KIWA INITIATIVE
Nature-based solutions for climate resilience

Capacity Needs Assessment for Implementing Nature-based Solutions for Climate Change Adaptation

Literature & Policy Review Supplement: Mainstreaming Nature-based Solution approaches into relevant policies and frameworks

Summary

This review complements the consultancy on a capacity needs assessment for implementing Nature-based Solutions (NbS) for Climate Change Adaptation (CCA) in the Pacific Island Countries and Territories (PICT) for the Technical Assistance component of the Kiwa initiative. The Technical Assistance component is implemented through the Pacific Community (SPC) and the Secretariat of the Pacific Regional Environment Programme (SPREP), in partnership with the International Union for Conservation of Nature (IUCN).

There is increasing recognition of NbS for CCA and Disaster Risk Reduction (DRR) in the PICTs. Prominent efforts have been made to include and integrate NbS into regional frameworks that guide CCA, DRR and biodiversity conservation work in the PICTs: Pacific Islands Framework for Nature Conservation and Protected Areas, Framework for Resilient Development in the Pacific (FRDP), the complementary Pacific Resilience Standards (PRS) and the Pacific Coral Reef Action Plan. Key national plans, policies and strategies in the PICTs that drive CCA, DRR and biodiversity conservation include National Adaptation Plans (NAP), National Biodiversity Strategy and Action Plans (NBSAP), Climate Change policies, DRR and DRM plans, and Joint National Adaptation Plans (JNAP). Similar to the regional frameworks, these national documents thoroughly include and integrate ecosystem and/or nature-based elements, however, they do not contain direct reference to NbS as a terminology. Both the regional and national level frameworks, plans, policies and strategies integrate Gender Equality and Social Inclusion (GESI) elements. However, survey findings indicate limited awareness on GESI and NbS concepts and ideas among respondents. Community-based adaptation, Local, Indigenous and Traditional Knowledge (LITK) and practices and its links to natural resource management is emphasized in nearly all regional and national documents, and by most of the respondents of the online surveys. The role of traditional governing and customary tenure systems needs to be taken into serious consideration for successful and sustainable NbS initiatives.

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Acronyms

ACP	African, Caribbean and Pacific
CCA	Climate Change Adaptation
CROP	Council of Regional Organisation in the Pacific
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
FRDP	Framework for Resilient Development in the Pacific
IUCN	International Union for Conservation of Nature
JNAP	Joint National Adaptation Plan
KJIP	Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management
LITK	Local, Indigenous and Traditional Knowledge
MCAP	Managing Coastal Aquifers in Selected Pacific SIDS
NAP	National Adaptation Plan
NbS	Nature-based Solutions
NBSAP	National Biodiversity Strategy and Action Plan
OCT	French Overseas Countries and Territories
OECD	Organisation for Economic Co-operation and Development
PacREF	Pacific Regional Education Framework
PCCC	Pacific Climate Change Centre
PEUMP	Pacific European Union Marine Partnership
PIC	Pacific Island Countries
PICT	Pacific Island Countries and Territories
PIFS	Pacific Islands Forum Secretariat
PIRT	Pacific Islands Round Table for Nature Conservation
PROTÉGÉ	Pacific Territories Regional Project for Sustainable Ecosystem Management
PRS	Pacific Resilience Standards
R2R	Ridge to Reef
REDD+	Reducing Emissions from Deforestation and forest Degradation
SAMOA	Small Islands Developing States Accelerated Modalities of Action
SIDS	Small Island Developing States
SPC	The Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme

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Introduction

The Pacific Island Countries and Territories (PICTs) are extremely vulnerable to the impacts of climate change and other disasters, including cyclones, floods, droughts, sea level rise, coastal erosion, saltwater intrusion, coral bleaching, earthquakes, tsunamis etc. (Jentsch et al. 2007; Simpson et al. 2009; Veitayaki et al. 2021). Each year these small island nations suffer from severe economic losses as a result of the above-mentioned disasters, including loss and damage associated with housing and infrastructure, agriculture, fisheries and tourism industries (Holland 2009; Chandra and Gaganis 2016; Weir et al. 2016; Veitayki et al. 2021). Addressing these challenges related to climate change adaptation and mitigation, biodiversity protection and ensuring human wellbeing, calls for an integrated approach that reduces trade-offs and promotes synergies across the interdependent issues. Using Nature-based Solutions (NbS) to address climate change, biodiversity and human wellbeing issues is one such strategy (Seddon et al. 2020).

According to the International Union for Conservation of Nature (IUCN) "Nature-based Solutions address societal challenges through the protection, sustainable management and restoration of both natural and modified ecosystems, benefiting both biodiversity and human well-being. Nature-based Solutions are underpinned by benefits that flow from healthy ecosystems. They target major challenges like climate change, disaster risk reduction, food and water security, biodiversity loss and human health, and are critical to sustainable economic development".[1] Nature-based Solutions are particularly suitable in the PICTs context since it places emphasis on participatory community-based adaptation, taking into account the social, economic and cultural elements for sustainable management of natural systems as part of an overall adaptation strategy (Secretariat of CBD 2009; Seddon et al. 2020). Engagement with local communities to implement Climate Change Adaptation (CCA) and other projects, will encourage inclusive approaches, promoting sustainability and more resilient systems.

The Pacific Islands capacity development needs[2] states that for NbS to be truly effective it requires to be integrated in regional and national development frameworks. Moreover, lessons learned through the Pacific Community (SPC), Secretariat of the Pacific Regional Environment Programme (SPREP) and the Pacific Climate Change Centre (PCCC) capacity-building programmes, and OECD reports[3] identify the following challenges associated with implementing NbS for Climate Change Adaptation (CCA) in the Pacific:

- "Lack of national and policy frameworks for NbS;
- Silo-ed national development governance;
- Limited awareness of the importance of ecosystems and/or their importance to resilient communities;
- Limited awareness of the role of ecosystems in meeting policy objectives;
- Entrenched attitudes that grey or engineered solutions are superior to natural solutions;
- NbS is viewed as too difficult to implement;
- Limited access to finance for NbS;
- Lack of understanding of the costs (and benefits) of NbS and how to offset the costs;
- Low capacity and lack of staff of public authorities (local, provincial or government levels) in Oceania countries;
- Few examples of NbS in the Oceania region and their benefits protect, restore, and enhance biodiversity in order to adapt to climate change impacts and to strengthen the resilience of their socio-ecological systems."

The Technical Assistance component of the KIWA initiative[4] implemented through SPC and SPREP and in partnership with IUCN will develop and deliver a joint capacity-building training programme to support the PICTs in addressing some of the above-mentioned challenges. The present work supports this capacity-building training programme by carrying out a capacity needs analysis associated with NbS for CCA in the PICTs.

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[1] *https://www.iucn.org/our-work/nature-based-solutions*
[2] *https://www.sprep.org/attachments/Climate_Change/pi_states_capacity_development_needs_on_cca.pdf*
[3] OECD 2020. Nature-based Solutions for adapting to water-related climate risks. Policy perspectives. OECD Environment Policy Paper No. 21.
[4] *https://Kiwainitiative.org/en/about-Kiwa-initiative; https://www.sprep.org/project/Kiwa-initiative*

Objective and Scope of Work

The objective of the consultancy is to identify capacity building needs of local and national public authorities and institutions, representatives from civil societies and communities, and non-governmental organizations from the 19 Kiwa eligible ACP countries and French OCTs for:

1. better developing, implementing, and monitoring rights-based, gender-sensitive and socially-inclusive NbS projects for CCA and biodiversity conservation.
2. mainstreaming these NbS approaches in CCA and other relevant sectoral policies and strategic frameworks. The consultation will be undertaken in a highly participatory manner with detailed consultations at regional and national levels.

The present literature and policy review is complementary to the main capacity needs assessment report and supports the above objectives through a literature and policy review to examine the following:

- Nature-based Solutions for CCA in the Pacific region.
- Integration of NbS in relevant regional and national frameworks, policies, plans and strategies.
- Gender Equality and Social Inclusion considerations in PICT frameworks, policies and plans, and for NbS for CCA.

Nature-based Solutions for CCA

In terms of severity of impact and likelihood of occurrence natural disasters and extreme weather events are identified as the top two greatest risks to human well-being and global economy (World Economic Forum 2019; Seddon et al. 2020). Due to its small land area and remote location in the Pacific Ocean, the PICTs are vulnerable to the impacts of extreme climate events e.g., cyclones, floods and droughts (Veitayaki et al. 2021; Jentsch et al. 2007). In recent years, both the intensity and frequency of natural disasters in the Pacific region has increased. Recent examples include impacts from tropical cyclones Pam, Winston and Harold, which caused severe losses and damage in Solomon Islands, Vanuatu, Fiji, Tonga and surrounding countries in the years 2015, 2016 and 2020 respectively (Veitayaki et al. 2021). The PICTs spend billions of dollars earmarked for national development on recovery and rehabilitation from climate variability and extremes that cause disruptions in food production, water supply and economic development (Veitayaki et al. 2021; Barnett and Campbell 2016; McGree et al. 2016; Kuleshov et al. 2014; d'Aubert and Nunn 2012; Giambelluca 1991).

One of the most impactful risks ranked by the World Economic Forum (2019) is the failure to mitigate and adapt to climate change (Seddon et al. 2020). Despite their attempts to protect their people and territories from the impacts of climate disasters, the PICTs continue to face challenges due to increasing frequency and intensity of extreme weather and climate events (Veitayaki et al. 2021). Nonetheless, local communities continue to manage their natural resources through traditional and community-based approaches, such as the prominent 'tabu' systems that imposes temporary (and more recently permanent) closures on fishing activities (Le Cornu et al. 2018; Malsale et al. 2018; Farran 2014; Meo 2012; Robinson 2008).

Although past projects employed both hard and soft measures to address climate change impacts, recent initiatives in the PICTs increasingly highlight challenges associated with hard measures, and explore and support NbS as adaptation options (Nunn et al. 2021; 2020; Pigott-McKeller et al. 2020; Donner & Webber 2014; Nunn 2009). Some examples of NbS include, mangrove and coastal vegetation planting for shoreline protection (Ellison et al. 2017; Donner & Webber 2014; Wong 2011), setting up marine reserves for better management of fisheries and marine resources (Friedlander et al. 2017; Weeks & Jupiter 2013), reforestation to prevent erosion and biodiversity conservation (Friday et al. 2021; Cornelio 2020; Meyer 2000), riparian zone rehabilitation to prevent river bank erosion and water catchment protection (Jupiter et al. 2012; Jenkins et al. 2010) and urban greening and agroforestry practices (Thaman et al. 2017; 2006).

The Pacific Islands Framework for Nature Conservation and Protected Areas (PIRT 2020) lists the following challenges and best practices for NbS to sustain the PICT's social-ecological systems. Key challenges associated with NbS:

- "NbS can have unforeseen negative impacts if applied without proper social and environmental safeguards or equity considerations.
- Perceived trade-offs between environmental, social and economic health can impede cross cutting action to address all of these.
- Some attempted NbS fail due to the absence of an effective governance structure or mandate. Likewise, some fail to become adequately embedded in local or national governance processes.
- It can be difficult to identify indicators and metrics for the social, economic and environmental effectiveness of NbS.
- Although usually cost effective compared to other solutions, NbS are often radically underfunded compared to the scope of their objectives.
- Path dependency associated with solutions more familiar to decisionmakers, such as 'grey' infrastructure, may inhibit the uptake of NbS" (p. 20, PIRT 2020).

Best practices for NbS:

- "All NbS projects must be designed and implemented with demonstrable benefits for human and ecological wellbeing, where possible at multiple scales.
- NbS must be designed to equitably balance trade-offs between achievement of their primary goals and the continued provision of multiple benefits.
- NbS aiming at climate change mitigation must also have demonstrable benefits for biodiversity and ecosystem integrity.
- Traditional practices and indigenous Pacific knowledge systems must be acknowledged and supported within NbS projects.
- As with all conservation initiatives, NbS must be based on inclusive, transparent, and empowering governance processes.
- Scenario-planning tools should be utilised to explore alternative and sustainable economic pathways adapted to local, national and regional contexts.
- NbS projects should utilise tools which provide environmental and social-cultural safeguards for economic projects, such as impact assessments and spatial planning.
- NbS must be designed to address community-level challenges as identified by resource users, with environmental and social-cultural co-benefits documented and communicated.
- NbS should aim to 'build back better'from the impacts of COVID-19, in order to support economic, environmental and social cultural wellbeing in the Pacific.
- NbS practitioners should utilise the IUCN Global Standard for Nature-based Solutions" (p. 20, PIRT 2020).

The Pacific Islands Framework for Nature Conservation and Protected Areas documents the following key partners and programmes associated with NbS work in the PICTs: Kiwa Initiative, Oceania Nature-Based Solutions Collaboration Hub, IUCN/SPREP Coastal Marine Ecosystem Resilience Programme, SPREP-PEUMP By-catch and Integrated Ecosystem Management Initiative, Pacific Ridge to Reef (R2R), SPC-UNDP Managing Coastal Aquifers in Selected Pacific SIDS (MCAP), and SPC Pacific Territories Regional Project for Sustainable Ecosystem Management (PROTEGE) (PIRT 2020).

Policy Review

Regional Frameworks and Nature-based Solutions

Nature-based Solutions, ecosystem-based approaches and biodiversity conservation are mentioned and/or integrated in some regional frameworks in the Pacific, including the Pacific Islands Framework for Nature Conservation and Protected Areas (PIRT 2020),[5] the Framework for Resilient Development in the Pacific (FRDP 2016), the Pacific Resilience Standards (PRS) (PIFS 2021) that guides its implementation, and the Pacific Coral Reef Action Plan (Toki and Davies 2021). However,

[5] https://www.pacificnatureconference.com/framework-for-conservation

there are other prominent regional frameworks, such as Pacific Regional Education Framework (PacREF)[6] and Pacific Strategic Plan for Agricultural and Fisheries Statistics,[7] which do not integrate NbS and/or ecosystem-based approaches.

Pacific Islands Framework for Nature Conservation and Protected Areas

Nature conservation planning, prioritization and implementation in the Pacific region is primarily guided via the Pacific Islands Framework for Nature Conservation and Protected Areas 2021–2025 (PIRT 2020). Since 1985, the review and revision of this Framework takes place every five years. The most recent one (2021–2025) replaced the Framework for Nature Conservation and Protected Areas in the Pacific Island Region 2014–2020. The 10th Pacific Islands Conference on Nature Conservation and Protected Areas (Pacific Nature Conference) reviewed and endorsed the present framework for 2021–2025 in November 2020. It is the responsibility of the PICTs to implement the Pacific Islands Framework for Nature Conservation and Protected Areas, supported by the Pacific Islands Roundtable for Nature Conservation (PIRT) and other regional and local conservation partners and donors.

The Pacific Islands Framework for Nature Conservation and Protected Areas 2021–2025 is developed around a 30-year (2002–2032) ambition for Pacific Conservation created and endorsed by the delegates of the 7th Pacific Islands Conference on Nature Conservation and Protected Areas in Rarotonga, Cook Islands in 2002. The 30-year ambition for the Pacific places emphasis on the following vision, mission and goals:

- Vision: "Healthy Oceans – Healthy Islands – Healthy People. Our people proudly honour, value and protect our natural and cultural heritage and cultural identity for the wellbeing of present and future generations; the waters of our streams, lagoons and oceans are bountiful and unpolluted; our mountains are wild, our forests intact and our beaches unspoiled; our towns and gardens are healthy and productive; our societies are vibrant, resilient and diverse; we have equitable relationships with our global partners and our economies thrive; our cultures and traditions are widely appreciated; and the products of our creativity and labour are especially prized" (p. 7.
- Mission: "To protect and preserve the rich natural and cultural heritage of the Pacific islands forever for the benefit of the people of the Pacific and the world" (p. 7).
- Goals: "Environment — the biodiversity and natural environment of the Pacific are conserved in perpetuity. Society — Pacific peoples are leading activities for the conservation and sustainable use of natural resources and the preservation of cultural heritage for the benefit of present and future generations. Economy — Nature conservation and sustainable resource use are the foundation of all island economies" (p. 7).

The Pacific Islands Framework for Nature Conservation and Protected Areas 2021–2025 works through six strategic objectives to guide nature conservation in the Pacific:

1. "Empower our people to take action for nature conservation, based on our understanding of nature's importance for our cultures, economies, and communities" (p.16).
2. "Integrate environmental and cultural considerations into the goals, processes, and trajectories of economic development in the Pacific" (p. 18).
3. "Identify, conserve, sustainably manage and restore ecosystems, habitats, and priority natural and cultural sites" (p. 22).
4. "Protect and recover threatened species and preserve genetic diversity, focusing on those of particular ecological, cultural and economic significance" (p. 26).
5. "Manage and reduce threats to Pacific environments and drivers of biodiversity loss" (p. 28).
6. "Grow Pacific capacity and partnerships to effectively monitor, govern and finance nature conservation action" (p. 34).

[6] https://www.forumsec.org/wp-content/uploads/2018/10/Pacific-Regional-Education-Framework-PacREF-2018-2030.pdf
[7] https://pafpnet.spc.int/attachments/article/797/PSPAFS.pdf

A set of eight principles, or code of conduct for nature conservation initiatives, guide implementation of the above strategic objectives in the Pacific region: "community rights, conservation from Pacific perspectives, ownership of conservation programmes, resourcing for longevity, good governance and accountability, coordination and collaboration, growing Pacific capacity and reinforcing resilience" (p. 9, PIRT 2020).

Direct references to NbS (as a terminology) in the Pacific Islands Framework for Nature Conservation and Protected Areas 2021–2025:

- Priority action track on "Nature-based Solutions (NbS) to sustain our social ecological systems" (p. 20). This section includes information on key challenges, overview of best practices and examples of key partners and programmes associated with NbS initiatives in the region.
- The 10th action track on "Implementing nature-based solutions to sustain social-ecological systems as a fundamental response to climate impacts, disaster risk management, water and food insecurity, and threats to human health" (p. 43).
- The 21st action track, "strengthening financing of nature conservation and nature-based solutions in the Pacific that are resilient in the face of global economic or political disruption (p. 45).
- Linkage to post-2020 Global Biodiversity Frameworks: "target 7: by 2030, increase contributions to climate change mitigation adaption and disaster risk reduction from nature-based solutions and ecosystems-based approaches, ensuring resilience and minimizing any negative impacts on biodiversity" (p. 54).
- Linkage to post-2020 Global Biodiversity Frameworks: "target 10: by 2030, ensure that, nature-based solutions and ecosystem approach contribute to regulation of air quality, hazards and extreme events and quality and quantity of water for at least [XXX million] people" (p. 54).

Framework for Resilient Development in the Pacific

When the terms for the Pacific DRR and Disaster Management Framework for Action ended in 2015, a single integrated regional framework was decided upon by the Pacific Island Forum Leaders. "The Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) provides high level strategic guidance to different stakeholder groups on how to enhance resilience to climate change and disasters, in ways that contribute to and are embedded in sustainable development" (FRDP 2016).

Recognizing the overlaps between climate change and Disaster Risk Management (DRM), the FRDP (2016) promotes integrated approaches to tackling climate and disaster risks. Such an approach avoids duplications and encourages synergies resulting in more effective implementations and sustainable use of resources, including finances.

The FRDP focuses on three inter-related goals that encourages stakeholders to work collaboratively to enhance resilience and sustainable development:

1. Strengthened integrated adaptation and risk reduction to enhance resilience to climate change and disasters;
2. Low-carbon development;
3. Strengthened disaster preparedness, response and recovery.

"For the Pacific Island countries (PICs), the implementation of the FRDP contributes to the implementation of global frameworks including the Agenda for Sustainable Development 2015–2030, UNFCCC Paris Agreement on Climate Change 2015, the Sendai Framework for Disaster Risk Reduction 2015–2030, and the Small Islands Developing States Accelerated Modalities of Action (S.A.M.O.A.) Pathway. More importantly it specifically recognizes the need to enhance the implementation capacity of developing countries, in particular Small Island Developing States (SIDS)" (FRDP 2016).

Although the terminology NbS are not included in FRDP, it's guiding principles, priority actions and goals include and integrate elements of NbS in many instances.

- FRDP's Goal 2 on Low-carbon development: "Pursuing this goal revolves mainly around reducing the carbon intensity of development processes, increasing the efficiency of end-use energy consumption, increasing the conservation of terrestrial and marine ecosystems, and enhancing the resilience of energy infrastructure. This goal will contribute to having more resilient energy infrastructure in place, and to increase energy security, while decreasing net emissions of greenhouse gases" (p. 3).
- FRDP emphasizes on the "resilience of communities, livelihoods and ecosystems" as an "area of cooperation and facilitation to enhance understanding, action and support" (p. 10).
- "Incorporate ecosystem-based services and functions in resilience building" (p. 13).
- "Comprehensive approaches to slowing the rate of climate change involve both reducing greenhouse gases and increasing carbon stored in natural ecosystems" (p. 18).
- "Conservation of marine and terrestrial ecosystems, sustainable management of forests and the enhancement of forest carbon stocks are also essential components of low carbon development, leading to a more resilient natural environment" (p. 18).
- "The multiple aspects of and contexts for low carbon development" include maximizing "carbon uptake (REDD+)" through "ecosystems conservation e.g., protect mangroves" and enhancement of "carbon stocks e.g., sustainable forestry" to increase "natural capital" (p. 19).
- FRDP's strategic objective for Goal 2 on low carbon development is "more efficient end-use energy consumption, reduced carbon intensity of development processes, increased conservation of terrestrial and marine ecosystems and increased resilience of energy infrastructure in PICTs" (p. 19).
- The priority actions by national and subnational governments and administration under Goal 2 include: "conserve and sustainably manage forests, coasts, oceans and other natural ecosystems in ways that maintain and enhance carbon uptake and stocks in terrestrial and marine ecosystems and, for relevant PICTs, identify and manage the drivers of deforestation and both coastal and forest degradation; ensure that the results of these and related actions are measured, reported and verified, and incentivized" (p. 20).
- "Support and build capacity in research, development and training in specific skill requirements of low carbon energy technologies and practices in the region" (p. 21).
- "Support development of REDD+ and ocean initiatives, including sustainable forest and coast management and conservation to ensure long-term benefits to the environment and for natural resource-dependent communities" (p. 21).
- "Assist relevant PICTs to establish, implement and maintain monitoring systems that use an appropriate combination of remote sensing and ground-based carbon inventory approaches, in support of strengthening sustainable forest management efforts at national and subnational levels" (p. 21).
- "Work with PICTs to assess and implement ways to enhance and maintain natural carbon reservoirs in both marine and terrestrial ecosystems" (p. 21).

Gender and social inclusion elements that complement NbS elements for CCA and DRR in the Pacific emphasized in the FRDP include:

- "Protect human rights, such as the right to life, safety, dignity, non-discrimination, and access to basic necessities, to ensure that every person has equitable access to humanitarian and development assistance, according to his or her specific needs" (p. 13).
- "Prioritize the needs and respect the rights of the most vulnerable, including but not limited to women, persons with disabilities, children, youth and older persons, and facilitate their effective participation in planning and implementation of all activities" (p. 13).
- "Advocate open and ready access to reliable sources of traditional and contemporary information" (p. 13).
- "Build on and help reinforce cultural and traditional resilience and knowledge of communities, who should be engaged as key actors in designing plans, activities and solutions that are of relevance to them" (p. 13).
- "Ensure that all initiatives related to low carbon development respond to country and community priority needs and opportunities in an equitable manner, including being gender responsive" (p. 21).

Pacific Resilience Standards

The Pacific Resilience Standards (PRS), developed in 2019, is a practical tool that uses a structured approach to enhance the implementation of the FRDP's 10 Guiding Principles at the regional, national, sector and sub-national level. It was developed with support of the Pacific Resilience Partnership (PRP) Taskforce, under the leadership of the Pacific Islands Forum Secretariat (PIFS), United Nations Development Programme (UNDP) and the Pacific Community (SPC) (PIFS 2021).

Elements of and NbS as a terminology for CCA and DRR are thoroughly included and integrated in all four PRS that ensure resilience building is:

1. Integrated: climate change and disaster risk considerations and mainstream into new and ongoing development policy making, planning, financing, programing and implementation.
2. Inclusive: protect human rights to ensure equitable access to assistance, integrate gender consideration to support equitable participation, prioritize the most vulnerable to facilitate effective participation.
3. Informed: advocate open and ready access to traditional & contemporary information, build & reinforce cultural and traditional resilience and community knowledge, acknowledge & factor in traditional worldviews & spirituality, strengthen & develop partnerships for sharing lessons and good practice.
4. Sustained: incorporate ecosystem-based services, functions, management & conservation, ensure resilience development is sustainable & alleviates poverty and hardship, promote low carbon development, improve capacities to prepare for disasters.

Prominent NbS elements highlighted in the PRS include:

- "Sustainably manage, use, conserve, and restore ecosystems" (p. 11).
- "Integrate nature-based solutions and local guardianship" (p. 11).
- "Incorporate the sustainable management, use, conservation, and restoration of terrestrial, coastal and marine ecosystems into resilience building and acknowledge the deep-rooted interconnections of Pacific communities with land, sea and ecosystems" (p. 37).
- "Integrate nature-based solutions and draw upon local guardianship/stewardship, and ecosystem-based management approaches to building social, economic, cultural, and environmental resilience" (p. 37).
- "Promote low carbon development (LCD) by: (i) increasing renewable energy access, (ii) reducing the carbon intensity of development processes (e.g., GHG emissions from the shipping industry); (iii) ensuring efficient end-use energy consumption; (iv) increasing the resilience of energy infrastructure; and (v) supporting the conservation of terrestrial and marine resources" (p. 37).
- "Support transformative change, which addresses the underlying drivers or root causes of risk (e.g., poverty, hardship, environmental degradation, and inequality) to reduce vulnerability whilst maintaining and enhancing natural capital" (p. 37).
- "Strengthen local capacities, leadership, and ownership to prepare for emergencies and disasters to ensure timely and effective response and recovery, to reduce risks from rapid and slow-onset disasters, and to minimise loss, damage, suffering, and adverse consequences to national, provincial, local, and community economic, social, & environmental systems" (p. 37).
- PRS emphasizes on the lack of progress on NbS for CCA and DRR in the Pacific region: "Ecosystem management, low carbon development (LCD) (e.g., energy use, GHG emissions), preparedness and the sustainability of interventions are *ad hoc* considerations, often tackled as afterthoughts in plans, projects, proposals and programmes to meet funding requirements. As a result, progress is erratic and ineffective. Knowledge of ecosystem services including provisioning (e.g., food, water), regulating (e.g., floods, carbon sinks), cultural (e.g., spiritual amenities), and supporting (e.g., nutrient recycling) is primarily held by environmental officers; and development planning does not yet integrate nature-based solutions (NbS) for reducing risks, ecosystem-based management, or LCD options. There is little recognition that investing in capacities for good governance, tackling underlying root causes of risk (e.g., poverty), and preparedness pays dividends for long term resilience and therefore sustainability" (p. 38).

Pacific Coral Reef Action Plan 2021–2030 (Toki and Davies 2021)

The Secretariat of the Pacific Regional Environment Programme (SPREP) supported the development of the Pacific Coral Reef Action Plan that serves to "successfully manage tropical and sub-tropical reefs in the region" (p. 8). In addition, a plan dedicated for the management and conservation of coral reefs of the PICTs will provide basis for securing funding for coral reef conservation and management. The plan is intended to be led by PICT national governments and their partners with CROP agencies supporting capacity building and securing resources.

The plan aims to work on PICT coral reef conservation and management through four priorities:

- "Conservation of habitats and biodiversity;
- Sustainable fisheries and food security;
- Resilience and adaptation to climate change; and
- Sustainable tourism" (p. 10).

Implementation will be through eight action areas and objectives:

1. "Optimise capacity building: to build on and increase capacity of local and regional organisations to monitor, protect and improve the health of coral reefs.
2. Foster traditional knowledge and practices: to foster traditional knowledge and support it being applied to managing coral reefs.
3. Coordinate education and awareness: to increase communities' and politicians' awareness of the significance of coral reefs for sustenance, coastal protection and the economy; the threats reefs face; and the importance of making coral reefs more resilient.
4. Streamline regional and local collaboration: to support agencies, countries and territories, and regional initiatives (including existing initiatives) to work together and share information.
5. Conserve reef habitat and biodiversity: to better protect reef habitats against local threats, make coral-reef ecosystems more resilient to climate change, and stop biodiversity loss.
6. Prioritise habitat restoration: to restore critical reef habitats, so the ecosystems are healthy, functional, connected and resilient to climate change.
7. Improve coastal fisheries management: to manage reef-based fisheries sustainably and limit the impact that fishing has on coral habitats.
8. Utilise research and monitoring: to focus and use research and monitoring to investigate the health of coral reefs and the success, or otherwise, of initiatives to manage reefs; and to inform decisions" (p.21).

Nature-based Solutions for implementations are emphasized under the plan's action area 6 on prioritizing habitat restoration:

- "Encourage restoration of waterways, catchments, coastal ecosystems, and other nature-based solutions to making reefs resilient.
- Increase awareness of the range of available methods to restore reefs (such as nature-based solutions and options to encourage natural regeneration).
- Develop a process to identify and prioritise reef-restoration sites and nature-based solutions, to achieve multiple benefits (such as reduced coastal erosion, improved biodiversity or increased fisheries productivity)" (p. 33).

National Polices, Plans and Strategies and Nature-based Solutions

Over the years the PICTs have developed various national policies, plans, strategies and legislation (Table 1) to guide and progress towards improved approaches for CCA, DRR and natural resource management. These national policies, plans, strategies and legislation align with the regional (Framework for Nature Conservation and Protected Areas, FRDP, PRS, the Pacific Coral Reef Action Plan) and global frameworks (such as, Paris Agreement, the Convention on Biodiversity, the SAMOA Pathway, Agenda 2030 for Sustainable Development and Sendai Framework for Disaster Risk Reduction).

This section lists national polices, plans, strategies and legislation relevant to CCA, DRR and biodiversity conservation in the PICTs (Table 1). It further examines the inclusion and integration of ecosystem/nature-based elements in selected key national policies, plans, strategies and legislation

from Table 1. Most PICTs have overarching national Climate Change Policies, National Adaptation Plans (NAP), National Biodiversity Strategy and Action Plans (NBSAP), DRR Plans, DRM Plans, and in some cases, integrated DRR and CCA plans, like the Joint National Action Plans, that guide local community plans.

Table 1: A list of national policies, plans, strategies and legislation relevant to CCA, DRR and biodiversity conservation in the PICTs.

Country	National Policies, Plans and Strategies associated with CCA and Biodiversity Conservation
Cook Islands	▫ Cook Islands Biodiversity Strategy and Action Plan (NBSAP) 2002 ▫ Joint National Action Plan for Disaster Risk Management and Climate Change Adaptation (JNAP) 2011–2015 ▫ Cook Islands Climate Change Policy 2018–2028 ▫ Te Kaveinga Nui National Sustainable Development Plan 2016–2020 ▫ Cook Islands National Invasive Species Strategy And Action Plan 2019 – 2025 ▫ Cook Islands National Environment Policy 2022-2032
Federated States of Micronesia	▫ Federated States of Micronesia Biodiversity Strategy and Action Plan: 2018–2023 ▫ Federated States of Micronesia National Disaster Response Plan 2016 ▫ FSM National Wide Integrated Disaster Risk Management and Climate Change Policy ▫ Federated State of Micronesia's Strategic Development Plan (2004–2023) Achieving Economic Growth & Self Reliance Vol 1: Policies and Strategies Development ▫ Federated States of Micronesia Second National Communication to the United Nations Framework Convention on Climate Change ▫ Federated States of Micronesia Climate Change Act 2013
Fiji	▫ National Biodiversity and Action Plan for Fiji: 2020–2025 ▫ The Republic of Fiji National Disaster Risk Reduction Policy 2018–2030 ▫ Republic of Fiji National Adaptation Plan ▫ Republic of Fiji National Climate Change Policy ▫ Fiji's National Adaptation Plan Framework ▫ Nationally Determined Contributions: Fiji ▫ Fiji NDC Implementation Roadmap 2017–2030, Setting a pathway for emissions reduction target under the Paris Agreement ▫ 5-Year & 20-Year National Development Plan ▫ Fiji 2020 Agriculture Sector Policy Agenda ▫ Republic of Fiji : Second National Communication to the United Nations ▫ Fiji National Gender Policy 2014
French Polynesia	▫ Action Plan 2021–2023, 2030 National Strategy for Protected Areas ▫ **Unable to access other CCA/DRR plans, policies, strategies*
Kiribati	▫ Kiribati National Biodiversity Strategy and Action Plan 2016–2020 ▫ Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) 2014–2023 ▫ Kiribati Development Plan, 2016–2019 ▫ Kiribati National Framework for Climate Change and Climate Change Adaptation ▫ Nationally Determined Contributions: Kiribati ▫ Kiribati National Fisheries Policy 2013–2025 ▫ Kiribati National Adaptation Programme of Action [Report] ▫ Kiribati National Water Resources Implementation Plan: Sustainable Water Resource Management, Use, Protection and Conservation
Marshall Islands	▫ The Republic of Marshall Islands Biodiversity Strategy and Action Plan ▫ National Disaster Risk Management Arrangements ▫ Adaptation Communication ▫ Reimaanlok: National Conservation Area Plan for the Marshall Islands 2007-2012 ▫ The Strategic Development Plan Framework 2003–2018 (RMI) — Vision 2018 ▫ Nationally Determined Contributions: Republic of the Marshall Islands ▫ Republic of the Marshall Islands National Climate Change Policy Framework (1)
Nauru	▫ Nauru's Biodiversity Strategy and Action Plan ▫ Republic of Nauru Framework for Climate Change Adaptation and Disaster Risk Reduction ▫ Republic of Nauru National Sustainable Development Strategy 2005–2025

Country	National Policies, Plans and Strategies associated with CCA and Biodiversity Conservation
	▫ Republic of Nauru Framework for Climate Change Adaptation and Disaster Risk Reduction (RONAdapt) ▫ Nationally Determined Contributions: Nauru ▫ Republic of Nauru Second National Communication ▫ Nauru Energy Road Map 2018 to 2020, A Pwiyeiy bwio light up my land ▫ Republic of Nauru National Disaster Risk Management Plan
New Caledonia	▫ Action Plan New Caledonia: 2014–2018 ▫ **Unable to access other CCA/DRR plans, policies, strategies*
Niue	▫ Niue National Biodiversity Strategy and Action Plan 2015 ▫ Niue's Joint National Action Plan for Disaster Risk Management and Climate Change ▫ Government of Niue National Climate Change Policy ▫ Niue National Strategic Plan 2016–2026
Palau	▫ Republic of Palau Revised National Biodiversity Strategy and Action Plan 2015–2025 ▫ National Disaster Risk Management Framework 2010 (Amended in 2016) ▫ Palau Climate Change Policy – for climate and disaster resilient low emissions development 2015 ▫ Palau Marine Sanctuary Act ▫ Nationally Determined Contributions: Palau ▫ Republic of Palau, National Disaster Risk Management Framework 2010 ▫ Palau. First national communication to the United Nations Framework Convention on Climate Change. [Report] ▫ Palau's Medium Term Development Strategy – Action for Palau's Future 2009–2014
Papua New Guinea	▫ Papua New Guinea National Biodiversity Strategy and Action Plan 2019–2024 ▫ National Disaster Risk Reduction Framework 2017–2030 ▫ Papua New Guinea National Climate Compatible Development Management Policy ▫ Papua New Guinea Development Strategic Plan, 2010–2030 ▫ Nationally Determined Contributions: Papua New Guinea ▫ Papua New Guinea National Disaster Mitigation Policy
Samoa	▫ Samoa's National Biodiversity Strategy and Action Plan 2015–2020 ▫ Samoa National Disaster Management Plan 2017–2020 ▫ Samoa Climate Change Policy 2020 ▫ Strategy for the Development of Samoa 2016/17–2019/20 ▫ Samoa Energy Sector Plan (SESP) 2017–2022 ▫ Samoa National Environment Sector Plan (2017–2021) ▫ Samoa National Policy for Gender Equality 2016–2020 ▫ Nationally Determined Contributions: Samoa ▫ Samoa Strategic Programme for Climate Resilience 2011
Solomon Islands	▫ Solomon Islands National Biodiversity Strategy and Action Plan 2016–2020 ▫ National Disaster Management Plan 2018 ▫ Solomon Islands National Climate Change Policy 2012–2017 ▫ Solomon Islands National Development Strategy 2011 to 2020 ▫ Nationally Determined Contributions: Solomon Islands ▫ Solomon Islands National Adaptation Programme of Action ▫ Solomon Islands National Gender Equality and Women's Development Policy 2016–2020 ▫ Solomon Islands Agriculture and Livestock Sector Policy 2015–2019 ▫ Solomon Islands National Water and Sanitation Sector Plan ▫ Solomon Islands National Economic Recovery, Reform and Development Plan 2003–2006, Strategic and Action Framework
Timor-Leste	▫ National Biodiversity Strategy and Action Plan for Timor-Leste 2011–2020 ▫ Timor-Leste's National Adaptation Plan Addressing Climate Risks and Building Climate Resilience ▫ Timor-Leste Disaster Management Reference Handbook ▫ Timor-Leste Strategic Development Plan 2011–2030 ▫ UN Sustainable Development Cooperation Framework 2021–2025 (UNSDCF) ▫ Timor-Leste's National Adaptation Plan (NAP) ▫ Intended Nationally Determined Contributions (INDC) ▫ National Disaster Risk Management Policy

Country	National Policies, Plans and Strategies associated with CCA and Biodiversity Conservation
Tonga	▫ Kingdom of Tonga National Biodiversity Strategy and Action Plan ▫ Tonga Strategic Roadmap for Emergency and Disaster Risk Management 2021–2023 ▫ National Emergency Management Plan ▫ Joint National Action Plan (JNAP) 2 on Climate Change and Disaster Risk Management 2018–2028 ▫ Tonga Climate Change Policy – A Resilient Tonga by 2035 ▫ Nationally Determined Contributions: Tonga ▫ The Kingdom of Tonga's Initial National Communication in Response to its Commitments Under the United Nations Framework Convention on Climate Change. ▫ Tonga Strategic Development Framework (TSDF) ▫ Tonga Joint National Action Plan (JNAP) on Climate Change Adaptation and Disaster Risk Management 2010–2015
Tokelau	▫ Tokelau Invasive Species Strategy and Action Plan (TISSAP) 2020–2027 ▫ Tokelau National Strategic Plan 2010–2015 ▫ Tokelau National Disaster Risk Reduction, Response, and Resilience Plan (TDR4) ▫ Living with Change (LivC): An Integrated National Strategy for Enhancing the Resilience of Tokelau to Climate Change and Related Hazards, 2017-2030 ▫ Living with Change (LivC): An Integrated National Strategy for Enhancing the Resilience of Tokelau to Climate Change and Related Hazards, 2017-2030 — Implementation Plan 2017–2022
Tuvalu	▫ Tuvalu National Biodiversity Strategy and Action Plan 2012–2016 ▫ Te Kakeega III National Strategy for Sustainable Development 2016 to 2020 ▫ Tuvalu's National Adaptation Programme of Action [Report] ▫ Tuvalu National Strategic Action Plan for Climate Change and Disaster Risk Management 2012–2016 ▫ Tuvalu National Gender Policy ▫ Te Kaniva: Tuvalu Climate Change Policy 2012 ▫ Te Kakeega 2: National Strategy for Sustainable Development 2005–2015
Vanuatu	▫ Vanuatu National Biodiversity Strategy and Action Plan 2018–2030 ▫ Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030 ▫ Vanuatu 2030 The People's Plan, National Sustainable Development Plan 2016–2030 ▫ Nationally Determined Contributions: Vanuatu ▫ Vanuatu Provincial Disaster & Climate Response Plan
Wallis and Futuna	▫ Action Plan Wallis & Futuna 2014–2018 ▫ https://www.wallis-et-futuna.gouv.fr/Politiques-publiques

A set of above-mentioned (Table 1) national frameworks, policies, plans and strategies related to CCA from selected countries in the Pacific were examined to identify the level of integration of NbS for CCA actions in the Pacific region. Presented below are details of NbS elements from the frameworks, plans, policies and strategies that were reviewed. The information is organized by countries.

Fiji

The key national documents guiding CCA and biodiversity conservation in Fiji include the NAP, Climate Change Policy, National Biodiversity Strategy and Action Plan 2020–2025 and National Disaster Risk Reduction Policy 2018–2030. All documents include and integrate ecosystems/nature-based concepts, however, direct references to NbS as a terminology is only included in Fiji's NAP. These national plans and policies also place emphasis on gender and rights-based approaches in adaptation planning, highlighting community-based adaptation and ecosystem-based approaches. Implementation consideration also highlight traditional knowledge and its links to natural resource management.

Republic of Fiji National Adaptation Plan (Government of Fiji 2018a)

- Fiji's NAP supports integration of ecosystem-based approaches through improved awareness of ecosystem-based adaptation among private sector entities, non-government and community-based organisations, with a focus on "the potential of green, nature-based, or hybrid infrastructure solutions in reducing vulnerability to environmental and climate risk. There would be comparable benefits if awareness of gender and human-rights based approaches were also improved." (p. 30).
- Actions on adaptation measures emphasizes NbS:
  - "Promote and integrate climate-smart agriculture (CSA) practices, into farming, trainings, extension services, policies and plans (responsive to the needs of disadvantaged groups and tailored to subsistence, semi-commercial and commercial farmers) and adopt nature-based and urban solutions where possible" (p. 65).
  - "Scale up efforts to strengthen coastal boundaries of urban centres and rural communities through hybrid or nature-based solutions to risk reduction purposes and to slow the need to relocate communities and infrastructure" (p. 75).
  - "Increase adoption of sustainable soil and land management techniques" (p. 65), with an endnote on: "By developing and applying practical on-farm approaches (demonstration sites) for sustainable land and soil management technologies, developing teaching material, strengthening the use of land use planning across soil and climate zones that involves the participation of communities and land users, introducing alternative crops in association with more sustainable land-use practices, especially on marginal sloping and coastal lands, increasing coastal and foreshore protection with stones, rocks, mangroves, and coastal forests, and strengthen fire & wind breaks (e.g. bare strips, hedges, trees) especially in dry areas, integrating pest management, controlled livestock grazing, cover crops, soil health, water-run off controls, integrated crop-livestock farming and agroforestry into farm practices, and provide user friendly guidelines and incentives for investing in organic farming, including the use of green house and hydroponic systems" (p. 105).
- Emphasis on gender and human rights-based approaches to adaptation planning: "this approach improves inclusivity and the quality of participation. It also matches community-based approaches to adaptation, which itself has many linkages to ecosystem-based approaches to adaptation. Additionally, the comprehensive involvement of women is likely to yield important indirect benefits. For instance, women are primary caregivers, and any improvement in their knowledge regarding sustainable resource use and management is likely to be passed on to children" (p. 39)
- Implementation considerations include:
  - "Efforts to improve climate change awareness and knowledge should also focus on ecosystem-based approaches to adaptation. This would particularly involve the conservation or restoration of degraded habitats which can decrease local environmental and climate risk" (p. 54).
  - Traditional knowledge and associated customary practices are often about using resources in a sustainable way and as such are the basis of many community-based resource management activities. Consequently, traditional knowledge has strong linkages to community-based and ecosystem-based approaches to adaptation" (p. 54).

Climate Change Policy (Government of Fiji 2012)

- Adaptation strategies include "support the ecosystem-based approach throughout Fiji, recognizing that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience" (p. 33).
- Food security: traditional crop species and agroforestry methods for adaptation.
- Climate change impacts on the agriculture sector include: "agricultural and land management practices undertaken in rural areas can also affect the level of impact brought about by climate change. Changes in natural landscapes for agricultural development cause a decline in regulatory ecosystem services, including those responsible for reducing people's exposure to floods" (p. 51).
- Key properties contributing to climate change resilience in the forestry sector: "healthy forest ecosystems increase the resilience of forest communities through the provision of various ecosystem services and food security; healthy forest ecosystems increase the climate change resilience of many flora and fauna; forests maintain land stability and waterway conditions" (p. 11).

- Constraints to implementation highlighted under national planning: "Uncontrolled and unregulated clearing of marginal and vulnerable terrestrial areas has reduced the provision of ecosystem services" (p. 15).

National Biodiversity Strategy and Action Plan (NBSAP) 2020–2025 (Government of Fiji 2020)

- NBSAP vision: "living in harmony with nature, where by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people" (p. 11).
- NBSAP mission: "take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication; to ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilization of genetic resources are shared in a fair and equitable manner; and adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach" (p. 11).
- NBSAP's Principle 5: "adopting an ecosystem-based management approach: all conservation and development programmes to adopt ecosystem-based, ridge to reef or island system approach and principles" (p. 31).
- NBSAP's Principle 9: "Ecosystem-based adaptation (EbA) and Eco-Disaster Risk Reduction: the principle or approach which is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change" (p. 32).
- When setting up protected areas "Ecosystem-Based Management Approach should be applied, taking into account ecological connectivity and the concept of ecological networks, including connectivity for migratory species" (p. 34).
- NBSAP's Target 6: "by 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits" (p. 43).
- Strategic Area Sustainable Use and Development (SUD) 6: "strengthen ecosystem-based approaches to coastal fisheries management to reduce overharvesting and destructive fishing methods to maintain and improve coastal and coral reef ecosystems" (p. 45).

The Republic of Fiji National Disaster Risk Reduction Policy 2018–2030 (Government of Fiji 2018b)

- DRR measures should take place against the background of external environments: "diverse terrestrial and marine ecosystems that offer diverse habitats and ecosystem services, for example, related to mangroves and coral reefs that provide some coastal protection from storm surge and tsunami; fresh-water resources that are at high risk of/from over-use, contamination and drought; high population density in coastal areas of Viti Levu, as well as coral coasts and low islands that have been developed for tourist resorts; socio-economic disparity is a considerable part of the rural and low-lying island populations and informal settlement at subsistence levels; and primary industry-based economy is vulnerable to drought, flood and global market influence" (p. 14).
- Fiji's National Disaster Risk Reduction Policy 2018–2030 places emphasis on gender and social inclusion, including Local, Indigenous and Traditional Knowledge (LITK) aspects that are cross-cutting for NbS and CCA as well:
  - Impediments associated with national planning include: "lack of effective involvement of communities in planning and decision-making of DRR" and "lack of roles of women in DRR" (p. 16).
  - Insufficient coordination mechanisms among existing DRR projects and programs. There is also "insufficient coordination in DRR between the NDMO and relevant organisations such as the local governments, civil society organisations, multilateral stakeholders and communities…" (p. 17).

- Awareness and training: "lack of public awareness and understanding on climate change and disaster risk and their impacts, which hinders the development and effective implementation of appropriate DRR measures "and "poor access to information available to stakeholders outside of the government: the private sector, civil societies and communities" (p.17).
- Disparity among people: "regional disparity between persons living in urban and rural areas", "vulnerability disparity between living in and out of disaster-prone areas", "gender disparity" and those with and without disabilities, "information disparity between persons with and without information gadgets" and "awareness disparity between persons with and without DRR trainings and/or drills" (p. 18).
- Prominent consideration for local communities across the eight guiding principles: capacity development needs of communities to empower them to deal with disasters; including DRR lessons in school curricula, promoting communication and networking between national and local governments and communities; participatory approaches are highlighted including social inclusion mechanisms and strengthening communication between government and the local communities.
- "There has to be a broader and more people-centered prevention approach to disaster risks, and equal access to information is the first step towards equal participation" (p. 24).
- Includes a set of guiding principles on "participatory approaches" and "human rights and gender-based approaches" (p. 24, 25).

Examples of some local community plans in Fiji that integrate NbS concepts: Ecosystem-based Management Plan for Kubulau District, Integrated Coastal Management Plan Ra Province, and Vatu-i-Ra Conservation Park Management Plan.

Kiribati

Prominent national plans and policies in Kiribati that guide CCA, disaster risk and biodiversity conservation include the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) 2014–2023, Kiribati Climate Change Policy and Kiribati National Biodiversity Strategies and Action Plan (NBSAP) 2016–2020. None of these documents contain direct reference to the terminology NbS. However, all plans and policies include and integrate ecosystem/nature-based concepts and biodiversity conservation. Emphasis is also placed on education and awareness, social inclusion elements, including gender and people with disabilities and LITK.

Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) 2014–2023 (Government of Kiribati 2014)

- The plan highlights climate change/disaster impacts on the natural environments/ecosystems: "increasing coastal inundation, erosion and loss of land; increasing loss of island biodiversity on land and at sea and degradation of important habitats (such as mangroves, coral reefs); increasing environmental degradation and vulnerability of marine and terrestrial ecosystems and habitats to the additional stressors caused by climate change and hazards; increasing outbreaks of invasive species, pests and diseases; increasing water-, food- and vector-borne diseases; and salinisation of groundwater lens and decline in size of groundwater lens" (p. 28).
- Environmental sensitivity in the fisheries sector: "design and building of causeways and other coastal infrastructure often do not take into account their potential negative impact on marine ecosystems and coastal fish productivity" (p. 32).
- Strategy 4 of the plan places emphasis on "increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems" (p. 42).
- One of the performance indicators of the actions associated with biodiversity conservation is the "number of thematic island maps showing unique habitats and ecosystems (e.g., coral reef ecosystem, seagrass, benthic habitats etc.)" (p. 70).
- Traditional food systems are declining as a result of preference for imported food, and the number of people using traditional knowledge and practices is also decreasing in Kiribati. The "loss of agriculture skills and knowledge" (p. 31) is identified as both observed and potential threat.

- Actions on integration of LITK into early warning systems: "set up an effective monitoring system to improve early warnings for all hazards. Research and incorporation of traditional skills on seasonal and weather forecasting" (p. 66).
- Actions to improve water and food security and promote healthy ecosystems include:
  - "Document traditional knowledge, among men and women, of cultivation, preparation and preservation techniques for traditional food crops and fruit trees;
  - develop community and outer islands awareness program and demonstration sites to promote climate-resilient crop and livestock production systems (taking into consideration traditional and contemporary knowledge and practices, such as agroforestry, drought/salinity-resilient crops and livestock, sustainable management practices); and
  - implement identified actions and monitor progress (such as promotion and enhancement of household agroforestry systems, re-planting of traditional and climate resilient staple food crops (e.g., coconut trees, cassava, sweet potato, etc.), upgrading island nurseries, practice of organic and conservation agriculture, composting, mulching and cover crops)" (p. 79).
- Actions to improve the fisheries sector:
  - "document traditional knowledge on fishing, navigation and preservation techniques; and
  - develop community and outer islands awareness program and demonstration sites to promote CBFM (taking into consideration traditional and contemporary knowledge and practices)" (p. 81).
- Consideration is also given to traditional governing systems: "Develop an island-specific disaster plan in consultation with people with disabilities, including provision of rations, water, blankets and emergency equipment as required, taking into account traditional protocols and governing systems (p. 102).
- Among the key strategies and actions identified to reduce vulnerability and respond to observed and likely impacts are: "delivering appropriate education, training and awareness programs", with the following desired results: "the I-Kiribati population is well informed and all stakeholders have access to up-to-date and accurate, contemporary and traditional information on climate change and disaster risk management (see also Strategy 2) and communities take voluntary action to reduce climate change and disaster risks" (p. 43).

Kiribati Climate Change Policy (Republic of Kiribati 2019)

- The guiding principles highlight the need for preserving traditional knowledge: "focusing on actions that will strengthen the long-term resilience of Kiribati communities through sustainable environmental, social and economic benefits that combine the use of modern technologies with the preservation of traditional knowledge" (p. 3).
- Under the priority on coastal protection and infrastructure, actions on integration of LITK include: "a range of actions, including both soft and hard measures, such as mangrove planting, traditional seawalls ('te buibui') and raising of ground levels, is needed to effectively address emerging climate change impacts" (p. 11).
- Actions to improve food security includes the "use of traditional plant varieties and native plant species is essential, given their suitability for existing environmental conditions and their nutritional value. This will help ensure higher-yielding local crops can be grown sustainably and managed at the household level" (p. 13).
- Objective 4 on food security further states "improve food preservation and storage techniques to avoid food shortages and increase food availability through use of both modern and traditional skills and knowledge" (p. 13).
- Climate change vulnerabilities on the marine ecosystems: "any changes in climate will have a direct negative impact on the marine ecosystem and fisheries stocks, which will result in reduced revenue for Kiribati" (p. 9).
- The section on environment sustainability and resilience highlights "effective conservation and sustainable use of natural resources" as one of the objectives for "strengthened institutional capacity and the framework" (p. 16).

Kiribati National Biodiversity Strategies and Action Plan (NBSAP) 2016–2020 (Republic of Kiribati 2016)

- NBSAP's vision statement: "the people of Kiribati continue to enjoy their natural biodiversity that is resilient to the impacts of climate change and supports the socio-economic livelihoods" (p. i).

- Biodiversity losses in Kiribati are attributed to "over-harvesting and unsustainable use of natural resources" (p. 6).
- The protection, sustainable use and conservation of natural resources are legislated under Kiribati's Environment (Amendment) Act 2007.
- The following guiding principles of the NBSAP are associated with ecosystem/nature-based management and biodiversity conservation:
  - "Food security and nutrition: recognizes that biodiversity plays a critical role in meeting the food needs of people, reducing hunger and improving individual health. It emphasizes the need to promote staple local food and sustainable use of our land and marine resources" (p. 17).
  - "Respect for traditional knowledge, practices and skills: I-Kiribati people have valuable indigenous knowledge and practices that can contribute to the sustainable use and effective management of their natural resources and the environment. The traditions and practices are important elements of their culture and heritage that forms their national identity" (p. 17).
  - "Integration of biodiversity in economic development aspirations: this principle recognizes the challenge in reconciling and balancing the need to protect and conserve biodiversity and the development needs" (p 17).

Palau

Palau's national plans, policies and legislation that guide CCA, disaster risk and biodiversity conservation include the Palau Climate Change Policy, Palau Marine Sanctuary Act, National Disaster Risk Management Framework 2010 and Republic of Palau Revised National Biodiversity Strategy and Action Plan 2015-2025. None of these documents have direct reference to the terminology NbS. However, all plans and policies include and integrate ecosystem/nature-based concepts and biodiversity conservation. Emphasis is also placed on social inclusion elements, including livelihoods, ecosystem services and LITK.

Palau Climate Change Policy: for climate and disaster resilience low emissions and development (Government of Palau 2015)

- The policy highlights climate change impacts on their natural systems: "increased inundation, storm surges, erosion and other coastal hazards; changes to quantity, quality and variability in seasonal and annual flows of surface and underground water; increased coral bleaching events and increased coral mortality; declining fisheries and other marine resources; reduced ecosystem functionality, particularly mangroves as coastal defenses and nurseries; overall loss of marine and terrestrial biodiversity and productivity; increasing population, diversity, and range of invasive species" (p. 13).
- The policy places emphasis on priority risks in the "agriculture and fisheries", "biodiversity conservation and natural resources" and "society and culture", among other sectors (p. 14).
- Strategic priorities in the "agriculture and fisheries", "biodiversity conservation and natural resources" and "society and culture" sectors include: "by 2020, the Palau agriculture and fisheries enabling frameworks is established to sustainably manage and support local food production and consumption", "by 2020, the enabling framework is established to build ecosystem resilience and sustainably manage carbon sinks using holistic and synergistic management approaches", and "by 2020, community resilience is strengthened through the establishment of sound institutional arrangements that are based on dynamic traditional systms, improved capacity building, a robust labor force, and effective emergency preparedness" (p. 16), respectively.
- The development process of the policy included consultations with and input from local communities.
- As part of the education and capacity building, the policy emphasizes the need for "community programs to teach children local practices and knowledge to sustain local resources" (p. 15).
- One of the gaps highlighted for good governance, Government-to-sector-level: limited engagement with local communities as a result of "competing interests, minimal capacity and understanding, and confusion arising from ad hoc government and partner projects on climate change that have not been aligned or coordinated" (p. 26).

- Palau's enabling framework for good governance to include a "centralized Climate Change Office" that would "provide the legal mandate and resources required to facilitate active engagement and participation by government agencies, civil society, communities, Traditional Leaders and the private sector" (p. 27).
- The policy includes a section on society and culture with the objective: "community resilience is strengthened through the establishment of sound institutional arrangements that are based on dynamic traditional systems, improved capacity building, robust labor force, and effective emergency preparedness" (p. 36). This section also emphasizes on establishment of emergency support for displacement and relocation issues.

Palau Marine Sanctuary Act (Republic of Palau 2015)

- Palau National Marine Sanctuary Act signed into law on 28 October 2015, an enactment of a 'bul' — a moratorium on fishing and mining activities to protect selected critical reef systems that are crucial to food security. One of the largest marine reserves in the world, Palau's marine sanctuary covers an area of about 500,000 square kilometers.

National Disaster Risk Management Framework 2010 (Amended in 2016) (Government of Palau 2016)

- The Ministry of Infrastructure, Industries and Commerce is responsible for DRR tasks to: "mitigate the causes and negative impacts of land degradation on the structure and functional integrity of ecosystems through Sustainable Land Management" (p. 58).
- "Developing real time hazard information and undertaking risk and vulnerability assessments, supported by traditional knowledge as a basis for underpinning key decisions by national, state governments, NGOs, communities and individuals. Encouraging the relevance and value of traditional knowledge and its integration with scientific information in the design of risk reduction and risk management strategies and activities at all levels" (p. 18).
- "Empowering communities to address their risks through the development of capacity and knowledge (traditional and scientific) and through the provision of support for local involvement in developing and implementing disaster management strategies" (p. 18).
- Integration of LITK is emphasized "at the community level, disaster risk reduction programs and activities are to be developed and incorporated into programs that address community development and coping mechanisms in times of disasters. Relevant traditional knowledge and practices are to be included in all national, state and community disaster risk reduction plans" (p. 36).
- The framework highlights on the need for community engagement for traditional information exchange.

Republic of Palau Revised National Biodiversity Strategy and Action Plan 2015-2025 (Government of the Republic of Palau 2016)

- Threats to Palau's biodiversity: "unsustainable development practices, impacts of Climate Change, overharvesting of biodiversity and other natural resources, and ongoing expansion of tourism represent significant threats to Palau's environmental quality and biodiversity" (p. 7).
- "The development of additional plans to manage natural resources outside of protected areas demonstrates recognition of the importance of ecosystem-based environmental management" (p. 9).
- Guiding principles of the NBSAP include: "Approaches that favor ecosystem-based management support biodiversity conservation by protecting ecosystem functions and preserving high quality habitats that provide refuge for maintaining species populations" (p. 11).
- NBSAP highlights the "ecosystem approach: is a strategy for the integrated or holistic management of resources within a particular eco-region" (p. 78).
    - "The ecosystem approach may combine modern scientific adaptive management practices with traditional approaches to resource management. The ecosystem approach often links ecosystem management practices with economic, social and cultural output. It is the fundamental paradigm for activities under the CBD" (p. 78).
    - "Current lack of capacity to evaluate the status of ecosystem fragments within the context of larger eco-region trends is a barrier to effective development and implementation of ecosystem-based and results-based management approaches. Identifying relationships

between the ecological and economic effects of land use can significantly improve decision-making capacity and make the planning process more inclusive" (p. 79).

Solomon Islands

The Solomon Islands national plans and policies that guide CCA, disaster risk and biodiversity conservation include the National Climate Change Policy 2012–2017, National Disaster Management Plan 2018, and the National Biodiversity Strategic Action Plan (NBSAP) 2016–2020. None of these documents contain direct reference to the terminology NbS, however, they include and integrate ecosystem/nature-based concepts and biodiversity conservation. The plans and policies recognize and integrate gender and social inclusion elements, including emphasis on LITK and practices.

National Climate Change Policy 2012–2017 (MECDM 2012)

- The policy recognizes the need to develop the capacity of Solomon Islands to assess and reduce risks and vulnerabilities and adapt to climate change including "long term adaptation to climate change including, inter-alia, enhancing ecosystem and social resilience, climate proofing infrastructure and relocating communities as a last resort" (p. 20).
- "Build capacity, plan and implement ecosystem-based vulnerability assessments and adaptation programs and actions including, inter-alia, implementation of the protected areas legislation and regulations, low-impact logging strategies, marine ecosystem management" (p. 21).
- "Strengthen capacity of government agencies (e.g., MAL, SICHE), NGOs, and private sector (e.g., food industry) to undertake research, with appropriate infrastructure, into approaches that underpin key climate change issues that adversely impact on food security and ecosystem services (p. 25).
- "Establish infrastructure to support climate change research including; rainfall run-off relationship, physiographic and intensity trends, carbon assessments flood risk trends, soil analysis, coastal erosion and sea level rise, upward migration of bio-zones and ecological refugia, preservation of genetic diversity, coral bleaching and aquatic ecosystem stability" (p. 25).
- The policy also emphasizes on gender and social inclusion:
  - "Gender equity and involvement of youth, children and people with special needs: climate change impacts will affect everyone in Solomon Islands and the future generations. The implementation of this policy shall ensure gender equity, and the involvement of men, women, youth, children and people with special needs" (p. 15).
  - "Undertake gender analysis and integrate gender considerations as part of vulnerability and disaster risk assessments as well as adaptation actions. Inclusive participation of women and youth should be actively encouraged at all levels in order to build the capacity of vulnerable groups" (p. 22).
  - "Integrate gender analysis and gender considerations in planning and implementation of mitigation actions" (p. 24).
- The guiding principles of the policy emphasizes on:
  - Holistic and multi-disciplinary approaches; "Climate change impacts will be multi-dimensional therefore the planning and implementation of this policy shall be holistic and multi-disciplinary with special recognition to the important role of science and traditional knowledge" (p. 15).
  - "Respect for culture and rights for indigenous people: climate change will impact on natural resource utilization and people's livelihoods. The culture and rights of indigenous communities shall be respected throughout the planning and implementation of climate change mitigation, adaptation and disaster risk reduction programs and activities" (p. 15).
- Local, Indigenous and Traditional Knowledge and practices for CCA is declining, affecting resilience and coping capacity of Solomon Islanders. "Reviving and promoting traditional coping strategies and technologies is an essential part of adaptation" (p. 20).
- The policy recognizes that "science and traditional knowledge have an important role in raising society's understanding of climate change" (p. 24).
- The plan promotes and supports "the documentation and use of indigenous knowledge and scientific investigations and encourage their application in enhancing the resilience of people and ecosystems to climate variability and climate change" (p. 25).

National Disaster Management Plan 2018 (National Disaster Council 2018)

The Solomon Islands Disaster Management Plan lacks inclusion and integration of elements of EcoDRR and/or ecosystem/nature-based approaches to DRR. The plan, however, does include and integrate social inclusion elements particularly those associated with LITK and practices:

- The plan "recognises traditional mechanisms and land rights" (p. 16).
- There are multiple instances where the plan integrates DRR actions with local communities, including but not limited to:
  - To ensure effective implementation of DRR initiatives external agencies require to work with the national and provincial governments to engage with local villages and communities.
  - "Ward (or other designation appropriate to the province) DR Committees are to be established at the appropriate administrative level to facilitate and support the activities of Village DR Committees in DM (preparedness, response and recovery) and in disaster and climate risk reduction. Their purpose is to provide a connection between the villages and the provincial arrangements to coordinate and support the local activity" (p. 37).
  - "Village Disaster Risk (DR) Committees are to be established at the village and associated settlement level or where appropriate amongst groups of up to 5 to 10 villages with a common interest based on existing community structures" (p. 37). The plan notes the inclusion of women in the Village Disater Risk Committees.
  - "Villages, families and individuals within the area of a Village DR Committee are to become a local network for participation in planning, early warning and response arrangements" (p. 38).

The National Biodiversity Strategic Action Plan (NBSAP) 2016–2020 (Government of Solomon Islands 2016)

- Solomon Islands NBSAP's national forestry strategies and action plans works at "a holistic management and transparent approach towards forestry sustainability" (p. 60); "ecosystem-based management approach is envisaged to ensure that all ecosystems that are related to forest biodiversity must be managed as a system" (p. 61).
- Solomon Islands Coral Triangle Initiative National Plan of Actions: "underpinning principles rest on people-centered approach and ecosystem-based resource management to be promoted by the flagship governance modal 'Community Based Resources Management (CBRM)" (p. 64).
- The NBSAP highlights the vision of Solomon Islands National Plan of Action (NPOA: "Solomon Islands sustainably manages marine and coastal resources to ensure food security, sustainable economic development, biodiversity conservation and adaptation to emerging threats through community-based resource management approaches supported by government agencies and other partners" (p. 64).
- The NBSAP's Strategic Goal B: "reduce the direct and indirect pressures on biodiversity through ecosystem-based management approach" (p. 72).
  - "Target 5: By 2020, the Solomon Islands has reinforced and reaffirmed its commitment, reciprocally to the regional and sub-regional offshore fisheries strategies and plans, particularly in effort to sustainably manage tuna, reducing of tuna by catch and instigating of incentives and subsidies to increase economic benefit/return from tuna development" (p. 86).
- Working through the Environment Act and Environment Regulations, the NBSAP encourages inclusive approaches:
  - "Promote the participation of the community in environmental decision-making" (p. 45).
  - "Ensure freedom of and access to information on environmental matters, and in particular to ensure that the community has access to relevant information about hazardous substances arising from, or stored, used or sold by any industry or public authority" (p. 46).
  - "Conduct public education and awareness programmes about the environment" (p. 46).

Tuvalu

Key national plans and policies that guide CCA, disaster risk and biodiversity conservation in Tuvalu include Te Kaniva: Tuvalu Climate Change Policy 2012, Te Kakeega III National Strategy for Sustainable Development 2016 to 2020 and Tuvalu National Biodiversity Strategy and Action Plan (NBSAP) 2012-2016. These plans and policies do have direct reference to the terminology NbS, although they do include and integrate ecosystem/nature-based concepts and biodiversity

conservation. In addition, the documents recognize and integrate social inclusion elements, particularly on LITK and practices, and community-based practices.

Te Kaniva: Tuvalu Climate Change Policy 2012 (Government of Tuvalu 2012a)

- The guiding principles of the policy places emphasis on "methodological technologies and tools, such as ecosystem and community-based approaches and decision support tools, are equally important to avoid mal-adaptation" (p. 9).
- Strategy 1.4 of the policy states: "coordinated planning and management of marine, coastal and land resources and systems (Whole Island Systems Management/ecosystem base management)" (p. 14), and has the following expected outcomes:
  - "Recognition of inter-linkages of systems and adaptations and disaster risk reduction activities strengthened resilience and adaptability of these inter-linkages (ecosystem-based management);
  - Marine and coastal resources are sustainably managed in the context of climate change to minimise the impact on the people of Tuvalu" (p. 14).
- Strategy 1.7 of the policy states: "legislation and policies to govern sustainable resource management, (marine, coastal and land) in the context of climate change impacts" and has the following expected outcome:
  - "Improved coordination driven by relevant policies;
  - Threats and impacts of climate change and disaster risks on biodiversity minimised and avoided (refer NBSAP, NAPA, NAP etc)" (p. 14).
- Tuvalu's Climate Change Policy reaffirms "the importance of the role of the Kaupule in implementing climate change actions at the community level" (p. 3).
- The guiding principle of the policy is inclusive; emphasizing on LITK elements: "respect for, and preservation of, the values, culture and traditions of Tuvalu", and "a multidisciplinary and no-regrets approach to guiding adaptation decision-making, based on consultation, traditional knowledge, a scientific evidence base, policy monitoring and evaluation and regular reviews" (p. 9).
- The goals of the policy were decided after comprehensive consultations with relevant stakeholders, including chiefs and Kauple (Island Council) representatives.
- Goal 3 of the policy focuses on "enhancing Tuvalu's governance arrangements and capacity to access and manage Climate Change and Disaster Risk Management finances" and indicates capacity issues related to traditional governing systems "lack of capacity in the Island (Kaupule) Governance" (p. 17). The strategy identified to address this issue: "island governance and leadership (Kaupule) strengthened", with the following expected outcomes: "effective and responsive island governance where climate change and disaster risks and impacts are integrated into Island Strategic Plans, and diversifying gender specific climate resilient livelihoods and enhanced hazard response capacity of the Kaupule" (p. 18).

Te Kakeega III National Strategy for Sustainable Development 2016 to 2020 (Government of Tuvalu 2016)

- Strategic goal 8 of the strategy is on natural resources: "maximize social and economic returns from the management and sustainable use of Tuvalu's natural resources" (p. 41).
- One of the objectives of goal 12 on ensuring sustainable consumption and production patterns: "by 2030, achieve the sustainable management and efficient use of natural resources" (p. 106).
- "Legislative options need to be explored that protects the public, island communities, land resources, marine ecosystems, biodiversity, and not least, laws that protect the country's sovereignty rights to any future climate threats" (p. 12).
- Strategic goal 10 on environment aims to: "protect, restore and promote sustainable use of terrestrial ecosystems; halt and reverse land degradation; protect and prevent biodiversity loss" (p. 55).
- The strategy supports the following to strengthen implementation of the SAMOA pathway: "access financial and technical resources for the conservation and management of biodiversity; addresses land degradation and drought challenges, in respect of food security and nutrition, soil resources, adaptation to climate change, protection of biodiversity and resilience to natural disasters; slow, halt and reverse deforestation and forest degradation; pursue financing for forest management policies that improve the state of biological diversity, and conserve and safeguard forest ecosystems" (p. 55).

- The strategy supports the establishment of both terrestrial and marine reserves for sustainable management of natural resources and biodiversity conservation.
- Goal 15 of the strategy states: "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" (p. 108).
- The value of culture and traditional knowledge is highlighted by the strategy, emphasizing on the establishment of a Cultural Development Committee by the Department of Culture, who will be responsible for development of a Strategic Action Plan, forge partnerships and identify funding opportunities for projects on cultural preservation and development.
- A report and toolkit on reversing the degradation of cultural, traditional customs and values, "building on the UN Cultural Mapping Project undertaken in 2010/11" (p. 25) is prioritized under the Tekakeega III.
- The need for regular cultural awareness raising efforts by the Department of Culture is highlighted.
- Sustainable development actions at local levels are managed through the Falekaupule Act, which gives the responsibility of day-to-day running of the administration to Island Councils called Kauples. This governing system is "crafted along traditional social and cultural lines" (p. 27). The Falekaupule Act was translated in to the local language to raise the "people's understanding of the business of running a government" (p. 27).
- Te kakeega III encourages sustainability through "increase farmer productivity: traditional crops, vegetables, biodiversity food" (p. 89).

Tuvalu National Biodiversity Strategy and Action Plan (NBSAP) 2012-2016 (Government of Tuvalu 2012b)

- Theme 1 on "climate change and disaster risk management", NBSAP highlights the nature-based actions:
  - "Raise awareness of meteorologists and climatologists on the linkages between climate information and biodiversity conservation" (p. 34).
  - "Assess and establish effective coordination arrangements to facilitate the mainstreaming of biodiversity conservation into climate change and disaster risk management policies and programmes by 2011" (p. 34).
  - "Identify options for ecosystem-based adaptation" in work towards the objective on developing "contingency plans to ensure biodiversity, culture and traditions of Tuvalu are preserved and protected in time of extreme events of climate change and natural disasters" (p. 35).
- The theme on "conservation of species, ecosystems (marine, coastal, land terrestrial) and genetic diversity" includes actions on promoting "ecosystem-based adaptation and conduct training and awareness on EIA" (p. 37).
- Theme 4 on "community — empowerment, involvement, awareness and understanding and ownership" includes actions on "community-based monitoring and reporting systems" (p. 40). Theme 4 also highlights the following objectives associated with inclusive approaches for biodiversity conservation and natural resource management:
  - "Building capacities of Falekaupule and their respective people to manage and conserve their island ecosystems to provide sustainable benefits and livelihoods;
  - Empowering communities to lead in the management and conservation of their island biodiversity; and
  - Review of existing by-laws and relevant national legislations impacting on biodiversity and align them so communities are effectively empowered to protect and conserve biodiversity" (p. 39–40).
- Theme 6 on "trade, biosecurity and food security" includes actions on documentation of "traditional food preservation and cooking methods and practices that are significant to biodiversity conservation" (p. 44).
- Tuvalu's NBSAP emphasizes on collation of "traditional knowledge from island elders and leaders and incorporate into sustainable land management practices" (p. 52).
- Theme 7 on "waste and pollution management" emphasizes integration of "key biodiversity conservation criteria into existing and new waste management policies, strategies and plans" (p. 45).

Tuvalu takes the local communities' Island Strategic Plans (ISP) approach to ensure involvement and participation of local communities. All islands have ISPs that align with national plans and policies. It is the role of the Island Council or 'Kauple' to align the ISPs with the national plans and policies.

Vanuatu

Vanuatu's CCA, disaster risk and biodiversity conservation are guided by the following national plans and policies: Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030, Vanuatu 2030 The People's Plan, National Sustainable Development Plan 2016–2030, and Vanuatu National Biodiversity Strategy and Action Plan (NBSAP) 2018–2030. None of these documents have direct reference to the terminology NbS. However, ecosystem/nature-based concepts and biodiversity conservation are thoroughly included and integrated in the above-mentioned plans and policies. These documents also recognize social inclusion elements, including gender, marginalized groups, LITK and practices, and community-based practices.

Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030 (Government of the Republic of Vanuatu 2015)

- The policy supports ecosystem-based approaches through a number of actions:
  - "Prioritizing actions that incorporate threats and solutions from the 'ridge to the reef' of island communities;
  - Identifying and minimizing negative impacts on the environment from proposed adaptation and risk reduction activities;
  - Prioritizing adaptation and risk reduction actions that build on, incorporate and protect taboos, conservation areas, heritage sites, locally managed areas and vulnerable habitats and ecosystems and carbon sinks;
  - Quantifying the value and benefit of ecosystem services and building this into adaptation and risk reduction planning and budgeting;
  - Prioritizing "soft" ecosystem-based adaptation over "hard" engineered infrastructure for ecosystem function maintenance (e.g., coastal revegetation versus sea walls);
  - Developing advocacy and educational programmes around the value of ecosystem-based adaptation; and
  - Utilizing sound land-use planning approaches, and implementing and enforcing ecosystem-related development policy documents (e.g., Land Use Planning Policy, Foreshore Development Act, Physical Planning Act)" (p. 20).
- Adaptation and DRR are supported through community-based approaches through the following actions:
  - "Adaptation and risk reduction action in communities addresses real, current and priority vulnerabilities by: undertaking community vulnerability assessments and comprehensive profiles prior to project implementation; engaging communities to participate in and lead the vulnerability assessment process in an appropriate language; and ensuring that the results of community assessments are returned to the communities that have participated" (p. 18).
  - "Adaptation and risk reduction is owned and driven by communities by: developing community adaptation and risk reduction plans and actions through a bottom-up planning approach; utilising and strengthening existing community systems for adaptation and risk reduction initiatives; identifying adaptation and risk reduction activities that bring additional, no regrets, social, environmental and economic benefits to communities and individuals; including capacity building to ensure continuity and meaningful ownership; requiring initiatives at the community level to include strong in-kind community contributions to avoid reliance on external support; and working within traditional and local knowledge and values so that these systems become more resilient" (p. 18).
  - "Rights and needs of individuals are respected and recognised by: ensuring that adaptation and risk reduction initiatives incorporate the rights, priorities and needs of individuals (particularly vulnerable and marginalised groups, including the elderly, women, youth, children, disabled, illiterate, landless, minority and impoverished); ensuring that community stakeholders and vulnerable groups are included in climate change adaptation and risk reduction initiatives and have an institutionalized role and voice in island, municipal, provincial and national climate and disaster decision-making; acknowledging and empowering the government and non-governmental organisations that are already

engaged in communities to champion climate and disaster risk planning and action at the grassroots level; and ensuring that community resilience and self-reliance are not compromised by development aid programmes" (p. 18–19).

- Traditional knowledge and its values are highlighted in the policy with actions to "build on and share existing traditional knowledge and expand its use" through proper documentation, making it accessible, integrating it in school curricula and building on existing traditional knowledge and practices (p. 14).
- The policy "seeks to strengthen existing capacity at national, provincial and area council levels, drawing on the country's rich heritage, traditional knowledge and the lessons learned from the broad range of initiatives regarding climate change and disaster risk reduction" (pg. 1).
- LITK is integrated in the guiding principles of the policy: "equity – providing opportunities for meaningful participation by all groups in society, including women, youth, the elderly, people with disabilities, remote communities; valuing traditional practices; and engaging with all levels of government, industry sectors, development partners, donors, academia, regional and international bodies"; "community focus – empowering communities at the local level through a bottom-up approach, drawing on local skills, values and traditional knowledge, and enhancing decentralisation in planning, programmes and projects"; "innovation – enabling dynamic systems that are science and evidence based, adaptable to changing situations, incorporating traditional knowledge and practice, emerging trends, technological advances and local contexts" (p. 2).
- Localization and the high value of traditional knowledge in the Vanuatu society is emphasized, including the prominence of local governance systems and actions towards "strengthening traditional governance systems through partnerships among government, civil society, development partners, academia and the private sector" (p. 9).
- LITK integration through community-based adaptation and DRR by "working within traditional and local knowledge and values so that these systems become more resilient" (P. 18).
- Strengthening early warning systems in Vanuatu through "incorporating both modern technology and traditional methods into early warning systems" (p. 24).

Vanuatu 2030 The People's Plan, National Sustainable Development Plan 2016–2030 (Republic of Vanuatu 2016)

- The plan highlights on "a pristine natural environment on land and at sea serving our food, cultural, economic and ecological needs" and the "need to realize the true cultural, economic and social value of our natural capital, biodiversity and ecosystems" (p. 5).
- The plan recognizes the need for people to "capitalise on the rapid advances in technology and innovation that can complement traditional knowledge to better utilise our natural assets on land and at sea to ensure our food security, maintain our cultural identity, and enhance our economic prospects", while stressing on the fact that this must be done "without destroying our ecosystems and biodiversity" (p. 6).
- The environment goal 5 on "ecosystems and biodiversity" is: "a nation committed to ensuring the conservation and sustainable management of our biodiversity and ecosystems" with the following objectives:
  - "Protect biodiversity and ecosystems and their significant role in our culture, society and environment;
  - Create and manage conservation and protected areas;
  - Support local conservation and protection of endangered, threatened or endemic species and ecosystems including though traditional knowledge and practices;
  - Protect our borders and environment through effective customs and biosecurity services;
  - Increase awareness on biodiversity conservation and environmental protection issues across government and publicly; and
  - Enhance environmental monitoring, evaluation and research with relevant, open and transparent data sharing among relevant agencies" (p. 15).
- The plan highlights on the importance of natural resource management and the "decline of traditional resource governance" (p. 5), with the need to integrate LITK in modern approaches to strengthen community-based resource management.
- Emphasis is placed on enhancing resilience and adaptive capacity to climate change impacts and disaster by continuing "to draw on our rich history of resilience and risk reduction that stems

from our traditional knowledge and practices, particularly in relation to food production and preservation" (p. 6).

- The policy objectives place value in LITK: objective 1: "a nation based on traditional governance and Christian principles, which underpin our culture and continue to bestow life skills and knowledge to future generations (p. 10)" and objective 4: "An inclusive society which upholds human dignity and where the rights of all Ni-Vanuatu including women, youth, the elderly and vulnerable groups are supported, protected and promoted in our legislation and institutions" (p. 11).
- Other objectives include strengthening links between the traditional and justice systems, enhancing traditional agricultural practices, and using integrated traditional knowledge and modern approaches for natural resource conservation.

Vanuatu National Biodiversity Strategy and Action Plan (NBSAP) 2018–2030 (Government of Vanuatu 2018)

- Vanuatu's NBSAP is thorough and comprehensive, covering various aspects of biodiversity conservation and natural resource management and has the following missions:
  - "To manage and safeguard biological resources through government, provinces and local communities so as to maintain fully our natural and cultural heritage for all Ni-Vanuatu.
  - Guide governments, provinces, local communities, landowners and landholders in the sustainable management of Vanuatu's natural resources.
  - Ensure that all Ni-Vanuatu, including future generations, are able to benefit from biodiversity and enjoy its use.
  - Protect the custom, intellectual and legal rights of Ni-Vanuatu as resource custodians and users" (p. 27).
- Eight principles underpin the strategy: "
  - "Principle 1. Community participation and ownership;
  - Principle 2. Biodiversity is the foundation for all development and inter-generational;
  - Principle 3. Biodiversity mainstreaming and ownership;
  - Principle 4: Gender mainstreaming and equality;
  - Principle 5: Adopting an ecosystem-based management approach;
  - Principle 6: Managed and Protected Areas for species protection, forest, watersheds and marine should be comprehensive and representative;
  - Principle 7: Improving knowledge, capacity and intellectual property; and
  - Principle 8. Financial sustainability and accountability" (p. 27–28).
- The plan's strategic area includes "conservation area management, forest and inland waters ecosystems conservation and management, coastal and marine ecosystems conservation and management, species and genetic diversity conservation, invasive species eradication and control, mainstreaming biodiversity across sectors and society, and resource mobilization" (p. 30).

Findings from Interviews and Surveys

Key Informant Interviews

Key informant interviews found many PICTs to have national policies and plans in place that integrate nature / ecosystem-based elements, but do not have the resources to implement the policies. Mainstreaming NbS both as a terminology and concept is an ongoing process. Some countries have commenced with work on mainstreaming NbS into their national policies and plans:

- Tonga is working on including NbS into their JNAP. The terminology is new and yet to be included in local level plans.
- National Invasive Species Strategy and Action Plan, which feeds into the National Biodiversity Strategy and Action Plan, guide invasive species management in the PICTs. There are ongoing efforts on integrating invasive species management into NAPs. SPREP's PRISMSS programme is in the initial phases of an NZ-funded project on supporting mainstreaming NbS associated with invasive species management into national plans for four countries. The countries will include Tonga and Niue, while the remaining are yet to be decided.

- French Territories: in French Polynesia integration of NbS into new climate plans and biodiversity policy is under discussion. The plans and policy are yet to be published. Work on mainstreaming NbS into policies and plans has yet to commence in New Caledonia and Wallis and Futuna.
- RMI: Reimaanlok, National Environment Management Strategy and Atoll Disaster Risk Reduction Pans (currently being developed). RMI's NAP recognizes NbS for adaptation in atolls (currently being developed).
- Samoa, Nauru and Solomon Islands Climate Change policies are undergoing revisions and all include NbS elements.
- Tagabe River Management Plan in Vanuatu includes NbS elements.
- Micronesia Conservation Trust (MCT) is supporting the development of State level climate change policies in FSM. NbS is being included as a priority in said policies.

Online Surveys

Integration of NbS into Policies and Plans

Most of the respondents (67%) indicated that NbS for CCA and resilience building elements were integrated in national climate change policies, plans and strategies. Fifty one percent of the respondents indicated sector policies on agriculture, forestry, fisheries and/or food security include NbS elements. About 40% of the respondents indicated NbS integration in the following plans and strategies: Disaster Management Plan (42%), Biodiversity Conservation Strategy (42%), National Development Plan (41%) and National Adaptation Plan (38%). Ten percent of the respondents indicated that NbS elements were indicated in Joint National Action Plans (Fig. 1).

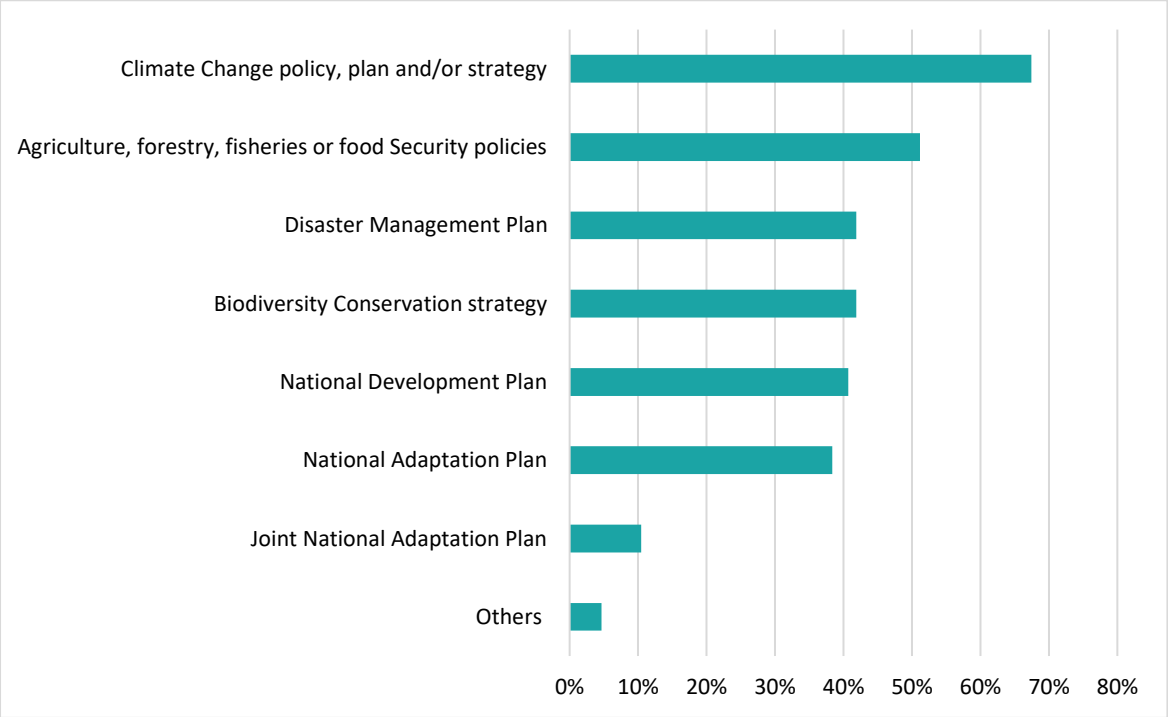

Figure 1: Most respondents indicated NbS elements to be included in Climate Change policies, plans and strategies. 38–42% of the respondents indicated NbS integration in other sector, disaster and adaption plans. Details on others is provided in the text below.

Five percent of the respondents indicated other plans and policies (Fig. 1) that included NbS elements, including: Kiribati Integrated Environment Policy KIEP 2021 – 2036, waterways and environment corporate plan, integrated coastal management frameworks, community fisheries reserves and community ecosystems mangrove conservation and management plans, Northern Province Climate Plan (New Calendonia) and Northern Province Climate/Energy Action Plan (New Calendonia). In Papua New Guinea climate change plans, policies, and sector plans including agriculture, forestry, fisheries and food Security plans and policies have been developed and/or adapted, however implementation of these plans is lacking.

Participation in NbS-related Development/Review of Policies and Plans

Fifty four percent of the respondents indicated participation in the review and/or development of local plans and strategies to identify gaps and mainstream NbS for CCA, while 41% of the respondents participated in national policies, plans and strategies to do the same. Twenty six percent of the participants did not participate in any Nbs-related policy review or development (Fig. 2).

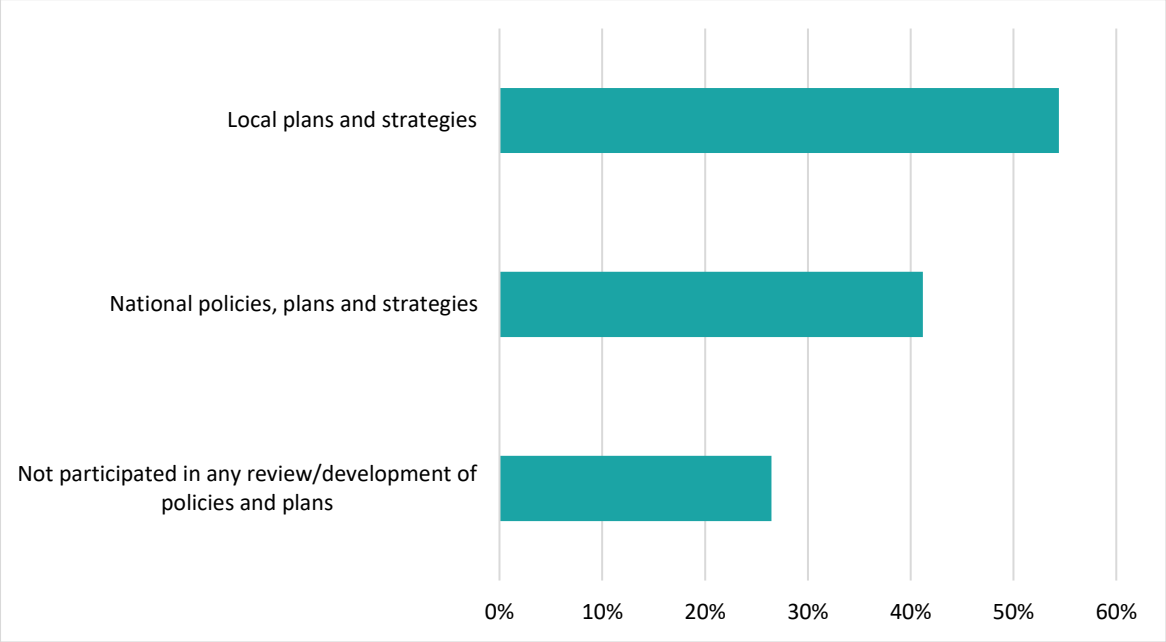

Figure 2: Most respondents indicated participation in review and/or development of plans and polices to identify gaps and mainstream NbS for CCA; 54% participated in local and 41% in national plans and policies. 26% did not participate in any NbS-related policy review or development.

Plan and policy reviews for NbS and CCA that the respondents were involved in include, but are not limited to:

- FSM: Pohnpei State Climate Change Policy, NBSAP, State level BSAPs, numerous community level plans
- Kiribati: Kiribati Education Improvement Programme (KEIP), Kiribati Development Plan, Kiribati Integrated Environment Policy, Ministry Strategic Plan (MSP), National Climate Change Policy KIEP 2021 - 2036; Integrated Environment & Natural Resources Co- Management Plans at Outer Islands level in Kiribati
- Palau: Protected Areas Network (PAN), Palau Conservation Society Strategic Plan 2022 – 2027, Ngardmau State Community Based Climate Change Adaptation Plan, Koror State Rock Island Southern Lagoon Management Plan Fisheries Management Plan Koror State Biosecurity Plan, Peleliu State Master Plan, Ngiwal State Master Plan development, PAN management plan, food security, Community response plan towards disasters KSCA Management Plan, Ngiwal Master Plan
- Cook Islands: CINCW Five Year Plan, Tongareva Island Government Plan, Strategy on Gender and Social Inclusion in NBs for climate adaptation projects and training activities, National Development Plan and Climate Change Policy, improving sustainable river banks, Policies in the education sector related to disaster risk reduction and education in emergencies, Cls CC Policy 2018 – 2028
- Niue: Southern Lagoon, Joint Coordination on Seascape/Landscape Planning, Aliluki Adaptation Action Plan, Local Adaptation plan of Action (LAPA) and Community Adaptation Plan of Action (CAPA) Reports
- Timor-Leste: Timor-Leste National Climate Change Policy, Island district plans (3) and the scoping of the, NAP M&E framework,
- Fiji: Fiji Relocation guideline, National Climate Change Policy, Agriculture Policy, Renewable Energy Policy, National Forest Policy, Fiji Climate Change Act, NAP

- Samoa: Environment Policy, NENS project supported by the Samoa National Invasive task team (SNITT) for invasive species, Climate Change Policy (Samoa), Community Ecosystem Management Plans for CCAs Mangroves conservation and rehabilitation (several communities in Samoa), Regional Coral Reef Plan of Actions (Coordinated by SPREP),
- New Caledonia: currently, we are ensuring that various provincial regulatory texts in North, New Caledonia take into account the PN Climate Energy Plan. The Pacific Territories Regional Project for Sustainable Ecosystem Management (PROTÉGÉ) programme provides elements for the implementation of public policies and their evolution, in particular on the sustainability of food systems.

Processes associated with Development/Review of Policies and Plans

Many respondents are unaware of the processes involved in the development and review of national and local plans, policies and strategies. Nonetheless, some were able to give the following responses on the processes involved in the development and review of national and local policies and plans. The development and review of national climate and environment related policies and plans are managed by the National Governments. The development and review of said plans should be made more inclusive with input from CSOs and local communities. Given their experiences and lessons learnt from previous and ongoing initiatives, the NGOs and CSOs who are directly involved in implementation of climate change and environment projects will be able to provide constructive input for the national and local plans. Consultations and meetings with the local communities, and the various social groups (women, youth, elderly, people with disabilities, children, LGBTQ etc.) will provide a clearer picture on the actual situation and actions necessary to ensure a resilient society.

Respondents from the French Territories indicated that NbS is yet a new concept and very little work has progressed towards integration into policies and plans. Work on mainstreaming NbS is in progress; NbS integration to support and financial aid systems for farmers, environment and health sectors have begun. There is a lack of overall environment strategy in New Caledonia; it is only the North Province that has a climate plan. According to the respondents, depending on the entities and parties involved, NbS is considered across various levels in New Caledonia. In addition to ecosystem services, there is integration of adaptation to climate change in projects and strategies.

Awareness on Local Community Plans

Most respondents are unsure of Community Action Plans that integrate NbS elements across the PICTs. There are responses to indicate that community level actions are dominated by LITK and practices, and that local development and community-based plans are not well developed. However, some respondents have indicated a few community-level plans that include NbS element:

- Solomon Islands: To'okina Tribal Land Conservation Association strategic plan, Integrated Environment & Natural Resources Community Co- Management Plans; Islands Strategic Plans
- Fiji: Community-based Fisheries Management Plans (CBFM), community actions are guided by provincial development planning; Island district plans initiated jointly by community groups urban and home islands.
- Samoa: Uafato Coastal Rainforest Conservation Management Plans, Uafato Sustainable Land Management Plan, Vaiusu Ecosystem Mangrove Management Plan, Vaovai Mangrove Conservation Plan, Lotopue-Malaela Mangrove Management Plan, Aleipata Marine Protected Area Management Plan, Poutasi Mangrove Management Plan
- New Caledonia: as per a respondent associated with the PROTÉGÉ project, there is not much information on Community Action Plans for New Caledonia, apart from the Northern Province Climate Plan. Although there are NbS and CCA activities in the Northern Province plans, the concepts are not well developed. Community plans in the Northern Province: water policy with the rehabilitation of river banks, Northern Province Climate/Energy Action Plan and shared water policy (PEP) in New Caledonia.

National Plans and Policies that integrate GESI for CCA

Less than 50% of the respondents were aware of national plans and policies that integrated GESI elements for CCA and resilience building. Forty-two to 48% of the respondents were aware of GESI elements integrated in the National Development plans, Climate Change policies and Disaster Management plans. Twenty-nine to 35% of the respondents were aware of GESI integration in local

development and community plans, National Adaptation Plans, sector plans and Biodiversity Conservation Strategies. Twenty nine percent of the respondents were unaware of GESI integration in national plans and policies (Fig. 3).

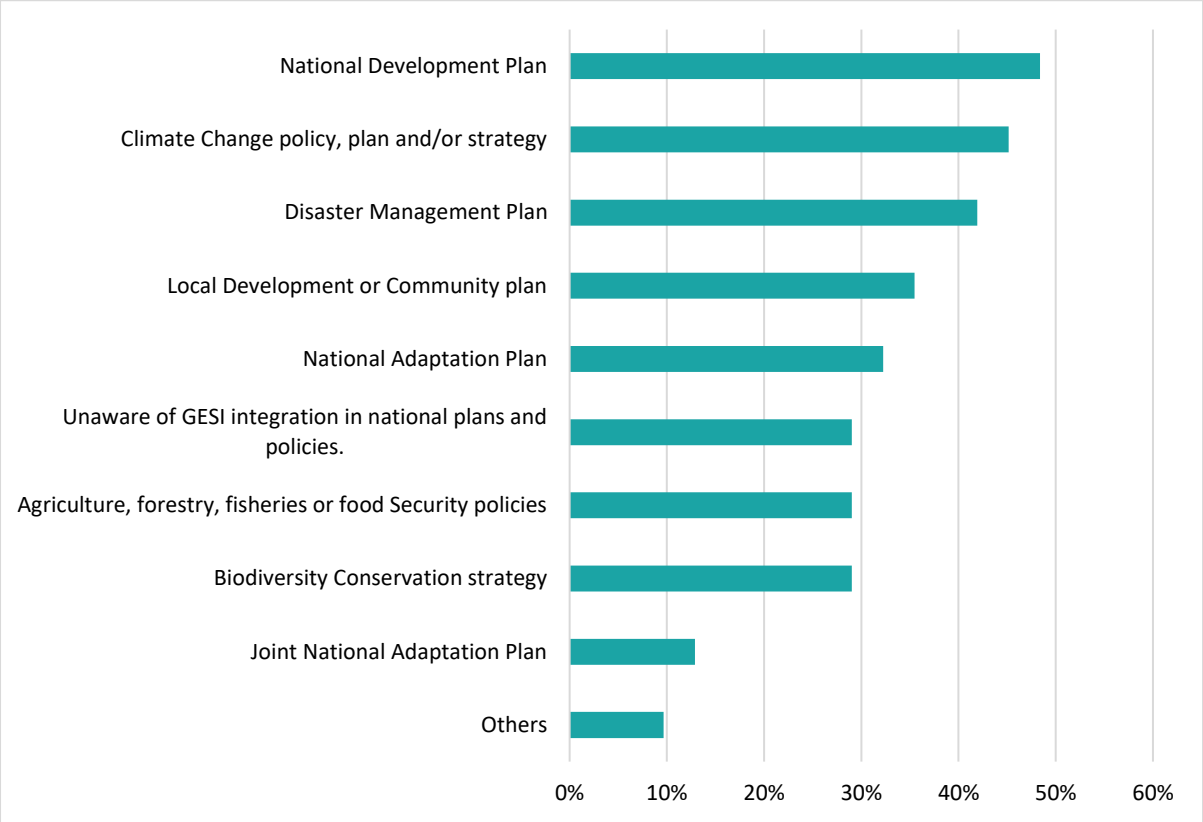

Figure 3: Less than 50% of the respondents were aware of GESI elements integrated in national policies and plans, while 29% of the respondents were not aware of integration of GESI elements into national plans and polices. Others (10%) include: National Gender Policy; GESI is mentioned in CCA related policies and plans but there are no clear and practical strategies to ensure implementation and compliance. Policies in favor of women, young people and vulnerable people are sectoral, not cross-cutting policies. Community resilience is not conceptualized in the French Territories.

Overall Findings of the Policy Reviews

There has been a relatively thorough inclusion and integration of ecosystem and/or nature-based concepts and approaches into the regional and national policies, plans, strategies and legislation associated with CCA, DRR and biodiversity conservation in the PICTs. This is clearly reflected in the regional Pacific Islands Framework for Nature Conservation and Protected Areas, FRDP, the complementary PRS and the Pacific Coral Reef Action Plan. The Pacific Islands Framework for Nature Conservation and Protected Areas, PRS and the Pacific Coral Reef Action Plan include and integrate NbS as a terminology for using nature-based approaches to address the impacts of climate change and sustainable development. Although the FRDP does not contain direct references to NbS, it recognizes and emphasizes on ecosystem and/or nature-based approaches to addressing CCA and DRR in an integrated way. Furthermore, the implementation of FRDP is guided by the PRS, which includes and integrates NbS both as a concept and terminology.

Prominent national policies, plans and strategies in the PICTs that are relevant to CCA, DRR and biodiversity conservation include NAPs, NBSAPs, Climate Change policies, DRR and DRM plans, and Joint National Adaptation Plans (JNAP). Ecosystem and/or nature-based approaches and concepts are thoroughly included and integrated in all national CCA, DRR and biodiversity conservation plans. However, there are no direct references to NbS as a terminology. Fiji's NAP is a rare case where NbS is included as a terminology for nature-based approaches to address climate change impacts. This is consistent with the findings from the online surveys (Fig. 1). Most of the survey respondents indicated that NbS concepts have been integrated into prominent national policies and plans

including Climate Change policies, DRM plans, Biodiversity Conservation Strategies, NAPs and National Development Plans. A considerable number of respondents were also involved in the development and/or review of NbS-related plans and policies (Fig. 2).

The regional and national plans, policies, strategies and frameworks also recognize and emphasize social inclusion elements, including gender, marginalized groups, people with disabilities and rights-based approaches in adaptation planning, and education and awareness for all. Online survyes on GESI and NbS indicate less than 50% of the respondents to be aware of GESI elements in national plans and policies related to NbS (Fig. 3). As such, there is a need for awareness on GESI and its links to NbS concepts and ideas.

Regional plans and policies place particular emphasis on community-based adaptation and consideration for LITK and practices, and its links to natural resource management are highlighted. Various elements of LITK relevant to nature-based adaptation are included: strengthening engagements with community, working closely with traditional governing and land tenure systems, integration of LITK with science and modern approaches, documentation and storage of LITK, conservation of indigenous agricultural crops, promoting traditional agroforestry practices for food security, LITK and practices for natural resource conservation and management, involving local communities for CCA/DRR planning and decision-making, addressing capacity development needs of local communities to empower them to address climate change issues, people-centered approaches for CCA/DRR etc. Two prominent areas associated with LITK for CCA and DRR appeared frequently across the various national frameworks, policies, plans and strategies. The implementation of actions in close consultation and engagement with local communities and their traditional governing systems, and land tenure systems and challenges associated with setting-up protected areas for natural resource management and conservation. Traditional governing systems and land tenure are further discussed under separate sub-headings below.

National and Traditional Governing Systems

National Governments of the PICs follow western governing systems, while their local communities are governed by customary laws and regulations. Understanding and working through traditional governing systems are crucial for effective CCA in the Pacific. The significance of localizing and contextualizing, and understanding the traditional governing systems are recognized by many NGOs, regional agencies and National Governments who implement CCA/DRR programs. Working with the traditional governing systems and aligning CCA projects with local needs, results in the village community taking ownership, and thus ensuring sustainability of the actions. Some examples of traditional governance in PICs include:

- Tuvalu: Local communities of Tuvalu are governed by a traditional governing system through the Falekaupule Act. The Cultural Falekaupule, which is the dominant, more powerful institution, is chaired by the Ulufenua (Head Chief). Administrative powers for local community governance are through the Kaupules (previously known as Island Councils), the executive arm of the Falekaupule (Government of Tuvalu 2016). Inshore fisheries resource management are governed through the Kauple. Fisheries activities in villages are managed by Master Fishermen or Tautai, which is a traditional position that manages fishing activities including trawling, net fishers, bottom fishers, conservation of resources and fishing decisions at local levels including pre-disaster plans for food preparation. Customary tenure closures known as kogatapu are practiced through the local governing system, where sections of inshore fishing grounds are subjected to temporary closures following traditional calendars. These are practiced during fish spawning periods, such as for groupers.
- Fiji: There are three major types of land ownership in Fiji, traditional land ownership inherited through kinship and relations, private ownership through purchases as freehold and, crownland owned by government and state for public use and other purposes. The sea is owned by the state (government) while the exclusive fishing and use rights are vested in the indigenous communities that live in along the coast, who belong to the same kinship group. Every member has the same right in the group while in practice, there may be local village rules set by the village resource management committee on use and access. The customary fishing rights are inclusive of use of major ecosystems including mangroves, coral reefs and access to food fish. Usually there are localized rules in many of the villages that regulate access to these resources.

The traditional regulations indirectly limit the use of fishing gear, technology and equipment, which in turn regulates the fishing pressure. People within the fishing communities must seek village approval when they introduce new methods and technologies. This indirectly regulates fishing pressure.

- Timor-leste: the practice of tara bandu, a customary law of the indigenous people of Timor-Leste that enforces harmony and reconciliation through the public agreement to define social norms and practices acceptable to a given community, which include environmental protection, natural resources management and improvement of community welfare. Tara bandu practices include traditional closures, such as restrictions on cutting down trees around slopes with the intent of preventing erosion and landslides. There is tara bandu to protect water sources, prohibitions on cutting down trees around water sources and littering around water sources. Fishing restrictions through the tara bandu such as in Bee Malae Lake, in the west of Timor-Leste where people are only allowed to fish after a ritual is performed by the village chief. Usually, people observe increased catch after these traditional closures.
- Samoa: the four islands of Samoa have over 250 villages, and every single village has a Village Council. The Village Councils are extremely powerful and manage most village issues. Unless the Village Council is not able to handle a situation, it is not referred to the National Government. Matais or chiefs in Samoa have different hierarchies and different roles. Families have chiefs in the Village Councils and at the district level. There are Matais/chiefs who lead Government Ministries; it is crucial to know and understand the traditional communication protocols when communicating with chiefly titles at different levels. When implementing a program in Samoa one needs to go to each village, understand the culture and have a strong understanding of the village politics to be able to successfully implement projects.
- Federated States of Micronesia (FSM): Western governing system is practiced at the national level: National Government, State Government, Local Government (municipality). The traditional governing systems govern island communities across FSM's four States, and works differently in each state. Under the traditional governing systems, a Head of Island or chief is elected. There are traditional sector experts who oversee key sectors, e.g., Master of Seas, Master of Agriculture etc. In the State of Pohnpei, over the last 50 years the younger sector leaders have chosen western professions and delegate the traditional sector expert positions to other persons in the community. However, they neglect to follow traditional protocols when transferring these responsibilities. As such, the new traditional sector expert may not be an expert of that sector. As a result, the effectiveness of the present traditional governing system is lower.

Both the interview and survey findings emphasize on the importance of working with traditional governing systems to implement NbS initiatives. Working with the traditional governing systems will not only promote a sense of ownership of NbS initiatives among local communities, but ensure sustainability of the interventions creating a more resilient society. More than 50% of the respondents indicated that LITK elements were integrated in NbS initiatives: 64% indicated that traditional governing systems were used to strengthen implementation and sustainability of the NbS intervention, 55% indicated that customary land tenure issues were considered, negotiated and resolved and 52% indicated that traditional tabu practices were integrated with NbS activities. Forty six percent of the respondents indicated that traditional community structures were in place for transferring knowledge from the older to younger generations. A small percentage (4%) of the respondents said that they were unaware of LITK integration into NbS activities (Fig. 4).

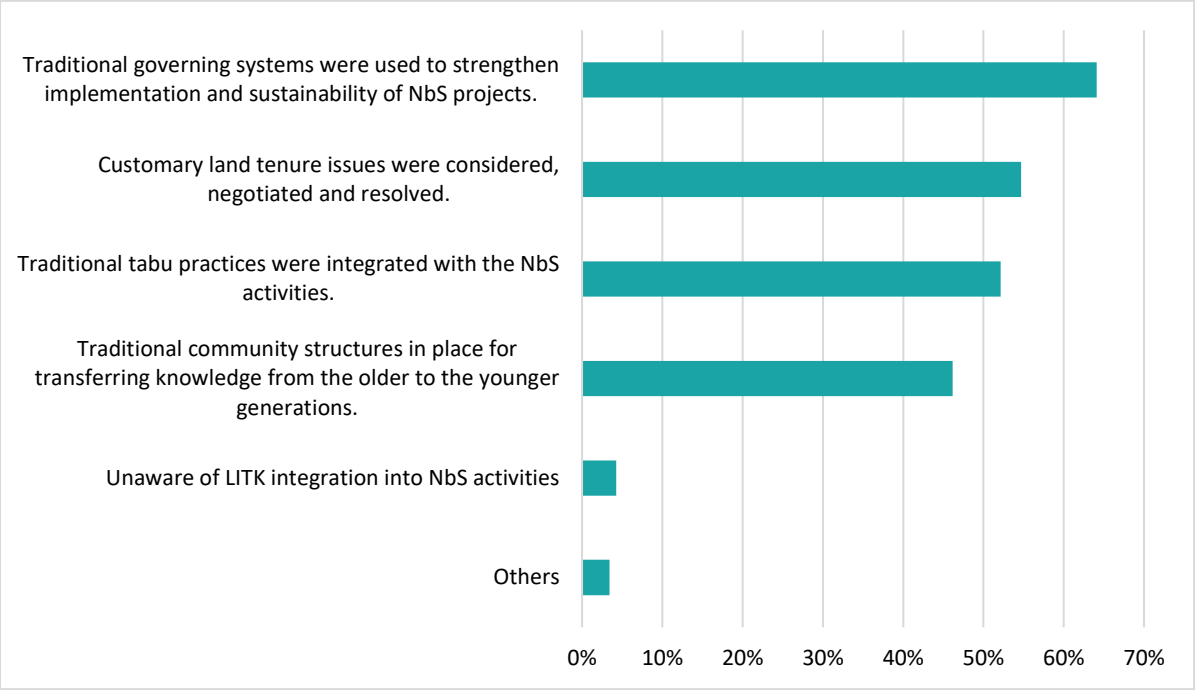

Figure 4: Between 46–64% of the respondents indicated various LITK elements to be integrated in NbS activities. Others include: LITK of animal behaviour for clam collection and fishing, traditional agroforestry practices, and biodiversity and watershed management practices.

Most respondents across the PICTs are of the opinion that it will be difficult for local communities to understand NbS as a terminology. However, few respondents highlight that contextualizing NbS would enable local communities to comprehend the concept, particularly due to its strong links with traditional natural resource management systems. The respondents highlight the following points for contextualizing NbS for local communities:

- translation of training and awareness materials into local languages;
- keeping explanations on the NbS concepts close to local languages and limiting the use of jargons;
- aligning the concept with LITK/traditional methods of natural resource management such as the tabu and agroforestry systems;
- using traditional governing systems to implement NbS initiatives;
- working with communities to establish demonstration sites; and
- including practical components in training programmes to promote learning by doing.

Land Tenure Systems

Customary law systems are prevalent in all PICs, who have a history of colonization and have western law systems in the present times (Mondragón 2018). Although there are both state (government) owned land, and land and sea under customary tenure in the PICs, about 80% of the land and sea, and the resources it contains are subject to customary tenure (Tobin 2013).

The customary land tenure systems vary greatly across the PICs, the context differs country-to-country. Although generalizing customary land tenure across the PICs will not be appropriate, it is useful to understand the common features that they share. Access to land in the PICs mostly comes from groups that are based on kinship or other relationship that one might have with the custodians of the land (Juswanto and Kelkar 2019). Examples of land tenure systems from Melanesia (Fiji), Micronesia (Republic of Marshall Islands) and Polynesia (Tonga):

- There are three types of land in Fiji, crown land is state (government) owned, iTaukei land is communal or indigenous owned, and freehold land is privately owned. The iTaukei or customary land in Fiji is protected under the 2013 Constitution. The current customary tenure system recognizes the *yavusa* (tribe) comprising several *mataqali* (clans), and a *mataqali* comprising several *tokatoka* (family units). Exclusive ownership of the land belongs to the *mataqali*, who

have the authority to approve land-related decisions. Although, some decisions may require final approvals from the iTaukei Land Trust Board.

- In the Republic of Marshall Islands, all Marshallese have certain rights and obligations to the land, which is acquired by lineage. As such most of the land in RMI are under customary tenure. Therefore, it is important to consult and receive consent from traditional landowners to carry any DRR initiatives in RMI. The Government of RMI continues to explore options "aimed at building consensus, balancing traditional and desired (future) land tenure, and implementing sound land management practices" (Climate Change Directorate 2020, p. 28).
- Unlike other PICs, Tonga does not have a customary property law system that runs alongside statutory land laws. Tonga has crown land that is state (government) owned and governed through the Land Act. There are no relocation laws, governing principles for relocations are resolved on a case-by-case basis in conjunction with donor and/or funding agencies.

Most respondents (88%) from the online surveys indicated that they have not participated in customary land tenure negotiations when designing and/or advising on implementation of NbS initiatives, such as setting up marine and forest reserves. Twelve percent of the respondents indicated that they had participated in NbS-related customary land tenure negotiations (Fig. 5).

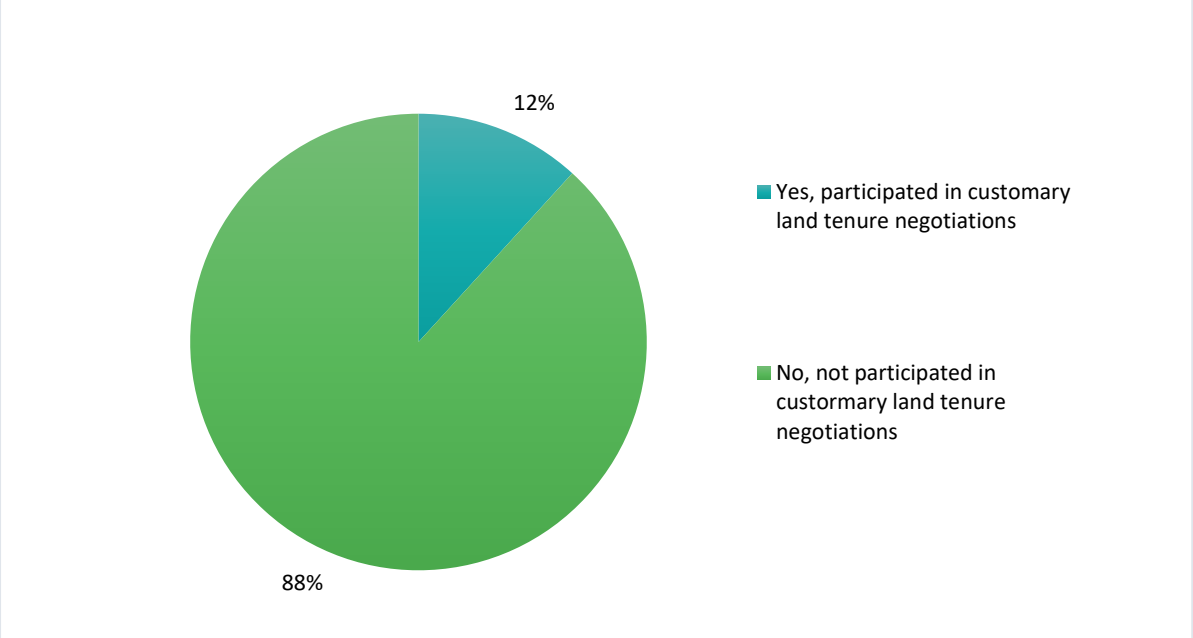

Figure 5: Most of the respondents indicated that they had not participated in customary land tenure negotiations related to NbS.

The respondents stated that most customary land tenure negotiations were related to setting up protected and/or conservation areas. Many indicated that an endorsement is required from the traditional chiefs and governing systems to proceed with the negotiations. Respondents from the French territories provided an example from the East side and Loyalty Islands where agreements with customary authorities/tribes were formalized for the extension of a terrestrial protected area. Said agreement involved negotiations with customary clan chiefs and co-leadership of a local restoration project by a referent member of the "water clan".

The Secretariat of the Pacific Regional Environment Programme's (SPREP) Action Strategy for Nature Conservation and Protected Areas emphasizes community involvement for natural resource management: "to involve and support communities, resource owners and resource users in cooperative and sustainable natural resource management that recognizes and strengthens the rights and customs of local people as a basis for promoting environmentally sustainable and equitable development" (p. 1, James 2002). Considering the prominence of customary land ownerships in the PICTs the role of local communities in achieving demonstrable nature-based initiatives is fundamental. Recognizing and working with the powerful role of local village communities through customary land rights, and supporting the local communities through

community-based approaches will enable successful and effective nature-based initiatives and accentuate the positive elements of the local communities towards conservation.

The customary land tenure and traditional systems of the local communities in the PICTs are intertwined. The rights of local communities to use and manage natural resources such as land, rivers and reefs, are driven by the customary tenure systems. Furthermore, customary land and sea ownerships are defined by tribal groups, appropriate bloodlines or family history. James (2002) provides two definitions of mainstreaming at the local community levels: "conservation initiatives designing their community engagement processes to fall more in line with the priorities and rhythms of mainstream village life (in as much as mainstream village life can turn towards conservation), rather than driving communities towards predetermined conservation project 'deliverables'; and improving capacity for village landowner participation in National and Provincial rural planning for economic development as well as conservation" (p. 10). Although national government staff are relatively well trained and equipped, local communities are lacking in technical and other relevant skills for sustainable natural resource management (James 2002). To support community engagement and mainstream nature-based solutions, it is crucial to develop the capacity of local communities to effectively and sustainably manage their natural resources.

Conclusion

Recent years have witnessed increased efforts on using NbS to address the impacts of climate change and for DRR in the Pacific region. Prominent regional frameworks driving and guiding CCA, DRR and biodiversity conservation in the PICTs include Pacific Islands Framework for Nature Conservation and Protected Areas, FRDP, the complementary PRS and the Pacific Coral Reef Action Plan. The plans, policies and strategies guiding national CCA, DRR and biodiversity conservation include NAPs, NBSAPs, Climate Change policies, DRR and DRM plans, and JNAPs. Both at the regional and national levels, the frameworks, plans, policies and strategies thoroughly include and integrate nature-based elements to address CCA and DRR. Although the regional frameworks integrate NbS as a terminology to encompass all nature-based approaches to address CCA and DRR, this is not reflected in the national plans, policies and strategies.

Gender and social inclusion elements are prominent in both regional and national frameworks, plans, policies and strategies. However, online survey findings indicate limited awareness on GESI and NbS concepts and ideas. Nonetheless, existing regional and national frameworks, plans, policies and strategies places emphasis on community-based approaches and integration of LITK and practices and its links to natural resource management. Linked to social inclusion elements are the prominence of traditional governing and customary land tenure systems, which define ownership and use of the natural resources in the PICTs. It is important to work with both these related systems to enable successful and effective implementation of NbS for CCA in the PICTs. Capacity development of local village communities is essential for sustainable NbS initiatives, and to mainstream nature-based initiatives in the local communities.

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