Pacific smaller island states. Building on the approach taken by the GCCA: Pacific Small Island States project (GCCA: PSIS) and learning from the past, the GCCA+ SUPA Action focuses on scaling up adaptation activities in specific sectors supported by knowledge management and capacity building.

Key to improved decision making is the ability to track the performance of adaptation actions and to measure the outcomes. The first stage is the literature research and to prepare an outline for the methodology including the key criteria. A detailed review of adaptation interventions in the project's ten countries was conducted and expressions of interest were solicited to participate in the trial of the methodology. Four trial countries were selected, interventions for assessment selected and local consultants recruited. The second stage was to prepare indicators and checklists for data collection relating to the impact of the completed interventions. The data are now being compiled, analysed and summarised. The third stage consists of relating the assessment results to the criteria for the impact assessment methodology. The goal of this stage is to refine the criteria for the impact assessment methodology and support the methodology with simple indicators and checklists. The fourth stage is to share the methodology with partner countries and finalise the methodology.[1]

Scope of Impact Analysis. Because of its need to be comprehensive but tailored to the localised conditions where these interventions were established, an analysis of the impact of the adaptation effort will constitute the physical, ecological, and human elements. It should be noted that some important issues are not measured by indicators because of data limitations, scientific uncertainty, or a lack of robust monitoring program in place. Thus, may not be possible to derive a complete picture of the impact of adaptation action.

[1] Schematic on report cover page.

Preliminary results from field trial of the impacts' analysis methodology, explores its potential to get data for a spectrum of sector-interventions in each socio-cultural context and make sense of its impact.

1.1 Workshop Objective

The main objective for workshop program was regroup with teams in-country where the field testing of impact analysis methodology was conducted and share experiences of application with highlights from preliminary results. Trial countries include Tonga, Palau, Federated States of Micronesia and Cook Islands.

Purpose of sessions per day:

1 March 2022 Session 1: Overview of the impact analysis (IA) methodology
Session 2-3: Field trial experiences from FSM, Palau and Cook Islands

2 March 2022 Session 1: Group brainstorming on how to apply the IA methodology
Session 2: Feedback on the overall IA methodology
Session 3: What next after the field trial of IA methodology?

Figure b. SPREP team on Day 1 of workshop.

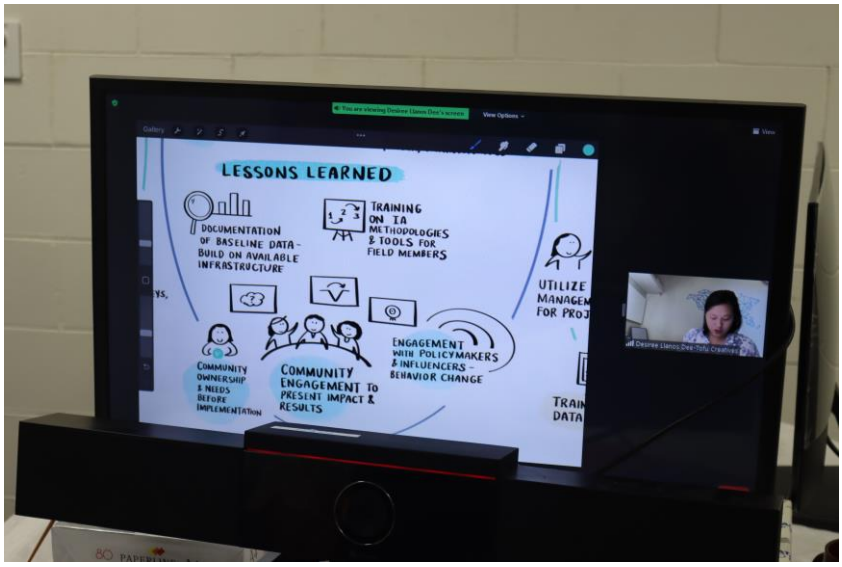


Figure c. Visual facilitator summarises country trial experiences on Day 1 of workshop.

1.2 Workshop Agenda

Day 1: March 1st 2022	Time	Further note(s)	Facilitator
Prayer & Introductions	15 minutes	Introduction of the program Overview of the Impacts Analysis methodology	*Winfred ((*FSM national consultant) Monifa Fiu, Impacts Analysis Adviser
Short Menti session	10 minutes	Prompt question(s) To think about how a CCA intervention has impacted your way of living.	Gloria Roma, Information & Research Officer
Session 1: Cook Islands field trial experience	20 minutes	Cook Islands to share their field experiences from their impact assessment work on Mangaia Island with a particular focus on water security and marine resource management.	Teariki Rongo (Cook Islands National consultant)
Session 2: FSM field trial experience	20 minutes	FSM to share their field experiences from utilising the impact assessment tools to assess impacts of Water security measures in Nukuoro.	Winfred Mudong (FSM national consultant) & DECEM
Session 3: Field trial experiences from Palau	20 minutes	Palau to share their field stories from assessing impacts of resilient agriculture and Water security measures.	Umai Basilius (Palau National consultant)
Breakout session (Report back)	20 minutes	Gauging level of awareness on impacts of climate change adaptation actions and how to assess impact(s).	Gloria Roma
Wrap up	10 minutes	Share live scribe infographic of field trial experiences of FSM, Cook Islands, Palau.	Monifa Fiu & Tofu Creatives
Day 2: March 2nd 2022	**Time**	**Further note(s)**	**Facilitator**
Prayer & Recap	15 minutes	Recap of day one	Teariki Rongo Gloria Roma
Menti session	5 minutes	Sharing how we could measure a type of impact for an adaptation action	Gloria Roma
Session 1: Field trial experience from Tonga	20 minutes	Tonga to share their field stories from assessing impacts of coastal protection measures.	Fuka Talanoa (Tonga national consultant)
Break 10 minutes			
Session 2: Group Brainstorming	30 minutes	Online mural platform to be used to brainstorm ideas on how we might use the results of the impact assessment to inform future planning.	Monifa
Report back 15 minutes			
Breakout session (Report back)	35 minutes	2 Questions: Sharing how the Impact Analysis methodology could be helpful in your areas of work.	Gloria Roma
Session 3: Summary	15 minutes	What next after trialling the IA methodology.	Monifa
Slido Feedback Session	15 minutes	Feedback on the 2-day workshop.	Gloria Roma

DAY 1 PROCEEDINGS

With words of welcome for participants to *"come together, reflect and share field experiences of the tailored set of tools tested to assess impact and analyse sample interventions you have selected as part of your country history of climate change adaptations".* SPREP GCCA+SUPA project team acknowledged national consultants and country focal points who were faced with the *"difficulties of applying the tools at first but appreciated the expertise of national adaptation practitioners with the advice into what works best within the socio-cultural context of their countries".* This workshop was for us to *"listen to your trial experience and learn from your wisdom on decades of adaptation on how to better move forward with fine tuning the tools".*

2. Sharing of trial country experiences

Session 1: Cook Islands field trial experience

KEI'Ā RĀ'UI and Tamarua Water Project at Mangaia Island:

- Current CCA practice focused on outputs at the end of the project cycle which does not always fulfil the long-term goals of the adaptation work it was intended to solve hence, the need to assess the impact of climate change adaptation interventions several years after their completion.
- Without information about longer-term impact, the country and the community will not always realize the long-term potential of a project intervention.
- Need for an objective impact assessment of past interventions that will help the planning targets from the short-term project approach to the medium term (10+ years) sector resilient approach.

In selecting interventions from profiling:

- Two sectors were chosen where comparison of the level of traditional systems involvement could be made from Mauke and Mangaia islands as contrasting examples.
- Water supply and marine resources conservation interventions were prioritized.
- Water Supply (Tamarua Water Project and the Mauke Water Project).
- Marine resources conservation (Kei'ā Rā'ui and the Mauke Fishing Boat Project).

How did measurements go & tools utilized?

- Household Survey
    - Small sample, heads of household did not want to be interviewed
    - 21.4% sample of the population, 33 households (out of 154), 5 from Ivirua, 19 from Oneroa, 9 from Tamarua
    - Difficult to detect any statistical difference
    - Result to be interpreted with caution
- Focus Group Discussion
    - 6 focus group discussion (water and sanitation and marine focus groups)
    - 15 – 70+ age group, a total of 57 participants
    - For water and sanitation, did not include question that specifically ask if project objective (more secure water supply was achieved.
    - Marine conservation area, did not ask people about personal impact of not being able to fish in rā'ui areas
- Interviews (Traditional Leaders and others)
    - Traditional leaders were targeted, i.e. Kāvana and Rangatira (Chief and sub-chiefs)
    - For water and sanitation, focused on surrounding areas at the water intake, security of the area, leakages, maintenance issues
    - Marine conservation areas, focused on conservation values, e.g. access, fishing intensities and surface impacts; anthropogenic impacts, extent of ownership indicators, e.g. management issues
- Checklist
    - Based on field visit, the information presented to the interviews of focus discussions with the traditional leaders.

What kind of data was collected?

- Household Survey

    - Household information - role of interviewee, #people in HH, HH size, education, vulnerable, dwelling # and type, appliances, HH infrastructure, water storage capacity
    - Livelihood and energy use – Life satisfaction, employment and spending, # people employed, spending category by amount, animals and livestock
    - Awareness and environment – perceived cause of climate change, environmental change over the past 10 years
    - Sanitation – received information regarding maintenance and proper care of water tanks and septic tanks, cleaning of water tanks, emptying septic tanks, functionality of toilets, communicable diseases, solid waste, vector
    - Risk and preparedness – how at risk do people feel their village/community is during extreme weather events, preparedness of HH, risk preparedness, actions people take following a drought/cyclone/tsunami warning
- Focus Group Discussion
    - Awareness of environment and changes to climate change and environment
    - Water security and environmental public health
    - Livelihood
- Interviews (Traditional Leaders and Others)
    - Water system improvement/Kei'ā Rā'ui - Impact on community well-being, haw far has intervention impacted health and livelihood, how far has intervention contributed towards healthier lifestyles, under which conditions the intervention achieved outcomes and impacts, what are some of the main barriers to achieving outcomes
- Checklist
    - Public water main and piped from source– surrounding area, water source, water filtration, protection of water source, distribution, metered, control valves, leakages, water treatment, increased capacity
    - Kei'ā Rā'ui – conservation values, anthropogenic impact, management actions for species, conservation area, awareness programme, formal protection, training activities for monitoring.

Impacts at glance from survey, focus group and interview with traditional leaders

General:

- People in all three villages said their life is the same or better than it used to be, so the response cannot be linked to a specific intervention.

Water and sanitation:

- All three villages have very similar infrastructure
- No significant differences in terms of communicable disease or disaster preparedness.
- Tamarua Project - the lack of a significance difference across villages could be considered evidence the project was successful.
- Lack of filtration after the pump house and stock exclusion is a barrier to achieving the best possible outcome.
- It is not clear whether the other villages also have these problems is unclear.

Kei'ā Rā'ui (and marine conservation area):

- There are multiple marine rā'ui areas around Mangaia island so all three villages are affected.
- The focus groups revealed that some people still ignore the rā'ui, which may reduce its effectiveness.
- The focus groups did not specifically ask if the rā'ui affects peoples' livelihoods (by limiting opportunities to fish) but no-one volunteered any such information either.
- We can conclude that the overall impact is either positive, or at least not negative enough to make people think their lives are worse than they were 5 years ago.

Summary of impact results vs. tools: Checklist

Water system improvement:

- Public Water Main – Although the impact assessment showed the intervention have a high impact (positive), there are some shortfalls in the area of evidence, i.e. reports from the health department and the water utility division on maintenance. The reporting process through the annual business plan process for budgetary reasons is not specific enough and clear.

- Water Piped from Source – Although the project is incomplete, i.e. the header tank foundation and installation of header tanks to improve distribution as per project document, the intervention thus far has a high impact (positive). No sign of leakages and pump is used.
- Water Treatment – Impact assessment showed a low impact (negative) water is dirty and not used for drinking.
- Increased Facility – Impact assessment showed a high impact (positive), the intervention has increased the water supply to the households compared to before the intervention.
- Operations and Maintenance Capacity – The impact assessment showed a high impact (positive) rating. The Island Government have a water utility comprised of trained plumbers who carry out maintenance work, and also, they are the ones that review the water utility annual business plans. There is a need to have clearly defined involvement of the community, traditional leaders and trained people in the management of water facilities.
- Overall, with the issues identified, the intervention has a high positive impact on the community of Tamarua.

Kei'ā Rā'ui

- Conservation Values – The impact rating is low as there is no controlled access to the rā'ui site when it is closed, and there is no control on the most sought after species, the clam.
- Anthropogenic Impact – The impact rating is high as there are no tourist and boating activities, minimal pollution sources due to low population and no industrial pollution in the proximity of the area.
- Extension of Ownership – The impact rating is high due mainly to the strong advocating by traditional leaders of the importance of their rā'ui.
- The overall impact rating for this intervention is high (positive). There is strong advocacy work on the importance of the rā'ui by traditional leaders.

Recommendations

- Have more households surveyed (increase sample)?
- For water security, the protection of the water source, maintenance of the distribution system and filtration.
- For marine conservation, continue with the current practice and enhance community consultation and communication.

Which aspects of the overall IA methodology will there be need for capacity building (online or in person)?

- Household survey, online
- Checklist, ratings used, and will vary with the different systems used

How to communicate effectively about these issues to bring about change in your community? At the strategic planning level.

- Establish a central database system and a simple system for updating
- Enhance cooperation and collaboration with agencies and community groups Including registered NGOs.

Session 2: FSM field trial experience

FSM Nukuoro Experience:

In selecting interventions from profiling:

- Search for listing of completed project activities in consultation with DECEM and SPREP
- Specific information on timeline of intervention aligned to which sector/sub-sector
- Reported methodology/approach taken to implement the adaptation and types of data available
- Type of organization and implementing agencies
- Four sector priorities with listing of adaptation interventions sampled- coastal protection, marine resources and food-water security from projects RENI and AF project on Nukuoro and Kapingamarangi.
- Nukuoro was selected due to ease for arranging travel logistics by sea, located approx. 300 miles southwest of Pohnpei main island. Island population of 96 people and 39 occupied households.

How did measurements go & tools utilized?

- Social Surveys: Household survey, Public Poll and focus group interviews
- Field observation: Global Positioning System units to mark location of water systems, pictures and use of checklist - Rainwater harvesting systems condition.

- Enumerators conducted household survey and focus group interviews with help of translators of local language on Nukuoro.
- Field observation team used the camera to take photos and GPS operator marking location of tanks.
- Water systems inspection team used the Basic Impact Checklist for water security measures to fill in the details.

What kind of data was collected?

- Enumerators: social data on demographics, housing and infrastructure, type of livelihood, climate change and environmental awareness, risk and preparedness to extreme weather conditions or impacts of climate change, perception on water security projects.
- Field Observation team: Physical data on condition of water sources and rainwater harvesting and storage systems, location of fresh water sources or systems; status or condition of community's overall water storage capacity; changes in community's water storage capacity.

Impacts at glance: Social data

- 37 out of 39 Households participated in the survey and public poll.
- Over 60% of those interviewed has at least a high school education.
- 39% Male, 22% Female, 39% children.
- 70% thatched roof housing.
- 90% of all households claims to have their own private water tanks.
- 81% of households claimed that their lives had stayed the same or better within the last 5 years.
- Over 85% of households surveyed owned pigs and chicken.
- Over 80% of households surveyed believe that climate change is happening.
- At least 54% of households felt they quite prepared or prepared to deal with drought or cyclone.
- Fully supportive of the current AF water security project.

Impacts at glance: field observation

- Community water well fully completed.
- Two 5,000gal community water tanks installed.
- Over 90% of all private rainwater collection systems needs some form of repair or maintenance.
- All water tanks tested for the quality of the water indicated unsafe for drinking and EPA recommended to the community to boil water before drinking.

IA Tools Lessons Learned

- Documentation of baseline data and build upon already available infrastructure.
- Community ownership and consider community's needs before implementation.
- Training on all IA methodologies and tools for all field team members.
- Community engagement or town hall meeting to present community members baseline and results of climate change intervention impact analysis results.
- Engagement with policy makers and influencers to bring about behavior change.

On the Q&A that followed the presentation, Richard Moufa, AF project manager (FSM) added that Hydrogen Sulphide H2S test kits for bacterial water testing donated by UNICEF have worked well for them in the past for remote locations. Joe Aitaro from Palau asked if there were community early warnings systems in place to ensure that droughts are dealt with rapidly due to the long distance required to bring water to the distant island of Nukuoro. Community experience of prolong droughts causes them to put in place water conservation measures noting that people already live with water scarce conditions.

Session 3: Palau field trial experience

Developing a Methodology to assess Climate Change Adaptation Intervention Impact

Adaptation Profile

- History of adaptation and prioritized sector to test the IA tools.
- Priority sector for climate change adaptation investment in Palau are agriculture and water.
- Palau case studies looked at (1). A regional climate change adaptation project that focused on developing climate resilient farming practices (salt tolerant taro varieties); (2). An SPC supported project to strengthen water security measures in Palau's outlying states. (3). A partnership with the German government to catalyze integrated farming practices to strengthen food security.

- Rationale for selection -project outcomes aligned with country sustainable development objectives and meets with both national, regional and international commitments

Steps to develop a methodology to assess impacts of Palau's Climate Change Adaptation Intervention Investments.

- Created a working group (composed of technicians and experts in the priority sectors) to identify the methodology parameters.
- Created a change model to identify pre-conditions for food and water security upon which Palau would measure its progress and impact.
- The case study project outcomes and the precondition nodes in our Theory of Change model aligned.
- Once the preconditions were validated, we identified the indicators that would reflect the realized precondition.
- Once the indicators were confirmed we worked with SPREP technical team identify data and data collection methods.

What is/ to be measured?

- On elements of soil capability, crop productivity and soil training program using the set of tailored direct observation with completion of a checklist, focus group and household surveys.
- For water security measures, impact is categorized as an institutional adaptation and individual noting the elements on water facilities and its condition, operation and maintenance, level of awareness and capacity.

Data collection

- Partnered with PALARIS- Palau's GIS shop- collected spatial data- using GPS and drones.
- Partnered with State governments and Palau Public Utilities Corporation to conduct house to house assessments in one community- utilized data collection sheets capturing key household water supply capacity information.
- Conducted household surveys in two communities (used kobo survey tool) SPREP provided training for potential enumerators representing multiple sectors.

Impact - What did we find out?

- Our Return on Investment was low (low uptake of intervention measures).
- Project design for interventions did not build in sustainability measures such as maintenance of infrastructure and capacity building support beyond the project lifetime.

Strategic Actions to take to enhance the Impact of our Interventions

1. Design technically sound projects, implement projects utilizing a Results based Management approach so that it can be informed by data (arising from tracking indicators) so that adaptive management can take place.
2. Institutionalize the use of indicators in the various sectors that are engaged in food and water security programs of work.
3. Provide training on the collection of data associated with these indicators (the Palau Field Guide which is a direct output of this project is a good place to start).
4. Don't re-invent the wheel the conservation sector, health sector, national emergency sector, governance sector in Palau have aligned objectives and could use some of these indicators to track the progress and impacts of their sectoral objectives.

Palau recommended the use of a result-based management approach to CCA projects so that adaptive management can take place as the project progresses.

Session 4: Tonga field trial experience*

Scope of work by national consultant (1) Work with Tonga Government through MEIDECC to source, collect, update, and monitor information required to carry out the impact analysis around past, present and pipeline adaptations projects. (2) To trial an impact analysis methodology designed and developed by SPREP on two projects, jointly agreed by SPREP and the Tonga Government. (3) Provide support with training held in conjunction to build a national impacts database of past adaptation actions.

Adaptation Profiles

- Information on projects implemented in the last five years were collected to build a data baseline and test the IA tools.
- Information (monitoring) was found to be incomplete after the completion of each project from the mangrove replanting, water tanks, groundwater infrastructure and the groyne structures built to protect coastline.

Selected Interventions

- Sourced from two projects: refer to Annex II.
    1. Groyne Structure at Hahake District (Makaunga/Talafo'ou Villages)
    2. Rock Barrier at 'Ahau Village (Hihifo District)
- Key criteria for assessing of these interventions- (1) effectiveness (2) sustainable social and behavioral changes (3) successful lessons practices and (4) overall sustainability of completed climate change adaptation interventions

Impact measurements

- Physical Assessment of the structures
- Household surveys
- Focus Group meetings
- Public Poll

Impacts at glance: Results-1

Rock Barrier - Littoral current is northward

- The two open ends of the structure allow sea water to reach frontline residents properties during storms.
- The slope of the structure is more than 45^{o} angle, high wave energy impacts.
- The interior of the structure is made up of fine sediment which is not covered by an impermeable carpet- thus allowing impact waves to dig it out and remove from inside, leading to a collapse in the structure.
- One area is showing failure due to waves removing the fine sediment.
- The whole structure is showing sign of lateral fracturing along the whole structure.

Groyne Structure - Littoral current is southward

- Sand accumulation around the southern groynes at Makaunga village appears to decrease southward.
- Concluded that the sand distribution at Makaunga coastline is affected by a clash between the southward littoral current and the northward-outward low tide from the Fangauta Lagoon, thereby pushing sand offshore – the origin of the Lighthouse Island is likely related to this process but to be verified by further studies.

Impacts at glance: Results-2

Household Survey

- 'Ahau Village-66 out of the 85 listed households (2016 Census) were interviewed, 78% of population.
- Makaunga Village- 43 out of the 72 listed households (2016 Census) were interviewed, 60% of population.
- Majority of the communities agreed that the beach area remain the same, suggesting that the built structure provided them with good security.
- Majority believed that the frequency of storms remained the same and the communities are well prepared for drought, cyclone and Tsunami. *But the last Tsunami on 15th January 2022 destroyed properties and killed one person at Hihifo District.*

Impacts at glance: Results-3

Focus Group meeting *was about the impacts of the built structures on the communities' livelihood. 19 attendants for 'Ahau (western side) and 9 for Makaunga villages (eastern)*.

- Over half of the participants said their main reason for visiting the local coast is to fish while just under half said the main reason is to relax (stroll, picnic, or enjoy the cool breeze).
- Most participants considered that the groynes/ revetment infrastructure have been helpful in protecting their coastline.
- Most participants thought cleanliness, refreshment facilities and safety were good or very good.
- Most people (18) said there are no changes in the way they use the coastal area, even though five of these people said that it had impacted their daily tasks.

Lessons/ conclusions

- Majority of the two communities appear to accept the two projects, that they are protecting their lives and their properties.
- However, defects from poor engineering needs to be addressed for the 'Ahau protection
- The Makaunga Groyne Structure may also need a new design/structure because sand is not accumulating. Instead, coastal erosion is happening at this coastline instead.

Rock Barrier

- Supervision of project works like this need to ensure that proper engineering is adhered to
- The slope of the structure needs to be shallower to allow wave energy dissipation
- Impermeable carpet should have been used to cover the fine sediment from being washed away by waves.
- Both ends of the structure need to be closed to protect frontliners.
- Heavier rocks should also have been used at the top of the structure.

Groyne Structure

- May need to be replaced with a rock revetment, especially the portion towards Makaunga.
- Need to adhere to detail of modern engineering and to be well supervised.
- Need to get the community involved through trainings and consultations.
- MEIDECC needs to be involved with the community when providing training and supervision of community involvement.
- Incorporate a pathway for community involvement as a prerequisite to major projects.

3. Breakout group feedback

Gauging level of awareness in impacts of climate change adaptation actions and how to assess impact(s).

Question 1: Please share 1-2 things you may have learnt from the trial stories of Cook Islands, Federated States of Micronesia and Palau.

- Cook Islands highlighted that there are no sustainability measures put in place thus for future projects, a sustainability plan needs to be in place so when project ends, there is exit plan on who will maintain and oversee the system built/ intervention cost
- Needs of the community is well understood before the project/activity is designed
- There is a lot of work done in countries with project outcomes and valuable lessons. It would be valuable if this assessment is going to be replicated in other countries. Important to widen the scope of looking at projects beyond a finite timeline so we can have access to numerous projects. The caveat for this is that we understand there are challenges to accessing information; difficult to get country profiles as most of the time in country personal do not know what's been happening.
- For the Palau case, a lot of Investment is on Agriculture systems; want to find out if the investment is well taken.
- FSM congratulates Palau for leveraging existing projects and support around their assessment.
- FSM congratulates CI for bringing in traditional leaders into their process. Having the traditional leaders be part of the conservation talk, this aspect is hardly recognised in in the Micronesian region.
- Enhancement of community ownership through their involvement in the development of projects. One of the lessons learnt is making the consultation process as wide as possible to enhance ownership and sustainability; reduce failures.
- New data collected as part of the Impact assessment in the trial countries can be used as baseline to support several projects including Ecosystem-based Adaptation projects.

Question 2: Why do you think it's important to assess the impacts of adaptation interventions within your communities?

- Know what and not what to do so we can have more efficient project implementation communities can derive from the wellbeing associated with projects.
- Realise at times that project scope can be narrow with key stakeholders and community members not being involved. As a result, we get a product that isn't well designed and sustainable. Easier if the communities were part of development process. There is always need of consultation done at community level to ensure priorities are aligned from national state to community and opportunity to bring in more partners and agencies.

- Climate change impacts are evolving, and assessment is important so we can replicate successes and modify approaches to match.
- With desired outcomes, it is rare to evaluate actual impacts, and even rarer to communicate those evaluations to the wider community
- Important that we assess impacts of adaptation interventions, so we are more efficient with our time, funding, and our efforts to build effectiveness.
- It's the only way we can know that the interventions are having a positive impact on the community and their daily livelihoods
- Such assessments provide data on how to track progress. Approach- top down and would have liked to focus on the community elements eg gender and disability. Data we have is identified from the community to design projects
- Purpose of the assessment: Inform what/how the project is designed. Need to understand the impact of the Climate change on the community. Aligning priorities at national-state-communities; bringing in more partners and agencies for tracking on progress of where project investment is carried out.
- Design projects that can be replicated across the islands. Consistency is important when designing projects. What kind of data should we begin to measure and monitor for new/pipeline projects?

4. Summary for Day 1

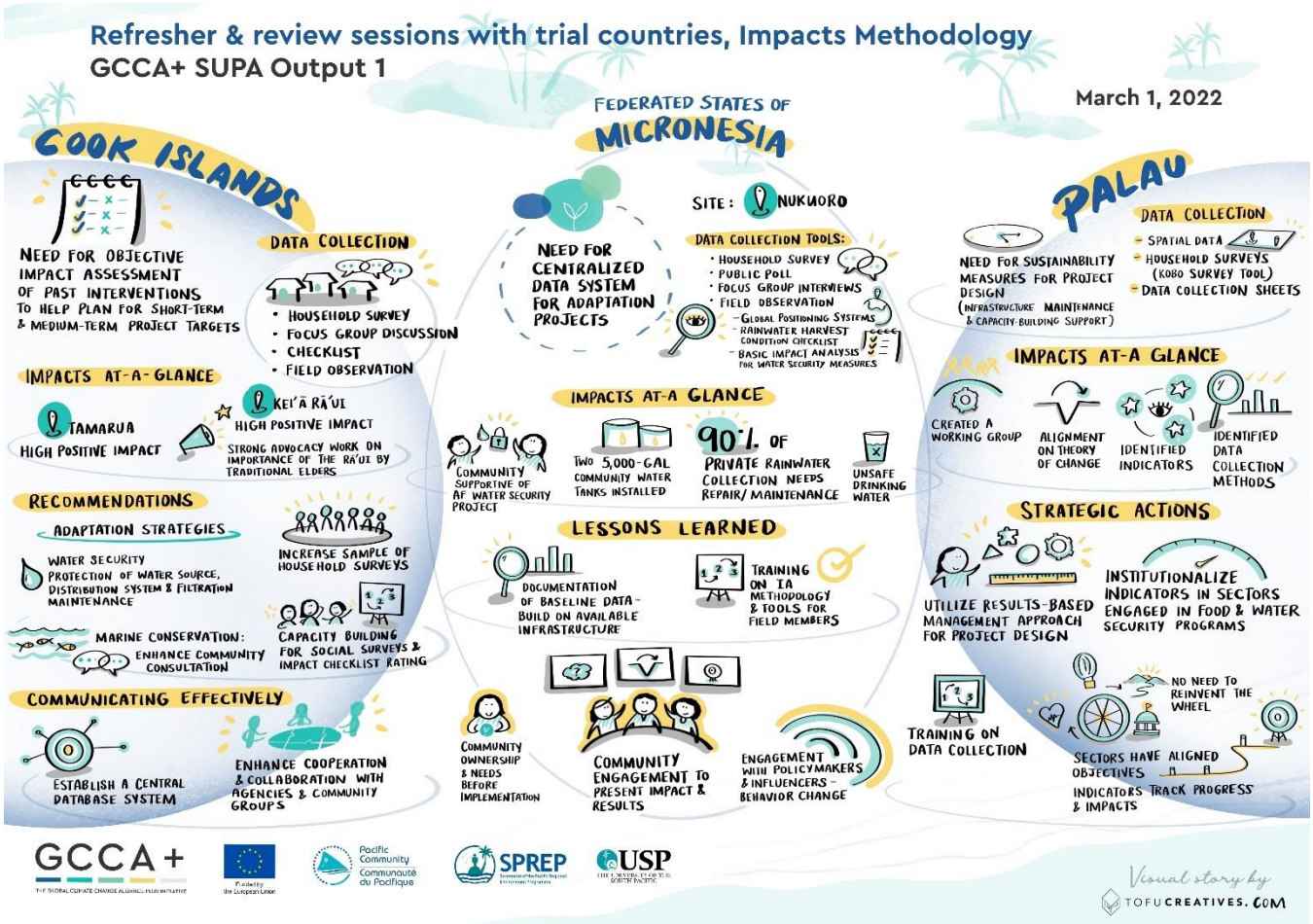


Figure d. Visual summary for the three trial countries experiences presented only for Day 1. Note that Tonga presented on day 2 hence not captured in this graphics.

DAY 2 PROCEEDINGS

Day two started with a prayer led by Teariki Rongo before a quick recap by Gloria Roma, GCCA+ SUPA's Information and Research Officer using the infographic Figure d.

The Tonga national consultant, Mr. Fuka Kitekei'aho was at hand to share field experiences of trialling the IA methodology and present his findings on coastal protection measures prior to damages caused by the volcanic eruption and tsunami effect. His presentation was followed by two break up sessions to reflect on the trial experiences in Cook Islands, Palau and FSM, discuss the next steps of the implementation of the IA methodology, and finally to demonstrate the use of check lists for water security measures.

5. Session 1. Mural-group brainstorm

An online mural platform used to facilitate an interactive brainstorming on **how we might use results of the Impact assessment to inform future planning.**

Group 1 Breakout Room discussion

Question 1: How might we use the results of the field testing to inform future planning?

- Target group? include Policy makers, Climate practitioners, Project planners.
- Inform planning processes: Disaster risk management, Management plans, Strategic plans.
- Assist in identifying actual root causes vs assumed sources of problems.
- Assist in climate vulnerability assessment in distant atolls.
- Help identify previous doners and projects through the profiling of archived projects.
- Use the results to inform both traditional and Government leaders. Learning what the most important factors are for a successful implementation.
- We can use the results to determine baseline or trend status.
- Help improve planning particularly the design of future interventions.
- Identifying stakeholder and community needs.

Question 2: Do you think the IA methodology with its set of tools be helpful in your line of work

- Most of the participants commented yes to the question.
- A participant commented on her line of work not being practical but the methodology in its essence provides useful information for research.
- The IA methodology is useful but would need more training on the tools before conducting the Impact assessment.
- The discussion also touched on What could be improved on with a comment on visualising a more robust way to connect the environmental outcome to a social benefit suspecting that the time frame captured in the social surveys don't always align with the project timeline.
- The profiling of past adaptation projects provided a way to collate archived project information which in the initial phase of the profiling were fragmented across different sources. As part of the profiling exercise, much of the information and data have been referenced for each project with the aim to include in the Impacts Database.
- The participants comment the value of having a centralised team leading this.
- The upkeeping of the Impacts will be made possible through the ongoing liaison of the SPREP team with the focal points in each trial country.

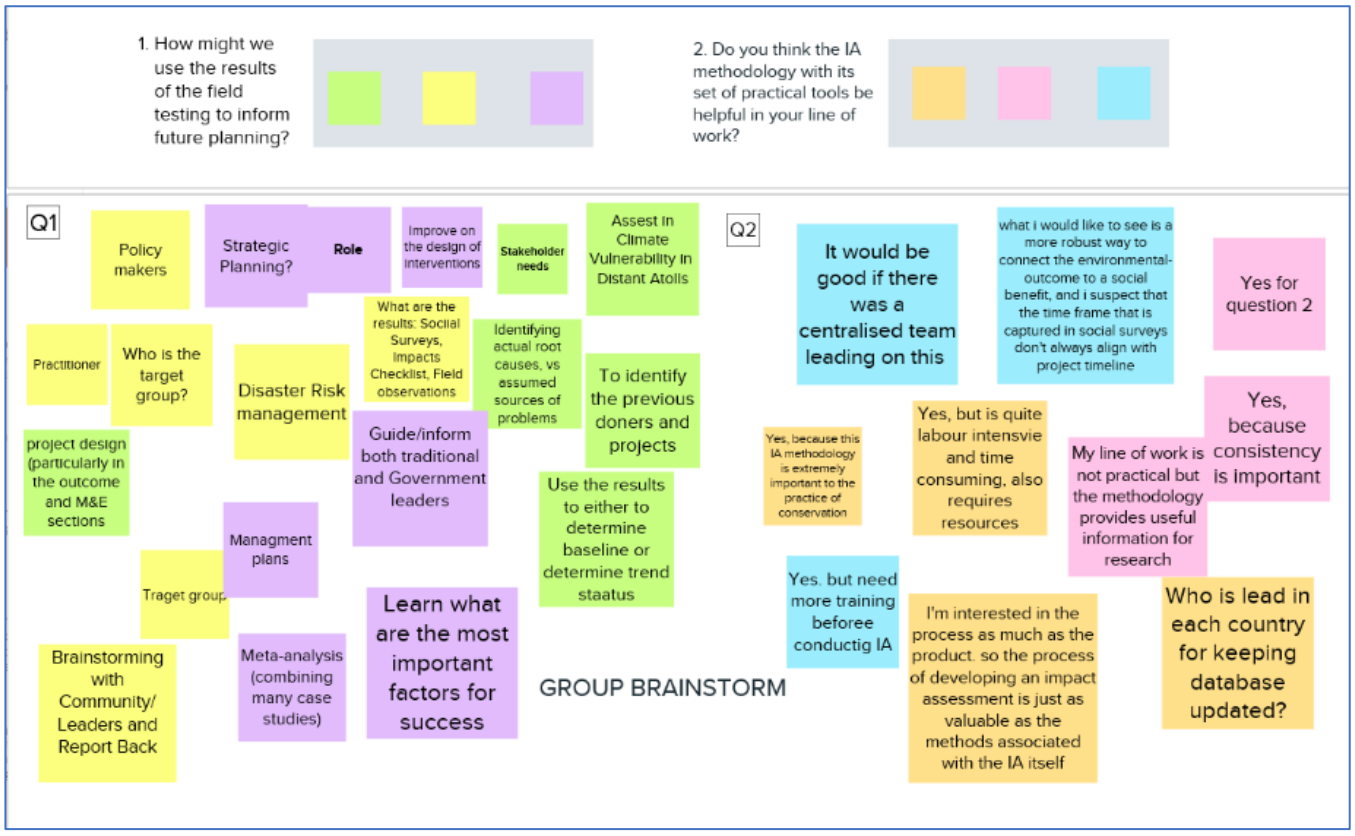


Figure e. Mural chart for group 1

<u>Group 2 Breakout Room discussion</u>

Question 3: How would you apply all or parts of the IA methodology in your areas of work and interest?

- The social surveys (Household and Focus Group, Public Polling at awareness & education outreach activities) can be used to assess impacts of community adaptation projects, community risk level.
    - Assist in the identification of community readiness towards impacts of climate change or extreme weather event
    - Assess all small grants climate change adaptation projects
- Documenting impacts of climate change adaptation help ensure that there is access to the history of information at the State, Government, and community level
    - Communities need to have access to database information about history of projects/activities carried out on Island
- Gain access to a pool of experts engaged in the structural design, Environment Impact Assessment (EIA)

Question 4: Which parts of the methodology and its tools are of interest to you?

- Impact Assessment tools
- Focus group Interviews
- Household Survey
- Profiling of past adaptation projects
- Complete demographic household information
- Spatial mapping: Change detection of target coastline
- All components of the Agriculture sector to be included: Capture all activities in the sector

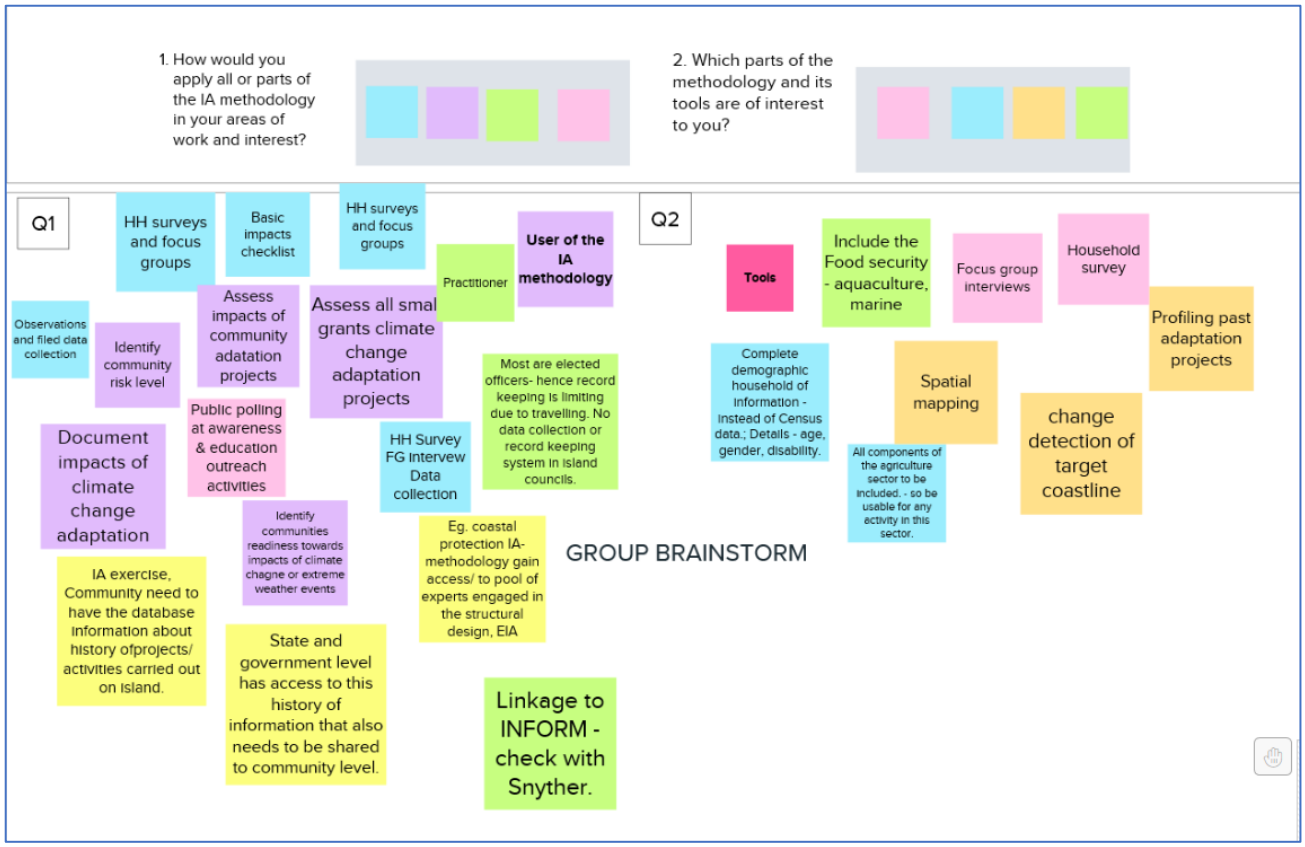
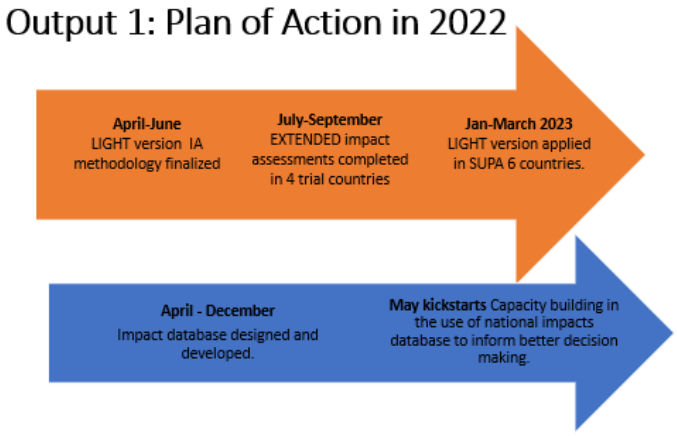


Figure f. Mural chart for Group 2.

6. Final Summary

Learning from the past for this output 1 led by SPREP, focuses particularly on supporting national decision making with aspects of strategic planning of adaptation actions that are designed and implemented with sustainability at the forefront of the process. In close collaboration with selected trial countries with a history of adaptation and a sound level of adaptive capacity, a draft impact methodology was field tested. The reflection and group feedback amongst each country participant with its own take on the impact assessment and analysis results add value to refining the methodology. This is expected to complete in the next few months and will be shared with the other six countries seeking buy-in for its application elsewhere in the Pacific.



A user-friendly database is planned to assist countries implement and store their impact assessment data.

The wheel schematic on Figure g. outlines the IA methodology differentiated for light and extended versions based on required level of effort for the tailored suite of tools and its type of data result, the available resourcing and capacity for ease of application in-country.

Next steps post-workshop on field trial experiences will be documenting lessons and reflection series of articles to be shared and support for in-country outreach about the IA methodology with key stakeholders in Palau, FSM and Cook Islands. Follow up sessions on building capacity of interested stakeholders to utilise parts or some aspects of the IA methodology will be organised in groups according to similar sector-interventions for ease of reference to specific tools per sector measures.
In the refinement of IA methodology with technical assistance, four countries will further utilise a light version in application to inform national strategic planning and national communications reporting of adaptation actions.

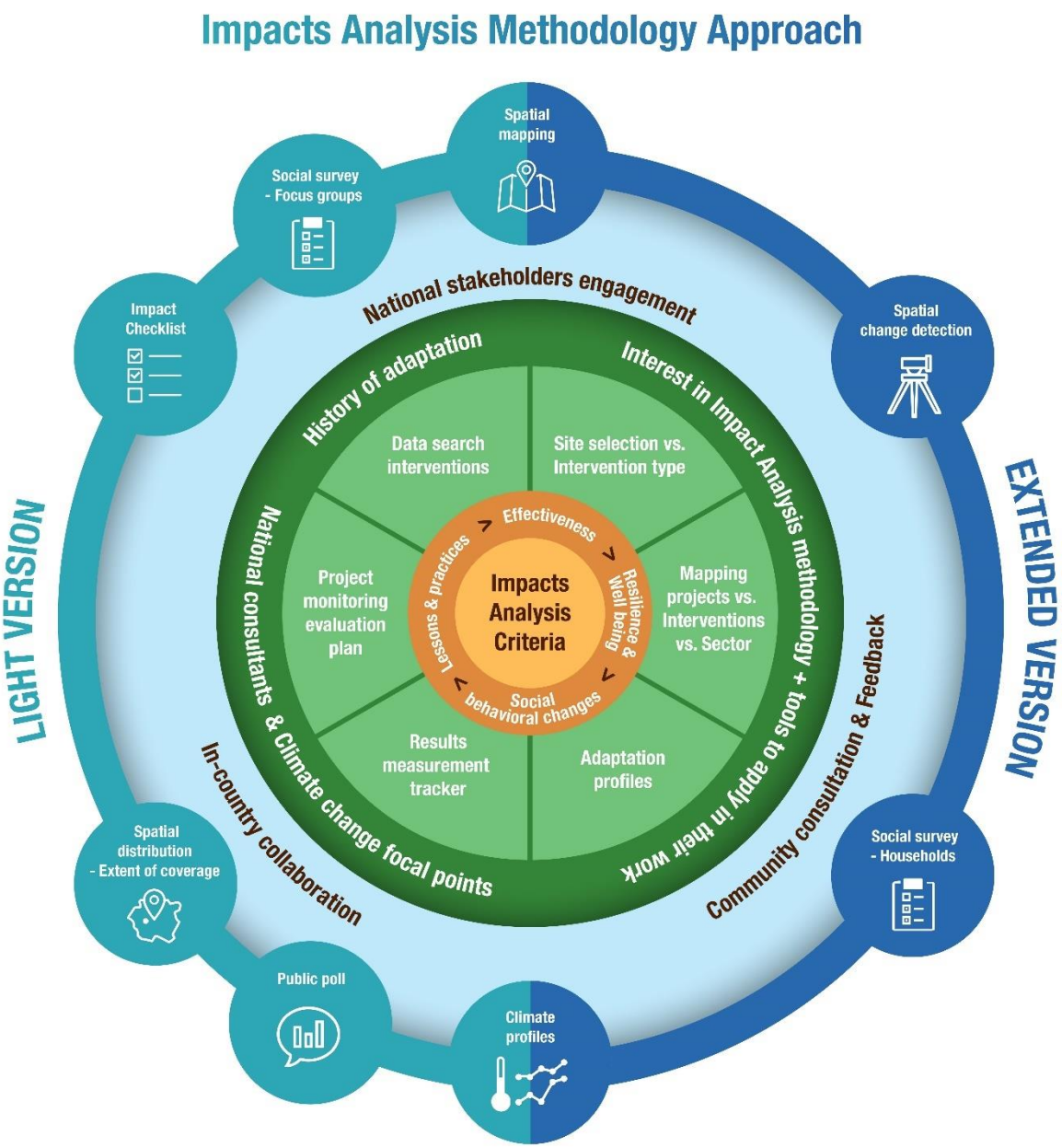


Figure g. Outline of the Impacts Analysis methodology differentiating light and extended versions for practical application in-countries according to required level of effort.

Annex I – Participants List

Country	Name	Min/Organisation/Delegation	1st March	2nd March
FSM (15)	Mr Winfred Mudong	GCCA+ SUPA National Consultant, Micronesia Conservation Trust	☑	☑
	Mr Correy Abraham	Department of Environment, Climate Change and Emergency Management (DECEM)	☑	☑
	Mr Richard Moufa	Adaptation Fund (AF)	☑	☑
	Mr Skiis Dewey	IT DECEM	☑	☑
	Mr Morthy Solomon	AF DECEM	☑	☑
	Mr Quinston Lawrence	Pohnpei Environmental Protection Agency	☑	
	Ms Shirleyann Pelep	MCT Senior grant officer	☑	☑
	Mr Angel Jonathan	Community liaison officer	☑	☑
	Mr Herman Semes Jr	National program coordinator	☑	
	Mr Patterson Shed	USAID Regional coordinator	☑	
	Ms Ivenglynn Andon	MCT	☑	
	Mr Adrean Ligohr	MCT Intern		☑
	Ms Isabelle Frank	MCT Project manager	☑	
	Mr Santiago Joab Jr	MCT Project manager	☑	
	Mr Roseo Marquez	Grant officer	☑	
Palau (8)	Ms Umai Basilius	GCCA+ SUPA National Consultant, Palau Conservation Society (PCS)	☑	☑
	Mr Joe Aitaro	Office of Climate Change Palau	☑	☑
	Ms Bianca S Temol	Division of Environmental Health of the Ministry of Health and Human Services		☑
	Ms Amand Alexander	Office of Climate Change	☑	
	Ms Mikayla Etpison	Division of Environmental Health of the Ministry of Health and Human Services	☑	☑

	Ms Carol Emaurois	USP RCO	☑	☑
	Ms Merlynda Ramarui	Division of Environmental Health of the Ministry of Health and Human Services	☑	
	Ms Zina Wong	PCS	☑	☑
Tonga (4)	Mr Fuka Kitekeiaho	GCCA+ SUPA National consultant	☑	☑
	Ms Losana Latu	Ministry of Meterology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC)	☑	☑
	Mr Alunga Tupou	Project Enumerator for Social Surveys	☑	☑
	Mr Unaloto Puloka	USP RCO Tonga	☑	
Cook Islands (3)	Mr Teariki Rongo	GCCA+ SUPA National consultant	☑	☑
	Ms Celine Dyer	The LCimate change Cook islands (CCCI) within the Office of the Prime Minister	☑	☑
	Ms Exceive Papa	Project Enumerator for the Social surveys	☑	☑
Kiribati (1)	Ms Alice Tekaieti	USP RCO	☑	
SPC (6)	Mr Zhiyad Khan	SPC	☑	☑
	Ms Gillian Cambers	SPC	☑	☑
	Ms Swastika Raju	SPC	☑	☑
	Ms Turang Teuea	SPC	☑	☑
	Ms Teresia Powell	USP	☑	
	Mr Jovesa Naisua	SPC	☑	☑
Tuvalu (1)	Ms Vasa Saitala	USP RCO	☑	☑
SPREP (6)	Ms Monifa Fiu	SUPA Impacts analysis adviser.	☑	☑
	Ms Gloria Roma	SUPA Research and Information officer.	☑	☑
	Ms Dannicah Chan	SUPA Finance and administration officer.	☑	☑
	Mr Alvaro R	Project Communications Consultant.	☑	☑
	Mr Sosikeni lesa	Communications Consultan.	☑	☑
	Ms Yvette Kerslke	Technical adviser, Science to services, Pacific Climate Change Centre (PCCC)		☑

Annex II – Country experience

Cook Islands:

Trial Experience

KEI'Ā RĀ'UI and TAMARUA WATER PROJECT BOTH OF MANGAIA ISLAND AS TEST SUBJECTS

Adaptation Profile:

- Recognizes:
  - ✓ the need to assess the impact of climate change adaptation interventions several years after their completion.
  - ✓ without information about longer-term impact, the country and the community will not always realize the long-term potential of a project intervention.
  - ✓ Current practice, project evaluations focus mainly on outputs and are conducted at the end of the project.
  - ✓ Tendency to design and implement new adaptation initiatives, which in many cases, may not be fulfilling long term goals.
- Need for an objective impact assessment of past interventions that will help the planning targets from the short-term project approach to the medium term (10+ years) sector resilient approach

Selecting Interventions

- Two sectors were chosen where comparison of the level of traditional systems involvement could be made from
- Mauke and Mangaia islands were chosen as contrasting examples
- Water supply and marine resources conservation interventions was prioritized.
- Water Supply (Tamarua Water Project and the Mauke Water Project)
- Marine resources conservation (Kei'ā Rā'ui and the Mauke Fishing Boat Project)

Impacts at-a-glance

How did measurements go & tools utilized?

- Household Survey
  - Small sample, heads of household did not want to be interviewed
  - 21.4% sample of the population, 33 households (out of 154), 5 from Ivirua, 19 from Oneroa, 9 from Tamarua
  - Difficult to detect any statistical difference
  - Result to be interpreted with caution
- Focus Group Discussion
  - 6 focus group discussion (water and sanitation and marine focus groups)
  - 15 – 70+ age group, a total of 57 participants
  - For water and sanitation, did not include question that specifically ask if project objective (more secure water supply was achieved.
  - Marine conservation area, did not ask people about personal impact of not being able to fish in rā'ui areas
- Interviews (Traditional Leaders and others)
  - Traditional leaders were targeted, i.e. Kāvana and Rangatira (Chief and sub-chiefs)
  - For water and sanitation, focused on surrounding areas at the water intake, security of the area, leakages, maintenance issues
  - Marine conservation areas, focused on conservation values, e.g. access, fishing intensities and surface impacts; anthropogenic impacts, extent of ownership indicators, e.g. management issues
- Checklist
  - Based on field visit, the information presented to the interviews of focus discussions with the traditional leaders.

Impacts at-a-glance:

What kind of data was collected?

- Household Survey
  - Household information - role of interviewee, #people in HH, HH size, education, vulnerable, dwelling # and type, appliances, HH infrastructure, water storage capacity
  - Livelihood and energy use – Life satisfaction, employment and spending, # people employed, spending category by amount, animals and livestock
  - Awareness and environment – perceived cause of climate change, environmental change over the past 10 years
  - Sanitation – received information regarding maintenance and proper care of water tanks and septic tanks, cleaning of water tanks, emptying septic tanks, functionality of toilets, communicable diseases, solid waste, vector
  - Risk and preparedness – how at risk do people feel their village/community is during extreme weather events, preparedness of HH, risk preparedness, actions people take following a drought/cyclone/tsunami warning
- Focus Group Discussion
  - Awareness of environment and changes to climate change and environment
  - Water security and environmental public health
  - Livelihood
- Interviews (Traditional Leaders and Others)
  - Water system improvement/Keiʻā Rāʻui - Impact on community well-being, haw far has intervention impacted health and livelihood, how far has intervention contributed towards healthier lifestyles, under which conditions the intervention achieved outcomes and impacts, what are some of the main barriers to achieving outcomes
- Checklist
  - Public water main and piped from source– surrounding area, water source, water filtration, protection of water source, distribution, metered, control valves, leakages, water treatment, increased capacity
  - Keiʻā Rāʻui – conservation values, anthropogenic impact, management actions for species, conservation area, awareness programme, formal protection, training activities for monitoring.

Impacts at-a-glance

Household Survey, Focus Group and Interview with Traditional Leaders and others

General

- People in all three villages said their life is the same or better than it used to be, so the response cannot be linked to a specific intervention.

Water and sanitation

- All three villages have very similar infrastructure
- No significant differences in terms of communicable disease or disaster preparedness.
- Tamarua Project - the lack of a significance difference across villages could be considered evidence the project was successful.
- lack of filtration after the pump house and stock exclusion is a barrier to achieving the best possible outcome.
- It is not clear whether the other villages also have these problems is unclear.

Impacts at-a-glance

Household Survey, Focus Group and Interview with Traditional Leaders and others

Kei'ā Rā'ui (and marine conservation area)

- There are multiple marine rā'ui areas around Mangaia island so all three villages are affected.
- The focus groups revealed that some people still ignore the rā'ui, which may reduce its effectiveness.
- The focus groups did not specifically ask if the rā'ui affects peoples' livelihoods (by limiting opportunities to fish) but no-one volunteered any such information either.
- We can conclude that the overall impact is either positive, or at least not negative enough to make people think their lives are worse than they were 5 years ago.

Water system improvement

- Public Water Main – Although the impact assessment showed the intervention have a high impact (positive), there are some shortfalls in the area of evidence, i.e. reports from the health department and the water utility division on maintenance. The reporting process through the annual business plan process for budgetary reasons is not specific enough and clear.
- Water Piped from Source – Although the project is incomplete, i.e. the header tank foundation and installation of header tanks to improve distribution as per project document, the intervention thus far has a high impact (positive). No sign of leakages and pump is used.
- Water Treatment – Impact assessment showed a low impact (negative) water is dirty and not used for drinking.
- Increased Facility – Impact assessment showed a high impact (positive), the intervention has increased the water supply to the households compared to before the intervention.
- Operations and Maintenance Capacity – The impact assessment showed a high impact (positive) rating. The Island Government have a water utility comprised of trained plumbers who carry out maintenance work, and also, they are the ones that review the water utility annual business plans. There is a need to have clearly defined involvement of the community, traditional leaders and trained people in the management of water facilities.
- **Overall, with the issues identified, the intervention has a high positive impact on the community of Tamarua**

Kei'ā Rā'ui

- Conservation Values – The impact rating is low as there is no controlled access to the rā'ui site when it is closed, and there is no control on the most sought after species, the clam.
- Anthropogenic Impact – The impact rating is high as there are no tourist and boating activities, minimal pollution sources due to low population and no industrial pollution in the proximity of the area.
- Extension of Ownership – The impact rating is high due mainly to the strong advocating by traditional leaders of the importance of their rā'ui. **The overall impact rating for this intervention is high (positive). There is strong advocacy work on the importance of the rā'ui by traditional leaders.**

Recommendations

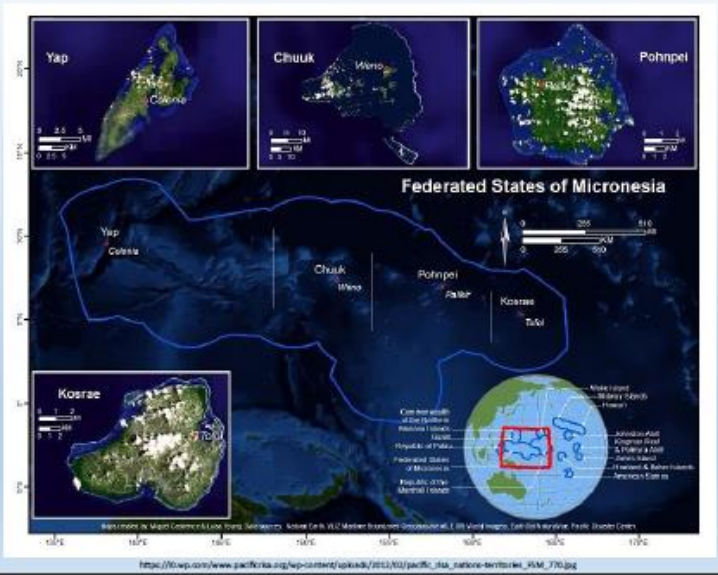
- What adaptation strategies can lessen the negative impact as observed in real-time? (or improve on the impact rating measured)
  - ✓Have more households surveyed (increase sample)
  - ✓For water security, the protection of the water source, maintenance of the distribution system and filtration.
  - ✓For marine conservation, continue with the current practice and enhance community consultation and communication
- Which aspects of the overall IA methodology will there be need for capacity building (online or in person)?
  - ✓Household survey, online
  - ✓Checklist, ratings used, and will vary with the different systems used
- How to communicate effectively about these issues to bring about change in your community? At the strategic planning level
  - ✓Establish a central database system and a simple system for updating
  - ✓Enhance cooperation and collaboration with agencies and community groups Including registered NGOs.

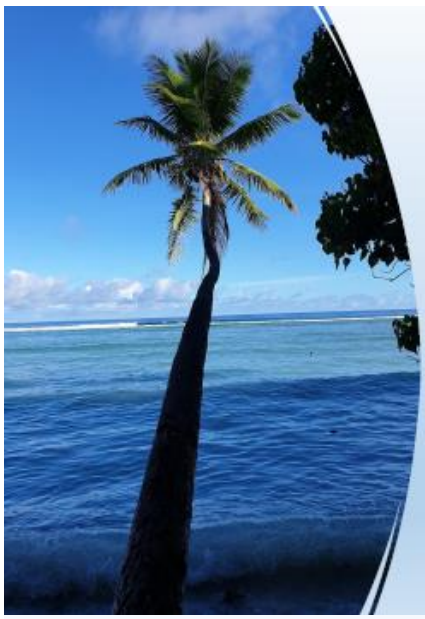
Federated States of Micronesia:

Trial Experience

FSM

Nukuoro Experience





Adaptation Profile:

- Title of Adaptation Intervention:
- Activities Completed:
- Timeline of Intervention:
- Sector:
- Subsector:
- Methodology/approach taken to implement the adaptation:
- Type of Organization and Implementing Agencies:

Adaptation Profile:

- Number of people served:
- Location:
- Indicators:
- Baseline data and unit of measurement:
- Data type:
- Date selection and justification:
- Data collection tool:

Sectors:

Coastal Protection

Marine Resource Management

Food Security

Water Security

Sector Selected:

- Adaptation Profiles
- Water Security
- RENI
- AF Project
- Nukuoro

Intervention Site: Nukuoro

- Nukuoro (3.5016° N, 154.5635° E)
- Approximately 300 miles southwest of Pohnpei main island
- over 40 individual islets
- 39 occupied households
- 96 individuals currently living on the island

Impact Analysis Tools:

- Social Surveys:
  - Household survey
  - Public Poll
  - Focus group interviews

Impact Analysis Tools:

- Filed Observation:
  - Global Positioning System
  - Pictures
  - Rainwater harvesting systems condition checklist
  - Basic Impact Analysis for water security measures

Implementation of Impact Analysis Tools:

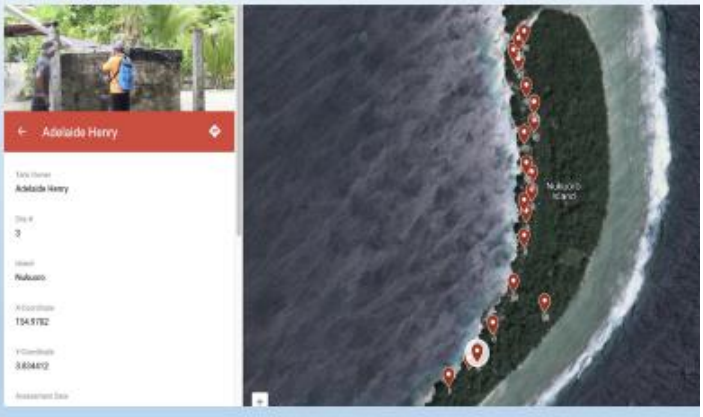
- Enumerators
  - Household survey
  - Public polls
  - Focus group interviews
- Field Observation Team
  - Camera recorder
  - GPS operator
  - Water systems inspection team
  - Basic water Impact Checklist

Implementation of Impact Analysis Tools:

- Enumerators: Social Data
  - Demographics
  - Infrastructure
  - Livelihood
  - Climate change and environmental awareness
  - Risk and preparedness to extreme weather conditions or impacts of climate change
  - Perception on water security projects

Implementation of Impact Analysis Tools:

- Field Observation Team: Physical data
  - Condition of water sources and rainwater harvesting and storage systems
  - Location of fresh water sources or systems
  - Status or condition of community's overall water storage capacity
  - Changes in community's water storage capacity



Impacts at-a-glance:

- Social Data
  - Documented demographics including population of men, women, and children
  - Types if dwelling, infrastructure, and appliances owned
  - Types of livelihood and living conditions
  - Percent of households awareness of climate change
  - Percent of households

Impacts at-a-glance: Social Data

- 37 out of 39 Households participated in the survey and Public poll
- Over 60% of those interviewed has at least an HS education
- 39% Male, 22% Female, 39% children
- 70% thatched roof housing
- 90% of all households claims to have their own private water tanks
- 81% of households claimed that their lives had stayed the same or better within the last 5 years
- Over 85% of households surveyed owned pigs and chicken.
- Over 80% of households surveyed believe that climate change is happening.
- At least 54% of households felt they quite prepared or prepared to deal with drought or cyclone.
- Fully supportive of the current AF water security project

Impacts at-a-glance: Field Observation

Stand alone water tank with roof catchment but no gutter nor down pipe needed.

Typical family homes on Nukuoro

Stand alone water tank with roof catchment, gutter and down pipe.

Impacts at-a-glance: Field Observation

- Community water well fully completed
- Two 5,000gal community water tanks installed
- Over 90% of all private rainwater collection systems needs some form of repair or maintenance
- All water water tanks tested for the quality of the water indicated unsafe for drinking and EPA recommended to the community to boil water before drinking

IA Tools Lessons Learned

- Documentation of baseline data and build upon already available infrastructure.
- Community ownership and consider community's needs before implementation.
- Training on all IA methodologies and tools for all field team members.
- Community engagement or town hall meeting to present community members baseline and results of climate change intervention impact analysis results.
- Engagement with policy makers and influencers to bring about behavior change.

IA Tools Lessons Learned

- Documentation of baseline data and build upon already available infrastructure.
- Community ownership and consider community's needs before implementation. What adaptation strategies can lessen the negative impact as observed in real-time? (or improve on the impact rating measured)
- Which aspects of the overall IA methodology will there be need for capacity building (online or in person)?
- How to communicate effectively about these issues to bring about change in your community? At the strategic planning level

Palau:

Adaptation Profile

- History of adaptation and prioritized sector to test the Impact Assessment

- Priority sector for climate change adaptation investment in Palau
- are:

Agriculture

Water

2

Palau's Case Studies

We looked at:

1. A regional climate change adaptation project that focused on developing climate resilient farming practices (salt tolerant taro varieties)

2. An SPC supported project to strengthen water security measures in Palau's outlying states.

3. A partnership with the German government to catalyze integrated farming practices to strengthen food security

Rationale for Project Selection

Project outcomes aligned with country sustainable development objectives and meets with both national, regional and international commitments

3

Impacts at a Glance

Steps to develop a methodology to assess impacts of Palau's Climate Change Adaptation Intervention Investments.

- Created a working group (composed of technicians and experts in the priority sectors) to identify the methodology parameters.
- created a change model to identify pre-conditions for food and water security upon which Palau would measure its progress and impact.
- The case study project outcomes and the precondition nodes in our Theory of Change model aligned.
- Once the preconditions were validated, we identified the indicators that would reflect the realized precondition
- Once the indicators were confirmed we worked with SPREP technical team identify data and data collection methods.

4

What did we measure?

Food Security:

Resilient Agriculture/ Food Security		
Impact Category	**Indicator**	**Methodology**
Soil capability	% land available for food production. % farmers who promote soil health practices	Spatial analysis information Rate uptake of soil health and land-care practices (intercropping, hedgerows etc.)
Crop productivity	% change in crop production yield % farmers with access to crop varieties	Ref. Focus group surveys of farm holders. Spatial mapping information. Salt tolerant taro varieties, crop varieties that tolerate a wet environment
Soil training program	% increased access to crop varieties	Observations & record of scoring for each variable. Ref. Impact checklist for Resilient Agriculture form. Focus group interviews with farmers.

5

Water Security Indicators			
Impact Dimension	**Impact Category**	**Indicator**	**Methodology**
W2 Institutional Adaptation Individual Adaptation	Water facilities & its condition	% increase in water availability for the targeted communities because of the improved water systems. % of households with access to reliable safe water supply. Volume of water used per capita per day.	Number of households in the sample with access to an improved water supply divided by total number of households in the sample. Vol of water (in gallons collected) for domestic use per day by all households in the sample divided by total number of persons in the sample households. Observations & record of scoring for each variable. Ref. Impact checklist for water security measures form.
W3 Institutional Adaptation	Operations & Maintenance	% households with functioning rainwater harvesting systems. % constructed water facilities maintained by community with past training.	Observations & interview of focus groups. Tabulate number of tanks according to size /volume of tanks onsite. Map out all water sources in area be useful to track repair/new water systems and household (and vulnerable groups) level of access to safe water. Data can be collected from random survey of households.
W4 Institutional Adaptation Individual Adaptation	Level of awareness & capacity	% increase access to safe potable water by the disability, elderly and children (schools). % recurrent costs for water supply services provided by community.	Observations & record of scoring for each variable. Ref. Impact checklist for water security measures form. Meta data from the social survey will calculate for sections: Level of awareness to changes and household preparedness responses.

6

Data collection

Partnered with PALARIS- Palau's GIS shop- collected spatial data- using GPS and drones

Partnered with State governments and Palau Public Utilities Corporation to conduct house to house assessments in one community- utilized data collection sheets capturing key household water supply capacity information.

Conducted household surveys in two communities (used kobo survey tool) SPREP provided training for potential enumerators representing multiple sectors.

7

What did we find out?

Our Return on Investment was low (low uptake of intervention measures)

Project design for interventions did not build in sustainability measures such as maintenance of infrastructure and capacity building support beyond the project life tine

8

Strategic Actions to take to enhance the Impact of our Interventions

1. Design technically sound projects, implement projects utilizing a Results based Management approach so that it can be informed by data (arising from tracking indicators) so that adaptive management can take place.
2. Institutionalize the use of indicators in the various sectors that are engaged in food and water security programs of work.
3. Provide training on the collection of data associated with these indicators (the Palau Field Guide which is a direct output of this project is a good place to start.
4. Don't re-invent the wheel the conservation sector, health sector, national emergency sector, governance sector in Palau have aligned objectives and could use some of these indicators to track the progress and impacts of their sectoral objectives.

9

10

Tonga:

Trial Experience

By
Fuka Kitekei'aho, Local Consultant

BACKGROUND

The main aims of this Project were;

1. to assess the impacts of **climate change adaptation interventions**, built on Tongatapu coastlines in the **last five years**, to protect the community lives and properties from the impacts of sea level rises.
2. The **effectiveness** of these adaptation measures will determine ways to improve their performances in the future.

Scope of Consultancy

I was recruited by SPREP to;

1. Work with Tonga Government through MEIDECC to source, **collect, update and monitor information** required to carry out the impact analysis around past, present and pipeline adaptations projects.
2. **To trial an impact analysis methodology** designed and developed by SPREP on two projects, jointly agreed by SPREP and the Tonga Government.
3. **Provide support with training** held in conjunction to build a national impacts database of past adaptation actions.

Adaptation Profiles:

- Information on projects implemented in the last five years were collected to build a database to test the IA tools
- However, information (monitoring) were found to be incomplete after the completion of each project.
- Information were collected on the following projects;
  - Mangrove replanting
  - Water Tanks
  - Ground water infrastructure
  - Groyne Structure

Selected Interventions

Two Interventions were selected by SPREP and Tonga Government to trial the **IA tools**.

The two projects were;

1. **Groyne Structure** at Hahake District (Makaunga/Talafo'ou Villages)
2. **Rock Barrier** at 'Ahau Village (Hihifo District)

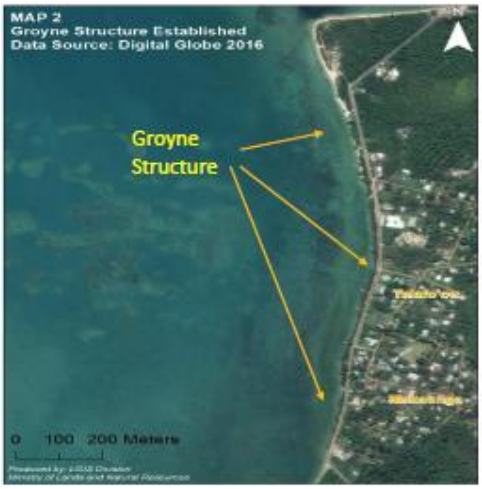
Key criteria for assessing of these interventions included;

(1) effectiveness
(2) sustainable social and behavioural changes
(3) successful lessons practices and
(4) overall sustainability of completed climate change adaptation interventions.

LOCATIONS

ROCK BARRIER

GROYNE STRUCTURE



Impacts at-a-glance:

Methodology Adopted for the study;

- Physical Assessment of the structures
- Household surveys
- Focus Group meetings
- Public Poll

RESULTS- 1

Rock Barrier

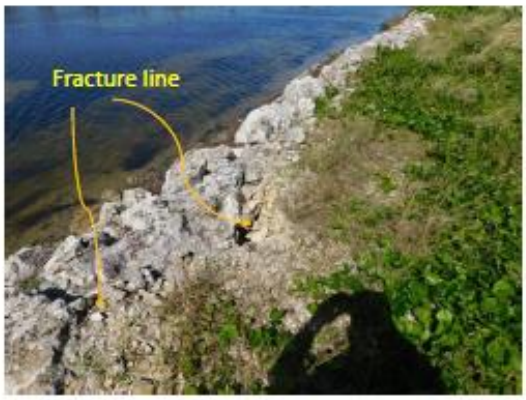
- Littoral current is northward
  - The **two open ends of the structure** allow sea water to reach frontline residents properties during storms
  - The slope of the structure is more than 45° - high wave energy impacts
  - The interior of the structure is made up of fine sediment **which is not covered by an impermeable carpet**- thus allowing impact waves to dig it out and remove from insid, **leading to a collapse in the structure**
  - **One area is showing failure** due to waves removing the fine sediment. *Refer to Photos*
  - The whole structure is showing sign of **lateral fracturing** along the whole structure

Groyne Structure

- Littoral current is southward
  - sand accumulation around the southern groynes at Makaunga Village appears to decrease southward
  - Concluded that the sand distribution at Makaunga coastline is affected by a clash between the southward littoral current and the northward-outward low tide from the Fangauta Lagoon, thereby pushing sand offshore – the origin of the Lighthouse Island is likely related to this process.
  - The above conclusion is yet to be verified by further studies.

Failure on the Barrier Structure

Fracturing along the Barrier Structure



RESULTS-2

Household Survey

- *'Ahau Village- 85 household listed by the 2016 Census. Only 66 households were interviewed, representing 78% of the opulation.*
- *Makaunga Village- 72 households listed in 2016 Census. Only 43 households were interviewed, representing 60% of the population*

  - **Majority of the communities** agreed that the beach area remain the same, suggesting that the built structure provided them with good security.

  - **Majority believed that the frequency of storms** remained the same and the communities are well prepared for drought, cyclone and Tsunami. *But the last Tsunami on 15th January 2022 destroyed properties and killed one person at Hihifo District. IT WAS A GREAT SHOCK TO THE COMMUNITY!*

RESULTS-3

Focus Group Meetings

- *The focus of the meeting was on the impacts of the built structures on the communities' livelihood. The attendants were 19 for 'Ahau at the western side and 9 for Makaunga Villages at the eastern side*.
  - Over half of the participants said their main reason for visiting the local coast is to fish while just under half said the main reason is to relax (stroll, picnic, or enjoy the cool breeze).
  - Most participants considered that the groynes/ revetment infrastructure have been helpful in protecting their coastline.
  - Most participants thought cleanliness, refreshment facilities and safety were good or very good.
  - Most people (18) said there are no changes in the way they use the coastal area, even though five of these people said that it had impacted their daily tasks.

CONCLUSIONS

- Majority of the two communities appear to accept the two projects, that they are protecting their lives and their properties.
- However, defects from poor engineering needs to be addressed for the 'Ahau protection
- The Makaunga Groyne Structure may also need a new design/structure because sand is not accumulating. Instead, coastal erosion is happening at this coastline instead.

LESSON LEARNT

Rock Barrier

- Supervision of project works like this need to ensure that proper engineering is adhered to
- The slope of the structure needs to be shallower to allow wave energy dissipation
- Impermeable carpet should have been use to cover the fine sediment from being washed away by waves.
- Both ends of the structure need to be closed to protect frontliners
- Heavier rocks should also have been used at the top of the structure

Groyne Structure

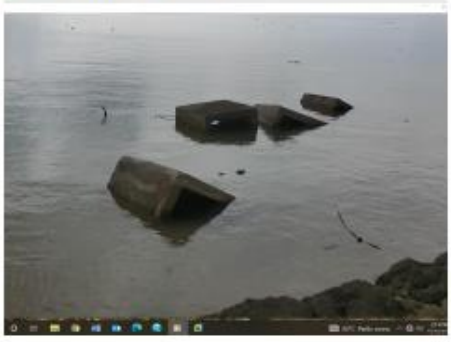
- May need to be replaced with a rock revetment, especially the portion towards Makaunga Village
- Need to adhere to detail of modern engineering and to be well supervised

LESSON LEARNT

- Need to get the community involved through trainings and consultations
- MEIDECC needs to be involved with the community involved in providing training and supervision of community involvement
- Incorporate a pathway to community involvement as a prerequisite to major projects.

LATE NEWS!

- THE GROYNE STRUCTURE AT HAHAKE HAS BEEN **COMPLETELY DISFIGURED** BY THE RECENT TSUNAMI ON 15TH JANUARY 2022



MALO 'AUPITO

Annex III – Facilitators Note for Breakout Groups

GCCA+ SUPA Output 1: Refresher and Review sessions with trial countries. Impacts Methodology, March 1st-2nd (Cook Islands, Feb 28th-March 1st)

Facilitator' Note

Day one, Agenda Item Ref 6: Breakout Session 20 mins- Gauging level of awareness on impacts of climate change adaptation actions and how to assess impacts

The participants on Day one will be allocated to one of three breakout rooms on Zoom. In the breakout rooms, a list of questions (below) will be discussed amongst the participants. The facilitator will ask the questions and guide the discussion with the participants.

Facilitators for the breakout rooms: Umai Basilius (Palau national consultant), Teariki Rongo (Cook Islands national consultant), Winfred Mudong (Federated States of Micronesia)

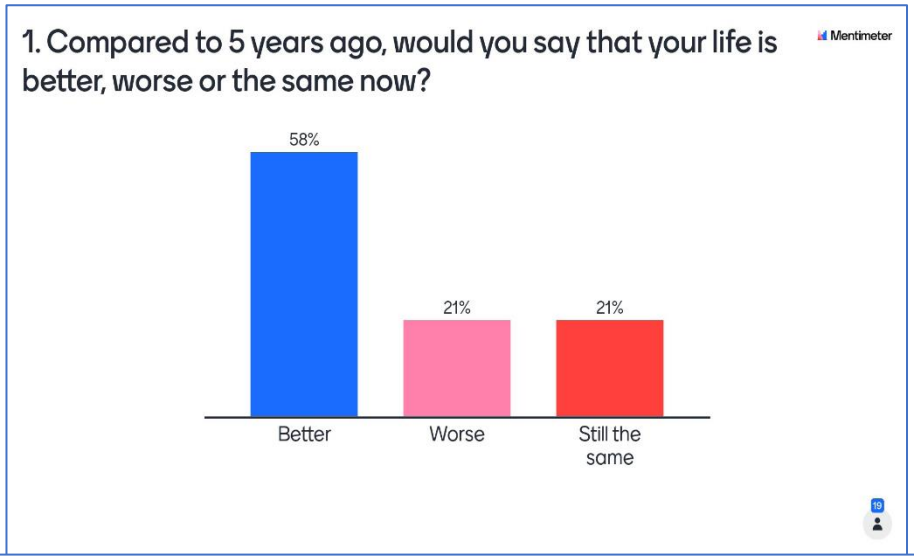
Questions for discussion

1. Please share 1-2 things you may have learnt from the trial stories of Cook Islands, Federated States of Micronesia, and Palau
2. Why do you think it's important to assess the impacts of adaptation interventions within your communities?

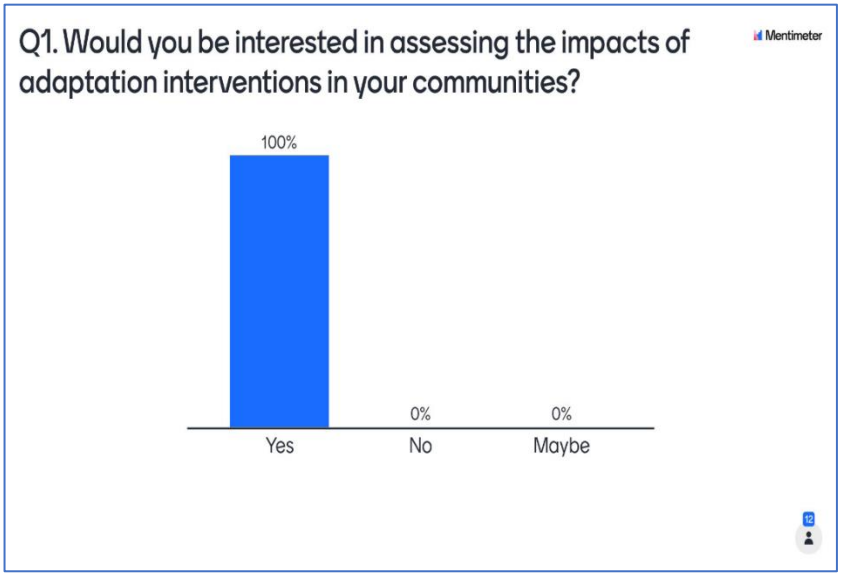
The breakout rooms will be active for only 20 minutes before automatically returning to the main room. Each facilitator is asked to report back to all participants in the main room what has been discussed in their respective breakout rooms.

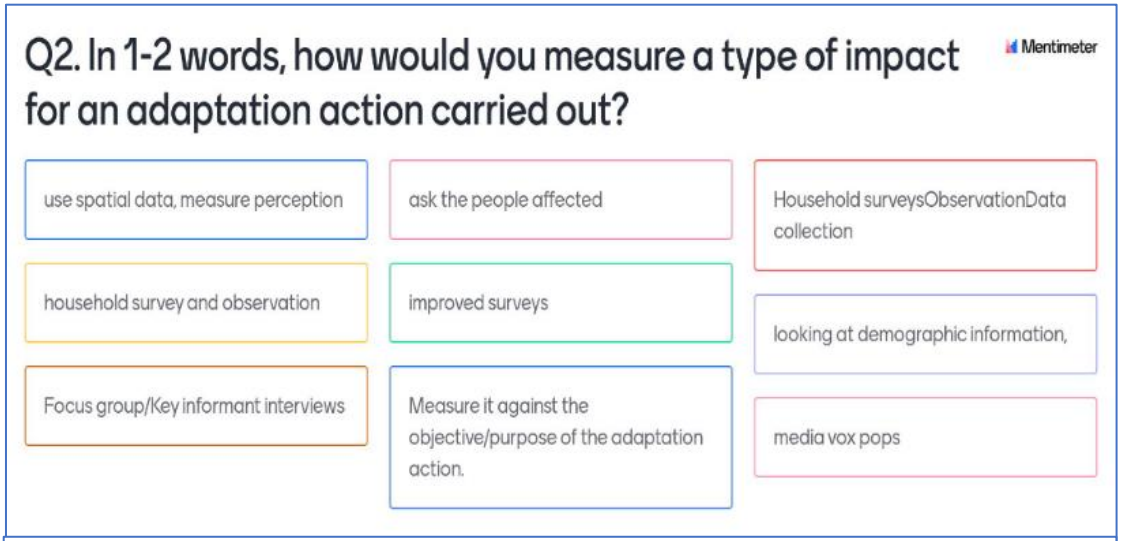
Annex IV – Menti survey results

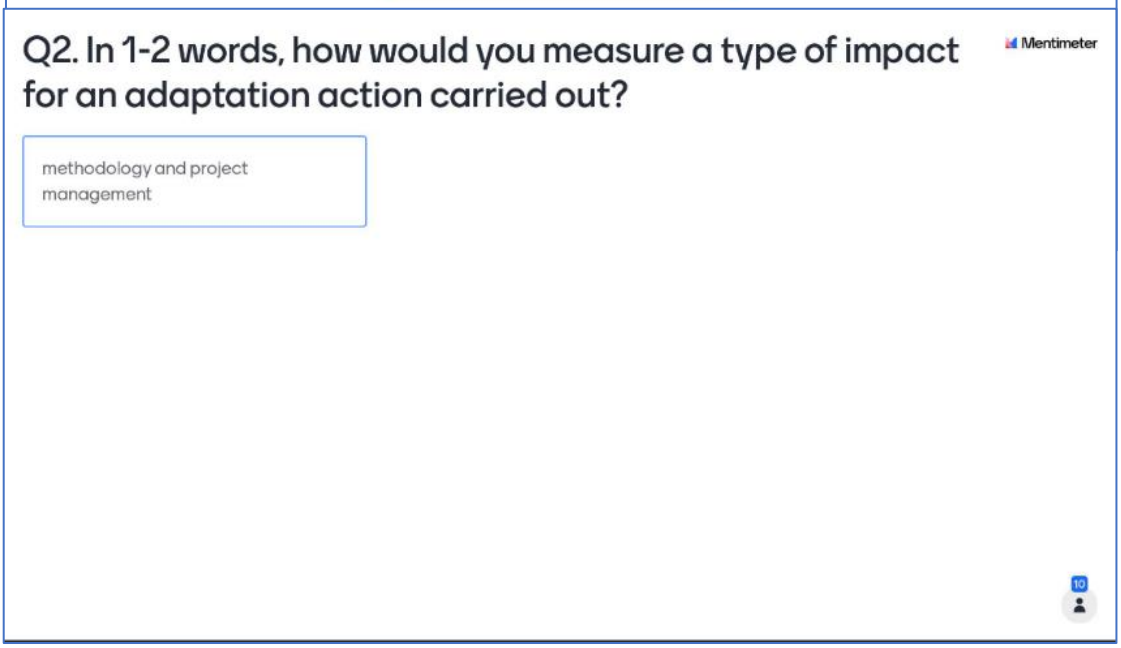
Day 1:



Day 2:

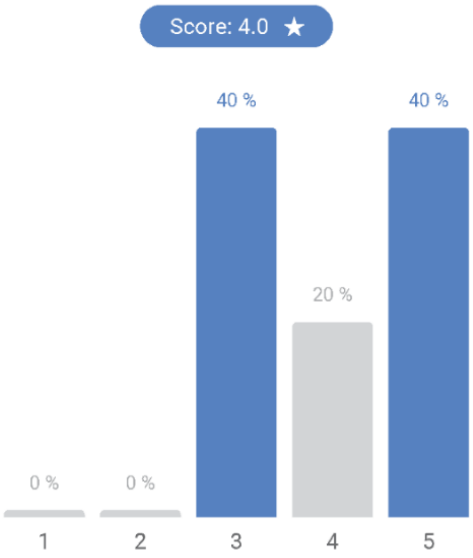

Q1. Would you be interested in assessing the impacts of adaptation interventions in your communities?
Mentimeter
100%
0%
0%
Yes
No
Maybe
12


Q2. In 1-2 words, how would you measure a type of impact for an adaptation action carried out?
Mentimeter
use spatial data, measure perception
ask the people affected
Household surveysObservationData collection
household survey and observation
improved surveys
looking at demographic information,
Focus group/Key informant interviews
Measure it against the objective/purpose of the adaptation action.
media vox pops


Q2. In 1-2 words, how would you measure a type of impact for an adaptation action carried out?
Mentimeter
methodology and project management
10

Annex V -Slido Results: Evaluation

1. Please rate your overall experience with Day 1 Virtual Session (1 - Poor, 3 - Fair, 5 - Good) 5



2. Did you encounter any technical difficulties participating in this virtual meeting? If yes, please specify. 5

I had temporary internet problems

No

No

No

no

3. The virtual workshop delivered the information I expected to receive. 8