

Opportunities for nature-based solutions to support adaptation in the Pacific region

Prepared for New Zealand Ministry of Foreign Affairs and Trade

October 2019

Prepared by:

Emily Douglas
Carolyn Lundquist
Jordan Luttrell
Doug Ramsay

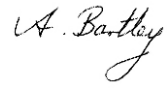
For any information regarding this report please contact:

Emily Douglas
Marine Ecologist
Marine Ecology
+64-7-856 1728
emily.douglas@niwa.co.nz

National Institute of Water & Atmospheric Research Ltd
PO Box 11115
Hamilton 3251

Phone +64 7 856 7026

NIWA CLIENT REPORT No: 2019316HN
Report date: October 2019
NIWA Project: MFA2024

Quality Assurance Statement		
	Reviewed by:	Dr Richard Bulmer
	Formatting checked by:	Alison Bartley
	Approved for release by:	Dr Drew Lohrer

© All rights reserved. This publication may not be reproduced or copied in any form without the permission of the copyright owner(s). Such permission is only to be given in accordance with the terms of the client's contract with NIWA. This copyright extends to all forms of copying and any storage of material in any kind of information retrieval system.

Whilst NIWA has used all reasonable endeavours to ensure that the information contained in this document is accurate, NIWA does not give any express or implied warranty as to the completeness of the information contained herein, or that it will be suitable for any purpose(s) other than those specifically contemplated during the Project or agreed by NIWA and the Client.

Contents

Executive summary	5
1 Introduction	6
1.1 Background	6
1.2 Methodology	6
1.3 Summary of nature-based and resilient ecosystem concepts.....	7
2 Current resilient ecosystem-related projects in the Pacific	10
2.1 Current or recently completed projects	10
2.2 Potential pipeline initiatives and projects	13
3 Key findings from stakeholder consultations	15
3.1 Indicative themes from interviews	15
3.2 Identification of thematic or geographic gaps.....	17
3.3 Common challenges.....	18
3.4 Evidence of success.....	21
3.5 Co-benefits and integration.....	22
4 Areas of potential opportunity	24
5 Acknowledgements	27
6 Glossary of abbreviations and terms	28
7 References.....	30
Appendix A Summary of current nature-based programmes with an adaptation focus.	31
Appendix B Geographical and thematic coverage of current nature-based programmes.	47

Tables

Table 1-1:	Summary of nature-based approaches to achieving resilient ecosystems.	8
Table 3-1:	Summary of stakeholders consulted.	15
Table 3-2:	Examples of success measures used in project monitoring and evaluations.	22

Figures

Figure 2-1:	Number of projects implemented in each country.	11
Figure 2-2:	Number of projects by island setting.	11
Figure 2-3:	Number of projects implemented using different management approaches.	12
Figure 2-4:	Number of projects covering different focus areas.	12

Executive summary

The vulnerability of Pacific Island Countries to the effects of climate change is widely recognised and the opportunities for interventions that develop both human and ecological resilience are diverse. Pacific people are highly connected to ecosystems and the services they provide, therefore climate change resilience, as well as the social and cultural wellbeing, health, and livelihoods of communities are dependent on ecosystem resilience. To support the Ministry of Foreign Affairs and Trade to develop an investment program on resilient ecosystems as part of the Pacific Climate Change development program, this report includes an assessment and gap analysis of current ecosystem-based intervention projects underway in the region.

The desktop assessment identified 31 ecosystem-based adaptation (EbA) or nature-based solutions (NbS) projects currently underway or recently implemented in the region. Fiji, Solomon Islands and Vanuatu have the highest number of current projects, reflecting that much of the work in this space is being undertaken in high and main islands (rather than atolls and outer islands), and in main populations centres. Also, that larger programs (usually with longer time frames and ongoing benefits) tended to be implemented in Melanesia. Projects spanned widely in scale and most had multiple focus areas and management approaches, the most common focus area being 'adaptation'. Thematic gaps in the current programming and areas with future opportunity were; Payments for Ecosystem Services, use of traditional ecological knowledge, and strengthening public-private partnerships.

Common challenges to implementing successful ecosystem-based projects included lack of community and government buy-in, lack of capacity within governments and implementing agencies, costs and logistics, and excessive focus on climate change shadowing the need to address ongoing environmental degradation. Well-established projects such as the SPREP-led Pacific Ecosystem Based Adaptation to Climate Change (PEBACC) program and the UNDP/SPC Pacific Ridge to Reef Program are underpinned by robust and proven frameworks, scientific knowledge and alignment with local government priorities. The review and stakeholder discussions highlighted the difficulty in defining EbA success but anecdotal evidence for success included enhanced livelihoods, increased ecosystem health and productivity, and increased community involvement in management and intervention. Most of the programs involving EbA had multiple cross-cutting goals and co-benefits for development objectives including food and water security, disaster risk reduction, health, increased livelihoods and economies, and prevention/delay/reduction in the potential for relocation.

Based on the review, potential investment options for the ecosystem resilience intervention that could form the long-list of options to be considered in the Indicative Business Case currently being developed include:

1. Focus on a new programme on coast/flood protection to demonstrate integration of EbA/NbS with hard infrastructural/development planning approaches.
2. Focus on out-scaling of existing established programmes delivering EbA/NbS-activities.
3. Focus on increasing financial contributions to Pacific regional funding initiatives supporting EbA/NbS initiatives.
4. Development of a regional applied-research programme to address key knowledge gaps constraining all EbA/NbS activities (including limitations, tipping points, adaptation success indicators etc.).
5. Do nothing.

1 Introduction

1.1 Background

The New Zealand Ministry of Foreign Affairs and Trade (MFAT) is currently devising a \$150M Pacific climate change development program to be implemented over the period to June 2023. The programme will cover 14 Pacific Island Countries (PICs), has 4 objectives and 7 intervention areas. The programmes of work for the 7 intervention areas are currently being developed by MFAT.

One of the 7 intervention areas will be a program on resilient ecosystems. This aims to support countries to increase the resilience of ecosystems and reduce the impacts of invasive species, in order to strengthen food security, protect the coast and reduce disaster risk.

In developing this intervention MFAT contracted NIWA to carry out an initial high-level scoping assessment to understand the landscape, summarise the variety of different nature-based solutions projects underway in the Pacific, and to identify some initial gaps and opportunities for potential investment by MFAT. In considering potential options, the investment will have:

- A development focus.
- A primary adaptation focus.
- Strong outcomes in Disaster Risk Reduction (for example coast or flood protection) and/or food security.

Following this introductory section is a description of the methodology used in the review, and a brief summary of approaches to nature-based solutions with particular reference to adaptation-related interventions. Section 2 provides a review of relevant recent or current projects and programmes underway in the Pacific along with any known pipeline projects.

Based on the scoping of projects in Section 2, the assessment conducted a number of stakeholder interviews during September 2019 either by telephone/skype or in person (in the margins of the 29th SPREP Governing Council meeting in Samoa or the Oceanic Ecosystem Services Forum in Christchurch). The common themes around potential gaps, common challenges, evidence of success and co-benefits and integration are summarised in Section 3. Potential opportunities identified from this high-level assessment are then summarised in Section 4.

1.2 Methodology

A web-based assessment was carried out of programs and projects currently or recently implemented in the Pacific region which either focused on, or had a component of, ecosystem resilience / nature-based approaches to support adaptation. The search was conducted by first identifying key funding (including the Global Environment Facility, Adaptation Fund, Green Climate Fund), implementing and partner agencies (including governments) known to be working in this space. Websites from these organisations as well as the Pacific Climate Change Portal (<https://www.pacificclimatechange.net/>) were searched for relevant projects. More general searches were conducted with Google, using combinations of keywords including: ecosystem-based, adaptation, Pacific, climate change, nature-based solutions, resilience, coastal protection, integrated management, ridge2reef.

Projects were included if they were; current (or ended in 2018/19), were undertaken in 1 or more of the 14 PICs, were focussed on or had components that involved ecosystem-based adaptation, nature-based solutions or resilient ecosystems. Projects focussed in French or United States territories (Guam, Northern Marianas, American Samoa, New Caledonia, Wallis and Futuna, French Polynesia) were not actively searched, but where relevant (i.e., where they were part of multi-country projects), some projects were included in analysis. More than 50 projects were identified but excluded because they lacked these focus areas, had reached their end dates, or were out of potential scope.

1.3 Summary of nature-based and resilient ecosystem concepts

Nature or ecosystem-based approaches have become increasingly recognised as a potential and well-suited approach contributing to, or complementing, local, national and regional climate change adaptation strategies in Pacific Island Countries (PICs) (Nalau and Becken 2018).

There are a wide range of approaches aimed at delivering resilient ecosystem services under the general heading of nature-based solutions (Table 1-1). Most have overlapping principles, pathways and outcomes. These approaches all employ natural ecosystems and the services they provide, to reduce the vulnerability of human communities to the adverse effects of climate change, and enhance their ability to adapt to changing conditions. This commonly involves awareness, conservation, restoration and sustainable management of natural environments.

Table 1-1: Summary of nature-based approaches to achieving resilient ecosystems. Approaches used to categorise current Pacific projects (see Appendix B). Definitions are taken from Jupiter et al. (2017) and Nalau and Becken (2018).

Approach	Description	Sub-categories / related approaches	Project examples (Project number)
Community-based adaptive management (CBAM)	Integration of design, management and monitoring for learning and improving responses to management efforts where local communities play a major role.		PEARL (14)
Customary management (CM)	Management of natural resources and systems as part of customary practice and institutions.	Traditional Ecological Knowledge, Restoration of traditional practices	MACBIO (3) Vatu-i-Ra Seascape (8)
Ecosystem-based Adaptation (EbA)	An ecosystem focussed approach to adaptation to change, particularly climate change.		PEBACC (4) Vanuatu Ecosystems & Adaptation Project (23)
Ecosystem-based management (EbM)	Management of the cumulative impact of human activities in order to maintain ecosystems in a healthy, productive and resilient condition for the delivery of ecosystem services and the protection of biodiversity. Application of integrated land–sea management on island systems is a specific form of ecosystem-based management that targets the maintenance of ecosystem services and biodiversity that rely on connections between land and sea.		Vanuatu Ecosystems & Adaptation Project (23)
Ecosystem service valuation / Payments for Ecosystem Services (PES)	An innovative mechanism to bring economic benefits for conserving ecosystems.		MACBIO (3) The Nakau Program (21)
Integrated coastal (zone) management	A conscious management process that acknowledges the inter-relationships among the multiple objectives for the use of coastal areas and the environments that are affected by those uses. Islands are bound by coastlines and thus integrated coastal (zone) management should form an integral part of any natural resource management scheme.		Pacific Resilience Program (31)

Approach	Description	Sub-categories / related approaches	Project examples (Project number)
Integrated island Management (IIM)	Sustainable and adaptive management of island natural resources through coordinated networks of institutions and communities that bridge habitats and stakeholders at the scale of social–ecological processes and threats, with the common goals of maintaining ecosystem services and securing human wellbeing.	Integrated land management	SMSMCL (29) Integrated Forest Management in the SI (25)
Integrated land–sea management	Management that specifically targets cross-system threats and processes between linked terrestrial, freshwater and marine ecosystems in order to maintain or restore biodiversity, ecosystem services and human wellbeing. Because of the geographic proximity between water catchments and coastal marine areas in island systems, cross-realm processes and ecosystem functions are more easily disrupted by large-scale disturbances and thus require heightened consideration for integrated management.		Ridge 2 Reef (1) Vaisigano Catchment Project (2)
Integrated water resource management (IWRM)	Holistic approach to management of water resources that coordinates management of catchments and related resources.		Ridge 2 Reef (1) PEARL (14) SMSMCL (29)
Spatially / Locally Managed Marine areas	Management of marine areas that occurs at a local scale, or employing a spatial framework.	Marine Protected Areas (MPAs)	Vatu-i-Ra Seascape (8)
Terrestrial protected areas	Protection of terrestrial environments to conserve particular ecosystems or species and prevent degradation of forests and catchments.		EREPA (26) SMSMCL (29) Integrated Forest Management in the SI (25)

2 Current resilient ecosystem-related projects in the Pacific

2.1 Current or recently completed projects

In a crowded space, there is a multitude of types and scales of projects underway in PICs aiming to ensure the wellbeing of communities, populations, and the ecosystems they rely upon, in an uncertain future of climate change. There are a number of approaches to addressing vulnerability to climate change, through enhancing disaster risk response mechanisms, increasing adaptive capacity, and human and environmental resilience.

Summary tables of the review are contained in Appendices A and B, with a breakdown of the number of projects by country, island setting, management approach and focus area shown in Figures 2-1 to 2-4 below. Management approaches and focus areas for individual projects were determined or inferred using project websites and/or project documentation where available. In some cases, project information and documentation is sparse (and potentially out of date), and actual on-the-ground project focus areas and approaches may differ from our analysis.

The initial desk assessment identified a total of 31 projects currently underway that have initiatives seeking resilient ecosystems in PICs. Projects vary widely in terms of financial scale, and range from those operating at a single community/village level, to those at provincial, national and regional (multi-country) scales. Few projects are being implemented region-wide; the majority of projects (23) were being implemented in only one country, and of these, few were being implemented in more than one island (Figure 2-1). For example, the UNDP and SPC-led Ridge to Reef Projects are being implemented in multiple countries but with a regional component and country-specific objectives. Larger scale projects were generally conducted on main islands encompassing key urban areas and large population centres.

The projects covered the full range of island settings, from main islands to outer islands, from high volcanic to low lying atolls, and from rural to urban settings (Figure 2-2). Projects varied in objectives, with some having biodiversity related objectives as their primary objective (i.e., terrestrial protected areas, spatially/locally managed marine areas), and integrating across land (island) and sea such as integrated land-use or coastal zone management (Figure 2-3). Many of the nature-based solutions (NbS) or EbA projects included water or food security, disaster risk reduction or other community well-being objectives, in addition to biodiversity or ecosystem objectives (Figure 2-4).

Most projects include multiple focus areas, of which food security, ecosystem protection and disaster risk reduction are the most common. Virtually all had an adaptation component which is not surprising given that the majority of the main funding mechanisms require a climate change focus. Initiatives that promote or deliver a systems approach to whole ecosystems, such as integrated land-sea, whole of island, or ridge to reef type approaches were less common.

Two current programs, Pacific Ecosystem Based Adaptation to Climate Change (PEBACC) and Pacific Ridge to Reef (R2R), are of particular relevance to current investment considerations, demonstrating current EbA initiatives linked to sustainable development outcomes, with potential to scale up and support long-term benefits for communities and ecosystems (Box 1).

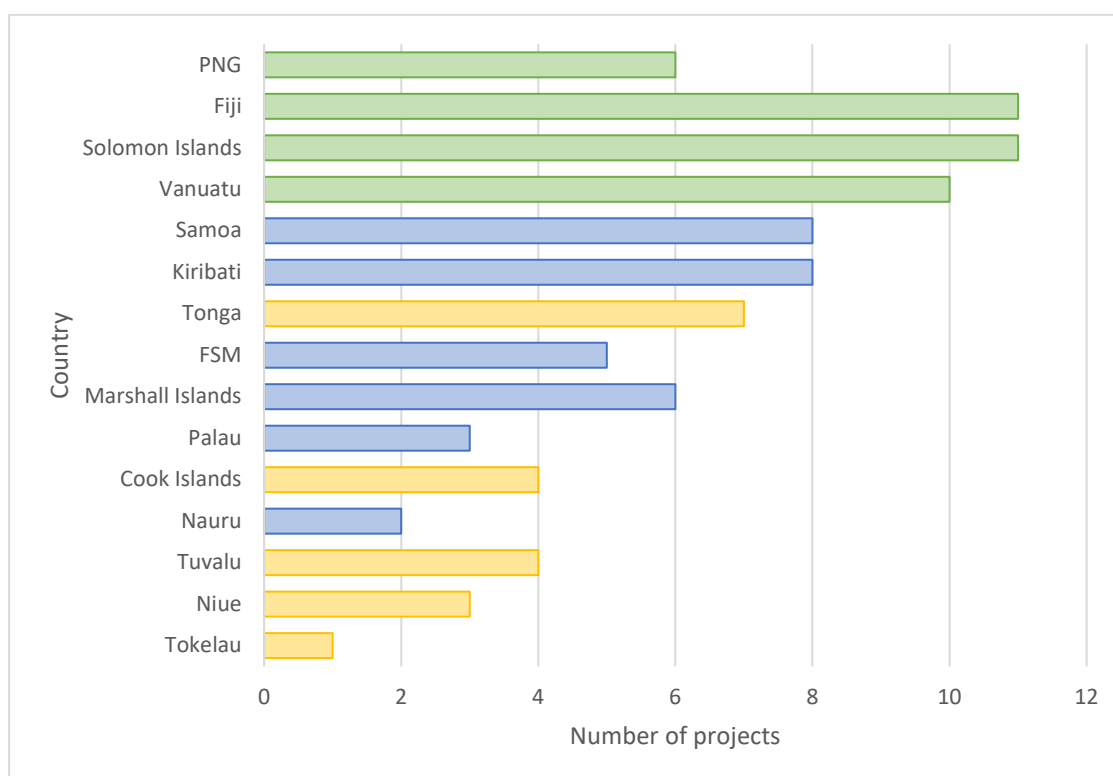


Figure 2-1: Number of projects implemented in each country. Countries are ordered from highest to lowest population. Pacific regions are represented by blue: Polynesia; green: Melanesia; and yellow: Micronesia. Note: Some regional projects occur in multiple countries. Abbreviations: Papua New Guinea (PNG), Federated States of Micronesia (FSM).

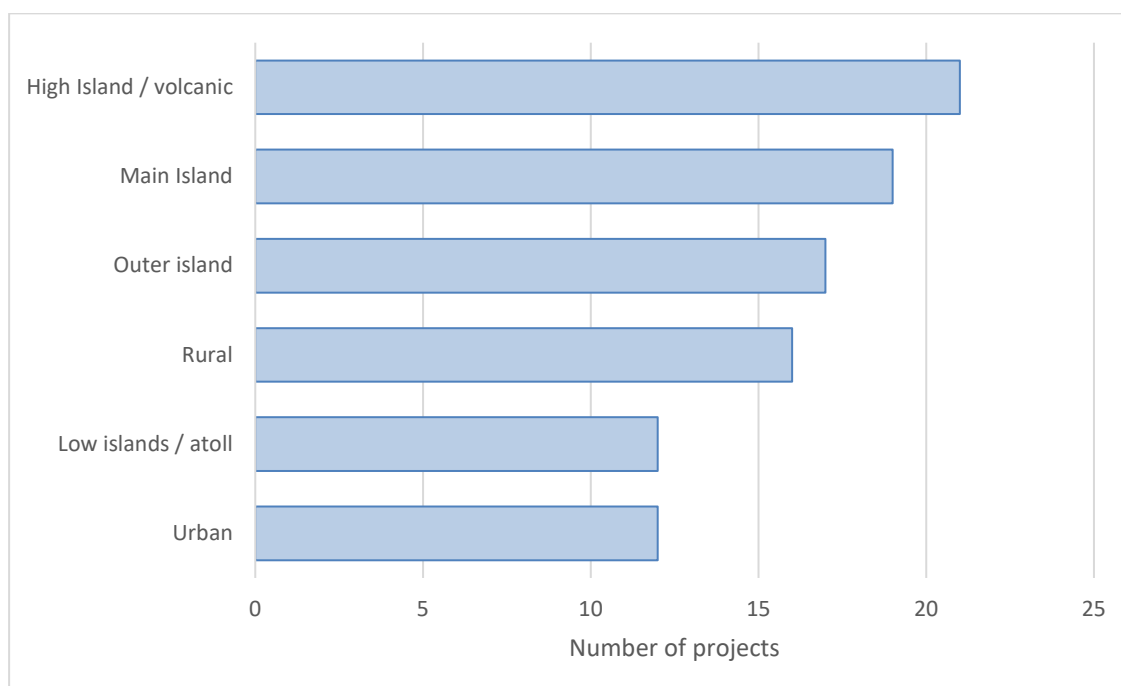


Figure 2-2: Number of projects by island setting. Note: some projects involve a number of settings and are included in more than one of these categories.

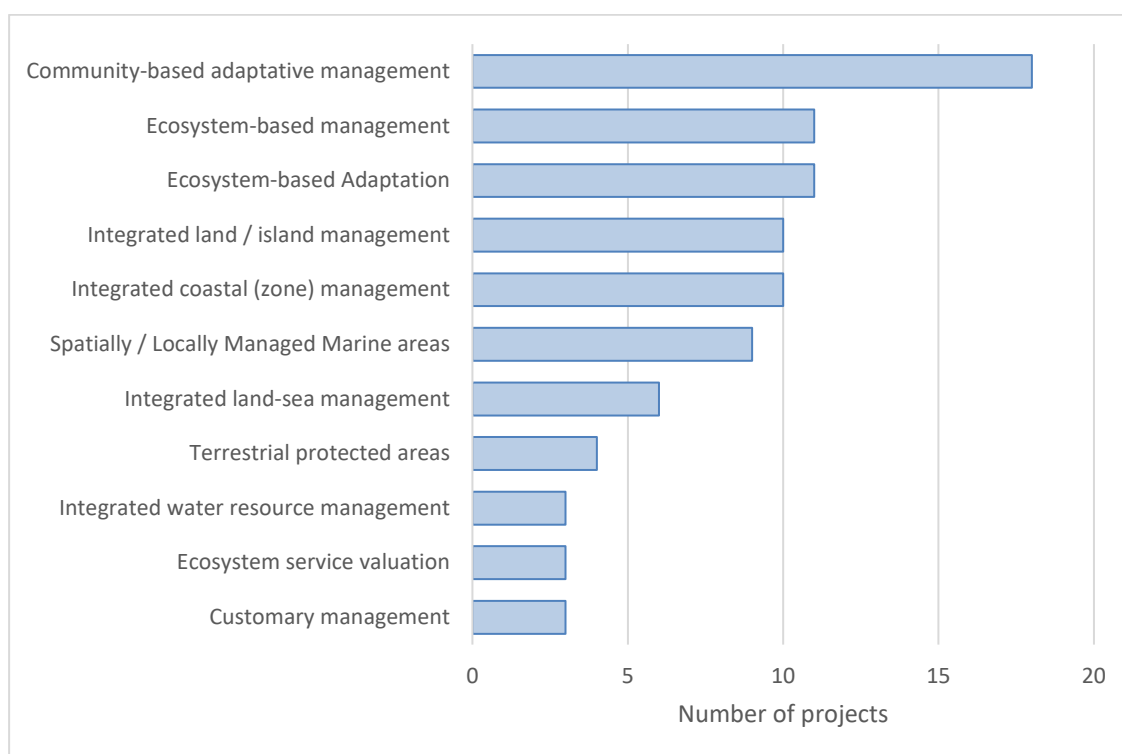


Figure 2-3: Number of projects implemented using different management approaches. Note: some projects used multiple approaches, refer Appendix B.

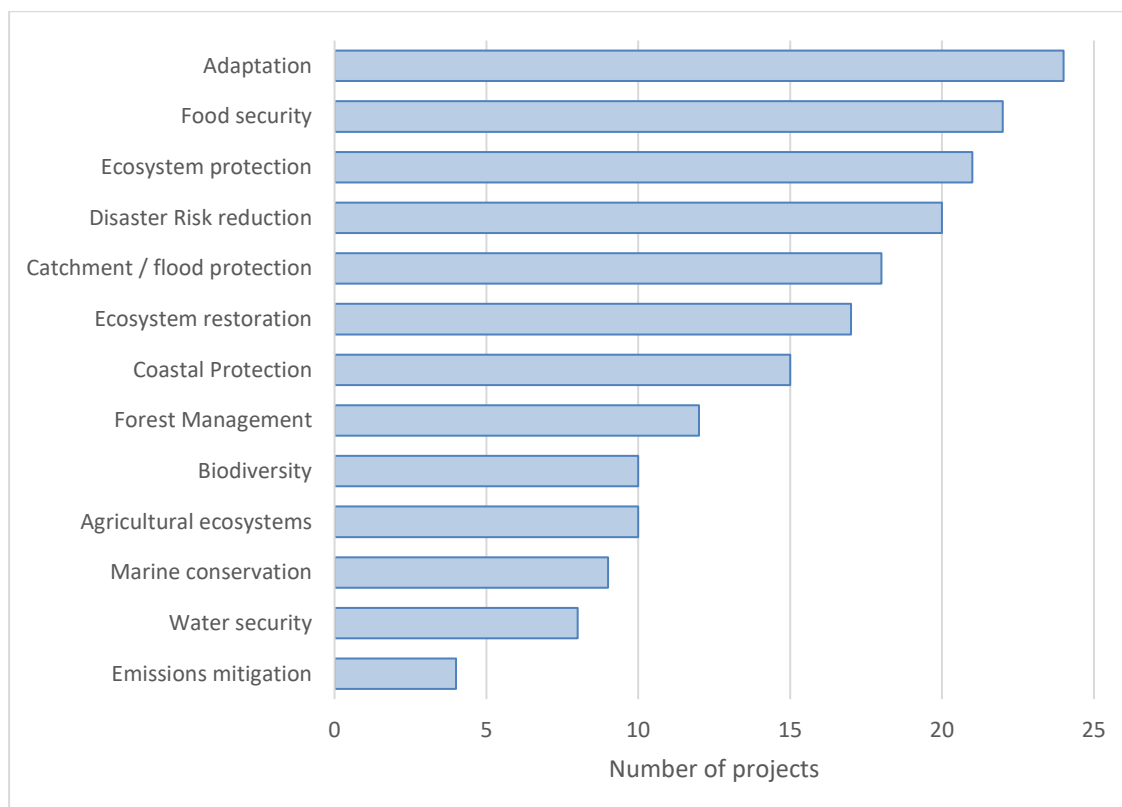


Figure 2-4: Number of projects covering different focus areas. Note: most projects had multiple focus areas, refer Appendix B.

Box 1. Current key EbA initiatives

Pacific Ecosystem Based Adaptation to Climate Change (PEBACC)

A SPREP-implemented program to explore and promote EbA options for climate change adaptation. Fiji, Solomon Islands and Vanuatu participated in phase 1 (2014-2020) of this program with outcomes intended to integrate EbA into development, climate change adaptation and natural resource management policy and planning processes. Phase 1 created replicable models and framework to allow project scaling up and expansion to other countries. The approach has developed high levels of government support and community engagement and a framework that enables national, provincial and local-level EbA initiatives to be integrated in to development, climate change adaptation and resource management policy.

PEBACC is part of the International Climate Initiative (IKI) initially funded through The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

Pacific Reef to Ridge Program (R2R)

The Ridge to Reef program uses an integrated whole of island approach to manage the interconnected natural and social systems from inland catchments through to fringing reef environments. It addresses national priorities and development needs including biodiversity, land degradation, international waters, sustainable forest management, and climate change mitigation and adaptation. Its strengths lie in that it has built on, and scaled up, the previous GEF Pacific Integrated Water Resource Management (IWRM) Project with a strong cross-sectoral planning framework with both government and community involved in planning, implementation and monitoring initiatives.

Whilst the R2R is still largely focussed on pilot projects that in many cases are not large enough to yet show impact, the process has identified where potential pilot-level scaling out is easier or more successful than others, e.g., the dry-litter approach to piggeries to remove water quality impacts from piggeries that affects both freshwater resource and nutrients and faecal contamination in marine areas.

The program is funded through the Global Environment Fund (GEF) and has been implemented in 14 Pacific Island countries by the United Nations Development Program (UNDP).

2.2 Potential pipeline initiatives and projects

The review and interview discussions identified a number of relevant initiatives and potential programmes that will also influence potential investment opportunities for MFAT's resilient ecosystems intervention area, including:

- The Joint Pacific Initiative on Biodiversity, Climate Change and Resilience. This Joint Pacific initiative has been launched by France, The EU, New Zealand and Australia with Canada also subsequently joining. The initiative is designed to increase the capacities of 19 Pacific states and territories to adapt to the impact of climate change impacts through strengthening Pacific island ecosystems and communities more resilient to the impacts of climate change through nature-based solutions.

The initiative plans to build an international coalition designed to catalyse and streamline funding, improve donor coordination in alignment with regional priorities while facilitating access to funds for project developers and strengthening capacity for project development. There will be a particular focus on financing small and medium sized initiatives to address identified gaps for Pacific communities. Support for the Secretariat of the initiative is provided by the French Development Agency (ADF) with SPREP, SPC and IUCN key implementing partners.

Approximately €28 million has already been committed to the initiative with the first projects likely to commence in 2020. New Zealand has currently committed NZ\$1m to the initiative.

- €12 million allocation to the Pacific region as part of the €35 million European Union - African, Caribbean, and Pacific Group of States - Small Island Developing States (EU ACP SIDS) Support Programme (€12 million allocated to the Pacific region), focused on management of coastal, marine and terrestrial biodiversity and enhancing resilience to climate change. The programme is anticipated to start in 2020 with SPREP as the implementing entity.
- A joint GIZ-SPREP €9 million Blue Carbon Ecosystems programme for Melanesia awaiting final approval from the German government BMU-IKI. The proposed programme will target activities on mangroves and seagrasses and to some extent coral reefs.
- A joint IUCN-SPREP-GIZ \$50 million Coastal and Marine Ecosystems Resilience programme to GCF for six PICs.

The above initiatives will in part likely to continue and expand the work commenced under the current Pacific Ecosystem-based Adaptation to Climate Change (PEBACC) project to both continue and expand work in the three initial countries (Solomon Islands, Vanuatu and Fiji) and to extend the approach in to other PICs.

3 Key findings from stakeholder consultations

The assessment conducted a number of short stakeholder interviews over the week of 2 September 2019 either by telephone/skype or in person (in the margins of the 29th SPREP Governing Council meeting in Samoa and Oceanic Ecosystem Services Forum in Christchurch) (Table 3-1).

Table 3-1: Summary of stakeholders consulted.

Date	Stakeholder	Location
2 Sept 2019	Mr David Loubser, former PEBACC program manager, SPREP, Vanuatu	Discussion by phone
4 Sept 2019	Mr Kevin Petrini, Team Leader, Resilience & Sustainable Development Team, UNDP Pacific Office in Fiji	Discussion by Skype
4 Sept 2019	Dr Winifereti Nainoca, Environment Specialist and Deputy Team Leader, Resilience & Sustainable Development Team, UNDP Pacific Office in Fiji	Discussion by phone
4 Sept 2019	Mr Stuart Chape, Director of the Islands and Oceans programme, SPREP Mr Fred Patison, Solomon Islands, Country Manager, Pacific Ecosystem-based Adaptation to Climate Change	Discussion in the margins of the 29 th SPREP Council Meeting, Samoa
5 Sept 2019	Samasoni Sauni, Science & Project team leader Emma Newland, Science Officer Reef to Ridge Team, Pacific Community, Fiji	Discussion by Skype
5 Sept 2019	Herman Timmermans, Fiji, Country Manager, Pacific Ecosystem-based Adaptation to Climate Change, SPREP	Discussion in the margins of the Oceanic Ecosystem Services Forum, Christchurch
19 Sept 2019	Herman Timmermans, Fiji, Country Manager, Pacific Ecosystem-based Adaptation to Climate Change, SPREP	Discussion by phone
1 Oct 2019	Trina Leberer, The Nature Conservancy	Discussion by Skype

3.1 Indicative themes from interviews

Similar to the desktop review, the participants in interviews identified a fairly even mix in terms of number of projects implemented in main or outer islands, and urban or rural areas. However, most interviewees identified that more focus was needed in rural and outer islands given a perceived current bias toward urban centres or main islands. Projects tend to be implemented on main islands, in urban areas and in population centres as it is usually easier and cheaper to implement with greater social and population benefits (where the number of people benefitting is a key metric often required by donor agencies).

More than one participant suggested that increased ecosystem and social resilience could be better achieved for both rural and urban centres if more focus was given to addressing environmental degradation, adaptation and resilience in rural areas and outer islands. The suggestion being that reducing environmental degradation and maintaining livelihoods in outer-islands/rural areas would play a role in reducing overpopulation and associated environmental degradation and social

vulnerability caused by internal migration to the main centres. However, there are other social drivers, for example access to schooling, employment and social opportunities that also drive internal migration issues.

Some participants also suggested that ecosystem-based approaches are more likely to be successful in rural/outer-island areas compared with main centres where ecosystems and environments are already highly degraded, people are less connected with nature, significant infrastructure and development is in place, and where hard solutions such as seawalls are more likely to be preferred.

Approaches that use traditional ecological knowledge, and restoration of traditional practices was a key thematic gap and opportunity identified. Use of traditional ecological knowledge did not appear to be a primary approach to ecosystem resilience in the desktop review, and customary management approaches were only identified in 3 of the 31 projects identified. However, the benefits of traditional ecological knowledge and restoring traditional practices are likely to be large, not only for achieving resilient ecosystems but also development objectives including food security, disaster preparedness, and health. Inclusion of these approaches into future projects was seen by interviewees as a means to increase success, and continuity of benefits beyond project end dates. Examples given included:

1. using bio-indicators as early warning systems for climatic events such as droughts
2. using traditional food storage methods which can increase disaster preparedness and reduce reliance on post-disaster aid, and
3. restoring traditional gardening and farming practices which promotes ecosystem sustainability, increases food security, and increases health through lower consumption of less healthy 'western' foods. However, only in Palau is there a strong programme of linking ecosystem management to health and nutrition through increased awareness of 'healthy protein'.

Payment for ecosystem services (PES) approaches were identified as a key opportunity; ecosystem service valuation only featured in three existing projects in the desktop assessment: MACBIO (project 3), the Nakau Program (project 21), and the Vaisigano Catchment Project (VCP, project 2). The MACBIO program provides ecosystem service valuation support to countries to aid decision making and prevent loss of 'hidden' marine and coastal ecosystem services on which people depend. The Nakau program uses carbon offsets from forests to generate income for local economies as a way of promoting forest conservation, preventing logging and subsequent loss of the ecosystem benefits and resources that support communities. Ecosystem service valuation will be part of the Vaisigano Catchment Project in Samoa, implemented by UNDP, which is now in its initial phase and expected to run to 2023 (project 2, Appendix A). PES will be used for promoting conservation of upland areas that are critical for downstream flood mitigation and management.

There are also a number of other programs (outside the scope of this study) underway or completed that use(d) PES successfully including; the Sovi Basin World Heritage Site in Fiji, and the United Nations Framework Convention on Climate Change (UNFCCC) Reducing Emissions from Deforestation and forest Degradation program (REDD+) (implemented in Fiji, Papua New Guinea, Solomon Islands, Vanuatu). Many examples of PES use in Pacific programs are for terrestrial forested ecosystems, however there are examples of other successful PES programs in the North Pacific; 'The Green Fee' tourist tax in Palau generates ~US\$1.5M / year for conservation, and the sale of tuna leases have been highly successful in the Marshall Islands (interviewee examples).

According to interviewees, PES approaches fit well with and largely benefit whole-catchment, integrated type approaches. An example given was that whole-catchment approaches require commitment and cooperation of people and communities from all different parts of the catchment. This means that forest owners in the upper catchment areas are asked to protect their forests, and not log areas, for the sake of ecosystem resilience and communities downstream for which they see no benefit (compared with the economic gains associated with logging). Integrating PES into programs may help to reduce such inequalities and increase project success.

Co-management approaches that foster collaboration, and build networks of people from science, government, and community are proven to have better outcomes than “command and control” type approaches (Armitage, Plummer et al. 2009). Interview findings supported this; successful projects have been those that have been government driven, in line with local needs and policy, and have had buy in of local communities as well as the private sector. Such successes are underpinned by good, stable management committees that include government, private sector and community individuals. Establishing context-specific baselines and addressing knowledge gaps at the site-level is essential to ensure that the right actions are used in the right places.

Participants unanimously indicated that future investments would most productively be spent building on or scaling up existing, proven programs. Integrated, whole catchment or island type approaches were seen as the best way forward, and that small scale or new initiatives without good scientific backing and community buy-in should be avoided.

3.2 Identification of thematic or geographic gaps

The initial web-based assessment and stakeholder discussions identified the following:

- thematic gaps in current nature-based programs:
 - Payment for Ecosystem Services.
 - Use of traditional ecological knowledge and restoration of traditional practices.
 - Strengthening public-private partnerships.
 - Integration with development planning and engineered ‘hard’ approaches.
 - Importance of broader-scale, synergistic policy interventions to protect ecosystems.
- geographic gaps in current nature-based programs, and potentially vulnerable areas:
 - Rural areas (especially communities in inner island areas on high islands).
 - Outer and remote islands.
 - Informal settlements in urban and peri-urban areas.
 - Atoll nations.

It was also evident from both the desktop assessment and the interviews that larger programs such as PEBACC tended to be implemented more in Melanesian countries than in Polynesia and Micronesia.

3.3 Common challenges

The Pacific is an extremely diverse region and one-size-fits-all approaches are not appropriate. Building and retaining capacity within governments and implementing agencies (i.e., high staff turnover and lack of ‘institutional memory’) is a key challenge to project success (Lo 2016). Knowledge and confidence in EbA and NbS approaches can be a barrier to gaining support for projects in their initial phases, at both government and community levels. This can be because the potential benefits of EbA can be difficult to convey, examples of successful outcomes are often limited to anecdotes, there can be a high level of uncertainty around benefits, and the true adaptation benefits of EbA may take many years or even decades to be noticeable (Lo 2016; Cohen-Shacham, Andrade et al. 2019).

A general lack of cohesion was identified; projects often overlap in their goals and resources wasted trying to achieve similar outcomes. Interview participants highlighted a need for improved collaboration between funding agencies, and capacity building within governments to streamline and optimise project goals with country needs. Strengthening of governance was also identified as necessary for projects to be scaled up and become more successful beyond project end dates (despite best efforts many projects achieve little more than pilot studies due to such barriers). An example was the Nadi Basin Catchment Committee in Fiji established during the 2008-2013 GEF-funded Integrated Water Resource Management Project which provided an effective stakeholder forum for catchment-based decision-making throughout the duration of the project but was not able to be sustained beyond the end of the project. Furthermore, new start-up projects are often more likely to get funded than maintenance and longer-term implementation programs which can hinder ongoing benefits (interviewee comment).

As a result of the multitude of projects implemented with lack of cohesion and understanding of the local landscape, ‘over-consultation fatigue’ can hinder progress. These types of challenges may be overcome through more strategic engagement, better coordination among project donors and implementers, development of sustainable finance mechanisms, and programs that rely less on external funds and strengthen public-private partnerships (PPP). Interviewees suggested that future opportunities lie with programs that utilise private sector goals and economies (e.g., developing ecotourism), involve entrepreneurs (especially young people), and coordinate between governments and local communities.

Interview participants stated that the most successful programs have been implemented in countries that have experienced recent political stability such as Fiji. Furthermore, projects considered more successful are those that have strong government support, and align with country-specific needs, policies and goals. Long term planning and goal setting at the country level is needed, and reliance on external funding cycles needs to be reduced as planning rarely goes beyond these. Short funding cycles can result in lack of continuity, compromising the adaptation outcomes of EbA programs (Lo 2016).

Interviewees noted that the effectiveness of the Ridge to Reef program was underpinned by its robust framework, building on effective cross-sectoral coordination and planning process established through the previous GEF Pacific Integrated Water Resources Management (IWRM) Project, and developed in conjunction with country-specific goals and planning. Moreover, they attributed this program’s success to its strong scientific foundations and technical know-how. The combination of these factors has enabled the programs successful implementation in multiple settings (in terms of both governance and natural environment).

Costs and logistics prevent implementation of projects in outer or remote islands, and rural areas. For example, to charter a boat to Tuvalu for 3 days costs ~\$23,000, and such costs use large proportions of project budgets. Projects implemented in outer island and rural settings have tended to be smaller in scale (economic and otherwise) and driven by non-government organisations (interviewee comment).

Excessive focus on climate change was identified by an interviewee as a barrier as it can detract from key developmental problems and environmental degradation. Again, this is a reflection on the climate change multilateral funding sources which typically will only fund climate change additionality, not basic development issues. In the Pacific, the two cannot be separated and addressing basic developmental/environmental degradation challenges first is a fundamental step in many places in addressing community, ecosystem and economy vulnerabilities to climate change, achieving enhanced community, ecosystem and economic resilience and delivering climate change adaptation.

A further challenge is EbA approaches being considered as a distinct alternative, particularly to hard engineered approaches such as seawalls or flood stop banks. Even pristine ecosystems are unable to protect human communities from all climate-related hazards, particularly inundation related hazards where development or human settlement has been located in areas exposed to episodic coastal or river inundation. At best EbA approaches can only reduce the potential impacts associated with such development exposure. Rather than as a distinct alternative approach, improving how nature-based and engineered solutions can work more effectively together and understanding the various limits of effectiveness, thresholds and tipping points of nature-based solutions are two key gaps (Box 2). For effective adaptation, there needs to be a substantial increase in both the implementation and examples of projects that promote integration of green solutions and EbA approaches with hard solutions to address sustainable infrastructure (interviewee comment). For these types of integrated approaches to be successful, the interviewee stated that capacity building and education needs to be targeted at the appropriate audiences; those responsible for doing the on-the-ground work (e.g., engineers, planners). Whilst projects, such as the GEF-IWRM have attempted catchment-based mixed-intervention approaches, these tend to be limited and relatively small scale. However, such mixed interventions have the potential to be highly effective, although their cost-effectiveness may be low relative to EbA-only approaches due to the high costs of hard approaches (Brown, Daigneault et al. 2014).

Furthermore, ecosystem / nature-based adaptation activities for coastal protection have primarily focussed on individual components of the ecosystem coastal protection function, typically mangrove planting. Other activities, such as community-based marine or local protected areas are primarily for food security and biodiversity preservation and are often well away from the main village or urban areas. Whilst there are some secondary benefits to coastal protection through increased marine ecosystem resilience, this tends to have minimal present impact on reducing exposure as such initiatives rarely address the on-land, human activities, and in particular human impacts on the beach/berm ecosystem. Damage to beach/berm systems through inappropriate development, sand mining and construction of seawalls is by far the most significant factor driving increased exposure and vulnerability to coastal hazards at present and is a critical foundational component in responding to longer-term sea-level rise.

Box 2. Building smarter seawalls in Kiribati

There are few robust examples of how nature-based and engineered solutions can work more effectively together in the Pacific. Encouraging such approaches form a key component in the current development of *Te Kawai ae Kaokoro*, Kiribati's first long-term coastal security strategy.

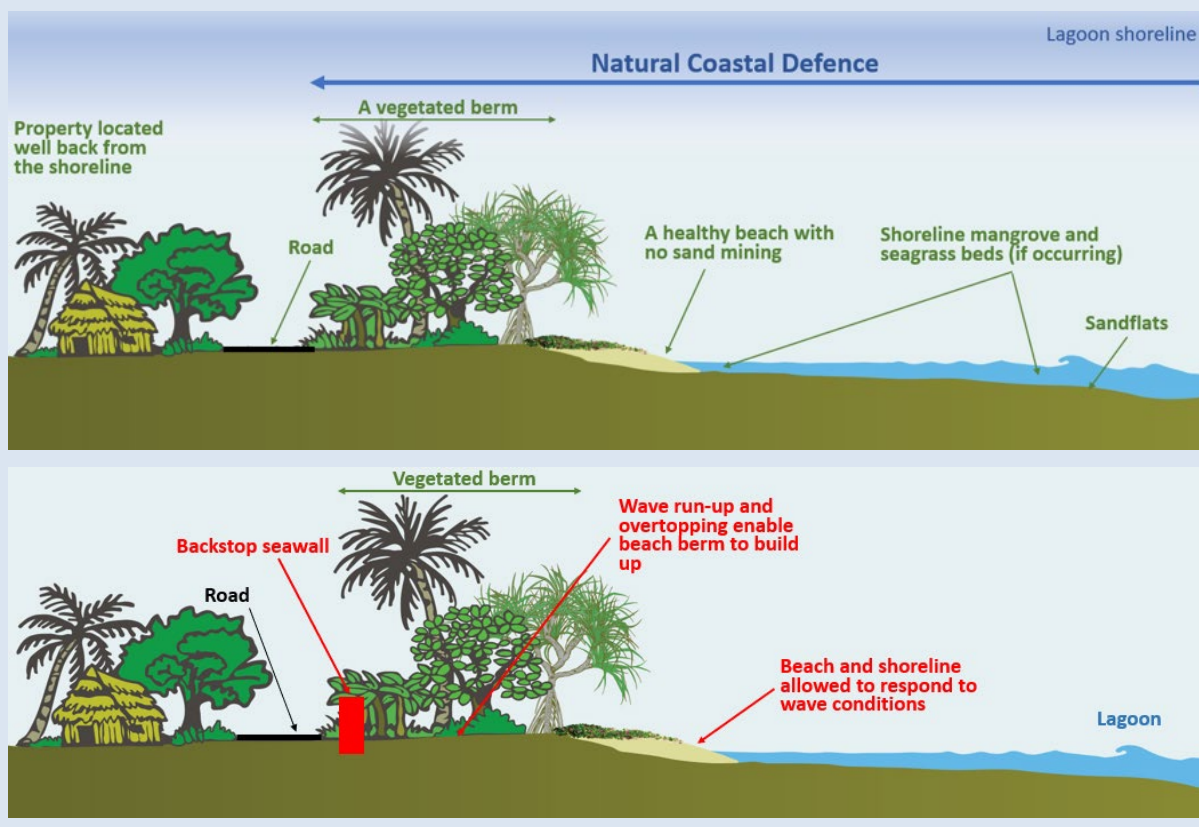
Adaptation activities for coastal resilience in Kiribati has focussed primarily on construction of low-cost seawall construction, ad hoc small-scale land reclamation and ad hoc mangrove planting. This approach provides little protection to development located behind, particularly to sea-level rise effects on inundation related to high tide wave overtopping.

Recognising the importance of the coast protection function of the coastal ecosystem, and reducing human pressures on it, needs to be a fundamental approach to adaptation in Kiribati. This coast protection function is dependent on a number of ecosystem components working together (top figure), but particularly important in building a stronger natural coastal defence system is reducing the human and development pressures on the beach and berm system.

If not constrained by human activities, the beach/berm system can adapt and respond to protect land and communities behind it against some of the changes that sea-level rise will bring.

Rather than building seawalls over the beach, constructing them to recognise and accommodate the protection provided and adaptive capabilities of the beach/berm system (bottom figure) enables:

1. Much more effective reduction in wave overtopping / overwashing from reaching the land behind the built seawall.
2. Much reduced costs for building the seawall structure
3. The built seawall will last significantly longer and require much less maintenance than a seawall built at the shoreline and exposed to wave action.
4. The vegetated berm seaward of the built seawall enables sand to be trapped and the berm to respond and naturally build up to the effects of increased wave overwashing due to sea-level rise.
5. Continued light use of the vegetated strip by landowners, including growing useful trees such as Pandanus, construction of small local shelters can be accommodated.



3.4 Evidence of success

The benefits of EbA are difficult to assess quantitatively and there is often a time-lag between implementation and adaptation benefits (Lo 2016). Whilst interviewees identified elements of success in various programs, the discussions confirmed the ongoing difficulty in defining both what adaptation or ecosystem resilience success is, and in defining appropriate metrics for attempting to define progress or success.

Key challenges of defining adaptation success (adapted from Dilling, Prakash et al. (2019) include:

1. A universal definition of adaptation success is not available. Unlike mitigation, there is no universal unit of measurement for adaptation. Adaptation success has many meanings; local context determines what must be adapted to, as well as who must do the adapting, and whether actions at other scales are complementary.
4. Typical project/programme metrics are not able or appropriate to show success within the typical project-related cycles and timelines. Better long-term metrics are needed to represent longer-term gains.
5. People have different, and evolving, values, risk perspectives and tolerances. Different perceptions of adaptation success may stem from differing perceptions of what constitutes a value or a risk and whether (or how) a risk should be mitigated.
6. Who gets to define what is measured? Both adaptation interventions and measurements of their success are inevitably shaped by Central Government or donor priorities which does not necessarily translate to meaningful or relevant sub-national or local metrics of success.

Current approaches to defining success include using a research-based context-specific approach (i.e., not one-size-fits-all), and use of outputs as intermediate success indicators (e.g., X ha of land restored per year) rather than defined adaptation outcomes that are difficult to measure in the short term (GIZ2017). Indicators can be based on quantity (i.e., number of trees planted) or quality of change (restoration of degraded ecosystem), from a local baseline, or capacity building success measures such as number of local people engaged in the project (GIZ2017) (Table 3-2). However, these indicators (e.g., Table 3-2) provide limited evidence that local vulnerabilities are reduced or resilience is improved, with respect to individuals or communities being empowered to pursue the lives and adaptation outcomes that they have reason to value (Dilling et al. 2019).

Interviewees identified enhanced livelihoods as a key indicator of project success, and although difficult to measure, local perception of success was also important for ensuring ongoing benefits. Perception of success as well as inspiration, helped to bolster community buy-in and ability to roll out or scale up projects to other areas. An example given was implementation of marine protected areas (MPAs) at the community level in Samoa (location not specified); community leaders from nearby villages observed the success and positive outcomes of MPA implementation and were inspired to create their own.

For MPAs (and other initiatives that protect reefs and associated ecosystems), evidence of program success can be measured as return of species previously lost, increased abundance of species, and increased ecosystem health and diversity. Following MPA implementation nearby areas often see benefits for fisheries, which has knock on benefits for food security, health and livelihoods. However,

again much of the evidence of increased long-term human-related resilience/adaptation outcomes is anecdotal.

Table 3-2: Examples of success measures used in project monitoring and evaluations. Refer Appendices A and B for project details.

Project goal	Success indicators	Project (number)
Establishing partnerships for sustainable coastal area development	National Botanical Garden with % of rare endemic species % Area classified as sustainable land use area Number of partnerships established	R2R Vanuatu (1)
Increasing capacity for effective environmental stress reduction practices and sustainable watershed management	Extent of areas re-vegetated Extent and continuity of the data collected through PM&E Plan Number and scope of best practice measures communicated	R2R Samoa (1)
Carbon stocks restored and enhanced in priority catchments	The target for reforestation and forest rehabilitation established during and by the project is: New plantings: 1,305 ha and Forest rehabilitation: 600 ha.	R2R Fiji (1)
EbA is fully integrated into development, climate change adaptation and natural resource management policy and planning processes in three Pacific island countries, providing replicable models for other countries in the region, and is successfully demonstrated through implementation at national, provincial and local levels	Ecosystem and socio-economic resilience analysis and mapping (ESRAM) completed as a basis for adaptation planning at national, provincial and community levels. EbA options analysed, prioritised and plans developed. EbA plans implemented with demonstrated benefits. Communications and outreach products developed to promote integration of EbA options into climate change policies, plans and projects	PEBACC (4)

3.5 Co-benefits and integration

Many of the current programs that use nature-based approaches have multiple focus areas and therefore co-benefits for development objectives and cross-cutting goals. EbA was generally not used as a stand-alone intervention in the projects identified in the analysis. Interviewees stressed that projects must align with country specific development objectives in order to be successful. Ecosystem based adaptation approaches are multi-sectoral and anthropocentric, and therefore beneficial to development overall (Sierra-Correa and Cantera Kintz 2015). EbA is not limited in who can be involved (compared with 'hard' approaches which tend to require technical assistance, which means that these approaches can build social capacity at a number of levels and align well with addressing gender equality, food and water security, health, and disaster risk reduction. Integrated, Ridge to Reef type approaches include a suite of activities that allow integration of many development goals. Furthermore, these approaches easily integrate with citizen science and private sector involvement, which are known to enhance project outcomes, continuity of benefits and overall success.

Key co-benefits of successful nature-based projects identified by participants:

- Food security.
- Water security.
- Disaster risk reduction / resilience.
- Health.
- Increased livelihoods / economies.
- Prevention / delay / reduction in the potential for relocation.

4 Areas of potential opportunity

In shaping a future programme on resilient ecosystems for investment by MFAT, the discussions and emerging themes outlined above have provided guidance on potential gaps and opportunities. As outlined in Section 1 in considering potential options, the investment will have:

- A development focus.
- A primary adaptation focus.
- Strong outcomes in Disaster Risk Reduction (for example coast or flood protection) and/or food security.

Activities that are out of scope for investment, though often have co-benefit outcomes of nature-based solutions or ecosystem-based approaches, include:

- Conservation or biodiversity as a primary focus or without a development focus.
- Water security (being addressed in one of the other intervention areas).
- Invasive species management (being addressed as a complimentary strand under this intervention area).
- Single site projects that are not clearly scalable.

As part of the discussions, the stakeholders interviewed were all asked thoughts on how or where a \$10M investment would be best spent. Responses are summarised in Box 3.

Box 3. Interviewee thoughts / opinions on where / how a \$10M EbA investment would best be spent:

- Focus on one adequately resourced project
- Focus in one representative or priority area / country
- Use an integrated, whole-catchment, multi-ecosystem approach
- Ensure project is supported by government and aligned with motivations
- Build on existing successful projects (Ridge 2 Reef Phase 2)
- Involve and leverage off private sector, strengthen public private partnerships
- Involve / employ locals
- Implement alternative livelihoods programs / business incubators
- Create scholarships for higher education to build capacity
- Utilise Payments for Ecosystem Services
- Build a sustainable financing system at a national level e.g., Biofin
- Support a program position for an EbA coordinator for the Pacific
- Increase data sharing capability, consolidate pilot studies, tracking indicators
- Improve modelling / prediction capabilities for climate change impacts (especially location specific data)
- Address coastal erosion (e.g., Tuvalu)
- Address plastic pollution, microplastics

Based on the stakeholder discussions and review summarised above, potential intervention options include:

1. Option 1: Focus on a new programme on coast/flood protection to demonstrate integration of EbA/NbS with hard infrastructural/development planning approaches.

This option would address two of the key thematic gap areas identified around 1) integration with development planning and engineered ‘hard’ approaches, and 2) the importance of adopting broader-scale, synergistic policy interventions to protect ecosystems. It would aim to demonstrate a more rigorous systems approach to ecosystem protection function resilience (and its role in the ‘mix’ of adaptation responses required for a particular location, for example one that considers the entire reef-reef flat-beach/berm (and where necessary catchment) system, prioritises activities that will have the most significant positive impact on this total protective function, and adopts engineering approaches to reduce flood or erosion risk that work with the natural geomorphological and ecological processes occurring). This is likely to mean a much greater focus on reducing development pressure on beach/berm systems and/or low-lying river floodplains.

2. Option 2: Focus on out-scaling of existing established programmes delivering EbA/NbS-activities.

This option would leverage off existing programmes where both regional and local project management structures are already in place. It would focus on one or at most two initiatives, building on well-established and cross-implementing agency mechanisms, with a focus on out-scaling effective demonstration projects. The option would provide the potential to target some of the geographic gaps identified above, either specific sub-regions/countries (e.g., Micronesia and/or Polynesia) or particular settings, (e.g., outer-islands, rural areas), and potential gaps in thematic areas, for example incorporating:

- Payment for ecosystem services and the development of youth employment or enterprise opportunities.
- A wider social approach to food security adaptation activities that builds in community nutrition and health components to promote affordable healthy local protein.

3. Option 3: Focus on increasing financial contributions to Pacific regional funding initiatives supporting EbA/NbS initiatives.

There are a number of initiatives commenced or commencing aimed at building an international coalition and improvement coordination in line with regional priorities to enable streamlined funding from a range of donors for nature-based solutions in ways that are embedded in sustainable development (e.g., Pacific Initiative on Biodiversity, Climate Change and Resilience, BioFin). These have similar aims and objectives to the intended resilient ecosystem intervention.

Strengthening New Zealand's contribution to such initiatives could enable a more significant focus on the Pacific (in the case of global initiatives) or a potential stronger say in initiative governance to enable targeted support to address some of the geographic and thematic gaps identified above, for example beyond the current focus on Melanesian countries for much EbA activities.

4. Option 4: Development of a regional applied-research programme to address key knowledge gaps constraining all EbA/NbS activities (including limitations, tipping points, adaptation success indicators etc.).

Despite the growing interest and use of EbA/NbS, application and uptake still lags behind its potential. Uncertainties still remain around the conceptual framework shaping EbA/NbS components and processes. The option would aim to strengthen scientific evidence for EbA/NbS to help gain political support, improve funding justifications and help facilitate implementation. The option could include components to address critical knowledge gaps including:

- Improving understanding how and to what extent climate change affects ecosystems and associate communities across the variety of Pacific settings, particularly around limitations, thresholds and tipping points, to help design adequate and effective EbA/NbS measures.
- Improve techniques to assess economic costs, benefits (and in-particular capture cultural, social and environmental values) and trade-offs of EbA/NbS measures.
- Improving metrics of ecosystem adaptation success, particularly community-relevant indicators of what success is, that reflect the priority values of the communities. Current approaches to monitoring and evaluation are dominated by tangible output, project-specific indicators and struggle to capture the complexities of long-time horizons and socio-ecological systems, and climate change and development pathway uncertainties.

5. Option 5 Do nothing.

This option would enable funding to be reallocated to other components of the climate change program.

It is suggested that the above options provide the long list of options to be considered within the Indicative Business Case against the critical success factors for the activity. However, a key influencing factor in the option(s) progressed is the modest timeframe available, with it assumed that the resilient ecosystems programme be implemented over the period to 2023.

5 Acknowledgements

We would like to thank the nine interview participants for their time and valuable input to the content of this report.

We would like to acknowledge Paula Blackett and Paula Holland for their advice and assistance in the early stages of this study, and Drew Lohrer and Richard Bulmer for reviewing drafts.

6 Glossary of abbreviations and terms

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BMU	German Federal Ministry of Nature Conservation, Environment, Building and Nuclear Safety
BMZ	Federal Ministry of Economic Cooperation and Development (Germany)
CCDA	Climate Change Development Authority
CEPF	Critical Ecosystem Partnership Fund
CI	Conservation International
CIF	Climate Investment Funds
CTI	Coral Triangle Initiative
EbA	Ecosystem based Adaptation
EU	European Union
FAO	United Nations Food and Agriculture Organization
FSM	Federated States of Micronesia
GCF	Green Climate Fund
GEF	Global Environment Facility
GFDRR	Global Facility for Disaster Reduction and Recovery
GIZ	German Society for International Cooperation
ICM, ICZM	Integrated coastal (zone) management
IFRC	International Federation of Red Cross and Red Crescent Societies
IIM	Integrated Island Management
IKI	International Climate Initiative
IUCN	International Union for the Conservation of Nature
LDCF	Least Developed Countries Fund
MCT	Micronesia Conservation Trust
MPA	Marine Protected Area
NbS	Nature-based Solutions
NGO	Non-government organisation
OFDA	Office of US Foreign Disaster Assistance (within USAID)
PCCP	Pacific Climate Change Portal
PES	Payments for Ecosystem Services
PICs	Pacific Island Countries

PIFACC	Pacific Island Framework for Action on Climate Change
PIFS	Pacific Islands Forum Secretariat
PNG	Papua New Guinea
R2R	Ridge to Reef
REDD	Reducing Emissions from Deforestation and Forest Degradation
RMI	Republic of the Marshall Islands
SPC	Secretariat for the Pacific Community (a.k.a. the Pacific Community)
SPREP	Secretariat for the Pacific Regional Environment Programme
TNC	The Nature Conservancy
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UN-Habitat	United Nations Human Settlement Programme
USAID	United States Agency for International Development
USP	University of the South Pacific
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund for Nature

7 References

- Armitage, D.R., Plummer, R., Berkes, F., Arthur, R.I., Charles, A.T., Davidson-Hunt, I.J., Diduck, A.P., Doubleday, N.C., Johnson, D.S., Marschke, M., McConney, P., Pinkerton, E.W., Wollenberg, E.K. (2009) Adaptive co-management for social–ecological complexity. *Frontiers in Ecology and the Environment*, 7(2): 95-102. 10.1890/070089
- Brown, P., Daigneault, A., Gawith, D., Aslbersberg, W., Comley, J., Fong, P., Morgan, F. (2014) Evaluating Ecosystem-Based Adaptation for Disaster Risk Reduction in Fiji. *Landcare Research, Climate Development and Knowledge Networks (CDKN) Project*: RSGL-0024.
https://www.landcareresearch.co.nz/_data/assets/pdf_file/0004/77341/Fiji_disaster_risk_reduction.pdf
- Cohen-Shacham, E., Andrade, A., Dalton, J., Dudley, N., Jones, M., Kumar, C., Maginnis, S., Maynard, S., Nelson, C.R., Renaud, F.G., Welling, R., Walters, G. (2019) Core principles for successfully implementing and upscaling Nature-based Solutions. *Environmental Science & Policy*, 98: 20-29. 10.1016/j.envsci.2019.04.014
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (2017) Monitoring and evaluation – how to measure successes of Ecosystem-based Adaptation. *2nd EbA Community of Practice Workshop*, 21 – 24 August 2017, Bangkok, Thailand.
<https://www.adaptationcommunity.net/wp-content/uploads/2018/01/giz2017-en-learning-brief-measuring-success-eba-low-res.pdf>
- Dilling, L., Prakash, A., Zommers, Z., Ahmad, F., Singh, N., de Wit, S., Nalau, J., Daly, M., Bowman, K. (2019) Is adaptation success a flawed concept? *Nature Climate Change*, 9(8): 572-574. 10.1038/s41558-019-0539-0
- Jupiter, S.D., Wenger, A., Klein, C.J., Albert, S., Mangubhai, S., Nelson, J., Teneva, L., Tulloch, V.J., White, A.T., Watson, J.E.M. (2017) Opportunities and constraints for implementing integrated land–sea management on islands. *Environmental Conservation*, 44(3): 254-266. 10.1017/S0376892917000091
- Lo, V. (2016) Synthesis report on experiences with ecosystem-based approaches to climate change adaptation and disaster risk reduction, Secretariat of the Convention on Biological Diversity, Montreal. *Technical Series*, No. 85: 106.
- Nalau, J., Becken, S. (2018) Ecosystem-based Adaptation to Climate Change: Review of Concepts. *Griffith Institute for Tourism Research Report*, No. 15.
<https://www.griffith.edu.au/research/research-excellence/griffith-climate-change-response-program/ecoadapt-pacific>
- Sierra-Correa, P.C., Cantera Kintz, J.R. (2015) Ecosystem-based adaptation for improving coastal planning for sea-level rise: A systematic review for mangrove coasts. *Marine Policy*, 51: 385-393. 10.1016/j.marpol.2014.09.013

Appendix A Summary of current nature-based programmes with an adaptation focus.

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agency: UNDP Partners: SPC FAO UNEP Funding: GEF Scale: US\$10,317,000 Regional component. Country projects see below	Pacific Ridge to Reef (R2R) - Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods. Integrated approaches to freshwater and coastal area management – emphasis on interconnections between the natural and social systems from mountains, through watersheds and habitats, across lagoons to the reefs. To maintain and enhance Pacific Island countries’ (PICs) ecosystem goods and services (provisioning, regulating, supporting and cultural) through integrated approaches to land, water, forest, biodiversity and coastal resource management that contribute to poverty reduction, sustainable livelihoods and climate resilience.	Cook Islands FSM Fiji Kiribati Nauru Niue Palau PNG RMI Samoa Solomon Islands Tonga Tuvalu Vanuatu	R2R website GEF IUCN	1
Implementing agencies: Vanuatu Government Partners: Live & Learn Vanuatu SPC FAO Funding: GEF Scale: US\$4,606,000	R2R: Integrated Sustainable Land and Coastal Management (ISLCM) (2016-2021) To test and implement sustainable and integrated management of forest, land and marine resources to achieve effective ridge-to-reef (R2R) conservation in selected priority watersheds in Vanuatu. This project forms part of the regional ridge to reef (R2R) programme “Pacific Islands Ridge-to-Reef National Priorities: Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods”.	Vanuatu	GEF Project document	1
Implementing agencies: UNDP Partners: Government of Samoa Funding: GEF-LDCF Scale: US\$12,322,000 Co-financing total: US\$90,000,000	R2R Samoa: Economy-wide integration of climate change adaptation and disaster risk management to reduce climate vulnerability of communities in Samoa (EWACC) (2014-2020). This project aims to enhance a more efficient integration and management of adaptation and DRR/DRM into national development planning and	Samoa	Factsheet PCCP UNDP UNDP project page	1

Stakeholder	Relevant projects	Where	Info	Project ref. number
	programming and the resilience of communities' physical assets and livelihoods across Samoa to climate change and natural disasters. *resilient livelihoods, involves field implementation including R2R approaches, ecosystem restoration, sustainable management of watersheds, forests and land, forest restoration and protection.			
Implementing agency: Partners: Funding: GEF Scale: US\$4,195,000	R2R: Application of Ridge to Reef Concept for Biodiversity Conservation, and for the Enhancement of Ecosystem Service and Cultural Heritage in Niue (2014-2019) To strengthen conservation and sustainable use of land, water and marine areas and their biodiversity by building on their cultural heritage values through integrated national and community actions.	Niue	GEF UNDP	1
Implementing agency: UNDP Partners: Funding: GEF Scale: US\$8,000,000	R2R Reimaanlok Looking to the Future: Strengthening Natural Resource Management in Atoll Communities in the Republic of Marshall Islands Employing Integrated Approaches (RMI R2R) To sustain atoll biodiversity and livelihoods by building community and ecosystem resilience to threats and degrading influences through integrated management of terrestrial and coastal resources.	Marshall Islands	GEF	1
Implementing agency: UNDP Partners: Funding: GEF Scale: US\$4,267,000	R2R: Conserving Biodiversity and Enhancing Ecosystem Functions through a "Ridge to Reef" Approach in the Cook Island (Cook Islands R2R) (2013-2017) The project will enhance Cook Islands' capacities to effectively manage its protected areas and sustainably manage its productive landscapes at local scales while considering food security and livelihoods.	Cook Islands	Cook Islands government GEF	1
Implementing agency: UNDP Partners: Funding: GEF Scale: US\$2,644,000	R2R: Implementing a "Ridge to Reef" Approach to Protecting Biodiversity and Ecosystem Functions in Nauru (R2R Nauru) (2013-?) To preserve biodiversity, ecosystem services, improve climate resilience and sustain livelihoods in Nauru using a ridge to reef approach.	Nauru	R2R Nauru GEF	1

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agency: UNDP Partners: USP Funding: GEF Scale: US\$7,387,000	R2R: Implementing a "Ridge to Reef" Approach to Preserve Ecosystem Services, Sequester Carbon, Improve Climate Resilience and Sustain Livelihoods in Fiji (Fiji R2R) (2015-2020). To preserve biodiversity, ecosystem services, sequester carbon, improve climate resilience and sustain livelihoods through a ridge-to-reef management of priority watersheds in the two main islands of Fiji.	Fiji	GEF R2R Fiji UNDP	1
Implementing agency: UNDP Partners: USP Funding: GEF Scale: US\$4,689,815	R2R: Implementing an integrated "Ridge to Reef" approach to enhance ecosystem services, to conserve globally important biodiversity and to sustain local livelihoods in the FSM. This project is designed to engineer a paradigm shift in the approach to and management of natural resources from an ad-hoc species/site/problem centric approach to a holistic ecosystem-based management "ridge to reef" approach guided by planning and management process that are informed by actual data. The shift to an ecosystem-based approach within National and State governments will ensure that whole island systems are managed to enhance ecosystem goods and services, to conserve globally important biodiversity and to sustain local livelihoods.	Federated States of Micronesia		1
Implementing agency: UNDP Partners: Funding: GEF Scale: US\$3,763,000	R2R: Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu (R2R Tuvalu) (2015-2020) To preserve ecosystem services, sustain livelihoods and improve resilience in Tuvalu using a 'ridge-to-reef' approach.	Tuvalu		1
Implementing agency: UNDP Partners: Funding: GEF Scale: US\$1,756,880	R2R: Integrated Environmental Management of the Fanga'uta Lagoon Catchment This project seeks to conserve the ecosystem services of the Fanga'uta Lagoon Catchment on the Tongatapu Island of the Kingdom of Tonga in the South Pacific through an integrated land, water and coastal management approach thereby protecting livelihoods and food production and enhancing climate resilience.	Tonga		1

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agency: UNDP Partners: Funding: GEF Scale: US\$5,609,000	R2R: Strengthening the Management Effectiveness of the National System of Protected Areas The present project falls under umbrella of ‘Strengthening the Management effectiveness of the National System of Protected Areas’ programme. Reduced vulnerability to natural disasters and climate change, improved environmental and natural resource management, and promotion of energy conservation through access to affordable and renewable energy, particularly in off-grid local communities.	Papua New Guinea		1
Implementing agency: UNDP Partners: Government of Samoa Ministry of Finance (MoF) Ministry of Natural Resources and Environment (MNRE) Funding: GEF Scale: US\$65,700,000 (total) US\$57,700,000 (GCF) US\$8,000,000 (Govt of Samoa)	Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa (2017-2023) Vaisigano Catchment Project (VCP) Mostly infrastructure focussed but includes implementing ecosystem responses in river catchment to cope with extreme weather events. Includes crop planting. Payment of Ecosystem Service Full Feasibility, Design and Implementation (part of VCP) 3 main programmes: Ecosystem-based Adaptation Enterprise Developments (EbAED), Cash for Work (CfW) through Green Jobs, and Payment for Ecosystem Services (PES). The purpose of the PES Programme is to protect vital habitats in the Vaisigano River Catchment Area and the ecosystem services they provide for the people residing in the catchment and the broader Apia Urban Area.	Samoa	Funding proposal doc GCF UNDP	2
Implementing agencies: IUCN/GIZ Partners: SPREP Multiple other partners Funding: BMUB IKI Scale: ?	Project: The Marine and Coastal Biodiversity Management in Pacific Island Countries (MACBIO) project (2013-2018, still ongoing?) Objective: The management of the marine and coastal biodiversity of mountainous volcanic islands (Fiji, Solomon Islands, Vanuatu) and flat islands and atolls (Kiribati, Tonga) has improved. The project undertakes economic assessments of marine and coastal ecosystems in the five project countries on a national and regional level compatible to the global TEEB (The Economics of Ecosystems and	Fiji Kiribati Solomon Islands Tonga Vanuatu	MACBIO Pacific GIZ Pacific IUCN Vanuatu Government Solomon Islands Government	3

Stakeholder	Relevant projects	Where	Info	Project ref. number
	Biodiversity) programme in order to contribute to national development plans. The project assists governments to use seascape-level planning to re-design MPA networks, demonstrate effective approaches to site management, including payment for ecosystem services.			
Implementing agency: SPREP Partners: Governments of Fiji, Solomon Islands and Vanuatu IKI Funding: BMUB Scale: US\$5,400,000	Pacific Ecosystem-based Adaptation to Climate Change Project (PEBACC) (2017-2020) The Project focusses on strengthening and protecting the role of natural ecosystem services to enhance resilience to climate change. The project provides support to participating governments and communities in promoting EbA as a climate change adaptation strategy, building capacity for robust EbA planning processes, implementing EbA demonstration activities, communications and policy integration.	Fiji Solomon Islands Vanuatu	Overall site PEBACC Resources SPREP Vanuatu Government	4
Implementing agencies: SPC/GIZ Partners: SPREP, USP, Melanesian Spearhead Group, South Pacific Tourism Organisation, Pacific Power Association Funding: German Government/BMZ Scale: €19,000,000	Coping with Climate Change in the Pacific Islands Region (CCCPIR) program (2009-2020) aims at strengthening the capacities of Pacific Island Countries (PICs) and regional organisations to cope with the anticipated effects of climate change that will affect communities across the region. The CCCPIR is focusing on key economic sectors such as agriculture and livestock, forestry, fisheries, and tourism. Focus areas are country dependent. *focus areas include forestry, agriculture, ridge to reef and REDD+ approaches, coastal resource management.	Cook Islands Federated States of Micronesia Fiji Kiribati Republic of Marshall Islands Nauru Niue Palau Papua New Guinea Samoa Solomon Islands Timor-Leste Tonga Tuvalu Vanuatu	SPC CCCPIR SPC LRD GIZ Vanuatu government	5

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agency: Micronesia Conservation Trust (MCT) Partners: Funding: Adaptation Fund Scale: US\$970,000	Practical Solutions for Reducing Community Vulnerability to Climate Change in the Federated States of Micronesia (2018-2020) The overall goal of the project is to build the ecological, social and economic resilience of communities in the Federated States of Micronesia through practical solutions for reducing community vulnerability to climate change stressors that are already affecting the marine ecosystem on which they depend for subsistence and livelihoods. The project also seeks to provide communities with the resources and support needed to implement successful eco-based adaptation actions to protect their marine ecosystems and increase resilience to climate change impacts. *involves protection of natural ecosystems and fisheries, MPA management, EbA.	Federated States of Micronesia	Adaptation Fund	6
Implementing agency: UNDP Partners: Funding: GCF Scale: US\$38,900,000	Tuvalu Coastal Adaptation Project (TCAP) (2016-2024) Protecting the small island nation of Tuvalu from the impact of rising sea level and increasing cyclone events that threaten the country's viability. Building on existing initiatives, and using a range of measures for coastal protection - including eco-system initiatives, beach nourishment, concrete and rock revetments, and sea walls - the project focuses on building coastal resilience in three of Tuvalu's nine inhabited islands. Includes EbA for coastal protection.	Tuvalu	GCF TCAP UNDP	7
Implementing agencies: Wildlife Conservation Society – Fiji Partners: SPC, SPREP, Fiji Government, many more (see seascape doc). Funding: Multiple sources Scale: US\$14,600,000	Vatu-i-Ra Seascape is a network of community managed marine areas covering 27,000 km ² . It includes land areas with connected forests, rivers, mangroves and reefs. Focussed on healthy, resilient ecosystems from ridge to reef, that are managed to support livelihoods and culture. - Uses EBM, includes fisheries management, marine managed areas, sustainable fishing initiatives. *WCS also has initiatives around climate change adaptation, integrated coastal management, developed ridge to reef plans for some districts, fisheries and coral reef impact assessments, support of community tabu	Fiji	WCS Factsheet Seascape document	8

Stakeholder	Relevant projects	Where	Info	Project ref. number
	areas, alternative livelihood projects, terrestrial conservation parks, marine reserve management, and marine conservation agreements.			
Implementing agency: UNDP Partners: Funding: GEF – LDCF Scale: US\$11,500,000	Enhancing National Food Security in the Context of Climate Change (2016-2020) will build the adaptive capacity of vulnerable Kiribati communities to ensure food security under conditions of climate change. All project activity will target the reduction of food security issues by setting in place capacities required for local communities to maintain and enhance ecosystem integrity. Includes UNDP signature programs: Ecosystem based Adaptation & Ecosystem Based Adaptation and Mitigation *food security, enhanced ecosystem management, coral reef restoration.	Kiribati	UNDP Kiribati Government	9
Implementing agency: UNDP Partners: Funding: GEF – LDCF Scale: US\$8,925,000	Enhancing “whole of islands” Approach to Strengthen Community Resilience to Climate and Disaster risks in Kiribati (2017-2023) The project looks to strengthen the capacity of government institutions to support the operationalisation of the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2014-2023 (KJIP), enhance capacity of island administrations to plan for and monitor climate change adaptation processes in a Whole of Islands (WoI) approach, and enhance community capacities to adapt to climate induced risks to food and water security and community assets.	Kiribati	UNDP GEF	10
Implementing agency: UN-Habitat Partners: Funding: Adaptation Fund Scale: US\$4,200,000	Increasing the resilience of informal urban settlements in Fiji that are highly vulnerable to climate change and disaster risks (2018-2022) The overall objective of the project is to increase the resilience of informal urban settlements in Fiji that are highly vulnerable to climate change and disaster risks.	Fiji	Adaptation Fund Project factsheet	11

Stakeholder	Relevant projects	Where	Info	Project ref. number
	*includes initiatives addressing ecosystem resilience, natural resources, EbA.			
Implementing agency: UN-Habitat Partners: Funding: Adaptation Fund Scale: US\$4,300,000	Enhancing urban resilience to climate change impacts and natural disasters: Honiara (2018-2021) To enhance the resilience of the city and its inhabitants to current and future climate impacts and natural disasters, putting a particular focus on pro-poor adaptation actions that involve and benefit the most vulnerable communities in the city and a special emphasis on youths, women, girls, the elderly, and people with disabilities. *addresses resilience of food security, agriculture.	Solomon Islands	Adaptation Fund Project brochure	12
Implementing agency: UN-Habitat Partners: SPREP Funding: Adaptation Fund Scale: US\$9,000,000	Enhancing the Climate Resilience of vulnerable island communities in Federated States of Micronesia (2018-2022) The overall goal of the project is to build social, ecological and economic resilience of the target island communities of the Federated States of Micronesia and reduce their vulnerabilities to extreme drought, sea level rise and other climate risks through water resource management, coastal resource and development planning, and by promoting gender perspectives and ecologically sound climate resilient livelihoods. *Includes initiatives for coastal management, water security.	Federated States of Micronesia	Adaptation Fund SPREP news article	13
Implementing agency: Cook Islands Government. Partners: Funding: Adaptation Fund Scale: US\$3,000,000	“Akamatutu’anga kia Tukatau te Ora’anga ite Pa Enea” Pa Enea Action for Resilient Livelihoods (PEARL) (2018-2020) To build and implement an integrated approach to further increase the adaptive capacity of remote island communities and ecosystems to disaster risk and climate change impacts. *Community based approaches, water security, agriculture, land security	Cook Islands	Adaptation Fund	14

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agencies: American Red Cross Partners: Micronesia Red Cross Society Funding: USAID/OFDA Scale: ?	Community Resilience and Capacity Development (CRCD) Project (2016-?) Community preparedness and coastal restoration activities in Chuuk. Establishing nurseries etc. *addresses security of food etc., through protection from typhoons, storm surges etc.	FSM	News article	15
Implementing agencies: TNC Partners: IUCN, Marshall Islands Conservation Society Funding: Scale: ?	The Nature Conservancy (TNC) Republic of Marshall Islands The project will further progress the National Climate Change Policy of the Republic of Marshall Islands. “Adaptation for a climate resilient future” in particular: - On ‘living shorelines’ and upscaling of the Reimaanlok (conservation plan for RMI). - Marine conservation, implementation of Reimaanlok and the Micronesia Challenge. - Natural resource mapping and GIS. *Nature based solutions. **Follows RMI R2R Reimaanlok program.	Marshall Islands	IUCN SPREP	16
Implementing agencies: PIFS, SPC, SPREP, Forum Fisheries Agency Partners: Funding: Climate Investment Funds, Pilot Program for Climate Resilience, Strategic Climate Fund Scale: see for individual projects below	Pilot Programme for Climate Resilience (PPCR) (2013-2016, some ongoing?) (sub-projects below) Designed to mainstream climate change adaptation and disaster risk reduction into national, sectoral, and local development planning and action. In addition to providing direct financial support for transformational climate resilience projects, the Pacific region’s PPCR financing is intended to support Papua New Guinea, Samoa, and Tonga, as well as non-PPCR pilot countries in the region, in developing local and national capacities for climate resilience planning, coordination, and action. A) PNG: Building Resilience to Climate Change in Papua New Guinea Project;	Papua New Guinea Tonga Samoa	PCCP Samoa Ministry of Finance	17, 18, 19 



Stakeholder	Relevant projects	Where	Info	Project ref. number
	B) Samoa: 1) Enhancing the Climate Resilience of Coastal Resources and Communities, 2) Enhancing Climate Resilience for West Coast Road Project; C) Tonga: Climate Resilience Sector Project.			
Implementing agencies: ADB Partners: PNG Government, Climate Change Development Authority (CCDA) Funding: CIF Scale: US\$35,000,000	A) Building Resilience to Climate Change (BRCC) in Papua New Guinea Project (2016-2021) The project's impact will be increased resilience to the impacts of climate variability and climate change. The project comprises: 1. Climate Change Vulnerability Assessment and Adaptation Plans. 2. Sustainable fishery ecosystems and food security. Climate-resilient coastal infrastructure & early warning communications.	Papua New Guinea	CCDA CIF	17
Implementing agencies: Partners: Funding: World Bank Scale: US\$22,500,000	B) Enhancing the Climate Resilience of Coastal Resources and Communities (2013-2020) To support coastal communities to become more resilient to climate variability and change. The project consists of the following components: 1. Implementation of priority adaptation measures to manage climate and disaster-related threats. 2. Strengthened climate information services. 3. Institutional strengthening for climate and disaster resilience, project coordination and monitoring. *Not much info available on what is actually happening	Samoa	World Bank CIF	18
Implementing agencies: Partners: Funding: ADB, CIF Scale: US\$23,000,000	C) Climate Resilience Sector Project (CRSP) (2013-?) The Project will: 1. Build capacity in climate change adaptation and disaster risk management at community, sector and national levels. 2. Provide information, tools, and legislative frameworks needed to introduce climate change considerations into government and sector planning and budgeting processes. 3. Provide access to resources (technical, human, financial) to address the climate change risk priorities of the Government, as	Tonga	ADB	19

Stakeholder	Relevant projects	Where	Info	Project ref. number
	well as those of vulnerable communities through a combination of soft and hard measures. *Includes ecosystem resilience objectives			
Implementing agencies: GFDRR Partners: Funding: World Bank Scale: \$1,000,000	Small Island States Resilience Initiative (SISRI) (2014-ongoing) The goal of SISRI is to support Small Island States in reducing climate and disaster risks to their populations, assets, ecosystems and economies. *addresses disaster risk management, livelihood protection (agriculture, land, homes etc.).	Kiribati Marshall Islands Solomon Islands Vanuatu Tuvalu Tonga Samoa Papua New Guinea Fiji	website understanding risk Factsheet	20
Implementing agencies: Live & Learn Environmental Education International/Fiji Partners: Carbon Partnership Plan Vivo, Ekos, Natural Resources Development Foundation (NRDF), CPMA, Wildlife Conservation Society (WCS) Funding: EU Scale: ?	The Nakau Program (2012-ongoing) is a landscape-level approach that focuses on community-based forest conservation and sustainable development. The Nakau Programme aims to reduce the vulnerability of indigenous communities to climate change and natural disasters by enabling indigenous landowners to generate carbon and conservation credits as a way to deliver sustainable economic and social development. Uses 'Payments for Ecosystem Services' (PES) for community-based rainforest & mangrove protection. Projects under this program: 1. Loru, Vanuatu 2. Drawa, Fiji 3. Sasaboe, Solomon Islands *avoiding forest degradation, improved forest management, protection of native forest.	Vanuatu Fiji Solomon Islands	ekos Nakau program site Plan Vivo NRDF Live & Learn	21

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agencies: USAID Partners: Various Funding: Pacific American Climate Fund (PACAM) Scale: Project specific	USAID's Pacific-American Climate Fund (PACAM) is a five-year grant facility to strengthen the resiliency of vulnerable communities in Pacific island countries to adapt to the negative impacts of climate change. Projects include introducing resilient agriculture, developing alternative livelihoods that are viable as well as sustainable, strengthening disaster management, training communities in adaptive water management processes, and other community resilience efforts. For its fourth and final grant cycle PACAM approved four grants to support biodiversity conservation and resilience in Papua New Guinea. *see factsheet for specific projects Relevant phase 4 projects: 1. Scaling Up Women's Participation in Mangrove Management.	Federated States of Micronesia Fiji Kiribati Nauru Palau Papua New Guinea Republic of Marshall Islands Samoa Solomon Islands Tonga Tuvalu Vanuatu	PACAM Factsheet	22
Implementing agencies: Papua New Guinea Centre for Locally Managed Areas Inc. – PNGCLMA Partners: Plan A Conservation International Funding: PACAM/USAID Scale: US\$200,000	Protect Papua New Guinea Communities from Rising Sea Levels (ongoing) Work in collaboration with partners to empower coastal communities to achieve their marine resource management goals and share their learnings and work towards becoming resilient and living sustainable livelihoods to deal with climate change issues. PNGCLMA is currently implementing a project: Scaling Up Women's Participation in Mangrove Management Women's participation in resource management is crucial in the protection of biodiversity for food security, income and environmental resilience. Empower women to actively participate in conserving and rehabilitating mangrove forests and farm food/income resources within their natural habitats. *Addresses food security, biodiversity, sustainable livelihoods, marine resource management, no take areas, mangrove protection and restoration, coastal protection, water security.	Papua New Guinea	Plan A PCCP Factsheet	22

Stakeholder	Relevant projects	Where	Info	Project ref. number
Implementing agencies: UNEP Vanuatu Government Partners: Funding: GCF Scale: US\$30,000,000	Vanuatu Ecosystems & Adaptation Project (2016-2021) To address the challenges Vanuatu is facing, this project proposes to focus on ecosystems and the services they provide at landscape level as a functioning unit. The project will be designed to increase resilience of vulnerable and marginalized communities through the application of ecosystem-based interventions and/or combining ecosystem-based adaptation interventions with grey-green and hard infrastructure. Aligned with other projects: PEBACC, VCAP, ISLCM R2R project *Ridge to reef approaches, EbA, terrestrial and marine conservation, sustainable land use, forestry.	Vanuatu	Vanuatu Government Project brief	23
Implementing agencies: FAO Partners: Government of Kiribati SPC Various others Funding: GEF Scale: US\$18,000,000	Resilient Islands, Resilient Communities (2014-ongoing) Improve biodiversity conservation and landscape level management to enhance socio-environmental resilience to climate variability and change. *food security, sustainable livelihoods, natural resources, involves R2R approaches, restoration, conservation.	Kiribati	FAO Project document GEF	24
Implementing agencies: FAO Partners: Funding: GEF Scale: US\$36,000,000	Integrated Forest Management in the Solomon Islands (2017-2021) To assist the Government of the Solomon Islands to implement integrated management of protected and productive forest landscapes for sustainable community development and multiple environmental benefits. Protected area networks, forest restoration, land security, biodiversity conservation, integrated land management, natural resource management.	Solomon Islands	FAO FAO-GEF GEF	25
Implementing agencies: SPREP Partners: IUCN Funding: GEF Scale: US\$13,000,000	EREPA - Ensuring Resilient Ecosystems and Representative Protected Areas in the Solomon Islands (2018-2024) Effective ecosystem management for healthy, complementary networks of protected, productive and restored landscapes in Guadalcanal, Malaita and Rennell-Bellona provinces and a specific protected area focus in Temotu province.	Solomon Islands	GEF IUCN proposal request	26

Stakeholder	Relevant projects	Where	Info	Project ref. number
	*terrestrial ecosystem management and restoration, protected areas, land management.			
Implementing agencies: FAO Partners: Vanuatu Government Funding: GEF Scale: US\$2,000,000	Ecosystem Restoration and Sustainable Land Management in Tongoa Island (2018 - approved) To effectively restore degraded landscapes and implement climate-resilient sustainable land management practices in Tongoa Island. *restoration of terrestrial ecosystems, sustainable land management, food security. *recently approved, not yet implemented.	Vanuatu	GEF	27
Implementing agencies: FAO Partners: SPC, GIZ Funding: GEF Scale: US\$15,000,000	Community-based Integrated Natural Resource Management Project (2018-2024) To promote community-based integrated natural resource management at landscape level to reduce land degradation, enhance carbon stocks and strengthen local livelihoods in Ra and Tailevu provinces. *land degradation, forest management, food security (agriculture).	Fiji	GEF FAO	28
Implementing agencies: UNDP Partners: Government of Samoa Funding: GEF Scale: US\$4,700,000	Strengthening Multi Sectoral Management of Critical Landscape (SMSMCL) (2013-?) “To strengthen local capacities, incentives and actions for integrated landscape management in order to reduce land degradation.” *integrated land and water management, sustainability of fisheries, agriculture and supporting ecosystems. Integrated landscape management.	Samoa	Government of Samoa UNDP	29
Implementing agencies: UNDP Partners: Funding: GEF Scale: (by country) US\$4,700,000 (SGP Samoa) US\$100,000 (SGP PNG) US\$3,000,000 (Fiji)	Small Grants Projects (SGP) (ongoing) Community-based projects in biodiversity conservation, climate change mitigation and adaptation, prevention of land degradation, protection of international waters, and reduction of the impact of chemicals, while generating sustainable livelihoods. *MPA initiatives, restoration, sustainable agriculture, conservation projects, biodiversity, fisheries, threatened ecosystems.	Samoa Cook Islands Niue Tokelau Solomon Islands Tonga Fiji Kiribati	Samoa factsheet GEF SGP Samoa	30

Stakeholder	Relevant projects	Where	Info	Project ref. number
US\$3,100,000 (Vanuatu) US\$1,300,000 (Kiribati) US\$50,000 (Tonga) US\$2,700,000 (FSM) US\$1,500,000 (MI) US\$1,400,000 (Palau)	SGP Samoa is a sub-regional program that covers Samoa, Cook Islands, Niue and Tokelau. *Multiple small different projects in each country – see country project pages for specifics.	Vanuatu Papua New Guinea Marshall Islands FSM Palau		
Implementing agencies: PIFS, SPC Government of Marshall Islands Government of Samoa Government of Tonga Government of Vanuatu Partners: Funding: World Bank GFDRR GEF Scale: US\$2,200,000	Pacific Resilience Program (PREP) (2016-2020) Phase 1 (5 years) The PREP (Phase I) has a duration of five years and includes the following four components: Component 1 – Strengthening Early Warning and Preparedness; Component 2 – Risk Reduction and Resilient Investments; Component 3 – Disaster Risk Financing; and Component 4 – Project Management. *largely capacity building.	Tonga Samoa Marshall Islands Vanuatu	World Bank news World Bank project site Samoa project site	31
Implementing agencies: PIFS, SPC, Government of Marshall Islands Government of Samoa Government of Tonga Government of Vanuatu Partners: Funding: World Bank, GCF, GEF Scale: Marshall Islands: US\$46,000,000	Pacific Resilience Project II under the Pacific Resilience Program (2017-2022) *may be extended for third and fourth phases The objective is to strengthen early warning systems, climate resilient investments in shoreline protection, and to provide immediate and effective response to an eligible crisis or emergency. Builds on knowledge from SISRI. *involves coastal protection & adaptation, addresses drought, flooding, erosion, storm surges, sea level rise, but focus is largely capacity building. Integrated coastal risk management.	Tonga Samoa Marshall Islands Vanuatu Fiji Federated States of Micronesia Solomon Islands	World Bank news Project site PCCP GCF GEF World Bank news	31

Appendix B Geographical and thematic coverage of current nature-based programmes.

Food security definitions; Agriculture (A), Inshore/coastal fisheries (F). *Catchment protection includes land security/degradation mitigation, forest management includes mangroves. Green shading is used to differentiate between table rows.

[illegible]

