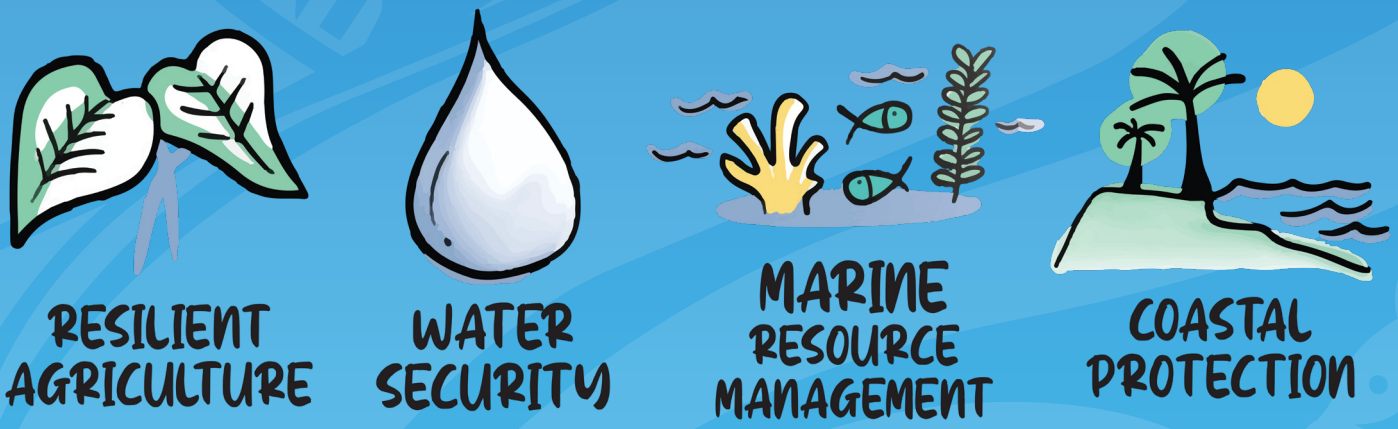
Pacific impacts Analysis (iA) Methodology

Guide



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SCALING UP PACIFIC ADAPTATION (SUPA)
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Our vision:

A resilient Pacific environment sustaining our livelihoods and natural heritage in harmony with our cultures.

Table of Contents

List of Figures

Foreword

Measuring impact to make sense of our climate actions

Fakaalofa lahi atu! As people of the Pacific, when we speak about being on the front line of the climate crisis, we know what we are talking about. It is not a theory, it is our reality, a very confronting and frightening one.

The impact and the devastation caused by climate change related extremes on lives, properties and economies is a reality we have become all too familiar with in this part of the world. With cyclones, earthquakes, flooding, forest fires, volcanic eruptions, storm surges, droughts and tsunamis, amongst other weather-related calamities, this is the 'lived reality' of the climate crisis.

As a result, across our region, we face the daily challenges of water and food insecurity and its impacts to our peoples' health and wellbeing, loss of land and biodiversity and plastics pollution. Our land and ocean, which we as a people depend on, is changing and affecting the web of life intrinsically linked to our people's survival.

The Intergovernmental Panel on Climate Change (IPCC) reports have repeatedly warned that the world is not on course to meeting the 1.5 degree Celsius target our One Pacific Voice has been advocating. This means the urgency with which we must act and respond must be elevated, par for the course.

The GCCA+ SUPA project, which scales up climate change adaptation measures in specific sectors supported by knowledge management and capacity building, is a key part of our response. The project places people Pacific Island countries at the centre of climate change adaptation efforts, strengthening sectors responsible for providing water, food, health, marine resources and coastal protection.

The Impacts Methodology Handbook is a milestone, prepared specifically for us in the Pacific. It is a major step in what has been a journey of learning from our history of adaptation as well as reflecting on best practices to do better, not just in planning and reporting but also communicating the impact of our actions.

The Impacts Methodology and supported practice offers opportunities to analyse past actions, learn from successes and failures and gain insights into how we might improve, resulting in best decisions and tracking of the performance of direct supported activities using available skills and resources within the Pacific.

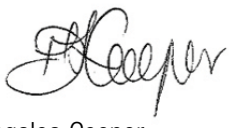
With the invaluable input of Pacific practitioners, this impact analysis methodology was field tested on completed recent interventions designed to enhance community resiliency through freshwater security, coastal protection, climate smart agriculture in cropping and marine resources management.

To discover the best tools that fit your needs, the four case studies in the Impacts Methodology Handbook from the Cook Islands, Federated States of Micronesia (FSM), Palau and Tonga make sense of what could be measured and how this could be achieved for different island settings and cultural context. The Handbook also presents the applied tools in an easy format with four key sections structured according to the sector-interventions sampled for data collation and analysis in countries that field tested the impact methodology.

It is important to promote best practices from past climate actions in capturing the knowledge gained and lessons learnt to inform strategic planning and build capacity that allows for scaling up best practice moving forward.

Our work cannot be done alone and hence the support of partners is highly valued and appreciated. I want to thank the European Union for financially supporting the GCCA+ Scaling Up Pacific Adaptation project, which has coordinated one action amongst three implementing partners; Secretariat of the Pacific Community (SPC), the University of the South Pacific (USP) and the Secretariat of the Pacific Regional Environment Programme (SPREP). This meaningful partnership and collaboration with member countries and country practitioners has made the task of framing the scope of such a methodology, to make sense of the impacts of our work in delivering positive outcomes for vulnerable communities, possible.

It is my hope you will find this Impacts Methodology Handbook helpful and useful. Fakaue lahi!



Tagaloa Cooper

Director of Climate Change Resilience,
Secretariat of the Pacific Regional Environment Programme (SPREP)

Definitions

Adaptation
The process of adjustment to actual or expected changes and their effects. In human systems, adaptation seeks to moderate or avoid harm and exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects[1].

Asset
An item of property that provides a current, future or potential economic benefit for an individual or other entity.

Beneficiaries
People who have received an input of support from an activity or programme.

Checklist of key characteristics to consider for measuring impact, specific to each sector-intervention.

Climate profile in this case for making sense of impact of interventions, is the summary of key data on historical air temperature, drought, and rainfall for a location with climate monitoring station.

Coastal protection measures taken to prevent the erosion of the coast. The stabilization of beaches by structural or non-structural vegetational means or through building breakwaters, seawalls, groyne or revetments.

Coping capacity[2]
The ability of people, organizations, and systems, to use available skills and resources, to manage adverse conditions, risk or disasters.

Effectiveness
In project management this refers to the extent to which the project's results were attained, and the project's specific objectives achieved.

Efficacy
The ability to produce the desired and intended result.

Food security the availability of food in the area and the ability of individuals within that community area to access, afford and source adequate food nutrition.

Freshwater security The capacity of a population to safeguard sustainable access to safe water for sustaining livelihoods, well-being and socio-economic productivity.

GNSS survey the use of GPS and Global navigation satellite system signals via a GPS/GNSS receiver and antenna to determine the form, boundary, position of objects or points in space relative to other forms, boundaries, or points.

Impact
The measurable or observable effect or influence something has on a situation or person.

Index
The aggregated average of each of the characteristics to give an overall measure.

Indicator
A specific, observable and measurable characteristic that can be used to show changes or progress a programme is making toward achieving a specific objective.

Natural assets
Consist of biological assets (produced or wild), land and water areas with their ecosystems, subsoil assets and air.

Outcome
The medium-term result or consequence of an action, situation, or event.

Output
The actions that contribute to achieving an outcome.

Quantitative
Measured by the quantity of something rather than its quality.

Qualitative
Relating to or measured by the quality of something rather than its quantity i.e. description of an event, activity, observation or experience.

Spatial analysis (beyond mapping) establish correlation between the marked objects, events in target area(s) over time. For instance, measuring location and dimension of coastal structures, the different elements (roof, gutter, downpipe, tank) of the rainwater harvesting, land use patterns.

Acronyms

AF	Adaptation Fund
ADB	Asia Development Bank
CC	Climate Change
CCA	Climate change adaptation
ENSO	El Niño Southern Oscillation
FAO	Food Agriculture Organisation
GCCA	The Global Climate Change Alliance Plus Initiative
GCF	Green Climate Fund
GEF	Global Environment Facility
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
iA	Impacts Analysis
PCS	Palau Conservation Society
PALARIS	Palau Automated Land and Resource Information System Office
SPC	Secretariat of the Pacific Community
SUPA	Scaling Up Pacific Adaptation
USP	University of the South Pacific
WHO	World Health Organisation

1 IPCC, 2014: Annex II: Glossary [Mach, K.J., S. Planton and C. {WGII, III}
2 www.preventionweb.net

Learning from the past preparing for the future.

A Pacific tailored impacts methodology applied to examine residual impacts of how effective coastal protection designs were. Some designs were better served with a blend of nature-based climate solutions across our coasts.

In making the case for Tonga's second NDC to plant 1 million trees by end 2023, continues with Department of Climate Change, MEIDECC. National initiative was launched in 2020 and a record of 352,928 tree seedlings planted. A plan to plant 9000 coastal & terrestrial seedlings plus 16000 mangroves seedlings in the next 2 months.

1. Introduction

An impact methodology was designed with assessment tools tested on a spectrum of adaptation interventions noting that different adaptations may need different methodologies.

To do this, information on past adaptation interventions completed in the past 5-6 years were collated and profiled. With data assembled and an increase in knowledge base on how to measure the impact of select adaptation interventions, it is important to clarify, document and communicate issues among stakeholders involved from the start.

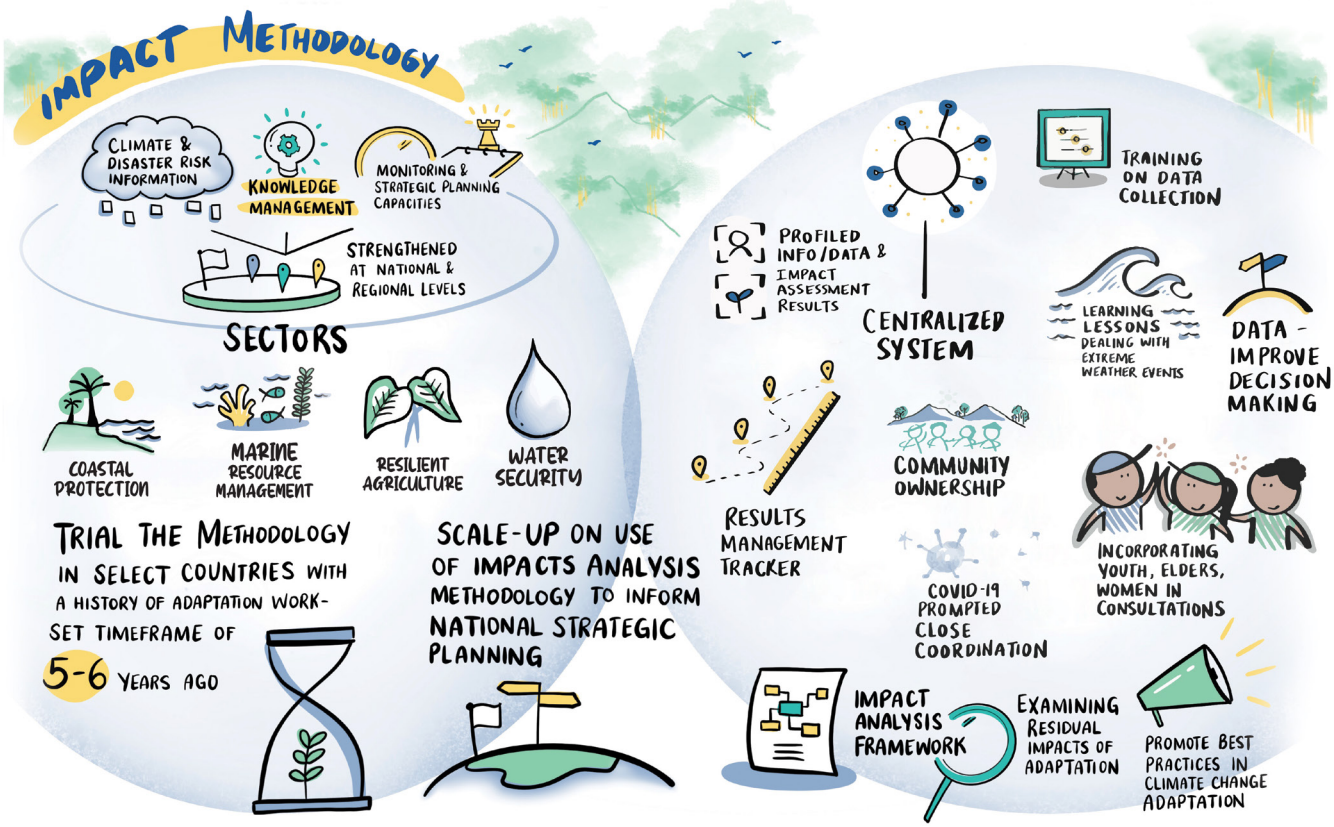


Figure 1 Infographic about the value-added Pacific impact analysis methodology.

This is a scaled-up methodology with experiential learnings from Pacific practitioners.

An applied framework was developed for examining the desired measurable impact of a range of sector-based climate actions, in different island setting experiencing different kinds of risks.

For each trial country, a suite of tailored tools with the extended version of methodology was applied to identify priority sector(s), with data derived interventions sampled to conduct an impact analysis.

Contributions from case studies and Practice Learning Series segments facilitated in 2022, therefore, propose a set of comparable indicators to measure impact for sector interventions across different biophysical environments with climate actions on coastal protection, marine resources management, freshwater security, and resilient agriculture- cropping measures.

1.1 PURPOSE OF THIS HANDBOOK

This handbook contains case studies drawn from the field trial of a tailored impacts analysis methodology (2020-2021) conducted in collaboration with practitioners in Cook Islands, Federated States of Micronesia, Palau and Tonga.

To practitioners, your experience adds value in measuring impact with this methodology to track adaptation and inform strategic planning of future climate actions.

The purpose of this practical guide is to make sense of impact of past climate actions as a measure of resilience whilst getting the assistance to where it is needed.

This handbook provides guidance on how to objectively assess the impact of completed adaptation interventions and identify those aspects that can be replicated and scaled up.

1.2 STRUCTURE OF THIS HANDBOOK

This handbook is only a guide based on Pacific experience and field lessons during the testing and refinement of the tailored tools to examine impacts of select interventions completed with the last 5-6 years.

Four main parts to the Handbook:

Part I Planning and profiling with an impact analysis framework.

Part II Conducting an impact assessment with tailored tools per sector.

Part III Reporting to stakeholders with impact snapshot.

Part IV Communicating impact stories of climate actions.

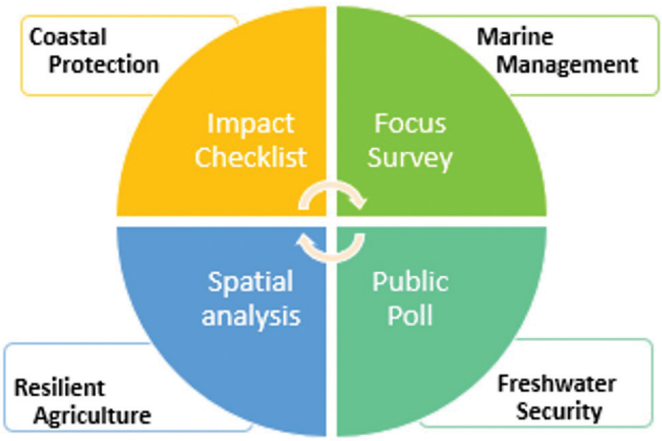
Users of this guide may modify and tailor questions to suit its purpose based on intervention type, community context and relevant available data information used to profile climate action(s) prior to field assessment(s) and analysis of desired impact to vulnerable people, community, and well-being.

The annexes have templates ready for record keeping of related data information for different intervention types: coastal protection, marine resources management, resilient agriculture and freshwater security.

Additionally, an impacts database for real time application of data input from utilisation of the suite of tools from the methodology provides a system of storing and managing the collected data for tracking measured climate actions-adaptation progress as a region or programme, at country level or sub-national level. Data profiles for countries that applied the impact methodology and suite of tools are stored and administered via the Pacific Climate Change Portal: https://impacts.pacificclimatechange.net/

The impact assessment tools are tailored for sector-interventions with utilisation of existing resources and expertise in country. Feedback from the impact checklists, the mapping information from the spatial analysis and gained insight from the focus group discussions enabled the process to identify where and how vulnerability has been reduced by these interventions; where and how adaptive capacity and resilience were enhanced.

A methodology focused on what characteristics to be measured, how to be measured, analysed and reported in practice, so as, to promote best practices in climate change adaptation in small island states in the Pacific is presented in this handbook.



TRIAL COUNTRY	SAMPLE PRIORITY SECTOR
Cook Islands	Marine resources management governed by tradition. Surface water catchments
Federated States of Micronesia	Rainwater harvesting on atolls
Republic of Palau	Resilient agriculture. Rainwater harvesting
Kingdom of Tonga	Coastal protection, structural and nature-based

Figure 2 Main tools tailored from collaboration with countries that trialled the impact analysis (iA) methodology, 2021-2022.

2. Impact Analysis Methodology

Tracking adaptation history at the country level, enables any priority setting and learning whilst gaining traction in implementation of its climate change policy framework.

There are limitations to tracking with aggregated metrics, however, this can provide the first step for a generalizable method in analysing the impact of climate actions in the Pacific.

Extended version of iA methodology means to measure level of impact of sector focused actions that benefit local communities.

Light version of iA methodology: distinguished by level of effort and resources to plan and conduct an impact analysis of the intervention(s) in question.

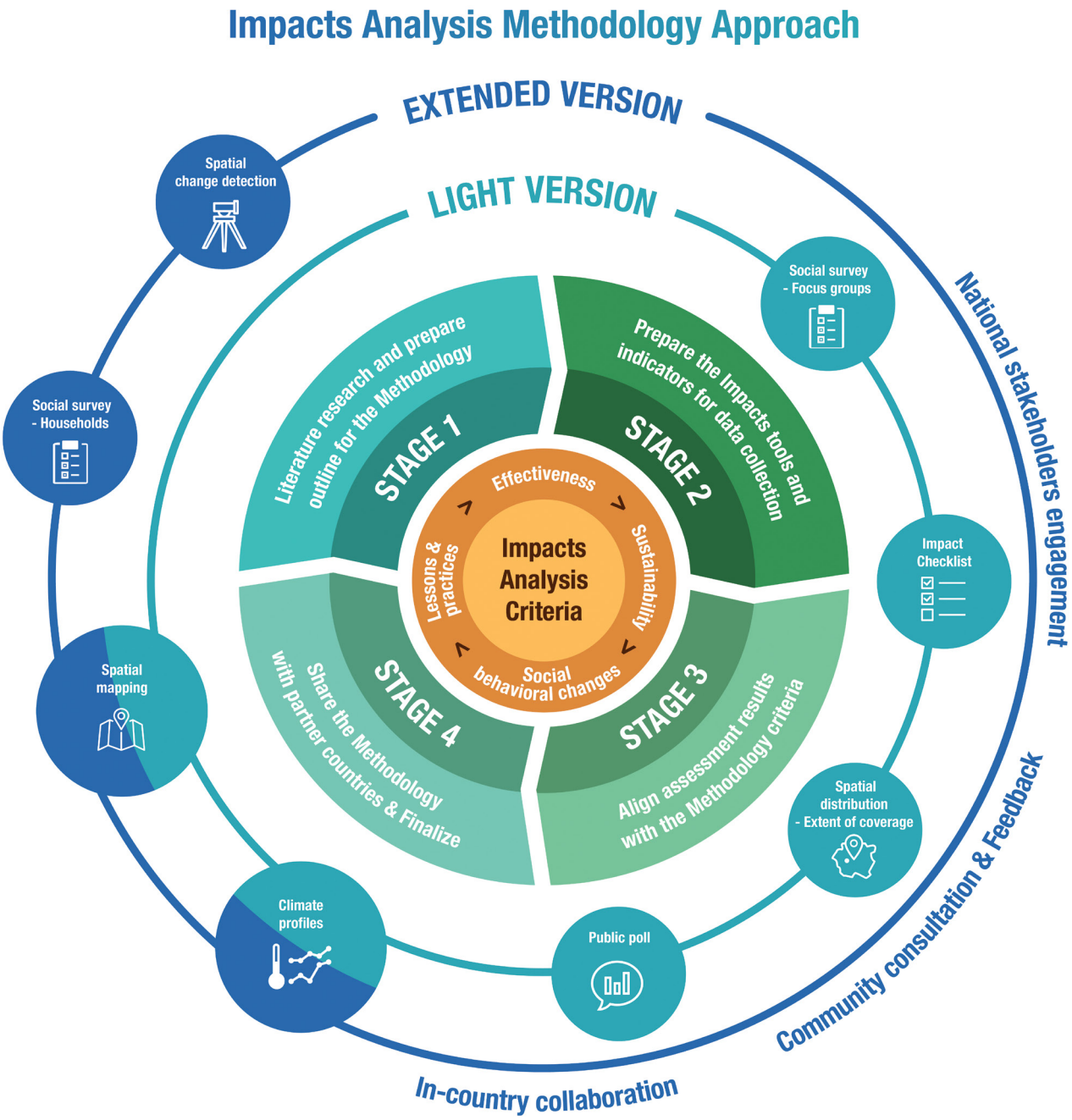


Figure 3 Impact analysis methodology wheel.

TARGET GROUP:

Policy makers, disaster risk reduction managers, public health-development practitioners, budget planners in national and local authorities, regional organizations, locally based and international non-government organizations, interest groups in the public-private sector.

2.1 Impact Indicators

The indicators are varied in nature and attributes to achieving **key result areas of adaptation**[3] in Figure 4 below:

Figure 4 Key results areas of adaptation

The indicators and sub-indicators are location-specific and time-sensitive, adapted based on the following:

- A standard listing of indicators used by multilateral donors like Green Climate Fund (GCF), Global
- Environment Facility (GEF) and Adaptation Fund (AF).
- Scalable over the entire scale of interest. Applicable to country level or subnational and localized level.
- Cover the different biophysical conditions, geographical, habitat and climatic types e.g. terrestrial, coastal, marine, atoll, high/low volcanic islands.
- Unbiased and easy to apply with well-defined measurements and limits.
- Availability of relevant baseline data.

It must be considered that some indicators may become redundant after analysis. Yet, field experiences from the countries that trialled the impact methodology indicated its potential to get data for a spectrum of sector-interventions in each socio-cultural and biophysical context as means to make sense of the impact.

3 Planning Framework and Schedule for the Preparation of the Impact Methodology 2021.

CRITERIA	INDICATOR CODE	INDICATOR DESCRIPTION	METHODOLOGY
Effectiveness	W1	Water source and condition as proxy to measuring improved drinking water coverage.	• Observations & use impact Checklist that include physical attributes of local environment.
	W2	Assesses the improved state of water facilities and increase in water availability.	• Observations & use of impact Checklist. • Spatial mapping of water infrastructure elements with extent water tanks coverage.
	A1	Soil capability. Percent of land available for food production. Percent of farmers who promote soil health practices	• Spatial analysis information tool. • Rate uptake of soil health and land-care practices
	A2	Soil training program. Percent increased access to crop varieties.	• Observations & record of scoring for each variable. • Ref. Impact Checklist for Resilient Agriculture form. • Focus group interviews with farmers. • Spatial mapping information tool.
	C1	Structural design built to protect the coast from frequent storm surge, flooding, sea level rise. Degree of physical condition of the structure.	• Observations & use impact Checklist that include physical attributes of local environment.
	C2	Area of beach recharged with sand and beach condition over time pre and after structures were built. Healthy/ eroding signs with the shape of the beach surface, coastal vegetation cover, recruitment of small trees, regrowth and signs of local influence-rubbish, footprints, sand extraction & other users.	• Observations & use of impact Checklist. • Spatial mapping of change detection along the focal coastline.
	M1	Conservation Value; Control access to protected zones and management actions for species conservation	• Observations and use of Impact Checklist • Focus group interviews

CRITERIA	INDICATOR CODE	INDICATOR DESCRIPTION	METHODOLOGY
Lessons and Practices	M3	Extent of ownership; Environmental awareness programme in place, training activities for monitoring and a form of protection put in place (statutory or other)	• Focus group interviews • Household Survey
	W5	Ascertains if there is improved access to safe water by households, the special needs vulnerable groups: persons with disabilities, the elderly, widows, single mothers, and children.	• Focus group interviews • Household Survey
	A4	Level of awareness. Percent of families with subsistence farms. Noted change in farmers' household income with an improved crop yield.	• Spatial mapping infor. Analyze records of agriculture census data if available. • Focus group interview results.
	C5.	Number of assets and asset value of coastal protection measures, including nature-based solutions; derived co-benefits.	Liaise with national Climate change focal point for cost details on fiscal budget of built structures.

CRITERIA	INDICATOR CODE	INDICATOR DESCRIPTION	METHODOLOGY
Social-behavioural change	W3	Level of improvement to existing water harvesting storage systems.	• Observations & use impact Checklist that include physical attributes of local environment.
	W4	Tracks the capacity to either operate, maintain and or local management of the water supply system.	• Observations & use of impact Checklist. • Spatial mapping of water infrastructure elements with extent water tanks coverage.
	W6	Level of participation, awareness, and sense of improved sanitation standard.	• Spatial analysis information tool. • Rate uptake of soil health and land-care practices
	A3	Farming practice. Number of families with farms and composition of farmers.	• Observations & record of scoring for each variable. • Ref. Impact Checklist for Resilient Agriculture form. • Focus group interviews with farmers. • Spatial mapping information tool.
	M2	Anthropogenic impact; Boating & recreation activities, signs of sandmining, coral harvesting/ bleaching, and sedimentation.	• Observations & use impact Checklist that include physical attributes of local environment.
	C3.	Ascertain level of community management actions taken to protect the coastline. Scoring on clean surrounding area, beach control access, evidence of beach protection and its vegetation, community coastal replanting and brush protection to help with sand build up, management actions to promote beach accretion and control set up signs to access beach.	• Observations & use of impact Checklist. • Spatial mapping of change detection along the focal coastline.
	C4.	Ascertain level of awareness and community sense of safety with protection of property and land. Expressed as number of people or vulnerable groups whose livelihoods have improved/disrupted as a result, of the adaptation action. Nature of services and type of facilities set up at the reclaimed coast area (if any).	• Observations and use of Impact Checklist • Focus group interviews

CRITERIA	INDICATOR CODE	INDICATOR DESCRIPTION	METHODOLOGY
Sustainability	W7	If structural measure is still intact, the extent to which it has/not been maintained, and whether natural assets were enhanced or damaged; derived co-benefits if any. Tracks investment in water security measures at one place over time.	Liaise for with national CC focal point for cost details on fiscal budget of built structures, project expenditure reports.
	A5	Percent farming households with improved/ diversified crop productivity, mixed farming.	Meta data from the social survey eg. people receiving agricultural extension services, training of individuals in communities.
	M4	Level of protection (statutory or other governance), community-based training for monitoring effectiveness of Ra'ui.	• Focus group interviews • Observations and use of Impact checklist

Figure 5 Indicator description and tools for each sector intervention type.

Ruth "Rur" Elbelau, Member of the Ngaraotellouch, Women's group of Melekok. Farm is in Melekeok, Palau and she is planting taro as part of "*The Republic of Palau: COVID-19 Response for Affected Poor and Vulnerable Groups*" project.

Women farmers - Agriculture in Palau

2.2 Impact Tools

When using the suite of tools tailored for each priority sector, bear in mind the resources required, available capacity and time taken to conduct an impact assessment and its analysis of the data. Therefore, a selection of a tool from each of the main tools can provide a snapshot on impacts for select interventions profiled and examined.

Figure 6 describes the effort level and current capacity with required time and available resources determines the extent of applying the tailored impact methodology to the intervention(s) in question.

Figure 6 Impact assessment at Angaur, Palau utilising the water security checklist.

Impact methodology	Duration to apply specific tool	Effort level (people, skills set)	Budget level (<10000 USD, moderate)
Light version			
Profiling adaptation history	10 working days	Basic knowledge to research and collate	No cost
Impact Checklist	<2-4 field days	Some knowledge of intervention	<$5,000 Low
Focus group interviews	1-3 hours field	1x Community facilitator per group	<$5,000 Low
Spatial distribution (mapping extent)	3-5 working days field	1x Basic GIS user knowledge	<$10,000 moderate
Public Poll	1 hour outreach		
Climate profile of target area (from nearest weather monitoring station)	5-7 working days	Specialized	Available knowledge products.
Extended version			
Social surveys (household)	< 20 working days	Community awareness	<$10,000, moderate
Spatial analysis (change detection)	<10 working days	Specialized	<$10,000 moderate
Field observations (+mapping)	3 hours -10 working days	Moderate experience	<$10,000 moderate

Figure 7 Effort level and time spent on an impact assessment determines what constitutes a light version of the methodology. Budget estimate is based on field costs during field trial of iA method.

SOCIAL SURVEYS	
For benefited households	Interviews with households with data relating to key result areas of adaptation irrespective of intervention type. Six sections with tailored questions on household level preparedness, health and well-being, awareness of changes to climate and the natural environment, infrastructure and built environment since the adaptation. Refer to Annex 2 for a household survey template.
Focus Groups	Understand the mindset of people with a collective interest and as direct beneficiaries of the action(s) undertaken i.e. impact of interventions on general well-being of the group and its community.
Public Poll	Gauge people perspectives on level of awareness of climate science, risks - preparedness, outreach and access to information, life satisfaction. Refer to Annex 2 for the Public Poll.

What you need:

Download the KoBoCollect App on your Android tablet or phone (Refer to Annex 3 for the KoBotool box guide). The three social surveys can be carried out using the KoBotool box online tool. As outlined in the KoBotool box guide the surveys can be synced to the KoBoCollect on.

2.2.1 Field Observation

Give time and effort to plan well before going out to the field as it provides fresh perspective and awareness of interventions that would have been profiled during the planning for an impact assessment. The data templates in the Annex section aim to organize field data collected.

What you need

- Activity Profile (completed in the Adaptation Profile template)
- Impact Checklists Slate + Pencil
- Camera & Phone
- Uploaded the Kobo Toolbox app on your phone with the focus group details
- Water & Sunscreen

INTERVENTION TO BE ASSESSED	TEMPLATE	
Resilient Agriculture- agroecological	Checklist - Agriculture (Annex 6) Focus group survey	Marking waypoints for households surveyed (Annex 6) Household Survey questions (Annex 2) Public poll questions (Annex 2) Key steps for taking a Focus group survey (Annex 2
Coastal protection	Table for Site photograph comparison (Annex 2) Checklist – Coastal Protection Focus group survey	
Freshwater security	Form B. Marking waypoints and assessing condition of water systems. (Annex 5) Checklist – Freshwater Security (Annex 6) Focus group survey	
Marine resources management	Checklist – Marine Resources (Annex 6) Focus group survey	

Figure 8 List of data recording templates

2.2.2 Impact Checklists

With the use of a checklist structure to conduct a first level impact assessment, there are several caveats which concern the validity of the assessment results. Some responses were qualitative and took the form of 'yes' or 'no' answers or graded from 'low' to 'some' to 'a large amount'.

For others, numerical data were available which could have been used in their raw state. But even for the numerical data, scales were heterogeneous so the possible responses to each indicator be mapped on a simple scale to allow for a reasonable amount of spread among the possible values of the data.

For instance, a 'yes' answer could be assigned the maximum value of the given score range per sector adaptation criteria and a 'no' answer the minimum value of 1, or some values in between. Utilizing a scale of 1-4 or 1-5 also has a central score which means that the well understood concepts of average, maximum and minimum can be used to anchor the responses for nonnumerical data presented in some results.

Refer to Annex 7 for sector specific checklist templates.

2.2.3 Mapping and Spatial Analysis

Visualizing the array of interventions with marked elements in a GIS environment, increases understanding of the coverage and extent of distribution of adaptation conducted over time. This is valuable to monitoring progress of such climate actions and informs strategic planning on where further investment of a spectrum of interventions to be supported towards building community resiliency. Mapping involves documentation with marked elements stored in a relational database for posterity and to be updated with new spatial information work.

For more details on case examples, please refer to links:

Palau case:
Map coverage and distribution of piggery farms in Babeldaob; map coverage and distribution of water tanks and infrastructural elements of water storage for the community in Angaur[4].

Tonga case:
In geolocating all marked elements of an intervention, this provides the basis to map for any detection of significant coastal changes either it be erosion or sand accretion, plant growth areas over time pre and when the interventions were implemented[5].

4 https://library.sprep.org/content/impact-assessment-past-climate-change-adaptation-actions-situation-report-palau
5 https://library.sprep.org/content/impact-assessment-past-climate-change-adaptation-actions-situation-report-tonga

2.2.4 Climate profiles

Climate profiles within a 10-year timeframe provides insight on the physical climate change risks since intervention was established. For structural measures be useful to consider how effective an intervention design has been tested through time based on its exposure to the risks identified at the time of conducting a vulnerability assessment onsite.

Request for climate profiles can be sought via the National Meteorological Services websites and the Pacific Meteorological Desk.

Source:

https://www.pacificmet.net/products-and-services/online-climate-outlook-forum

http://www.bom.gov.au/cyclone/tropical-cyclone-knowledge-centre/history/tracks/

Enhancing water security through community owners' capacity building to operate and maintain the water system, however unimproved the water system. With use of spatial mapping, location data of water sources and condition is proxy to measuring improved drinking water coverage for high risk communities.

PART I: Planning & Profiling Past Actions

Any impact assessment may only provide a partial picture for a particular intervention, but it can still provide important information in the development field for best practices to promote more effective and sustainable interventions in the future. Four sets of criteria guided the planning and profiling:

I. **Effectiveness.** This refers to the extent to which the project's results were attained, and the project's specific objectives achieved. It requires an examination of the documents relating to the design and implementation of the specific intervention, including its scope, funding, objectives, purpose, time frame and effort expended.

II. **Sustainable social and behavioural changes.** Includes the theory of change and the triggers for how, why, and when the human behaviours changed. These are best examined through a medium to long term framework such as an impact assessment designed to test theory of change and assumptions made then during the life of project. The theory of change enables stakeholders to embed an intervention within a larger strategy and broad, transformative analysis (Stein and Valters, 2012:5), such that it articulates a vision of meaningful social change, with specific steps or actions mapped. For the Palau experience, it began with setting a pathway to achieving community resiliency that is focused on its country priorities and on which achievements can be measured. This is also an iterative process such that unintended outcomes from the interventions reflect the emerging conditions and new knowledge acquired, the social background and interactions between the stakeholders benefitting from the intervention.

III. **Successful lessons and practices** gained from the reported intervention, particularly on how vulnerable groups, such as persons with disabilities, the elderly, women, youth or migrants have been involved or had their livelihood improved by the intervention. Alternatively new technology that improved beneficiaries coping strategies might be among the successful practices.

IV. **Overall sustainability of the completed climate change adaptation interventions.** If a structural measure was part of the intervention, this would include whether the measure is still intact, the extent to which it has or has not been maintained, and whether natural assets were enhanced or damaged. Alternatively, if the intervention focused on capacity building, then this would include the extent to which the new skills have been applied, or in the case of an educational activity, whether the skills have been incorporated into the curriculum.

First step: Desktop review of completed adaptation actions.

A few broad questions guided the desk review

- Where have projects been implemented?
- What actions have been conducted by listed projects?
- What adaptation outcomes were these listed projects seeking to achieve?
- How have the impacts of projects been measured and evaluated?

What set of indicators that can capture the impact of the adaptation actions were implemented by projects?

The profiling exercise helps to identify and assess available information, complementary to the learning and knowledge exchange amongst in-country personnel and regional contacts.

Tracking adaptation history at the country level helps identify key sectors and understand the efficiency of assigned resources. However, there are limitations to adaptation tracking and measurement which include the ambiguity of the concept of adaptation per se and the lack of comparable, aggregated metrics (Ford and Berrang-Ford 2015, Magnan 2016, Tompkins et al 2018).

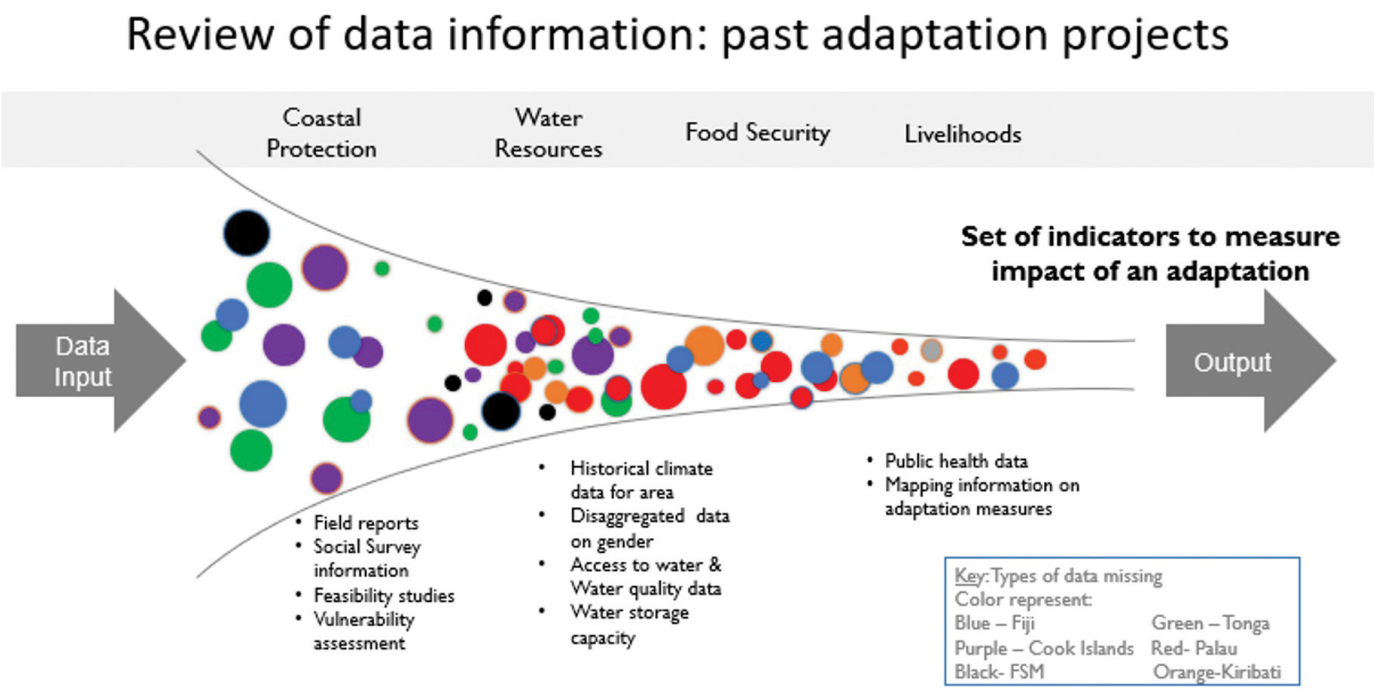


Figure 9 Schematic of the filtering, sorting and collating available data information

Prior to tracking adaptation actions, a reference baseline is needed to stocktake what is occurring on the ground (Tompkins et al 2018) so that future efforts of tracking can be adequately sized and compared. More information about the built impacts database[6] on Pacific derived data information about climate actions last 5-6 years profiled for impact analysis input.

Second step: Selection of project (s) and activities to be profiled (template in Annex 2).

Three categories of data were accessed during the profiling and data search:

- Archived project reports.
- Accessible online journals and publications, country reports, and reports published by regional and international organisations such as ADB, World Bank, WHO, FAO, SPC, SPREP, GEF, GCF, AF.
- Informal information sources such as personal communications from persons involved in the project implementation.

The usual data information sources accessed:

- Field assessment surveys, feasibility, and vulnerability assessments.
- Spatial distribution data
- Historical climate profiles from stations near to project sites.
- Data disaggregated by gender.

6 https://impacts.pacificclimatechange.net/

PART II: Conducting an Impact Assessment

Before initiating a plan to conduct an impact assessment, profiling of past climate actions is required. Factors considered in the selection of benefited areas from a history of adaptation interventions need to be based first on the availability of relevant information and data archived from past projects, in-country consultation with key people directly involved in those actions who may be able to shed institutional memory.

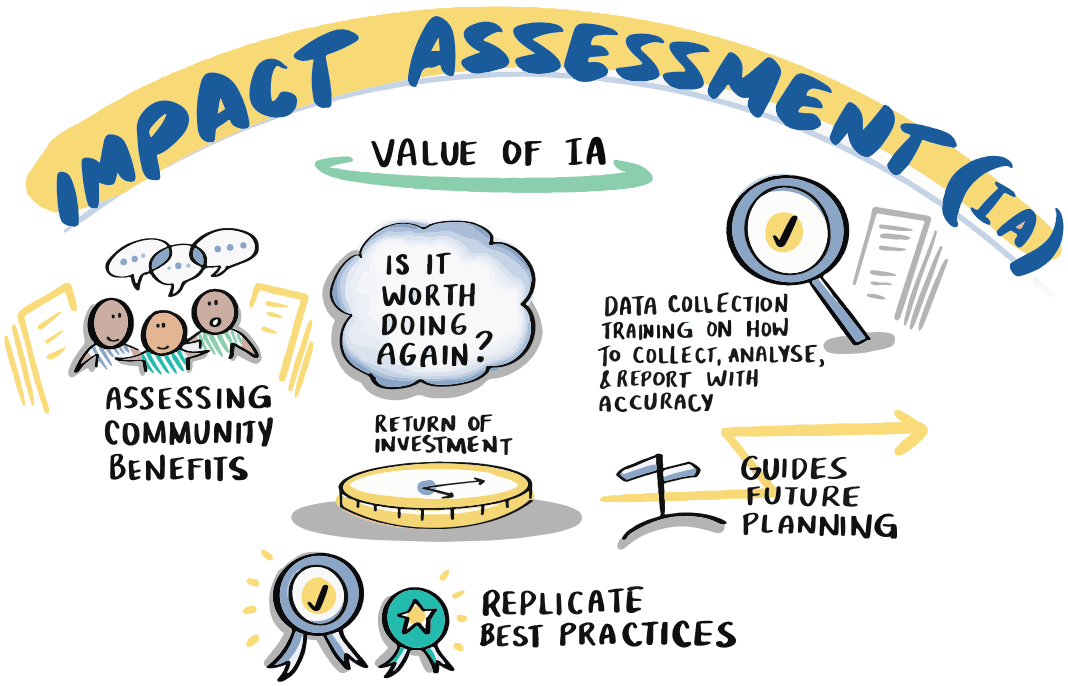


Figure 10 Above: Overall schematic on the value of an Impact Assessment
Below: Snippet of the Marine Resource Management Impact checklist form

IMPACT CHECKLIST FORM: MARINE RESOURCE MANAGEMENT MEASURES					
Coastline (N-S orientation)	Country ID:	Location: (within a 500m radius)	Name of reef complex:	Tide:	
Year activity started	Year activity ended	Activity type	River mouth width (circle):	GPS start:	GPS End:
			<10m 11-50m 51-100m 101-500m		
Survey date:	Time start:	Time end:	Survey team:		
Habitat type: (circle)	Coral reef system, Estuarine, Lagoon, Beach, Mangroves, Seagrass areas				
Turbidity: (secchi measure) muddy silty water, some murkiness, clear water			Condition of Day (rain, clear sky, windy):	Weather past 7 days: (is it stormy, rainy, windy, clear)	

FOCUS GROUP DISCUSSION:

It is important that that there is connection with the community based on history of positive engagement by interest parties prior to facilitating a field visit with intent to interact with target group.

Results from the focus group help rank the characteristics to measure under the section on 'Peoples Perspectives' listed in the Checklist templates.

Best to organise a few group discussions and compare perceptions of climate change related environmental and social change in the community despite interventions to reduce vulnerability of people, public safety and livelihoods.

Prompt questions to guide the discussion: (please refer to the Annexes for the focus group questions for the social elements listed on the Checklist per sector).

- The impacts of adaptation projects on overall beneficiary well-being in communities.
- How far the adaptation projects have impacted health and livelihood outcomes.
- How far adaptation projects have contributed towards healthier lifestyles.
- Under which circumstances the adaptation projects/programmes has achieved outcomes and impacts
- What are some of the main barriers to achieving outcomes, including structural factors such as access to quality of life.

Types of focus groups: can be the committee managing the water system, the chiefs/leaders, the women association, youth group council, taro farmers.

Respondent requirements

Choose between 9-12 participants who meet one of the following requirements:

- Must be an adult member of (benefiting) household
- In the case of a youth, must be 15 – 35 years old
- Ideally someone who has benefited directly from an adaptation measure
- Must be knowledgeable about the households' overall situation

Suggested for pre-discussion coding, consent and preparation.

- Use a digital recorder to record the entire conversation. Test the recording prior to the start to ensure it is working and that it captures the sound well.
- Read out loud the consent paragraph and ensure that every respondent consents to participating in the focus group discussions. Those who do not consent should be dismissed.
- Ensure to gather information from each participant regarding their gender and whether they benefit from any of the adaptation projects/activities for which impact is being assessed.
- Conduct the focus group discussion in a quiet area and do your best to ensure a polite and welcoming atmosphere. If the respondents are uncomfortable, they will not be willing to share much information and thus compromise the quality of the data.

Consent script

Good morning/afternoon. Thank you for coming to meet us.

We would like to invite you to give us your opinion on a range of questions that will help us to get a better understanding of the impact the two projects on you and your household. Your participation in the focus group is voluntary. There are no right or wrong answers, and we want you to feel free to express your views honestly. You may always refuse to answer an individual question and you may also refuse to answer all questions.

We want to strongly emphasize that all answers and information collected during this discussion will be kept strictly confidential. Moreover, we will not be recording your names and we will be assigning you numbers to protect your identities. We also ask that all participants please respect the privacy of each person here by not talking about who said what in this meeting outside of this room. There are no risks to participating in this discussion, and anything you say here today will not affect your household's access to water. There is no direct benefit to you if you participate in the interview, other than knowing that you are helping us to assess impact of the projects on yours or your household's wellbeing.

The discussion will take approximately 30-45 minutes.

We would like to ask your permission to participate in this group discussion and record the discussion on this tablet/laptop. Do you agree to participate and have this conversation be recorded?

We will invite one participant to talk to us again after to answer some additional, more detailed questions. Again, there will be no risks nor benefits to the selected participants.

Discussant identification

Name of moderator: ..... Name of note taker: .....

Island: ..... Location (community): .....

Date: ..... Start time: ..... End time: .....

Focus group type (can be the committee managing the water system, the chiefs/leaders, the women association, youth group council, taro farmers):

Participants

	RESPONDENT SEX	RESPONDENT AGE		
1				
2				
3				
4				

PART III: Reporting to Stakeholders: Impact Snapshots

Snapshot reports: Cook Islands[7], FSM[8], Palau[9] & Tonga[10]

Snapshot Report Year

Sector(s)

-Country-

ASSESSING IMPACT AT INTERVENTION LEVEL

Snapshot Outline:

1. **In context:** background on site(s) intervention of focus and priority sector.
   Provide one paragraph on objective(s) of the snapshot report
2. **How to conduct an impact assessment:** Explain the process and steps taken to select site(s) to apply the impacts analysis *methodology*.
3. **Impact Indicators:** Choice of indicators based on the intervention type and available baseline data collated that fits measure for criteria element.
4. **Impacts at a glance:** Summarise the social survey results whether it be from household interviews, focus group discussion or conducting a public poll.
5. **Mapping analysis:** documentation of marked elements stored in a relational database for posterity and to be updated with new spatial information work.
6. **Climate profiles:** 10-year record min-max air temperature, cyclone, drought, sand periods of low rainfall from the nearest climate monitoring station to the area of focus.
7. **Overall mean impact rating:** Using the impact rating approach permits a quick assessment of and comparison between different sector-based adaptation interventions. Checklist datasets provides a rapid summary of different elements and characteristics to measure impact of an intervention that typically categorize information along geographic, sector, people's perspectives, or some combination of the three.
8. **Reporting back to stakeholders:** Provide an in-depth summary reflecting on the impact assessment work conducted. Data input to the impacts database: www.impactspacificclimatechange.net
9. **Communications:** presenting the results of the impacts assessment back to the community and depositing data information to the agencies that data was sourced from.

7 https://library.sprep.org/content/snapshot-2021-raui-marine-conservation-water-security-measures-cook-islands-assessing
8 https://library.sprep.org/content/snapshot-2021-water-security-measures-federated-states-micronesia-assessing-impact
9 https://library.sprep.org/content/snapshot-2021-agriculture-water-security-measures-palau-assessing-impact-intervention
10 https://library.sprep.org/content/snapshot-2021-coastal-protection-measures-tonga-assessing-impact-intervention-level

PART IV: Communicating Impact of Actions

Impact stories are derived from the Focus group surveys. During a focus group discussion

1. The interviewer will choose a question from the Focus group Survey to video record. Please choose different questions as focus for each interviewee.
2. After seeking the interviewee's consent to video record him/her as he/she voices her response to the question, the interviewer will start video recording the interviewee's response
3. All videos recorded are labelled with date and interviewee's survey details

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ANNEX 1. Adaptation activity Profile

TITLE OF ADAPTATION INTERVENTION: Enhancing the climate resilience of vulnerable island communities in Federal States of Micronesia (Adaptation fund project)
Activity 1: Strengthen water and livelihood security measures to help 6 outer atoll islands adapt to impacts of climate change related to water, health and sanitation
Water Harvesting and Storage System (WHSS) repaired and installed in 6 atoll islands
Repairing household rainwater harvesting and storage systems and Constructing community rainwater harvesting and storage systems.
Activity 2: Construction of self-compositing toilets
Activity 3: Provide communities with climate resilient infrastructure to help relocate from high-risk coastal inundation sites in Kosrae

Timeline of Intervention (year start): 2018 End Date: 2022
Sector: *Water Resources & Coastal zone management*
Sub-sector: Rainwater harvesting, Climate resilient infrastructure
Climate Change Impact of focus: Drought, Tropical cyclones/typhoons
Methodology/approach taken to implement the adaptation:
Vulnerability assessment, Cost benefit analysis
Socio economic assessment survey?
Type of organization:
Implementing Entity: Secretariat of the Pacific Regional Environment Programme (SPREP)
Number of people served:

State	Yap		Chuuk		Pohnpei		Kosrae	
Island	Eauripik	Woleni	Satawan	Lukunor	Kapingamarangi	Nukuoro	Malem	Utwe
Population	110	800	692	848	350	210	1300	983
Male	54	425	353	432	179	107	663	458
Female	56	375	339	416	171	103	637	224
Households	18	85	97	119	60	36	525	169

Location:

Yap, Chuuk, Phonpei & Kosrae (Refer to above table)

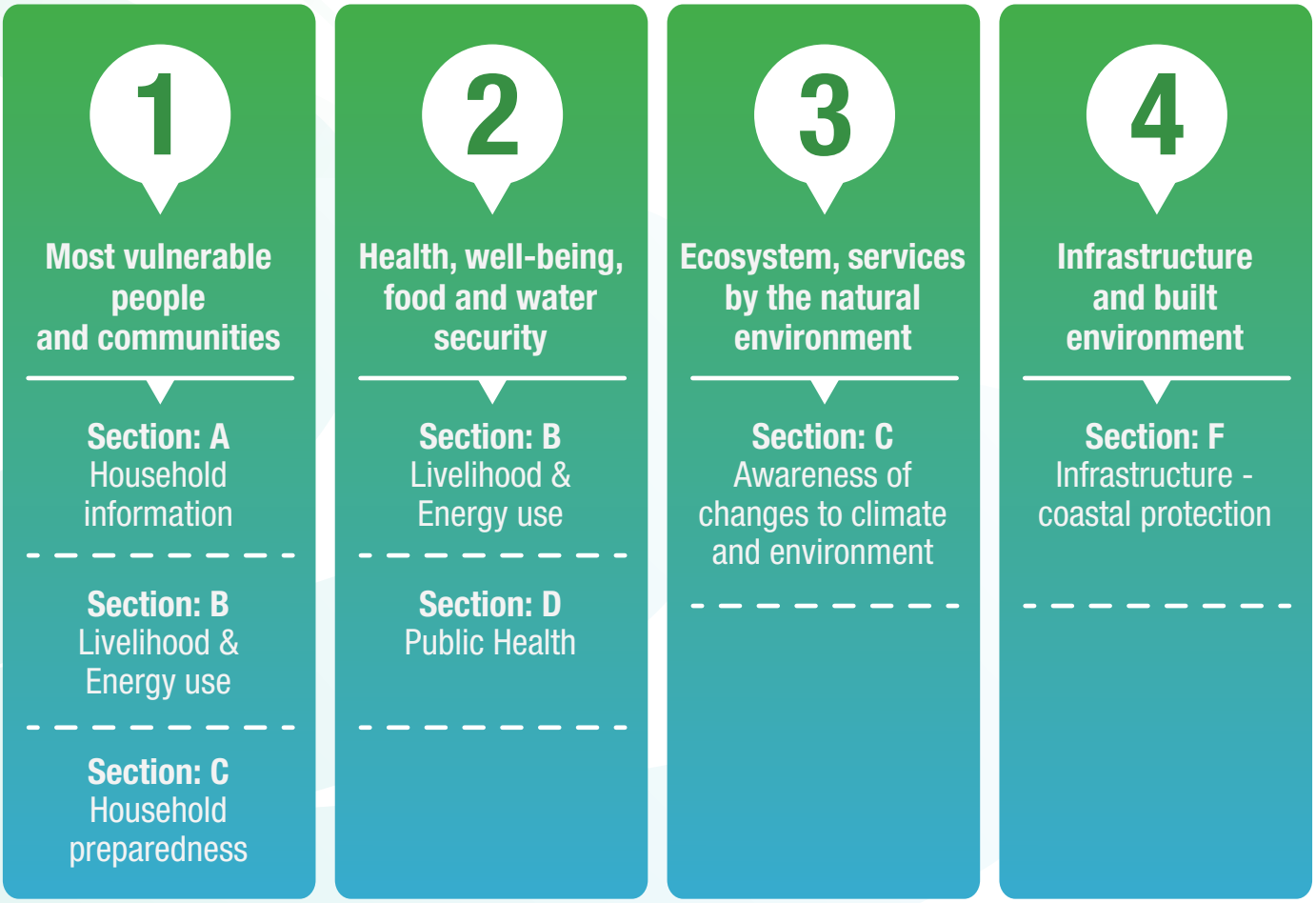
INDICATOR: Activity 1: **Strengthen water and livelihood security measures to help 6 outer atoll islands adapt to impacts of climate change related to water, health and sanitation** Available capacity (volume in cubic litres) of water per person per day Storage capacity for potable and grey water at household and community level	Characteristic to measure: Presence of good quality water, sanitation and health benefits for women and men during climate extreme events (drought, post cyclones, etc.)? Co benefits: Reduced Pressure on
Baseline: Poorly maintained traditional water harvesting and conservation infrastructure and technology available. cannot cope with the dry seasons. No monitoring stations on island to collect and monitor rainfall data to advice on water conservation practices including advice on other sectors Water cisterns and tanks in poor conditions (leakages, contaminated). Also, poor guttering and down piping No maintenance of water harvesting systems at community with the lack of specialized equipment and maintenance planning. Very limited awareness of WASH techniques useful for application during drought periods and post-typhoon situations	Metric Unit (if applicable): m3, ft3, liters
Data type: Project community survey: Technical surveys on community use of water in the community villages, sanitation & health incidences on island. Site surveys: Well survey (depth, conductivity), Groundwater survey quality testing, Water quality testing (chloride testing), Rain catchment inventory, Household interview, Photo documentation, Drone survey Socio economic assessment survey? National census data Baseline survey WASH survey	
Data selection & justification: Available data will help assess how the highlighted activities/interventions of securing and strengthening water security have impacted on the communities livelihoods, sanitation and health and overall well-being.	
Data collection tool (1): Technical survey (community use of water)	Timing of data collection: 2020

ANNEX 2. Social Surveys

HOUSEHOLD SURVEY QUESTIONS

ABOUT THE HOUSEHOLD SURVEY:

Noting that a variety of adaptation actions have achieved many natural resource management goals, the questionnaire format suggests a systematic way of collecting data on four key result areas of adaptation:



Survey consists of 6 sections. Focused questions per section can be used on its own given the realistic level of sampling effort and appropriate approach to conduct surveys with either a focus group or benefiting households of adaptation actions in focus.

SECTION A: HOUSEHOLD INFORMATION

Household ID#:	Interviewer:	Date : Time start: Time end:
Name of respondent:		
Role in household: *tick* ☐ Mother ☐ Father Other: _____	Number of children: Number of women: Number of men: Do you have any person with disability in your home?	State/District: Village: Island: Location on map (GPS):
Number in family:	Respondent's formal education level: *please circle.* Elementary High School College None	

QA1. HOUSING
please write number in appropriate boxes.

I) Type of dwelling and how many houses does your family own?

Corrugated iron		Thatched		Other	
Wooden/bamboo		Concrete		**TOTAL (HOUSES)**	

II) Furniture and appliance ownership: *Tick your choice.*

Radio/cd player		Sewing machine		Refrigerator	
Gas stove		TV/video		Other (eg. torch)	
Kerosene cooker		Beds			

III) Lighting facility.

Kerosene lamp		Own generator		Main power supply	
Benzene lamp		Village generator		Solar lights	

IV) Other infrastructure & technology .

Telephone, mobile		Internet		Outboard	
Computer		Weedicide container		Pit toilet*	
Radio		Water tank		Water-sealed	
Television		Dug well		Flush toilet	

*if there is no toilet, ask where do they go to?

QA2. Please answer if you selected water tank in Q1 (iv). How many water tanks are owned by your household? .....

QA3. What is the storage capacity of your household's tank(s). Please tick one of the options below as an estimation.

☐ Drums to store water ☐ <1,300gallons Storage tanks ☐ 2,700-5,200gallons Tank ☐ >5,400gallons Tank

SECTION B: LIVELIHOOD & ENERGY USE

QB1. Compared to 5 years ago, would you say that your life is better, worse or the same now?
Please tick which box is most appropriate. SINGLE CODE FOR EACH.

☐ Much better ☐ A bit better ☐ The same ☐ A bit worse ☐ Much worse ☐ Don't know

QB2. In response to the previous question QB1, Please specify why.

.....

QB3.
I) How many in your household are currently employed? SINGLE CODE FOR EACH

Male		Female	

II) If response to QB2. i) is No. Where are your other likely source of income from?

Source of income:	Tick choice	Resource type	Write choice (I-VI)	How often do you sell? Choices:
From selling vegetables, root-crops		Agricultural produce		I. Every day
From selling fish and other seafood		Fish and seafood		II. A few times a week
From selling mats, handicrafts		Mats, handicraft		III. About once a week
Remittances				VI. A few times a month
Canteen/Shop				V. Once a month
Other sources of income				VI. Less than once a month

QB4. List in order from highest to lowest what you spend your income per month on and how often?

How often income is spent on the following:	Write choice (I-IV)	How often do you sell? Choices:
Education of the children		I. Every day
Church		II. A few times a week
Household expenses		III. About once a week
Community obligations		VI. A few times a month
Other. Please specify		V. Once a month
		VI. Less than once a month

QB5. Does anyone go fishing in your household?
If yes, then **Who goes fishing in the family?** If no fishing move to next Section. Please tick.

☐ Mother ☐ Father ☐ Uncle ☐ Aunty ☐ Grandmother ☐ Daughter ☐ Son ☐ Nephew ☐ Niece

QB6. What type of gear is used? Please tick (4) the appropriate boxes on who uses the gear?

Type of fishing gear	Tick choice
Speargun	
Fishing net	
Handline	
Fish trap	
Other fishing gear. Please specify	

QB7. Please list what pets and livestock or other assets that your family own. Type of animal. Please tick.

☐ Cattle ☐ Chickens ☐ Pigs ☐ Horses ☐ Ducks ☐ Goats ☐ Dogs/cats ☐ Other

QB8. Please share how often you or your family harvest for subsistence.

Resource: Marine (specify)	How often do you harvest to sell: *Circle choice*	Resource: Land (specify)	How often do you harvest to sell: *Circle choice*
	I. Every day		I. Every day
	II. A few times a week		II. A few times a week
	III. About once a week		III. About once a week
	VI. A few times a month		VI. A few times a month
	V. Once a month		V. Once a month
	VI. Less than once a month		VI. Less than once a month

ENERGY USE

QB9. What do you use for cooking?

☐ Gas for cooking ☐ Firewood for cooking ☐ other.....

QB10. How often do you use open fire for cooking? Tick one choice. If answer is No. ask QB10.

☐ Every day
☐ A few times a week
☐ About once a week
☐ A few times a month
☐ Once a month
☐ Less than once a month

QB11. Who often collects firewood for the cooking?

☐ Mother ☐ Father ☐ Uncle ☐ Aunty ☐ Grandmother ☐ Daughter ☐ Son ☐ Nephew ☐ Niece

QB12. Where is the firewood usually collected from? Tick choice.

☐ From the bush ☐ From the beach ☐ Sale of firewood ☐ Other places, firewood sourced. Specify.....

QB13. How much fuel (Litres) does your family use on a weekly basis?

Fuel use	<5L	Between 6-10L	Between 10-20L	At least 20L drum per week
Diesel generator for electricity & power				
Kerosene & benzene for lighting				
Grass cutting, outboard, chainsaw				
Fuel for transport (bike, car)				
Kerosene for cooking				
Gas for cooking				
Use of outboard for fishing/ picnic				
Use Solar for lighting & power				

SECTION C: AWARENESS OF ENVIRONMENT AND CHANGES TO CLIMATE AND ENVIRONMENT

QC1. Are you aware of any climate change adaptation work in your community? If so what adaptation measures do you believe have been introduced?

QC2. What do you understand the measures are for? If they say they are not aware of any interventions, they may ask what has been done. So there would need to a be a brief explanation.

QC3. Were you living in this location before the (CCA intervention) was established?
Have you noticed any changes caused by the (CCA intervention) if yes what?

QC4. Read out statements and tick where appropriate from response. Please tick choice.

	Agree	Disagree	I don't know
It does not matter what happens to the ocean & lagoons?			
Having a healthy ocean & lagoon is a very important part of my culture.			
My family's health is linked to the health of ocean & my lagoon.			

QC5. In your community, would you say over the past 10 years each of the following have increased stayed the same, decreased? READ OUT STATEMENTS AND CODE IN THE GRID BELOW. SINGLE CODE FOR EACH.

	Increased a bit	Increased a lot	Stayed the same	Decreased a bit	Decreased a lot	Don't know
a. Number of trees						
b. Other types of vegetation (eg. Mangroves)						
c. Variety of animals, birds						
d. Number of insects/pests						
e. Variety of fish and coral life in the lagoon						
f. Number of fish						
g. Fish die-off						
h. Amount of seaweed & algae						

QC6. In your understanding, would you say the following has stayed the same, decreased or increased?
READ OUT STATEMENTS AND CODE IN THE GRID BELOW. SINGLE CODE FOR EACH.

	Increased a bit	Increased a lot	Stayed the same	Decreased a bit	Decreased a lot	Don't know
a. Rainfall						
b. Temperature, heat						
c. Beach area						
d. Lagoon						
e. Flooding						
f. Storm surges/strong wave action						

QC7. Climate change refers to a change in climate which is directly and indirectly attributed to human activity that changes the composition of the global atmosphere in addition to natural climate variations. Climate change changes the conditions lived today. Do you think that climate change is happening?

☐ Yes ☐ No ☐ I don't know

QC8. Which do you think are the main causes of climate change? SINGLE CODE FOR EACH.

a. A hole in a protective layer of gas that covers the planet, called ozone layer.	
b. Human activity that leads to the emission of dangerous green-house gases.	
c. Forces of nature.	
d. Loss of trees.	
e. Population growth.	
f. Migration.	
g. Don't know.	

SECTION D: ENVIRONMENTAL PUBLIC HEALTH

WASH messages:

QD1. Have you ever received information regarding the maintenance and proper care of your household rainwater system and septic tank? and if so please explain how such information, provided. SINGLE CODE FOR EACH.

a. A sanitation aid officer visited my house	
b. It was discussed at a community meeting.	
c. My church group discussed it.	
d. I've never received maintenance information about my rainwater system or septic tank	
e. Heard from media	

Drinking-water:

QD2. How often did you last clean your roof, gutters and storage tank?. SINGLE CODE FOR EACH.

We clean it every six months.	
Every year.	
Every two years.	
We have never cleaned it.	

Sanitation/toilet use, design, location:

QD3. When did you last pump out and clean out your family septic tank system? SINGLE CODE FOR EACH

READ OUT STATEMENTS AND CODE IN THE GRID	1 year ago	Less than 5 years ago	Less than 10 years ago	More than 10 years ago	Never / no septic system

QD4. If your answer to QD3 was "never", please explain why. PLEASE TICK CHOICE.

- ☐ Did not know septic tank needed cleaning
- ☐ Not sure how to do it
- ☐ Too expensive
- ☐ Too unpleasant

QD5. After heavy rainfall: do you have problems with sewage on the surface above your septic /toilet system or with bad smells? PLEASE TICK CHOICE.

☐ Yes ☐ No ☐ Sometimes

QD6. How would you describe your toilet at home? Please choose from the choices below. (Toilets that are full, dirty, broken, or inaccessible are not functional). PLEASE TICK CHOICE.

- ☐ Yes, our toilet is functional
- ☐ No, it is not clean
- ☐ No, it does not work properly
- ☐ No, it's not of a type and/or in a location that is acceptable to me
- ☐ No, it does not separate excreta from the user, groundwater, environment

QD7. Do you always have soap available for washing hands after using the toilet? PLEASE TICK CHOICE.

☐ Yes, there is soap ☐ No

Food safety:

QD8I. Have you ever received information regarding the safe handling, preparation and storage of raw meat in the household?

☐ Yes ☐ No

QD8II. Have you ever received information regarding the safe handling, preparation and storage of raw meat in the household, and if so please explain how such information were issued. PLEASE TICK CHOICE.

- ☐ Yes, a person from health ministry visited my house
- ☐ Yes, I attended a community meeting where it was discussed
- ☐ Yes, through the media (radio etc)
- ☐ No

QD9I. Do you store raw meat in a freezer or fridge at home?

☐ Yes ☐ No

QD9II. If you answered yes, do you have problems keeping it frozen due to power outages?

☐ Yes ☐ No

QD10I. Do you always prepare raw meats such as chicken, pork and fish with separate chopping boards, knives?

☐ Yes ☐ No

QD10II. Do you wipe down surfaces with a cloth?

☐ Yes ☐ No

QD10III. After preparing raw meats, do you wash everything (including your hands) before handling vegetable and fruits?

☐ Yes ☐ No

Communicable disease:

QD11I. Have you or anyone in your family suffered from an incidence of diarrhoea and/or vomiting?

☐ Yes ☐ No

QD11II. If you answered yes, did you report it to the health clinic?

☐ Yes ☐ No

QD12. If you did report it to health clinic: how quickly and how effective was their response in your opinion. PLEASE TICK CHOICE

- ☐ Quick response with good information about personal hygiene provided
- ☐ Slow response but with good information about personal hygiene provided
- ☐ They responded but did not provide good information about personal hygiene
- ☐ They did not respond

QD13. If you did not report it to the health clinic: please explain why. PLEASE TICK CHOICE.

- ☐ We would only report it if it is very serious
- ☐ We never report it when we have diarrhoea or vomiting
- ☐ We only report skin rashes and infections

Solid waste disposal:

QD14. Do you often have solid waste overflowing prior to disposal. PLEASE TICK CHOICE.

☐ Yes ☐ No

QD15. Are you satisfied that the waste (kitchen, household) at your home is disposed of adequately and often enough? PLEASE TICK CHOICE.

- ☐ Yes, our kitchen/household waste is put in a dug pit
- ☐ Yes, we bury and/or burn our waste regularly
- ☐ No, the waste at our home is thrown to the sea/ beachfront

QD16. Do you have problems with flies and rats in and around the area where you store or dispose of your solid waste? PLEASE TICK CHOICE

☐ Yes ☐ No

Vector control:

QD17. Do you have tires outside your home? PLEASE TICK CHOICE.

☐ Yes ☐ No

QD18. Are there areas near your home where standing water can be found? Please tick which area. PLEASE TICK CHOICE.

- ☐ Uncovered drinking water tanks
- ☐ Old tires
- ☐ Poor drainage
- ☐ Other. Please specify

QD19. What do you do with standing water? PLEASE TICK CHOICE

- ☐ Turn containers upside down
- ☐ Clear the area with any containers
- ☐ I do not know
- ☐ Any other action. Please specify

SECTION E: LEVEL OF HOUSEHOLD PREPAREDNESS

QE1. How at risk do you feel your village/ community is during extreme weather events e.g Heavy rainfall, Strong wave action, drought or typhoons/tropical storms? CAN TICK MORE THAN ONE.

READ OUT STATEMENTS for respondent	Tick choice
Your community is at no risk	
Your community is at low risk	
Your community is at medium risk	
Your community is at high risk	
I don't know	

QE2. If a drought / cyclone were to happen in your local area, how prepared do you think your household would be? Prepared or not prepared? PLEASE TICK CHOICE.

☐ Very prepared ☐ Quite prepared ☐ Not very prepared ☐ Not at all prepared ☐ Don't know

QE3. What would you and your family do if there was a drought/ typhoons/tropical storms/ tsunami warning?
DO NOT READ OUT. CODE ALL THAT APPLY AND RECORD VERBATIM IN OTHER CATEGORY OPEN ENDED.

Questions	Answers
Raise an alarm	
Keep on top of weather reports	
Follow emergency plan	
Evacuate to safe place	
Have emergency supplies e.g. torches, medication, food, fuel.	
Pray to god	
Other. Please specify.	
Don't know.	

QE4. Below is a list of actions people can take to help them deal with extreme weather events. How likely are you to do these actions in the future? SINGLE CODE FOR EACH.

READ OUT FOR EACH RESPONSE NOT CURRENTLY DOING OR ALREADY DONE.	Increased		Increased		Don't know
	Very	Quite	Not very	Not at all	
Make permanent adjustments to my home (e.g. moving to a new protected part of the island)					
Make temporary adjustments to my home (e.g. using sandbags to prevent flooding)					
Have disaster preparedness plan (for family or local neighbourhood)					
Learn to swim					
Store water into buckets ready					
Learn first aid					
Listen to weather forecasts					
Stock up on food (eg. Traditional food preservation, root-crops and dried fish)					
Other measures? Please specify eg. Emergency kit					

QE5. Do you know where and what is the evacuation plan for your community? PLEASE TICK CHOICE.

☐ Yes ☐ No ☐ Not sure ☐ Other? Please specify .....

QE6. Do you know who you should contact to let them know you and your family are safe? PLEASE TICK CHOICE.

☐ Yes ☐ No ☐ Not sure ☐ If yes, who is it? .....

PUBLIC POLL

PUBLIC POLL QUESTIONS: SCHOOLS OUTREACH / RADIO PROGRAMS ON CLIMATE CHANGE

Please note that these questions (some of which are repeated in the household knowledge attitudes and perception impact survey questionnaire) can be used in parts of:

AWARENESS

1. At your village/island and or school, would you say over the past 5-10 years have each of the following increased, stayed the same or decreased?

	Increased a bit	Increased a lot	Stayed the same	Decreased a bit	Decreased a lot	Don't know
a. Number of trees						
b. Other types of vegetation						
c. Variety of animals, birds						
d. Number of insects/pests						
e. Variety of fish and coral life in the lagoon						
f. Coral bleaching						

2. In your understanding, would you say the following has stayed the same, decreased or increased?

	Increased a bit	Increased a lot	Stayed the same	Decreased a bit	Decreased a lot	Don't know
a. Rainfall						
b. Cold nights						
c. Warm nights						
d. Heat, temperature						
e. Beach area						
f. Lagoon						
g. Flooding						
h. Storm waves						
i. Wind						

3. How do you feel about changes around you? E.g The weather, at the beach, our forests, our food and water availability.

	Very	Quite	Not very	Not at all	Don't know
a. Worried					
b. Angry					
c. Happy					
d. Guilty					
e. Helpless (can't do anything to change it)					

4. Have you heard of the phrase Climate change and Resilience?

☐ Yes ☐ Yes, but I don't know what it means ☐ No ☐ I don't know

5. Climate change describes a change in the average conditions, such as temperature and rainfall in a region over a long period of time. Climate has changed throughout Earth's long history, but this time it's different. Do you think that climate change is happening?

☐ Yes ☐ No ☐ Maybe ☐ I don't know

6. Which do you think are the main causes of climate change? Tick your choice.

- ☐ A hole in a protective layer of gas that covers the planet, called ozone layer
- ☐ Human activity that leads to the emission of dangerous greenhouse gases
- ☐ Forces of nature
- ☐ Loss of trees
- ☐ Population growth
- ☐ Migration
- ☐ I don't know

PREPAREDNESS

7. Would you like to have a role in helping your community deal with the impacts of changing weather and environment-related issues? Tick one choice

☐ Yes definitely ☐ Yes maybe ☐ No ☐ I don't know

8. How well informed do you and your family feel about the things you could do to cope with the changes in water, food or energy? Tick one choice.

☐ Very well informed ☐ Family well informed ☐ Not very well informed ☐ Not at all informed ☐ I don't know

9. How often do you talk to others in your neighbourhood about taking actions to cope with changes in rainwater, food, energy supplies you might be facing? Tick one choice.

☐ Very often ☐ Quite often ☐ Not very often ☐ Never ☐ I don't know

10. How at risk do you feel your village/community is when experiencing extreme weather and climate events e.g. flooding, frequent storms, coastal erosion, drought or cyclone? Can tick more than one choice.

- ☐ Your neighborhood is at no risk
- ☐ Your neighborhood is at low risk
- ☐ Your neighborhood is at medium risk
- ☐ Your neighborhood is at high risk
- ☐ I don't know

11. If an extreme weather or climate event was to occur in your local area, how prepared do you think you would be? Please tick one choice for each extreme event.

	Prepared	Quite prepared	Not prepared	Don't know
Storm surge				
Drought				
Flooding				
Tropical cyclones				
Other				

Please specify if you selected other.

.....

12. Compared to 5 years ago, would you say that your life is better, worse or the same now? Please tick which box is most appropriate. Tick one choice.

☐ Much better ☐ A bit better ☐ The same ☐ A bit worse ☐ Much worse ☐ I don't know

13. Out of the following, which is your biggest worry at the moment? Can tick more than one choice.

- ☐ Not having enough food to eat
- ☐ Not having enough clean water to drink
- ☐ Not being healthy
- ☐ Not having enough electricity
- ☐ Not having adequate shelter (safe roof for my family)
- ☐ Not having a safe place to swim and play at the beach
- ☐ Other

Please specify if you selected other.

.....

COMMUNICATIONS

14. On which of the following mediums have you heard about climate change and resilience? Can tick more than once choice.

- ☐ Television
- ☐ Radio
- ☐ Newspaper
- ☐ Internet on mobile phone
- ☐ Posted flyers
- ☐ Public library
- ☐ Village meeting hall
- ☐ At school
- ☐ Local knowledge

15. When was the last time you used/ accessed the following media? Tick your choice.

Media	Yesterday or today	Not yesterday but within last 7 days	More than a week ago, but this month	Longer than a month, within last 3 months	Longer than 3 months, within this year	A year go	Never	Don't know
TV								
Radio								
Internet								
Mobile phone								
Newspaper								
Posters								
From others								

FOCUS GROUP

Prompt questions on water security measures

FW_1: What do you understand the measures are for? A brief explanation would be required if the respondent states he/she is not aware.

W_2: How active was the target community? Please tick your choice

4 (Active)

3 (Inactive)

2 (No water committee exists)

1 (Neglected state of water systems)

0 (Limited access to water by households).

FW_3: What is the level of ownership of these assisted (household/communal) water systems? Key for ownership: 2 - community driven (attitude, active management);

1 - Leakage present, seem to be 'all talk no action

0 - Community neglect.

FW_4: Have you noticed any changes caused by the [Climate change adaptation intervention]? If yes, what?

FW_5: Did the project/adaptation assistance delivered, contribute to improved health and living conditions; water security of your community? Note: impact indicators such as number of water-borne disease incidents as compared to before; time saving (does people spend less time collecting water?); impact of improved water (schools? homes? - less school closure, impacts of conflicts within the community regarding access to safe water, etc. (Link to Table 1)

IMPACT RATING	ASSESSMENT CRITERIA		
	PHYSICAL ENVIRONMENT	NATURAL ENVIRONMENT	SOCIAL ENVIRONMENT
Major	High likelihood of people health impacts with very little potential for improvement.	Permanent alteration of ecosystem, and major loss of biodiversity with very little potential for recovery.	Permanent change in livelihood with significant financial loss with very little potential for improvement.
Moderate	Possible impacts on people health but good potential for improvement.	Possible impacts on ecosystem and biodiversity but with good recovery potential.	Possible change in livelihood and financial loss but good potential for improvement.
Minor	Possible impacts on people health but likelihood very low.	Possible impacts on ecosystem and biodiversity but likelihood very low.	Possible change in livelihood and financial loss but likelihood very low.
No impact	No change from present status.	No change from present status.	No change from present status.

Table 1 To summarize the discussions, facilitating team can draw on this table to reflect on all that has been said to rate level of impact based on the focus group talk.

Coastal Protection measures

Prompt Questions for Focus group

CZ-B_1: How has your way of using the coastal area changed since the implementation of the interventions?

CZ-B_2: How often do you visit the coastal area where the built coastal infrastructures are located e.g groynes, rock revetment?

☐ Every day ☐ Once a week ☐ Once a fortnight ☐ Monthly ☐ Less often ☐ Never visited ☐ Don't know

CZ-B_3: Thinking about reclaimed beach area/park, where you visited the most.

Rate the following:	4 - VERY GOOD	3 - GOOD	2 - SATISFIED	1 - POOR
The cleanliness				
Availability of the park/reclaimed beach area				
Cost of parking/ visiting the local coast park				
Toilet facilities				
Refreshment facilities				
Safe place to visit				
Place to sell & earn a small income				

CZ-B_4: Were there any other value-added benefits that resulted from the coastal adaptation work?

☐ Yes definitely ☐ No

If you answered yes to the previous question, please state other value-added benefits that resulted from the coastal adaptation work.

CZ-B_5: Have the coastal infrastructure been helpful in protecting your coastline?

CZ-B_6: Does it impact the way you carry out your daily tasks e.g. going fishing, gathering seafood, swimming?

CZ-B_7: Who takes care of maintenance of the coastal structures in your local area?

CZ-B_8: Who did you think should be responsible for the upkeep of the coastal structures?

CZ-B_9: If the project were to be repeated in another part of Island/location of interest, are there any changes you would recommend?

☐ Yes definitely ☐ No

If you answered yes to the previous question, please state any recommended changes.

CZ-B_10: How well informed do you and your family feel about the things you could do to cope with the changes in water, food or energy? Tick one choice.

☐ Very well informed ☐ Family well informed ☐ Not very well informed ☐ Not at all informed ☐ I don't know

CZ-B_11: Compared to 5 years ago, would you say that your life is better, worse or the same now? With reference to the intervention *Please tick which box is most appropriate*. Tick one choice.

☐ Much better ☐ A bit better ☐ The same ☐ A bit worse ☐ Much worse ☐ Don't know

CZ-B_12: Have you noticed any changes caused by the [Climate change adaptation intervention]? If yes, what?

Condition of Infrastructure

Use a report card with standard engineering/building code of the country to express degree of physical condition:

D	GRADE		3 - SATISFIED
1	Very good	a	The infrastructure in the system or network is typically new or recently rehabilitated.
		b	A few elements show general signs of deterioration that require attention.
2	Good	a	The infrastructure in the system or network has some elements that show general signs of deterioration that require attention.
		b	A few elements exhibit significant deficiencies.
3	Fair	a	The infrastructure in the system or network shows general signs of deterioration and requires attention.
		b	Some elements exhibit significant deficiencies.
4	Poor	a	The infrastructure in the system or network is mostly below standard, with many elements approaching the end of their service life.
		b	A large portion of the system exhibits significant deterioration.
5	Very poor	a	The infrastructure in the system or network is in unacceptable condition with widespread signs of advanced deterioration.
		b	Many components in the system exhibit signs of imminent failure, which is affecting service.

Marine Resource management measures

Prompt questions for Focus group on marine managed areas (Tailored questions for the Cook Islands, Mangaia Island case study[11]

11 https://library.sprep.org/content/snapshot-2021-raui-marine-conservation-water-security-measures-cook-islands-assessing

MR_1: Compared to 5 years ago, would you say that your life is better, worse or the same now? *With relation to the intervention.*

MR_2: Are there people in your household who are currently employed?

MR_3: How many in your household are currently employed? If your response to Q2 is No. Where are your other likely source of income from? (Probe from selling fish and other sea foods)

MR_4: Does anyone go fishing in your household? If yes, then who goes fishing in the family?

MR_5: What is the purpose of your fishing if you do go fishing? (probe for subsistence, semi-subsistence, commercial or semi commercial)

MR_6: Do you harvest invertebrates for curio sales or for home use?

MR_7: What type of fishing do you and your family do?

MR_8: What type of gear (s) do you or your family use?

MR_9: Do you know what a rā'ui is?

MR_10: Is information on the rā'ui publicly available?

MR_11: Do you know other rā'ui on Mangaia? (Please name a few)

MR_12: Who is responsible for setting up and managing a rā'ui?

MR_13: Who is responsible for making sure people comply with the rules of the rā'ui?

MR_14: Do you think the rules of the rā'ui are well communicated to beneficiaries?

MR_15: If yes to above, how do you know about these?

MR_16: Did you receive a written document outlining the criteria and rules?

MR_17: Did you fish in the Kei'ā rā'ui when it was opened?

MR_18: What species were you after?

MR_19: Did you fish all the days when the Kei'ā Rā'ui was opened?

Resilient Agriculture measures

Prompt Questions for Resilient Agriculture measures

RA_1: What do you understand the Resilient Agriculture measures e.g Dry litter piggeries are for?

RA_2: Have you noticed any changes caused by the intervention implemented, not only for your household but also the community?

RA_3: What are some of these changes?

RA_4: Compared to 5 years ago, would you say that your life is better, worse or the same now as a result of the adaptation intervention?

RA_5: Has there been an improvement in production yield following implementation of the intervention e.g Salt tolerant taro varieties?

RA_6: How has the implemented intervention impacted your daily livelihoods and well being?

ANNEX 3. Collecting survey data using KoBotoolbox

How to create your online KoBotoolbox account

Before you can move on to using your KoBoCollect app, you will first need to set up your online server by creating your own KoBo account.

1. To do this, you will need to first choose from two types of servers:
   Humanitarian server: HHI server https://kobo.humanitarianresponse.info/
   - Unlimited submissions and responses
   - Unlimited projects and data storage Or

   Non humanitarian server: OCHA server https://kf.kobotoolbox.org
   - Limited submissions and responses
   - Limited data storage

   **Highly recommend using the HHI server if you are working with a large dataset.*

2. **Creating a login on HHI server**
   You will now go to the HHI server URL https://kobo.humanitarianresponse.info/ and start creating your account.

3. **Logging in and creating surveys**
   Now that you have successfully created your login, you will go straight to creating your surveys from scratch.
   - To start creating a survey, you will need to click on NEW and click on BUILD FROM SCRATCH
   - Enter Project (Survey) name and other details and click on CREATE PROJECT
   - Now you can start entering in your questions. Click on the plus sign to add a question
   - By clicking on Add Question, you will be shown a number of survey question options which you can choose from depending on the type of question at hand. You can play around with the features to familiarise yourself.
   - After entering in a question and a list of responses if it is a multiple answer question, you will need to click on SAVE to ensure that you do not lose your survey in case of any technical issues.
   - Once you've completed your list of questions you will then click SAVE again and click on the RETURN TO LIST button
   - Now you are back at the home page with your survey under DRAFT
   - Click on your Draft survey and it will direct you to another screen. You will see a DEPLOY button, Click on this. By clicking on Deploy you will now make your survey active for participants to access or to show on your KoBocollect app. Please do note that whenever you make any changes or edits to the survey, you will need to REDEPLOY to allow the participants to see the new changes.

How to install your KoBocollect App and connect to your online server

Install Kobo Collect Application on Android phone/tablet

1. Go to Google Play Store
2. Search for "Kobo Collect" The App will have the image below

3. Download/install the Kobo Collect App

Logging into your KoBocollect App

4. Click on Manually enter project details and enter your
   Username, Password and URL
   If you are using the HHI server you will enter the URL: https://kc.humanitarianresponse.info
   If you are using the OCHA server you will enter the URL: https://kf.kobotoolbox.org
   Setup Server URL on KoboCollect (To connect to the online account and enable connection to the surveys)

5. Find General Settings by clicking on the three dot icon on the upper right side of the home screen, then click on Server.
   - In the Server Settings, under URL, enter the server https://kc.humanitarianresponse.info/yourusername
   - Then enter your own KoboToolbox username and password for the KoBo Collect App, to be able to access a shared form via Get Blank Form

Download forms from your account

6. Click on button "Get Blank Form" to download the form →Click on get selected (You will need to choose the survey form you wish to use

7. FILL Blank form to start using the surveys

8. Remember to save surveys at the end and send finalised form once you have the internet connection. This will allow the data to be fed back to the server.

.

ANNEX 4. Favorite tips for taking photographs

Taking clear photographs - Rule of Thirds Example: Landscapes

If the focus of your image is on land (i.e. mountains, buildings), the horizon should fall near the upper **third** and if the focus is the sky (i.e. sunsets, sunrises), the horizon should fall near the lower **third**.

With use of Android Tablet or Phone.

I. Avoid Tablet/Phone Shake.

II. Use Simple Plain Backgrounds.

III. Move in Close and take close shots of the water systems

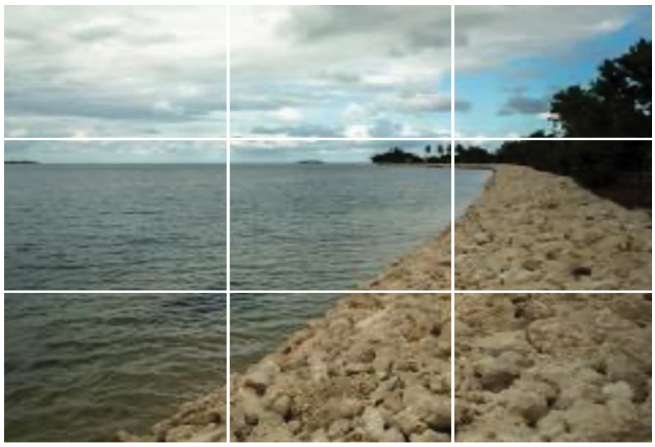
IV. Look at Subject at Eye level.

V. Watch the Light.

VI. Use Flash Outdoors Not Indoors.

VII. Create a Sense of Depth.

Record each photo taken for Form B and Site comparison for coastal protection.



Site photo comparison

Field sheet to record a series of photographs as basis for revisiting the same spots to capture a similar shot.
Refer to Annex 5 for full sheet.

LOCATION:	

THEN:	NOW:
Description: Year: Locality: GPS Coordinates: Source:	Description: Year photo taken: GPS coordinates:

Site - Video capture

Using the Android tablet, record videos of all visited sites focusing on the intervention in sight and the surrounding. Properly tag each recorded video on the tablet with:

1. The name of the locality/village.
2. Name of the intervention in sight.
3. Date video is taken.

ANNEX 5. Mapping of water systems in the target area.

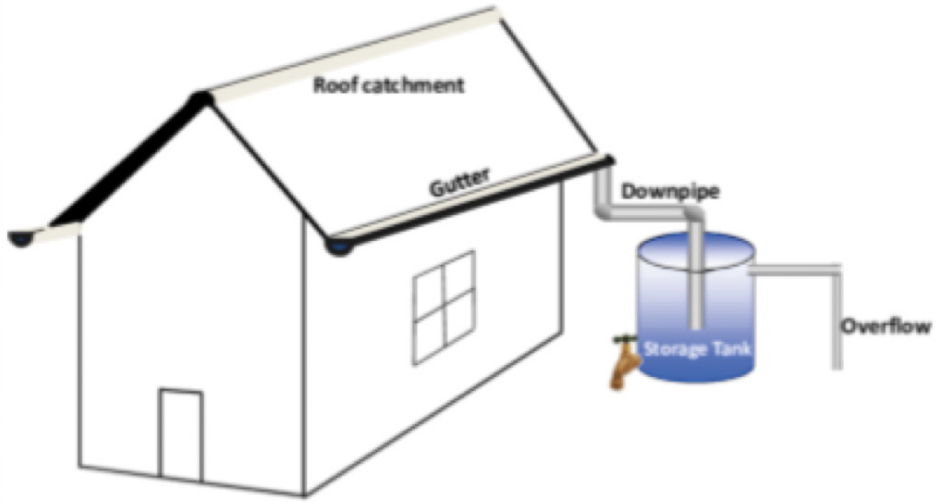


Figure 11 Parts of a rainwater harvest system.

Record sheets for marking locations specifically for spatial mapping of interventions and notes on observed condition of each water harvesting system e.g clean tanks, Cracks on tank, inspect pipeline, valves for leaks, Leaky taps & pipes, Condition of gutters if present, need to clean & disinfect tanks.

VILLAGE	WATER STORAGE INFRASTRUCTURE (INF) IN PLACE	INF. ID	WATER STORAGE MATERIAL	WATER STORAGE ROOFING MATERIAL	STORAGE CAPACITY (GALLONS)	PROJECT	YEAR IT WAS BUILT	WAYPOINT	LATITUDE	LONGITUDE

Table 2 Marking water storage infrastructures

INF. ID	WATER STORAGE INF. CONDITION (GOOD, DAMAGED, CRACKS, LEAKAGES, DIRTY)	IF DAMAGED, WHICH ELEMENT(S)

Table 3 Condition of Water storage system*Linked to Table 1

HOUSEHOLD/ INF ID	TYPE OF PUBLIC INFRASTRUCTURE COMMUNITY HOUSE, SCHOOL BUILDING, CHURCH	CONSTRUCTION MATERIAL	GUTTERING SYSTEM* IF PRESENT	ROOF MATERIALL	DOWN PIPE* IF PRESENT	OVERALL CONDITION OF INFRASTRUCTURE E.G ROOF RUSTING?	IF DAMAGED, WHICH ELEMENT(S)

Table 4 Condition of Guttering system* Linked to Table 1

Guttering systems if present: Scoring
1. Missing, 2. Not connected to tank, 3. Damaged, 4.leaking, 5.good condition

Downpipe if present: Scoring
1. Missing, 2. Not connected to tank, 3.Damaged, 4.leaking, 5.good condition

ANNEX 6. Field observation sheets

Site photo comparison

LOCATION:	

THEN:	NOW:
Description: Year: Locality: GPS Coordinates: Source:	Description: Year photo taken: GPS coordinates:

Coastal protection measures

Locality	Time Start: Time End: Low/High tide: Condition of the day: (sunny/overcast, rainy, wet, windy, etc.)	Adaptation Intervention e.g groynes, Detached breakwater	Waypoint (Record from GPS device where you're currently making your observation)	Description of surrounding focusing on the intervention in sight

Marking location of households where social survey conducted

NAME OF VILLAGE	HOUSEHOLD ID	WAYPOINT NO.	LATITUDE	LONGITUDE	ELEVATION

ANNEX 7. Field Checklists:

IMPACT CHECKLIST FORM: WATER SECURITY MEASURES

Name of Community	Country ID:	Location: (GPS)	Number of surveyed households	Number of households with access to water storage & supply

Activity type	Year activity started	Year activity ended

Water source (circle)

Desalination plant/tank, Spring, Well, Piped water supply tank, Groundwater, Water tank (reservoir, break pressure tank), Borehole, Catchment dam, River/Spring,

Survey date	Time start:	Time end:	Survey team

ELEMENTS	CHARACTERISTICS TO MEASURE	YES	NO	RATE WHERE RELEVANT RATING (1-4)	DESCRIPTION NOTES
Water source & Condition	Clean surrounding area (buffer zone of 15-30m from water source)				**1 - Poor:** Mostly introduced plants such as weeds, grass and gardens; little native vegetation cover; extensive disturbance; unrestricted access for animals. **2 - Fair:** Mixture of native and introduced plants. Moderate vegetation cover. Evidence of site disturbance; little or restricted access of animals. **3 - Good:** Mostly native plants; good cover of plants, no sign of recent disturbance or animals. Good mix of trees and plants. **4 - Excellent:** Most native plants found. Good vegetation cover with no introduced weeds or gardens. No sign of disturbance or animals.
	Water source clean				
	Source protection				**1** - Low protection **2** - Moderate protection (side wall of well is high enough for safety, well with roof) **3** - High protection (well covered, walled well is high enough, roof over well)
	Tank condition				**1** - Poor condition, **2** - Fair condition, **3** - Good condition, **4** - Excellent condition
	Cracks on water tanks				**yes/no** rating only
	Need to flush out sediment (dam catchment)				
	Measure flow @source (litres/min)				**1** - No flow, **2** - Low flow rate due to leaks, **3** - Moderate, **4** - High flow rate
	Condition of gutters if present				**1** - Poor: Dirty and too many leaves in guttering. **2** - Fair: Leaves and dirt fairly evident. **3** - Good: Very Few leaves and little dirt seen. **4** - Excellent: No leaves and dirt evident.
	State of water pump				**1** - Poor condition, **2** - Fair condition, **3** - Good condition, **4** - Excellent condition

ELEMENTS	EXTENT OF WHICH TECHNICAL, ENVIRONMENTAL, SOCIAL & FINANCIAL/ ECONOMIC ASPECTS OF ASSET HAVE IMPROVED:	RATING (1-4)	DESCRIPTION NOTES
Water Facilities* according to JMP (WHO, UNICEF 2013). Condition	Piped water on premises		**1** - Not improved, **2** - Somewhat improved, **3** - Mostly improved, **4** - Fully improved
	Leaky taps & pipes		
	Improved drinking water facility		
	Unimproved - Water sources		Unprotected dug wells, unprotected spring, cart with small tank/drum, *bottled water
	Surface water		**1** - Not improved. **2** - Somewhat improved. **3** - Mostly improved. **4** - Fully improved.
	Communal water storage capacity		
ELEMENTS	**LEVEL OF IMPROVEMENT TO HARVESTING SYSTEMS**	**RATING (1-4)**	**DESCRIPTION NOTES**
Harvesting systems	Tank attached to a building		**1** - Not improved (roof needs repair). **2** - Somewhat improved. **3** - Moderately Improved (good roof, with screen on tanks). **4** - Fully Improved (first flush diverters, screen of tanks).
	Standalone tank's roof.		
	Condition of roofs		**1** -Thatched roof - no collection of water. **2** - Fair condition. **3** - Good condition - few leaves and little dirt seen. **4** - Very good condition -no leaves and dirt evident.
	Size of tanks (gallons)		Attach record of tanks (number per tank size, material tanks made). Refer to Marking Sheet for Water Security Measures in the Methodology guide.
	Condition of gutters if present		**1** - Poor: dirty and too many leaves in guttering. **2** - Fair: leaves and dirt fairly evident. **3** - Good: Very Few leaves and little dirt seen. **4** - Excellent: No leaves and dirt evident.
	Need to clean & disinfect tanks		**1** - Not improved: Tank has not been cleaned or disinfected. **2** - Somewhat improved: Tank not cleaned and disinfected effectively. **3** - Mostly improved: Tank cleaned once a year. **4** - Excellent: Tank cleaned and disinfected at least twice a year.
ELEMENTS	**INCREASED CAPACITY**	**RATING (1-4)**	**DESCRIPTION NOTES**
Operation & Maintenance Capacity	Drinking water safety & security management plan (DWSMP)		**1** - Plan developed, neglected state of water system. No water committee. **2** - Plan with a sustainable financing system on how to manage operations. Inactive water committee. **3** - Plan in place with a sustainable financing system on how to manage operation with Active water committee. **4** - Plan to include training, water safety, financing repair work. Water committee is fully active. High participation with equal ration of men/ women, inclusive of disability and youth.
	Past training on maintenance and operation of water supply systems		**1** - No training carried out. **2** - Low (only one training). **3** - Moderate (more than 2 training). **4** - High (more than 3 trainings).
	Functioning water committee		**1** - No Water committee (neglected state of water systems). **2** - Water committee exists but inactive. **3** - Water committee moderately active. **4** - Water committee fully active.

ELEMENTS	LEVEL OF ACCESS & OWNERSHIP	RATING (1-4)	DESCRIPTION NOTES
Extent of Ownership	Increase in number of households with water tanks		**1** - (Limited water access by households). **2** - Low. **3** - Moderate. **4** - High.
	Women, youth and disability representation in the water management committee.		**1** - No representation in water management committee. **2** - at least one member per group represented. **3** - Youth, women and disability represented. **4** - At least 50% of water committee are members of the vulnerable groups.
	Involvement in the development of DWSMP		**1** - No involvement. **2** - Some involvement during consultation. **3** - Involved throughout its development. **4** - Fully involved in the implementation of DWSMP including awareness, training for repair, maintenance & fundraising.
	Access to water by vulnerable groups - disability & elderly		**1** - No direct access. **2** - (communal water tank). **3** - Moderate (families of disability and elderly have own tanks of water supply). **4** - High (Direct access of piped water into the home of the elderly & disability.

ELEMENTS	LEVEL OF AWARENESS	YES	NO	RATING (1-4)	DESCRIPTION NOTES
Level of awareness (from focus interviews, surveys)	Number of families trained in WASH practice				**1** - Low (at least 25% of total families). **2** - Moderate (50% of families). **3** - High (<75% of families in the vicinity). **4** - Very high (Over 75% of families in vicinity).
	Women, youth , disability involved in WASH training				**1** - Women not represented WASH training. **2** - Low (at least 25% of participants are women, inclusive of disability persons).**3** - High (At least 50% of participants were women). **4** - Very high (More than 75% of participants were women).
	Handwashing practice observed				**Yes/No** Rating.
	Soap availability - kitchen, bathrooms				
	Any recent illnesses - typhoid, diarrhoea, dysentery				
	Community sense of sanitation standard				**1** - Poor. **2** - Satisfied (at least 25% of sample). **3** - Good (50% of sample). **4** - Very good (at least 75% of sample of respondents).

ELEMENTS	TYPES OF SANITATION	YES	NO	RATING (1-4)	DESCRIPTION NOTES
Types of Sanitation Facilities	Signs of open defecation				**Yes/No** Rating.
	Types of toilet facilities (circle)	Read more at https://washdata.org			Pit toilet/Septic/Public sewer.
	Improved sanitation facilities				**1** - All homes share sanitation facilities; open defecation. **2** - Shared sanitation facilities rated high, at least 3-4 homes share a toilet. **3** - Shared sanitation facilities rated medium, for 2-3 homes share a toilet. **4** - Shared sanitation facilities rated low, for majority of homes own a toilet.
Water quality	Treated water for drinking				**1** - No treatment. **2** - Boiling water. **3** - SOLDIS/UV, Filtration. **4** - Chlorination Wastewater - grey Practice greywater management i.e. recycle for watering gardens.
Wastewater - grey	Practice greywater management i.e. recycle for watering gardens				**Yes/No** Rating.
	Waste water is treated in soakage Pits, trenches and wetlands				**Yes/No** Rating.

Impact Scores	**1: 0-25%** Low impact, **2: 26-50%** Medium impact, **3: 51-75%** High impact, **4: 76-100%** Very high impact
Geospatial planning	Linked to an integrated GIS & associated meta-database from resource mapping.

Note: Secondary assessment - use of social surveys for household and focus group to provide details on • condition and capacity of water infrastructure vs. quantity of water used per capita per day; % of households with access to reliable safe water supply & sanitation facility •Is there an increase in water availability for the targeted communities because of the improved water systems • % constructed water facilities maintained by community with past training; % recurrent costs for water supply services provided by community.

IMPACT CHECKLIST FORM: MARINE RESOURCE MANAGEMENT MEASURES

Coastline (N-S orientation)	Country ID:	Location: (within a 500m radius)	Name of reef complex:	Tide:

Year activity started	Year activity ended	Activity type	River mouth width (circle):	GPS start:	GPS End:
			<10m 11-50m 51-100m 101-500m		

Survey date:	Time start:	Time end:	Survey team:

Habitat type: (circle)	Coral reef system, Estuarine, Lagoon, Beach, Mangroves, Seagrass areas

Turbidity: (secchi measure) muddy silty water, some murkiness, clear water	Condition of Day (rain, clear sky, windy):	Weather past 7 days: (is it stormy, rainy, windy, clear)

ELEMENTS	CONSERVATION & LIVELIHOOD: CHARACTERISTICS TO MEASURE	RATE WHERE RELEVANT RATING (1-4)	DESCRIPTION NOTES
Conservation Value	Control access to protected zones		**1** - All access no protection. **2** - No take zone. **3** - Fishing zones, zonation for recreation, partial access no fishing. **4** - Full sanctuary.
	Fishing intensity		**1** - Open including trawling fishing. **2** - Commercial fishing/e gillnets, harvest of inverts for curio sales. **3** - Commercial aquaculture eg. Line & gillnets fishing, Harvest for curio sales. **4** - No fishing.
	Annual habitat health monitoring		**1** - No monitoring. **2** - Low monitoring. **3** - Moderate (transect surveys benthic, fish and coral cover. At least 1-2 year of record of monitoring). **4** - High (records of at least 5 years of monitoring reef & other habitat health in marine area).
	Surface impact: litter, sewage, driftwood, algae, fishing nets		**1** - Poor, some litter every 25 meters, signs of industrial pollution. **2** - Not good, some litter every 50 meters, observed fishing nets and marine nets. **3** - Good, some litter every 100 meters. **4** - Excellent, no litter in the area only driftwood natural marine debris.
	Tourist diving		**1** - Poor, uncontrolled tourist diving in the area. **2** - Not good, some tourist diving in the area. **3** - Good, permitted tourist diving in the area. **4** - Excellent, no tourist diving in the area.
Anthropogenic Impact	Boating & recreational activities		**1** - Poor, uncontrolled boating and recreational activities in the area. **2** - Not good, some boating and recreational activities in the area. **3** - Good, permitted boating and recreational activities in the area. **4** - Excellent, no boating and recreational activities in the area.
	Signs of sandmining, coral harvesting, bleaching		**1** - No signs. **2** - Low. **3** - Moderate (at least 50% coral cover damage). **4** - High (<60% or 3/4 of area coral cover damage.)
	Chemical, solid marine waste pollution		**1** - Poor, some industrial activities adjacent the managed area with no controls on their waste disposal. **2** - Not good, some industrial activities adjacent the managed area with some controls on their waste disposal. **3** - Good, no industrial activities allowed in the area. **4** - Excellent , no industrial activities in the area.
	Sedimentation		**1** - Poor major changes in the coastal area. **2** - Not good, major changes to the sediment budget in the area. **3** - Good, minor changes to the sediment budget in the area. **4** - Excellent, natural sedimentation process in occurring in the area.
Extent of Ownership	Management action for species conservation		**1** - Poor, no species management plan. **2** - Not good, no species management plan in place and people are not aware of it. **3** - Good, species management plan in place and people are aware of it. **4** - Excellent, species management plan in place and implemented.
Peoples Perspectives (from focus interviews, surveys)	Management action for conservation areas		**1** - Poor, no conservation plan. **2** - Not good, no conservation in place and people are not aware of it. **3** - Good, conservation plan in place and people are not aware of it. **4** - Excellent, conservation plan in place and implemented.
	Environmental awareness programme		**1** - Poor, no awareness programme. **2** - Not good, awareness programme is dependent on Government Ministries. **3** - Good, awareness programme in place and implemented through the traditional system with follow up. **4** - Excellent, awareness programme in place and implemented through the traditional system and the Ministry of Education and Non Government Organisations.
	Form of protection (statutory or other)		**1** - Poor, traditional protection of the managed area and no enforcement. **2** - Not good, traditional protection of the managed area in place but poorly enforced. **3** - Good, traditional protection of the managed area in place and enforced. **4** - Excellent, formal or traditional protection of the managed area in place and enforced.
	Training activities for monitoring		**1** - Poor, no monitoring programme. **2** - Not good, no local monitoring programme and dependent on central Ministry when they are available. **3** - Good, local monitoring programme in place and carried out by local marine officer. **4** - Excellent, local monitoring programme in place and carried out by local marine officer and traditional leaders.
Impact Scores	**1: 0-25%** Low impact, **2: 26-50%** Medium impact, **3: 51-75%** High impact, **4: 76-100%** Very high impact		
Geospatial planning	Linked to an integrated GIS & associated meta-database from resource mapping		

Note: Secondary assessment - use of habitat monitoring and fisher surveys to provide details on • its conservation and fisheries value • management efforts at community/ institutional • co-benefiting values for managing marine resource management at local island level.

IMPACT CHECKLIST FORM: COASTAL PROTECTION MEASURES

Coastline (N-S orientation)	Country ID:	Location:

GPS (refer to retrieved map info. available)

Waypoint ID:	GPS start:	GPS End:

Length of coast protected:	Tide at time of inspection:	Activity type:

Condition of Day (rain, clear sky, windy):	Year activity started	Year activity ended	Inspection date:

Time start:	Time end:	Survey team

ELEMENTS	CHARACTERISTICS TO MEASURE	YES	NO	RATING (1-4)	DESCRIPTION NOTES
Beach Condition *Source: Coastal Ecosystem-based Rehabilitation Guide. SPREP, 2015.	A healthy beach				**1** - Severe Impact (Very degraded). Extensive absence of vegetation (just isolated trees), no recruitment of trees or shrubs, no vines nor herbs, beach is eroded back to edge of buildings or road & little sand; beach profile concave-up with a cliff/scarp in the upper to lower beach; high tide mark is at top of the beach. **2** - Some Impact, sign of collapse on the structure, even canopy of coastal vegetation with no gaps; some human impact. **3** - Moderate Impact. Broken canopy of trees, some regrowth & recruitment, vegetation cover have gaps with damage signs of trampling, beach is flat in profile, high tide mark approx.5m in front of beach trees. **4** - No Impact (Good Condition) Coastal vegetation, even canopy with no gaps; no evidence of human impact, beach wide & convex in profile, high tide mark has sizeable dry beach above it below the vegetation.
	Eroding beach				Eroding signs- concave shape of the beach surface, lack of vines & broken vegetation cover, a small cliff of sand at the back of the beach.
	Nearby pig pens				**Yes/no** rating only.
	Nearby use of fertiliser-farming				
	Signs of beach litter				**1** - Very high.**2** - High (sign of communal rubbish dump in vicinity). **3** - Moderate (signs of rubbish including disposal of household waste).**4** - Low.

		RATING (1-4)	DESCRIPTION NOTES
Condition of shore structures	Condition of structures		**1** - Poor condition. **2** - Fair condition. **3** - Good condition. **4** - Very good condition.
	Signs of sand accumulation		**1** - No signs of sand accumulation. **2** - Some signs of sand accumulation. **3** - Moderate signs of sand accumulation. **4** - Extensive signs of sand accumulation.
	Erosion at vicinity of structures		**1** - Very high. **2** - High. **3** - Moderate. **4** - Low.
	Effectiveness of the structure (Did it serve its purpose)		**1** - Signs of high erosion, community remain impacted. **2** - Affected by coastal process, structure is intact. **3** - Partial effective (condition of structure is intact, coastline remains the same). **4** - Effective (community is protected from coastal inundation, storm waves, erosion & healthy beach condition).
Extent of Ownership	Clean surrounding area		**1** - Not clean. **2** - Fairly clean. **3** - Moderately clean. **4** - Very clean.
	Beach control access to reduce impact		**1** - No control. **2** - Some actions of control. **3** - Moderate level control. **4** - High level of control. Place signs in the area to inform the community of the rehabilitation efforts.
	Protection of the beach & vegetation		**1** - No protection. **2** - Low protection. **3** - Moderate protection. **4** - High protection (no access).
	Coastal replanting by community		**1** - No coastal planting. **2** - At least one coastal planting. **3** - Community activity in routine. **4** - Other support (NGO) for a community replanting program.
	Set up control signs to access beach		**1** - No signs at all places/ no brush protection. **2** - At least one sign/some form of brush protection. **3** - Two signs visible. **4** - More than 3 signs visible Build of brush protection on an eroding beach. Local techniques eg. fix a barrier with cut branches & coconut fronts held up by stakes, on the upper beach where erosion is occurring.
	Brush protection to help sand build up		**1** - No signs at all places/ no brush protection. **2** - At least one sign/some form of brush protection. **3** - Two signs visible. **4** - More than 3 signs visible Build of brush protection on an eroding beach. Local techniques eg. fix a barrier with cut branches & coconut fronts held up by stakes, on the upper beach where erosion is occurring.
	Management actions to promote beach accretion		**1** - No management actions in place. **2** - Few management actions. **3** - Moderate signs of management actions in place. **4** - Management actions highly observed and practiced by the community.
Peoples Perspectives (from focus interviews, surveys)	Is your coast protected?		**1** - Low level of community awareness of the coastal protection measure(s)and less than 25% of community group feel safe in their exposure to extreme weather events and risk to flooding, coastal inundation, storms, and cyclones. **2** - Lack of community awareness of the coastal structure(s). Results from survey show that between 25-50% of the group feel safe because of the built protection. **3** - Community has a moderate level of awareness of the coastal structure(s) and survey shows that 50-75% of the group feel safe because of the built protection. **4** - Community has a high level of awareness of the coastal structures and over 75% of the group feel safe and satisfied with the coast being fully protected with no reported inundation and flooding since build of structural measures.
	Community sense of safety		
	Protection of property & other land uses		
Impact Scores	**1: 0-25%** Low impact, **2: 26-50%** Medium impact, **3: 51-75%** High impact, **4: 76-100%** Very high impact		
Geospatial planning	Linked to an integrated GIS & associated meta-database from resource mapping.		

Note: Secondary assessment - use of spatial mapping & focus group surveys to provide details on • extent of coastal change over time • did the structures reduce exposure & vulnerability of communities living adjacent to the coastline • level of protection of families and their properties etc.

IMPACT CHECKLIST FORM: RESILIENT AGRICULTURE MEASURES

Country ID:	Activity type:	Name of farm:	Year activity started	Year activity ended

Location:	Distance of farm from nearest river / stream:	River mouth width (circle):	GPS mark of farmland (salt tolerant crops). Retrieve from map info available.		
			Waypoint ID:	GPS Start	GPS End:
		<10m 11-50m 51-100m 101-500m			

Inspection date:	Time start:	Time end:	Survey team members:

Other activities on the farm land (circle):	Crop types planted:	Name of crop varieties:
Poultry, Taro patches, Piggery, Other (please list)		

ELEMENTS	CHARACTERISTICS TO MEASURE	RATE WHERE RELEVANT RATING (1-4)	DESCRIPTION NOTES
Soil Capability	Availability of land for food production		**1** - At least a quarter of owned land used for planting and other uses eg. piggery, poultry. **2** - At least half of land owned used for crop farming. **3** - More than half of land owned is used for crop farming. **4** - All land is used for crop farming.
	Soil health practices (if any)		**1** - No use of organic fertiliser/sole reliance on inorganic fertiliser. **2** - Before planting, apply inorganic fertiliser to enrich the soil. **3** - Application of inorganic fertiliser before planting and organic fertiliser after planting. **4** - Full use of organic fertiliser.
	Land clearing practices		**1** - No practice of burning, Mechanical eg. use of bulldozers to clear land. **2** - Partial burn and slash for clearing. **3** - Burning to clear land for planting with some use of slashing for clearing. **4** - Burning to clear land for planting.
	Fallow period		**1** - No fallow period between crops. **2** - No rotation of crops during fallow period. **3** - Rotation of crops during fallow period). **4** - Fallowing of at least one season between crops). Is the soil allowed to rest between crops? Use best practice guidelines according to crop variety.
Crop productivity	Change in crop (taro) production yield		**1** - No change since introduced. **2** - Slight increase in production. **3** - Close to 50% increase in production yield. **4** - More than 50% increase in yield since introduction
	Crop farmed		**1** - No crop farmed. **2** - One crop farmed, depending on what crop is farmed. **3** - Mix cropping. **4** - Mix of crops+other agriculture eg. Poultry, piggery etc.
	Crop varieties farmed		**1** - One crop variety. **2** - Two crop varieties. **3** - Three crop varieties. **4** - More than three crop varieties).
Soil training program activities	Women farmers trained		**1** - At least 1 woman represented. **2** - At least 50% of participants are women. **3** - At least 65% of participant are women. **4** - More than 65% of participants were women.
	Beneficiaries of seedlings provided		**1** - At least 25% of farmers provided with seedlings. **2** - At least 50% of farmers issued with seedlings. **3** - At least 75% of farmers issued with seedlings. **4** - All farmers issued with seedlings.
	Number of women farmers provided seedlings		**1** - At least 25% of women farmers provided with seedlings. **2** - At least 50% of women farmers provided with seedlings. **3** - At least 75% of women farmers provided with seedlings. **4** - All women farmers are provided with seedlings.
	Training activities / Trainers for home gardening		**1** - Only one training. **2** - More than two trainings. **3** - Three trainings. **4** - More than three trainings

Farming practices (from focus interviews, surveys)	Number of families with farms		**1** - At least 25% of all families with farms. **2** - 50% of all families with farms. **3** - At least 65% of all families with farms. **4** - At least 75% of all families with farms.
	Composition of farmers		**1** - At least 25% of farmers are subsistence farmers. **2** - At least 50% of farmers in area are part-time subsistence farmers. **3** - At least 75% of farmers in area are subsistence farmers. **4** - All are subsistence farmers.
	Taro varieties distributed to families		**1** - At least 25% of total number of families in the area. **2** - Crop varieties distributed to at least 50% of total number of families. **3** - Crop varieties distributed to at least 65% of total number of families. **4** - Crop varieties distributed to at least 75% of total number of families.
Peoples Perspectives	Households with improved diet sourced from local agriculture		**1** - At least 25%f the total number households in the vicinity. **2** - At least 50% of total number of households in the vicinity. **3** - At least 75% of total number of households in the vicinity. **4** - All households with improved diet.
	Variety of (taro) crop available		**1** - One crop variety. **2** - Two crop varieties. **3** - Three crop varieties. **4** - More than three crop varieties.
	Diversification to other agriculture		**1** - Remain at producing one crop. **2** - Farm produce two crop varieties. **3** - Farm produce three crop varieties. **4** - Farm produce a mix of crops and other agriculture.
	Change in household income from an improved crop		**1** - Low. **2** - Moderate. **3** - High. **4** - Very high (able to cover family costs for education, improved living standard, etc.
Impact Scores	**1: 0-25%** Low impact, **2: 26-50%** Medium impact, **3: 51-75%** High impact, **4: 76-100%** Very high impact		
Geospatial planning	Linked to an integrated GIS & associated meta-database from resource mapping.		

Note: Secondary assessment - use of spatial mapping & focus group surveys for farmers to provide details on • % land available for food production eg. for salt tolerant crops, etc. • Soil health practices. • Change in % of farming households have improved/diversified with an increased crop productivity • Change in farmers' household income with such an improved crop yield.

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