

The background of the cover is a photograph of a tropical beach at sunset. Large palm fronds hang down from the top right corner. The sky is filled with orange and yellow clouds, with the sun low on the horizon. The calm sea reflects the colors of the sky. In the foreground, a small wooden boat is beached on a rocky shore.

Tuvalu

**Sixth National Report to
the Convention on Biological Diversity
2020**

Ministry of Public Works, Infrastructure
Environment, Labour, Meteorology and Disaster
Government of Tuvalu

Acknowledgements

We would like to thank everyone who contributed to the preparation of this report by providing information and reference material and taking part in interviews (both in-person and remotely), including a large number of government staff and representatives of civil society and intergovernmental organisations. We would particularly like to thank the staff of Tuvalu's Department of Environment, particularly Director Soseala Tinilau, Biodiversity Officer Tilia Tima, and Information and Knowledge Management Officer Reuben Kausea, without whom the completion of this report would not have been possible.

Acronyms and Abbreviations

4NR	Fourth National Report to the CBD
5NR	Fifth National Report to the CBD
6NR	Sixth National Report to the CBD
ABS	Access and Benefit Sharing (see Nagoya Protocol)
ABT	Aichi Biodiversity Target
ACIAR	Australian Centre for Integrated Agricultural Research
ADB	Asia Development Bank
BIORAP	Rapid Biodiversity Assessment
CBD	Convention on Biological Diversity
CSO	Civil Society Organisation
DoA	Department of Agriculture
DoE	Department of Environment
DWM	Department of Waste Management
EDF	European Development Fund
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ENSO	El Nino Southern Oscillation
EU	European Union
FAD	Fish Aggregation Device
FAO	Food and Agriculture Organisation
FCA	Funafuti Conservation Area
GCCA	Global Climate Change Alliance
GEF	Global Environment Facility
GoT	Government of Tuvalu
IAS	Invasive Alien Species
ICM	Integrated Coastal Management
IMP	Island Management Plan
ISP	Island Strategic Plan
IUU	Illegal, Unregulated and Unreported fishing
KPI	Key Performance Indicator
LDC	Least Developed Country
LDCF	Least Developed Country Fund
LMMA	Locally Managed Marine Area
METT	Management Effectiveness Tracking Tool
MFATTEL	Ministry of Foreign Affairs, Trade, Tourism, Environment and Labour

MPA	Marine Protected Area
MSL	Mean Sea Level
Nagoya Protocol	Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization
NAP	National Action Programme (UNCCD)
NAPA	National Adaptation Programme of Action
NAPA-II project	Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity
NBSAP	National Biodiversity Strategy and Action Plan
NCD	Non-Communicable Disease
NEMS	National Environment Management Strategy
NGO	Non-Government Organisation
NRM	Natural Resources Management
NSSD	National Strategy for Sustainable Development
PA	Protected Area
PIF	Pacific Island Forum
PIU	Project Implementation Unit
PIR	Project Implementation Review
POPs	Persistent Organic Pollutants
PoWPA	Programme of Work on Protected Areas
PSIS	Pacific Small Island States
R2R project	Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu
Red List	IUCN Red List of Threatened Species™
SAMOA Pathway	SIDS Accelerated Modalities of Action Pathway
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
SLM	Sustainable Land Management
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Program
Strategic Plan	Strategic Plan for Biodiversity 2011-2020
TaiwanICDF	Taiwan International Cooperation and Development Fund
TFSP	Tuvalu Fisheries Support Programme
TKIII	Te Kakeega III: National Strategy for Sustainable Development 2016-2020
TKIV	Te Kakeega IV: National Strategy for Sustainable Development 2021-2025
TMS	Tuvalu Meteorological Service

TNCW	Tuvalu National Council of Women
TNOP	Tuvalu National Observer Program
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USP	University of the South Pacific
VDS	Vessel Day Scheme
VMS	Vessel Monitoring System
WDPA	World Database on Protected Areas

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Introduction and methodology

Tuvalu has been party to the Convention on Biological Diversity (CBD) since March 2003¹. Article 6 of the Convention states that parties shall ‘develop national strategies, plans or programs for the conservation and sustainable use of biodiversity’. In accordance with this article (and Aichi Biodiversity Target 17 – see Appendix 3), in February 2014 Tuvalu submitted a National Biodiversity Strategy and Action Plan (NBSAP) for the period 2012-16. This NBSAP is structured around five Cross-Cutting Issues and eight Priority Themes, aligned with the Strategic Plan for Biodiversity 2011-20 (the Strategic Plan) and specifically the global Aichi Biodiversity Targets (ABTs).

In accordance with Article 26 of the Convention (that each party shall ‘present to the Conference of the Parties, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention’), Tuvalu submitted National Reports to the Convention in 2009 and 2016.

Tuvalu’s Fourth National Report (4NR) was submitted in November 2009. As Tuvalu was still in the process of developing an NBSAP, this report instead described progress with reference to Tuvalu’s 1997 National Environmental Management Strategy (NEMS). In addition to providing an overview of Tuvalu’s geography, climate, economy, society, land-use, ecology, and biodiversity trends and threats, this report highlighted that while many of the activities recommended by the NEMS had been implemented, significant gaps remained – particularly in terms of inadequate data, unsustainable use of natural resources, a lack of effective land-use planning, inappropriate waste disposal, limited community engagement, capacity limitations, and slow progress on institutional strengthening and reform.

Tuvalu’s Fifth National Report (5NR) was prepared in 2016 and submitted in June 2017. In addition to providing a detailed overview of Tuvalu and its biodiversity (including the importance of ecosystem services to Tuvalu, and key threats to biodiversity and ecosystem services), this report described the progress that had been made since the 4NR in achieving the objectives of the NBSAP, with particular reference to the ABTs and the United Nation’s (UN’s) Sustainable Development Goals (SDGs) (particularly SDGs 13 (climate action), 14 (life below water), and 15 (life on land) (see Appendix 4)). As with the 4NR, the 5NR highlighted that while much work of relevance to the objectives and targets of the NBSAP and NEMS had been done, notable gaps still remained, and more work is needed to ensure that Tuvalu’s biodiversity is effectively conserved.

This, the Sixth National Report (6NR), focuses less on Tuvalu’s biogeography in general (as this is covered in detail in the 5NR and elsewhere), and more on the details of Tuvalu’s progress towards the national targets defined by the NBSAP, NEMS 2015-2020, and the global ABTs. While this is presented as a stand-alone report, its structure and format are closely aligned with the 6NR reporting template defined by the CBD. For a brief overview of Tuvalu’s biodiversity country profile (including biodiversity status and trends, drivers of

¹while the Convention was signed by the Government of Tuvalu (GoT) in 1992, it was not ratified until December 2002

change, implementation of the NBSAP, action taken towards the ABTs, support mechanisms, and mechanisms for monitoring and reviewing implementation), please see Section V.

The 6NR was prepared based on review of available literature and reports, and interviews with key stakeholders (see Appendix 1 for list of stakeholders consulted and Appendix 2 for a selected bibliography). The 37 national targets (grouped into 13 themes) described in Section I were originally developed for Tuvalu's 2012-16 NBSAP. Section I includes a brief rationale for each target, and notes alignment with the ABT, NEMS targets and Tuvalu SoE 2020 indicators (where relevant).

As most targets are qualitative rather than quantitative, the assessment of progress against each target (see Section III) is inevitably somewhat subjective. In the absence of a systematic monitoring system, in most cases the assessment is made based on partial evidence, such as interviews with stakeholders and expert opinion. In addition, as most targets are expressed using 'active' language ('strengthen the capacity of...', 'improve knowledge on...', 'protect and conserve...', 'increase the number of...', etc.) rather than describing a specific desired state or result, it can be challenging to determine if the rate of progress has been sufficient to meet or exceed the target.

The 6NR does not include a description of Tuvalu's contributions to the achievements of the targets of the Global Strategy for Plant Conservation (Appendix 5). Of the 362 species or distinct varieties of vascular plants that have been recorded on Tuvalu, 303 species are non-indigenous species that have been introduced by humans (Thaman 2016). There are no plant species endemic to Tuvalu, and almost all of the 59 possibly indigenous species are widespread, easily dispersed coastal species found throughout much of the Pacific. As such, Tuvalu has very limited potential for meaningful contributions to these targets.

Similarly, the 6NR does not include a dedicated section on the contribution of indigenous peoples and local communities to the achievement of the ABTs. Tuvalu has an extremely small population (about 11,000 in 2017) and is relatively homogenous in terms of ethnicity (97% reporting 'Tuvaluan' ethnicity and 2% reporting 'Tuvaluan/I-Kiribati' ethnicity)(Government of Tuvalu 2017). As such it is not meaningful to disaggregate the contributions of indigenous peoples and local communities in the Tuvalu context.

Section I. National Targets

Tuvalu's current NBSAP (2012-16) includes national targets associated with five cross-cutting themes:

- Capacity Building, Education, Training, Awareness, and Understanding
- Sustainable Development and Environmental Management
- Mainstreaming and Financing Mechanisms
- Legal Framework for Biodiversity and Law Enforcement
- Monitoring and Evaluation.

and eight priority themes:

- Climate Change and Disaster Risk Management
- Traditional Knowledge, Cultural Practices, and Indigenous Property Rights
- Conservation of Species and Ecosystems
- Community – Empowerment, Involvement, Awareness, Understanding, and Ownership
- Sustainable Use of Natural Resources
- Trade, Biosecurity and Food Security
- Waste and Pollution Management
- Management of Invasive Species.

Each theme is associated with a Strategic Goal, and several Objectives, each with associated Actions. The priority themes also include information on key performance indicators (KPIs) and key implementing stakeholders. In this 6NR to the CBD we will report on progress against the 37 Objectives defined by the NBSAP.

Another key framework document, produced by the GoT to guide work associated with the CBDs Strategic Plan, is the Tuvalu Department of Environment (DoE) NEMS 2015-2020. This Strategy defines four themes:

- Environmental Governance
- Biodiversity Conservation and Management
- Waste Management and Pollution Control
- Environmental Awareness and Education.

Each theme is associated with several objectives, targets, performance indicators, and key implementing partners. While the structure of this 6NR will be based on the NBSAP targets, for clarity we will indicate how these align with those of the NEMS, and the global ABTs.

Cross-Cutting Theme One. Capacity Building, Education, Training, Awareness and Understanding

Target C1.1 Establish biodiversity priorities for each island, non-government organizations and the national government at large

Rationale for target		Priority setting is an essential first step towards achieving biodiversity goals. Different islands, non-government organisations (NGOs), and government departments will have different, but mutually supportive, priorities.
Level of application		National
Relevance to ABTs	Main related ABT	2
	Other related ABT	1
Relevance to other national targets		Aligns with NEMS Targets BD4 and on Environment Awareness and Education
Other relevant information		
Relevant websites, web links, and files		

Target C1.2 Strengthen the capacity of people, especially those directly responsible for the development, management and conservation of biodiversity

Rationale for target		Limited capacity (both at an individual and institutional level) is recognised as a factor that contributes to biodiversity loss and unsustainable natural resources management (NRM).
Level of application		National
Relevance to ABTs	Main related ABT	1
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets BD2 and on Environment Awareness and Education
Other relevant information		
Relevant websites, web links, and files		

Target C1.3 Increase number of Tuvaluans trained in environmental science and biodiversity in particular

Rationale for target		Having a larger number of citizens with a tertiary education in environmental sciences including biodiversity conservation will enable Tuvalu to be more effective in achieving national objectives associated with biodiversity and environment.
Level of application		National
Relevance to ABTs	Main related ABT	19
	Other related ABT	1

Relevance to other national targets	
Other relevant information	
Relevant websites, web links, and files	

Target C1.4 Establish necessary networking both within and outside entities to assist facilitate effective development and management of biodiversity

Rationale for target		Sustainable development and sustainable management of biodiversity and natural resources requires input from and the support of a large number of stakeholders, at national, bilateral, and multilateral scales. This is best achieved by the work of networks rather than individual actors.
Level of application		National
Relevance to ABTs	Main related ABT	1
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG4, BD2
Other relevant information		
Relevant websites, web links, and files		

Target C1.5 Take into full account biodiversity in all aspects of planning and development on each island

Rationale for target		Unsustainable development is a common driver of biodiversity loss. In Tuvalu this is exacerbated by limited land area and rising population density. By ensuring that development planning always includes consideration of impacts on biodiversity, steps can be taken to avoid, minimise, mitigate, or compensate for these impacts.
Level of application		National
Relevance to ABTs	Main related ABT	2
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG1
Other relevant information		Aligns to Tuvalu SoE 2020 indicator 'Approved development plans with conditions'
Relevant websites, web links, and files		

Cross-Cutting Theme Two. Sustainable Development and Environment Management

Target C2.1 All development activities regardless of its nature and magnitude must be subjected first to an EIA

Rationale for target	By requiring development activities to be preceded by an
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		Environmental Impact Assessment (EIA), potential impacts of the development on biodiversity can be identified, and steps can be taken to avoid, minimise, mitigate, or compensate for these impacts.
Level of application		National
Relevance to ABTs	Main related ABT	5
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG1 and Tuvalu Integrated Environment Policy, Objective 2
Other relevant information		Aligns with Tuvalu Integrated Environment Policy, Objective 2
		Aligns to Tuvalu SoE 2020 indicator 'Approved development plans with conditions'
Relevant websites, web links, and files		

Target C2.2 Consolidate all national efforts and activities under international conventions related to the environment in order to meet Tuvalu's obligations and thus strengthen its position to attract international assistance

Rationale for target		Tuvalu is a signatory to various international conventions, including the CBD, the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), Minamata Convention on Mercury and the Stockholm Convention on Persistent Organic Pollutants (POPs). By consolidating efforts being made to address the requirements of these conventions, Tuvalu will be better able to report progress against them, and more successful at attracting international assistance (both funding and technical support).
Level of application		National
Relevance to ABTs	Main related ABT	20
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG4
Other relevant information		Aligns to Tuvalu SoE 2020 indicator 'Multilateral Environment Agreements'
Relevant websites, web links, and files		

Cross-Cutting Theme Three. Mainstreaming and Financing Mechanisms

Target C3.1 Review feasibility of establishing a National Trust Fund for Biodiversity

Rationale for target	Effective biodiversity conservation requires significant financial resources (but also results in significant long-
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		term economic benefits, for example through functioning ecosystem services). Establishing and managing a national trust fund for biodiversity may be an appropriate financing model, perhaps modelled on those already established by Bhutan , Costa Rica , or St Lucia .
Level of application		National
Relevance to ABTs	Main related ABT	20
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG3
Other relevant information		The DoE will establish an Environment Trust Fund in 2020. The process has begun, and the concept note is yet to share to the Ministry of Finance for consideration. The Environment Trust Fund will be used for biodiversity, and other environmental focal areas.
Relevant websites, web links, and files		

Target C3.2 Review all documentations related to environment in Tuvalu and build baseline data for mainstreaming biodiversity into Tuvalu's overall national policy framework

Rationale for target		Mainstreaming biodiversity into Tuvalu's national policy framework requires access to and application of accurate information regarding Tuvalu's natural environment and the status of biodiversity.
Level of application		National
Relevance to ABTs	Main related ABT	2
	Other related ABT	19
Relevance to other national targets		Aligns with NEMS Targets EG1
Other relevant information		
Relevant websites, web links, and files		

Cross-Cutting Theme Four. Legal Framework for Biodiversity and Law Enforcement

Target C4.1 Review all legislations impinging on biodiversity with the view to consolidate all into one legislation

Rationale for target		When biodiversity is featured in multiple, disparate pieces of national legislation, it is common for inconsistencies and contradictions to arise. By consolidating biodiversity conservation into once piece of over-arching legislation, this situation can be improved, and biodiversity can be managed more effectively.
Level of application		National
Relevance to	Main related ABT	2

ABTs	Other related ABT	
Relevance to other national targets	Aligns with NEMS Targets EG1, BD1, BD5	
Other relevant information		
Relevant websites, web links, and files		

Target C4.2 Review status of all byelaws relating to biodiversity and where possible amend the relevant national legislations in order to enforce the byelaws

Rationale for target	While national legislation provides an essential framework for issues such as biodiversity and NRM, implementation at the local level is often through byelaws. As such, their status can have a significant impact on how effectively biodiversity is conserved and natural resources are managed.	
Level of application	Subnational (island level)	
Relevance to ABTs	Main related ABT	
	Other related ABT	
Relevance to other national targets	Aligns with NEMS Targets EG1, EG2 and BD1	
Other relevant information	Aligns to Tuvalu SoE 2020 indicator 'Environmental cases prosecuted'	
Relevant websites, web links, and files		

Target C4.3 Increase public awareness and understanding on the law and importance of compliance

Rationale for target	National legislation is only effective if the public are aware of the laws, understand what is required of them (i.e. what they may and may not do), and are prepared to comply with them. Compliance requires both understanding and enforcement.	
Level of application	National and Subnational (island level)	
Relevance to ABTs	Main related ABT	1
	Other related ABT	
Relevance to other national targets	Aligns with NEMS Targets EG2 and on Environment Awareness and Education	
Other relevant information		
Relevant websites, web links, and files		

Cross-Cutting Theme Five. Monitoring and Evaluation

Target C5.1 Construct the NBSAP logframe

Rationale for target		The NBSAP is a valuable framework for supporting national policy on biodiversity conservation and NRM. Tuvalu's current NBSAP was submitted to the CBD in 2014 and covers the period 2012-16.
Level of application		National
Relevance to ABTs	Main related ABT	17
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG1, BD1
Other relevant information		
Relevant websites, web links, and files		

Target C5.2 To undertake regular reviews of the NBSAP

Rationale for target		While Tuvalu's NBSAP identifies objectives and priority actions associated with cross-cutting issues and priority thematic areas, regular reviews are necessary to ensure that it remains relevant in the face of the changing national and international context.
Level of application		National
Relevance to ABTs	Main related ABT	17
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG1, EG7, BD1
Other relevant information		
Relevant websites, web links, and files		

Target C5.3 Establish clear coordinating framework among the national, regional and international organizations

Rationale for target		By establishing clear institutional roles for implementing the NBSAP, and providing training as necessary, Tuvalu will be more successful in achieving the NBSAP's objectives.
Level of application		National
Relevance to ABTs	Main related ABT	
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG4 and EG7
Other relevant information		
Relevant websites, web links, and files		

Priority Theme One. Climate Change and Disaster Risk

Management

Target P1.1 Improve knowledge on the impact of climate change and natural disasters on biodiversity

Rationale for target		While it is understood that climate change and natural disasters have a significant impact on biodiversity, if these impacts are to be successfully mitigated it is necessary to understand the mechanisms by which they result, and what can be done to increase the resilience of receptors.
Level of application		National
Relevance to ABTs	Main related ABT	19
	Other related ABT	15
Relevance to other national targets		
Other relevant information		Aligns to Tuvalu SoE 2020 indicator 'Funding for climate change adaptation/mitigation and ecosystem management'
Relevant websites, web links, and files		

Target P1.2 Ensure meteorology and climate change information systems are relevant to biodiversity protection and conservation.

Rationale for target		Tuvalu's National Strategy for Sustainable Development (NSSD) identified sea level rise resulting from global climate change as being one of the most significant risks affecting Tuvalu's environment. Tuvalu is also at risk of coastal erosion and flooding associated with tropical cyclones. As a result, the Tuvalu Meteorological Service (TMS) has an important role to play in national biodiversity conservation.
Level of application		National
Relevance to ABTs	Main related ABT	19
	Other related ABT	
Relevance to other national targets		
Other relevant information		
Relevant websites, web links, and files		

Target P1.3 Develop 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

Rationale for target		While government policy considers national relocation to be a last-resort strategy in response to climate change induced sea level rise, if this were to be necessary, it would be appropriate to consider ex-situ options for conservation of Tuvalu's natural and cultural heritage.
Level of application		National
Relevance to ABTs	Main related ABT	
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets BD4
Other relevant information		Aligns to Tuvalu SoE 2020 indicator 'Funding for climate change adaptation/mitigation and ecosystem management'
Relevant websites, web links, and files		

Priority Theme Two. Traditional Knowledge, Cultural Practices, Indigenous Property Rights

Target P2.1 Foster and promote the use of traditional knowledge and cultural practices in the conservation and management of biodiversity in Tuvalu

Rationale for target		Tuvalu's traditional culture is likely to date back approximately 3,000 years. Prior to European contact, traditional cultural practices supported sustainable management of natural resources (with minimal negative impacts on biodiversity), in accordance with Tuvalu's ecology and geology. While not all traditional knowledge and cultural practices are appropriate to modern conditions, there is much that could be applied to facilitate the achievement of the NBSAP's objectives.
Level of application		National
Relevance to ABTs	Main related ABT	18
	Other related ABT	19
Relevance to other national targets		Aligns with NEMS Targets BD2 and on Environment Awareness and Education
Other relevant information		
Relevant websites, web links, and files		

Target P2.2 Preservation of traditional knowledge and cultural practices pertinent to the conservation and management of Tuvalu

Rationale for target		Much traditional knowledge and traditional cultural practices have the potential to support biodiversity conservation and sustainable NRM. However, many are at risk of being lost following rapid societal and economic changes. Documenting and preserving this knowledge and practices is a necessary first step if it is to be applied successfully.
Level of application		National
Relevance to ABTs	Main related ABT	18
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets BD2 and on Environment Awareness and Education
Other relevant information		
Relevant websites, web links, and files		

Target P2.3 Foster and promote the equitable sharing of benefits derived from biodiversity

Rationale for target		In 2018 Tuvalu became a party to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (the Nagoya Protocol). As such it is required to identify elements of national biodiversity that have potential commercial value and ensure that any benefits derived from these resources and associated traditional knowledge are shared equitably (for example through enshrining indigenous property rights).
Level of application		National
Relevance to ABTs	Main related ABT	16
	Other related ABT	
Relevance to other national targets		
Other relevant information		
Relevant websites, web links, and files		

Priority Theme Three. Conservation of Species, Ecosystems (Marine, Coastal, Land terrestrial) and Genetic Diversity

Target P3.1 To protect and conserve diversity of ecosystems

Rationale for target		Conserving ecosystems is essential for the conservation of biodiversity at other scales, and the continued provision of ecosystem services.
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Level of application		National
Relevance to ABTs	Main related ABT	11
	Other related ABT	5, 14, and 15
Relevance to other national targets		Aligns with NEMS Targets BD3, BD4
Other relevant information		Aligns to Tuvalu SoE 2020 indicators 'Native tree cover', 'Wetlands', 'Live coral cover', 'Terrestrial protected areas' and 'Marine protected areas'.
Relevant websites, web links, and files		

Target P3.2 To preserve, protect and conserve diversity of species

Rationale for target		111 species found in Tuvalu have been assessed as globally threatened by the IUCN Red List of Threatened Species™ (the Red List), including the critically endangered Beck's petrel (<i>Pseudobulweria becki</i>). Conservation of threatened species is therefore a priority.
Level of application		National
Relevance to ABTs	Main related ABT	12
	Other related ABT	6
Relevance to other national targets		Aligns with NEMS Targets BD3, BD4
Other relevant information		Aligns to Tuvalu SoE 2020 indicators 'IUCN red list summary' and 'Status of threatened, endemic and migratory species'.
Relevant websites, web links, and files		

Target P3.3 To protect and conserve the genetic diversity of Tuvalu

Rationale for target		The conservation of biodiversity includes genetic diversity, in addition to diversity at the scale of ecosystems, and species. As such it is necessary to research and document this diversity, develop appropriate national policy, and raise public awareness on this topic.
Level of application		National
Relevance to ABTs	Main related ABT	13
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets BD4
Other relevant information		
Relevant websites, web links, and files		

Priority Theme Four. Community – Empowerment, Involvement, Awareness and Understanding and Ownership

Target P4.1 Building capacities of Falekaupule and their respective people to manage and conserve their island ecosystems to provide sustainable benefits and livelihoods

Rationale for target		Sustainable management of natural resources is dependent on the actions of those people that exploit the resources, including those that rely on the resources for their livelihoods. Each of Tuvalu's nine islands has a Falekaupule (traditional assembly of elders) that is ideally placed to promote sustainable management and conservation, if given appropriate support.
Level of application		National and Subnational (island level)
Relevance to ABTs	Main related ABT	4
	Other related ABT	1
Relevance to other national targets		Aligns with NEMS Targets on Environment, Awareness, and Education
Other relevant information		
Relevant websites, web links, and files		

Target P4.2 Empowering communities to lead in the management and conservation of their island biodiversity

Rationale for target		Sustainable management of natural resources and conservation of biodiversity is dependent on the actions of local communities that rely on these resources for their livelihoods. By engaging communities (particularly young people) and empowering them to play an active role in sustainable management, biodiversity conservation will be more effective.
Level of application		National and Subnational (island level)
Relevance to ABTs	Main related ABT	18
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets BD3, BD4, and on Environment, Awareness, and Education
Other relevant information		
Relevant websites, web links, and files		

Target P4.3 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

Rationale for target		While national legislation is essential for biodiversity conservation, implementation at the island level in Tuvalu is often via Falekaupule byelaws. However, these are not always consistent between islands, and can contradict national legislation – impeding enforcement. By reviewing byelaws and better aligning them with national legislation, Tuvalu's biodiversity will be more effectively conserved.
Level of application		National and Subnational (island level)

Relevance to ABTs	Main related ABT	18
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets EG1, BD1 and on Environment Awareness and Education
Other relevant information		
Relevant websites, web links, and files		

Priority Theme Five. Sustainable Use of Natural Resources

Target P5.1 Augment the management of existing conservation areas throughout the nation

Rationale for target		Protected Areas (PAs) are recognised internationally as one of the most effective tools for conservation of biodiversity. By improving the management of PAs, Tuvalu's biodiversity will be better protected.
Level of application		National and Subnational (island level)
Relevance to ABTs	Main related ABT	11
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets BD3
Other relevant information		
Relevant websites, web links, and files		

Target P5.2 Increase the number of new conservation areas throughout the nation

Rationale for target		PAs are recognised internationally as one of the most effective tools for conservation of biodiversity. By expanding Tuvalu's PA network, Tuvalu's biodiversity will be better protected.
Level of application		National and Subnational (island level)
Relevance to ABTs	Main related ABT	11
	Other related ABT	5, 6, and 14
Relevance to other national targets		Aligns with NEMS Targets BD3
Other relevant information		Aligns to Tuvalu SoE 2020 indicators 'Terrestrial protected areas' and 'Marine protected areas'.
Relevant websites, web links, and files		

Target P5.3 Create alternative livelihoods through the sustainable use of relevant biodiversity to provide sustainable livelihood and income to communities and families

Rationale for target		As a high proportion of Tuvalu's population relies on exploitation of natural resources as a source of
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		livelihoods, unsustainable management of natural resources has the potential to generate negative impacts on biodiversity. If sustainable alternatives can be identified (and policy put in place to ensure they continue to be sustainable), this could reduce pressure on other resources and biodiversity, and support local livelihoods.
Level of application		National and Subnational (island and community level)
Relevance to ABTs	Main related ABT	4
	Other related ABT	7
Relevance to other national targets		
Other relevant information		
Relevant websites, web links, and files		

Priority Theme Six. Trade, Biosecurity and Food Security

Target P6.1 Foster and promote traditional agriculture and agroforestry

Rationale for target		Traditional agriculture and agroforestry practices can support local livelihoods and nutritional needs without producing significant negative impacts on biodiversity.
Level of application		National and Subnational (island level)
Relevance to ABTs	Main related ABT	4
	Other related ABT	
Relevance to other national targets		
Other relevant information		
Relevant websites, web links, and files		

Target P6.2 Foster and promote the production and consumption of local food

Rationale for target		Local food crops can support local nutritional needs while avoiding the negative environmental and health impacts associated with overreliance on imported processed food (such as plastic waste and heart disease).
Level of application		National
Relevance to ABTs	Main related ABT	
	Other related ABT	
Relevance to other national targets		
Other relevant information		
Relevant websites, web links, and files		

Target P6.3 To increase awareness and understanding of the people on the linkages between

food security and biodiversity

Rationale for target		Without greater public awareness and effective national policy, issues associated with food security have the potential to generate negative impacts on biosecurity and biodiversity.
Level of application		National
Relevance to ABTs	Main related ABT	1
	Other related ABT	
Relevance to other national targets		Aligns with NEMS Targets on Environment, Awareness, and Education
Other relevant information		
Relevant websites, web links, and files		

Priority Theme Seven. Waste and Pollution Management

Target P7.1 To ensure the impacts of waste on biodiversity is minimized

Rationale for target		Tuvalu's limited land area and increasing population density mean that waste management is a national priority. More effective waste management will reduce threats to biodiversity and improve human health.
Level of application		National
Relevance to ABTs	Main related ABT	8
	Other related ABT	5 and 14
Relevance to other national targets		Aligns with NEMS Targets on Waste Management
Other relevant information		Aligns with Tuvalu SoE 2020 indicators 'Per capita generation of municipal solid waste', 'Household waste captured', 'Household waste recycled', and 'Access to and quality of sewage treatment'.
Relevant websites, web links, and files		

Target P7.2 Enhance capacity and understanding on impact of waste on biodiversity

Rationale for target		While it is agreed that ineffective waste management has a negative impact on biodiversity, the specific mechanisms by which this takes place are not well understood by the public, and policymakers. More effective national policy is necessary to reduce the impact of waste on biodiversity.
Level of application		National
Relevance to	Main related ABT	8

ABTs	Other related ABT	
Relevance to other national targets	Aligns with NEMS Targets on Waste Management	
Other relevant information		
Relevant websites, web links, and files		

Priority Theme Eight. Management of Invasive Species

Target P8.1 Establish management plans to control and eradicate invasive species

Rationale for target	Globally, Invasive Alien Species (IAS) are one of the most serious threats to the biodiversity of Small Island Developing States (SIDS). This is also the case in Tuvalu, which faces impacts of invasive species including rats (<i>Rattus spp.</i>), yellow crazy ants (<i>Anoplolepis gracilipes</i>), kou leafworm (<i>Ethmia nigroapicella</i>), and <i>wedelia</i> plant species (<i>wedelia trilobata</i>)	
Level of application	National	
Relevance to ABTs	Main related ABT	9
	Other related ABT	
Relevance to other national targets	Aligns with NEMS Targets BD1, BD5	
Other relevant information	Aligns with Tuvalu SoE 2020 indicators 'Invasive alien species under management or eradicated' and 'Priority sites with invasive species managed'.	
Relevant websites, web links, and files		

Target P8.2 Upgrade capacity, equipment and infrastructure to enforce biosecurity at all points of entry including inter island transportation

Rationale for target	Reducing the negative impacts of IAS on biodiversity requires increased national capacity for biosecurity, including trained staff, appropriate technology, public awareness, and national legislation.	
Level of application	National	
Relevance to ABTs	Main related ABT	9
	Other related ABT	19
Relevance to other national targets	Aligns with NEMS Targets BD5	
Other relevant information		
Relevant websites, web links, and files		

Section II. Implementation – measures taken, their effectiveness, obstacles, and scientific and technical needs

Tuvalu has implemented various measures that contribute to achieving NBSAP targets and ABTs, including the work of several government departments, and civil society organisations (CSOs). Further detail is provided in Section III. Progress Towards National Targets and Section IV. National Contribution to Aichi Targets. Here we provide a summary of two initiatives that have provided a particularly significant contribution.

Name	Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu
Description	<p>The Global Environment Facility (GEF) project 'Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu' (R2R project) commenced in July 2015, with an anticipated end date of December 2020 and a total budget of nearly \$19.5 million (\$3.8 million GEF-5 funding and \$15.7 million co-financing). It is implemented by the United Nations Development Programme (UNDP), and executed by Tuvalu's Ministry of Public Works, Infrastructure, Environment, Labour, Meteorology and Disaster (PWIELMD).</p> <p>Part of the Pacific R2R program on 'Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest & Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods', its objective is 'to preserve ecosystem services, sustain livelihoods and improve resilience in Tuvalu using a 'ridge-to-reef' approach'. It intends to achieve this through enhancing PAs, rehabilitating degraded ecosystems, integrated water resource management (IWRM), integrated coastal management (ICM), improved governance and institutional capacity building, and improving data and information systems.</p> <p>Specifically, the project includes natural resource assessments, island and coastal ecosystem rehabilitation, establishment and strengthening Locally Managed Marine Areas (LMMAs), developing a centralised GIS database on biodiversity, natural resources, and governance systems, sustainable land management and agroforestry interventions, remedial measures for the algal bloom in Funafuti lagoon, and other mainstreaming, knowledge management, awareness-raising, and capacity-building activities.</p> <p>As such, the project contributes to various national and international commitments including the CBDs Programme of Work on Protected Areas (PoWPA), the ABTs, Tuvalu's NBSAP targets, and the UNCCD's National Action Programme (NAP).</p>
Relevant ABT	1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 14, and 19.
Effectiveness in achieving desired	(<i>Effective</i> / <i>Partially Effective</i> / <i>Ineffective</i> / <i>Unknown</i>)

Name	Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu
outcomes	
Justification for assessment (including tools/methodologies used and relevant website, web links, and files)	<p>As of October 2019, the R2R project is entering its last year of implementation. Many project activities have been implemented successfully, and positive impacts have been generated. The 2019 Mid-Term Evaluation Report awarded the project implementation an overall rating of 'satisfactory'. It considered that the project is 'suitable and appropriate', that comprehension of the project concept by stakeholders was 'satisfactory', that project monitoring was 'strong', that reporting 'has been undertaken in a timely manner', that project design was 'satisfactory', that the project has made 'significant positive impacts and achievements' in terms of outputs and activities, and that sustainability is 'likely'.</p> <p>Project highlights include the establishment and expansion of LMMAs on all nine of Tuvalu's islands and atolls, efforts strengthening the capacity of communities to manage LMMAs, the presence of project island officers on all nine islands, the successful establishment of centralised GIS systems for mapping and data analysis, and the successful undertaking of Community Based Rapid Biodiversity Assessment (BIORAP) that provided an overview of the status and trends of Tuvalu's marine and terrestrial biodiversity.</p>
Links to Tuvalu SoE 2020 Indicators	'Live coral cover', 'Terrestrial protected areas', 'Marine protected areas', 'Lagoon (marine) water quality', 'Status of threatened, endemic and migratory species', and 'Fish biomass'
Other relevant information	
Obstacles and scientific and technical needs	<p>The R2R project's results have been generated despite facing various challenges. The project experienced a one-year delay in starting due to delays in establishing the Project Implementation Unit (PIU) within DoE. However, once established, the hard work and commitment of the PIU resulted in the project experiencing no significant negative impacts resulting from the delay.</p> <p>The project faced challenges in terms of in-country technical capacity and human resources. Achievement of positive results has required technical expertise and partnerships with international parties including the University of the South Pacific (USP), the Secretariat of the Pacific Regional Environment Programme (SPREP), and the Secretariat of the Pacific Community (SPC).</p> <p>The significant distance between Tuvalu's islands and atolls (distributed in a chain nearly 600km in length), and limited communications and transport infrastructure produces challenges to implementing work of this nature on Tuvalu's outer islands. The project addressed this by purchasing a vessel 'Tala Moana' to facilitate transport between islands, and by employing island officers stationed on each island.</p> <p>The project's scientific work has been limited by the absence of a project Chief Technical Advisor, and by the lack of project officers</p>

Name	Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu
	stationed within the Fisheries Department and Department of Local Government (previously Department of Rural Development). If the project's results are to be sustained beyond the life of the project, the R2R LMMA officer and island officers should be relocated to the Department of Local Government, and island Kaupules.
Name	Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity (NAPA-II)
Description	<p>The GEF project 'Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity' (NAPA-II) was implemented between August 2013 and December 2018 (4 years), with a total budget of over \$24 million (\$4.2 million from the GEF Least Developed Country Fund (LDCF) and \$19.8 million co-financing. It was implemented by UNDP and executed by DoE.</p> <p>It was developed to implement three of the priority adaptation actions identified in Tuvalu's 2017 National Adaptation Programme of Action (NAPA), namely:</p> <ul style="list-style-type: none"> - Strengthening of community-based conservation programmes on highly vulnerable near-shore marine ecosystems - Strengthening community disaster preparedness and response potential - Adaptation to near-shore coastal shellfish fisheries resources and coral reef ecosystem productivity. <p>Implementation of three other NAPA priority adaptation actions was previously (2009-16) supported by another GEF LDCF-funded project (NAPA-I), namely:</p> <ul style="list-style-type: none"> - Increasing resilience of coastal areas and settlement to climate change - Increasing subsistence pit-grown pulaka productivity through introduction of a salt-tolerant pulaka species - Adaptation to frequent water shortages through increasing household water capacity, water collection accessories, and water conservation techniques. <p>The overarching goal of NAPA-II was to 'increase the resilience of outer island communities to future climate change induced risks such as declining marine resources productivity and intensifying climatic hazards.' Its objective was 'resilience of island communities to climate change variability and risks is strengthened through participatory island-level planning, budgeting and execution and community-led investments.' It intended to achieve this objective by:</p> <ul style="list-style-type: none"> - increasing the resilience of marine-based coastal livelihoods to declining productivity induced by climate variability and change - enhancing the capacity of outer islands to respond to

	<p>increasing climate induced hydro-meteorological risks</p> <ul style="list-style-type: none"> - enhancing the capacity of communities to access internal/external financing for community-based climate change adaptation through existing participatory development planning processes.
Relevant ABT	4, 6, 10, 14, 15, 18, and 20
Effectiveness in achieving desired outcomes	<i>(Effective / Partially Effective / Ineffective / Unknown)</i>
Justification for assessment (including tools/methodologies used and relevant website, web links, and files)	<p>A mid-term evaluation of the NAPA-II project took place in 2017. It reported that good progress had been made towards the project's objective and all planned outcomes. This had been achieved through activities including installing and deploying Fish Aggregation Devices (FADs) and improving community access to disaster early warning systems. It determined that project monitoring and reporting were on track that project finances had been overall well-managed, and that community-level adaptation activities should ensure sustainability after the life of the project.</p> <p>A GEF Project Implementation Review (PIR) took place in 2018, with a slightly less positive assessment. It found that although compared with the NAPA-I project, this project had seen 'considerable improvements in its effective and efficient delivery of project results', there were 'significant shortcomings in the achievement of the original project targets and results. While almost all planned activities had been or were being implemented, many activities had been 'scaled back considerably, limiting the development impact of the Outcome' (particularly Outcomes 1 and 3). A key reason for this was the project unexpectedly being required to support the majority of running costs of a ship purchased by the project. Despite these shortfalls, the review recognised that 'the project's impact on building resilience in marine-based livelihoods and reducing vulnerability to climate hazards is clearly visible.'</p>
Links to Tuvalu SoE 2020 indicators	'Fish biomass', 'Climate-related deaths', 'Climate-related disaster losses', and 'Funding for climate change adaptation/mitigation and ecosystem management'
Other relevant information	

Obstacles and scientific and technical needs

The NAPA-II project achieved notable results despite facing some significant challenges. Although the project commenced in August 2013, the project was not fully staffed until early 2015. This resulted in delays in implementing project activities. Similarly, although the Mid-Term Evaluation was scheduled to start in 2015, it was not completed until late 2017 (due to delays in recruiting a consultant). This limited the time available for the project to respond to the evaluation's management recommendations.

In order to effectively implement project activities on all nine of Tuvalu's islands and atolls, the project included funds to purchase a ship, with operating costs to be shared with two other projects. Unfortunately, these operating costs were disproportionately allocated to the NAPA-II project, accounting for nearly 50% of the total budget. Although efforts were made to redress this towards the end of the project, this significantly limited the resources available for implementing project activities.

Section III. Progress Towards National Targets

Through implementation of the measures outlined in Section II above, and other efforts, Tuvalu has taken steps towards the achievement of the national targets listed in Section I. Here we assess progress towards these targets, with reference to some of the key pieces of work undertaken by government departments, CSOs, and other organisations.

Cross-Cutting Theme One. Capacity Building, Education, Training, Awareness and Understanding

Target C1.1 Establish biodiversity priorities for each island, non-government organizations and the national government at large

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>R2R project</u></p> <p>In the 2018 the R2R project conducted consultations with the Department of Fisheries to establish marine and terrestrial bio-indicators (target species for monitoring). A total of 28 marine species, 23 terrestrial species, and six bird species were identified.</p> <p>The scientific BIORAP surveys planned for 2020 should generate additional data on the biodiversity of Tuvalu and identify priority species for conservation action.</p> <p><u>Department of Environment</u></p> <p>Tuvalu's Environmental Protection Act (2008) defines DoE's role in protecting Tuvalu's biodiversity, however, does not include a list of species under specific legal protection, or priorities for conservation.</p> <p>While the DoE has not compiled a formal list of national priority species, all species that have been assessed as globally threatened on the IUCN Red List are considered priorities, as is Tuvalu's one endemic species, the Tuvalu forest gecko (<i>Lepidodactylus tepukapili</i>). This species is only known from Tepuka islet, Funafuti.</p> <p><u>Local government</u></p> <p>Island-level biodiversity priorities are defined by Kaupule IMPs.</p> <p><u>Assessment</u></p> <p>While some work has been done to establish national biodiversity conservation priorities, there is no formal list of protected species defined by national legislation.</p>

Target C1.1 Establish biodiversity priorities for each island, non-government organizations and the national government at large

Indicators used for assessment	Presence/absence of biodiversity priorities among key stakeholders
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	Environmental Protect Act (2008) Conservation Areas Act (2008) Wildlife Conservation Act (2008) Funafuti Reef Fisheries Stewardship Plan Island Management Plans
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE and R2R project staff and supporting documentation.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	www.tuvalufisheries.tv/

Target C1.2 Strengthen the capacity of people, especially those directly responsible for the development, management and conservation of biodiversity

Progress	<i>On track to exceed target</i> / On track to achieve target / <i>Progress towards target but at an insufficient rate</i> / <i>No significant change</i> / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019

Target C1.2 Strengthen the capacity of people, especially those directly responsible for the development, management and conservation of biodiversity

Additional information	<p>Several government departments have implemented initiatives aimed at strengthening the capacity of stakeholders for sustainable natural resources management and biodiversity conservation. For example the Department of Fisheries has organised training for fishermen and for fisheries observers, and the Department of Energy has organised training in the use of biogas stoves.</p> <p><u>R2R project</u></p> <p>The R2R project has included a variety of training initiatives, including for R2R Island Officers, Kaupules, Training of Trainers, young people, and fishermen.</p> <p>In 2018 the R2R project organised training of R2R Island Officers in “Community-based Ecosystem Approaches to Fisheries Management” by experts from the Fiji LMMA Network, including development of management and monitoring plans.</p> <p>The R2R project trained representatives of communities in Nanumea, Funafuti and Nukufetau in sustainable home gardening techniques, including composting, nursery management, planting, managing and maintaining vegetable gardens, harvesting, and marketing and selling produce.</p> <p>The R2R project includes a focus on empowering Kaupules and community members through training and joint implementation of project activities. This results in a greater degree of community ownership of the project and increases the likelihood that the work will sustain beyond the life of the project itself.</p> <p><u>Department of Environment</u></p> <p>A priority of the DoE is to build capacity among key stakeholders for the management and conservation of biodiversity. One way in which it does this is through increasing awareness of and building capacity for EIA, particularly among members of outer island communities. A steering committee was established in 2010 comprising of relevant stakeholders. One priority initiative of the DoE is to build the capacity of these stakeholders.</p> <p><u>Assessment</u></p> <p>A variety of efforts have been made to build the capacity of key stakeholders in biodiversity conservation and management, particularly through the R2R project, and the work of various government departments.</p>
Indicators used for assessment	Capacity building initiatives implemented
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a

Target C1.2 Strengthen the capacity of people, especially those directly responsible for the development, management and conservation of biodiversity

Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with R2R project and DoE staff, and review of supporting documents.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target C1.3 Increase number of Tuvaluans trained in environmental science and biodiversity in particular

Progress	<i>On track to exceed target</i> / On track to achieve target / <i>Progress towards target but at an insufficient rate</i> / <i>No significant change</i> / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>R2R project</u></p> <p>The R2R project has provided scholarships for Tuvaluans to study postgraduate courses at James Cook University in Australia. To date four students have completed postgraduate certificates in Ridge to Reef Sustainable Development. Students are now continuing with postgraduate diplomas, including topics such as water quality monitoring, ecosystem dynamics, and the use of scientific tools and methods.</p> <p><u>Department of Education</u></p> <p>While primary and secondary education in Tuvalu does include sciences, there is a recognised need to improve the quality of education provided, particularly the number of qualified teachers, and access to higher education.</p> <p>The Department of Education provides a limited number of scholarships for postgraduate study overseas, both pre-service (with a requirement to return for government employment for at least two years once the course has been completed), and in-service (for current government staff). These scholarships include tuition fees and living costs and total approximately AU\$20,000 per year.</p> <p>The majority of students taking scholarships study at USP in Fiji, with nursing and teaching being the most popular subjects. A smaller number study environmental sciences, and related subjects such as geology.</p>

Target C1.3 Increase number of Tuvaluans trained in environmental science and biodiversity in particular

	<p>In addition, the Department of Education also manages a tuition waiver scheme, with participating students required to fund all other costs themselves.</p> <p><u>Assessment</u></p> <p>Through the efforts of the R2R project and Department of Education, a significant number of Tuvaluans are receiving postgraduate education in environmental sciences and related subjects. A greater effort could probably be made, however, to increase the number studying biodiversity specifically.</p>
Indicators used for assessment	Tertiary education initiatives implemented
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with Department of Education and R2R project staff.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target C1.4 Establish necessary networking both within and with outside entities to assist facilitate effective development and management of biodiversity

Progress	<i>On track to exceed target</i> / <i>On track to achieve target</i> / Progress towards target but at an insufficient rate / <i>No significant change</i> / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>TANGO</u></p> <p>TANGO is a national network of NGOs, with 48 members nation-wide. It has established a partnership with Oxfam Pacific, through which it is receiving support for organisational capacity building.</p> <p><u>R2R project</u></p> <p>The R2R project works in partnership with the Fiji LMMA Network</p>

Target C1.4 Establish necessary networking both within and with outside entities to assist facilitate effective development and management of biodiversity

	<p>and the Taiwan International Cooperation and Development Fund (ICDF).</p> <p>In 2018 the R2R project contributed to national awareness-raising events organised in celebration of International Women's Day and World Water Day, including a radio programme and community workshops.</p> <p><u>Department of Environment</u></p> <p>A current national priority for the DoE is the establishment of a traditional network. The purpose of this network will be both improved management of LMMAs and promoting traditional knowledge and cultural practices. Once established, links can be made between this national network, and the Fiji LMMA Network.</p> <p><u>Assessment</u></p> <p>Although Tuvalu's extremely small population size should facilitate networking at the national level, the significant distance and limited communication links between islands poses challenges. Limited international transport services and limited internet connectivity further challenges engagement with regional and international networks. However, Tuvalu is well integrated into the Pacific community, and receives support from organisations such as SPC and SPREP.</p> <p>However, more could be done to promote the establishment of national networks and engagement with regional and international networks specifically focused on biodiversity conservation.</p>
Indicators used for assessment	Examples of domestic and international networking initiatives
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE, R2R project, and TANGO staff.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target C1.5 Take into full account biodiversity in all aspects of planning and development on each island

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>Department of Environment</u></p> <p>Procedures for EIA are defined by Tuvalu's Environmental Protection Act (2008) and Environment Protection (Environmental Impact Assessment) Regulations (2014). Previously, EIA processes were limited to large developments funded by international donors such as the World Bank and Asia Development Bank (ADB) and purely followed the requirements of these external donors (with generally limited input from national authorities).</p> <p>DoE's EIA section has been working to promote the application of national EIA regulations (preliminary EIA reports, and full EIA, as appropriate) for all applicable development projects (including construction of ports, seawalls, and land reclamation projects).</p> <p>While it should be possible to ensure that no future relevant development projects are conducted without application of Tuvalu's EIA regulations It is proposed that EIA should be encouraged and action must be taken for all developments in the future.</p>
Indicators used for assessment	<p>Existence of national legislation that requires biodiversity to be considered in development planning and approvals</p> <p>Evidence that development plans potentially harmful to biodiversity have been required to mitigate negative impacts.</p>
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators: <i>Approved development plans with conditions</i>
Relevant websites, web links, and files	<p>Environmental Protection Act (2008)</p> <p>Environment Protection (Environmental Impact Assessment) Regulations (2014)</p> <p>Draft Tuvalu Integrated Environment Policy 2019-2020</p>
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff and supporting documentation
Adequacy of monitoring information to support assessment	Monitoring related to this target is adequate / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	Monitoring conducted by DoE EIA section staff
Relevant websites, web links, and files	n/a

Cross-Cutting Theme Two. Sustainable Development and Environment Management

Target C2.1 All development activities regardless of its nature and magnitude must be subjected first to an EIA

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>Department of Environment</u></p> <p>Procedures for EIA are defined by Tuvalu's Environmental Protection Act (2008) and Environment Protection (Environmental Impact Assessment) Regulations (2014). Previously, EIA processes were limited to large developments funded by international donors such as the World Bank and ADB and purely followed the requirements of these external donors (with generally limited input from national authorities).</p> <p>DoE's EIA section has been working to promote the application of national EIA regulations (preliminary EIA reports, and full EIA, as appropriate) for all applicable development projects (including construction of ports, seawalls, and land reclamation projects).</p> <p>While it should be possible to ensure that no future relevant development projects are conducted without application of Tuvalu's EIA regulations, the lack of EIA for facilities constructed for the recent PIF Leaders Meeting indicates that further work is necessary.</p>
Indicators used for assessment	Evidence of consistent application of EIA legislation
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators: <i>Approved development plans with conditions</i>
Relevant websites, web links, and files	Environmental Protection Act (2008) Environment Protection (Environmental Impact Assessment) Regulations (2014) Draft Tuvalu Integrated Environment Policy 2019-2020
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff and supporting documentation
Adequacy of monitoring information to support assessment	Monitoring related to this target is adequate / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	Monitoring conducted by DoE EIA section staff

Relevant websites, web links, and files	n/a
Target C2.2 Consolidate all national efforts and activities under international conventions related to the environment in order to meet Tuvalu's obligations and thus strengthen its position to attract international assistance	
Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>Department of Environment</u></p> <p>Tuvalu is a signatory to at least 12 international conventions, including the CBD, the United Nations Framework Convention on Climate Change (UNFCCC), the Stockholm Convention on Persistent Organic Pollutants (POPs), the Minamata Convention on Mercury and the UNCCD. Each convention has associated requirements, including reporting obligations (including a wide variety of reporting templates, indicators, and timelines). With only five permanent staff members, the DoE currently has insufficient capacity to fully meet Tuvalu's MEA reporting obligations. There is a need to increase and expand Environment Department in order fulfil all the obligations at the national, regional and international level.</p> <p><u>Assessment</u></p> <p>While there is a reasonable overlap between Tuvalu's obligations under international conventions and the national priorities of DoE and other departments, there have been no targeted initiatives to date to consolidate national efforts under international conventions and streamline reporting processes.</p> <p>As Tuvalu prepares to develop Te Kakeega IV (TKIV) (following the current TKIII), an opportunity exists to review national MEA obligations, and align national indicators accordingly.</p>
Indicators used for assessment	Evidence that Tuvalu is up to date with MEA reporting obligations
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators: <i>Multilateral Environmental Agreements</i>
Relevant websites, web links, and files	Te Kakeega III: National Strategy for Sustainable Development 2016-2020
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>

How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Cross-Cutting Theme Three. Mainstreaming and Financing Mechanisms

Target C3.1 Review feasibility of establishing a National Trust Fund for Biodiversity

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>Department of Environment / Department of Climate Change</u> Preliminary efforts were made towards the establishment of a National Trust Fund for Biodiversity. However, following a restructure of government departments (the creation of a Department of Climate Change), these efforts were redirected towards the establishment of a Climate Change Survival Trust Fund. However, the DoE has already started to establish an Environment Trust Fund and it's still on its preparatory phase. This will include fund for biodiversity and other focal areas.</p> <p><u>Assessment</u> The establishment of a Climate Change Survival Trust Fund rather than a trust fund focused on biodiversity conservation is understandable given the perceived relative priority of these topics for a Pacific island nation. However, the DoE is trying to establish an Environment Trust Fund, which is inclusive of fund for Biodiversity and other focal areas.</p>
Indicators used for assessment	Efforts towards establishment of a National Trust Fund for Biodiversity
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target C3.2 Review all documentations related to environment in Tuvalu and build baseline data for mainstreaming biodiversity into Tuvalu's overall national policy framework

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>R2R project</p> <p>The R2R project has completed various activities of relevance to this target, including:</p> <ul style="list-style-type: none"> · compiling a natural resource inventory and indicators for land and water · producing a report on "Soil characterisation, geological, topographic, and land resources characterisation" · developing an island profile and updated GIS system · reviewing national policies relating to environment and biodiversity and compiling them into a draft integrated biodiversity policy.
Indicators used for assessment	Initiatives reviewing documentation and building baseline data
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with R2R project and DoE staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Cross-Cutting Theme Four. Legal Framework for Biodiversity and Law Enforcement

Target C4.1 Review all legislations impinging on biodiversity with the view to consolidate all into one legislation

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>One challenge facing effective conservation of Tuvalu's biodiversity is the fact that relevant legislation is dispersed across a variety of acts, policies, and byelaws, not all of which are consistent with one another.</p> <p><u>R2R project</u> The R2R project conducted a review of national and sub-national legislation relating to biodiversity and has developed a draft integrated environment policy 2019-2020. Once finalised this should be a useful tool for ensuring the better conservation of Tuvalu's biodiversity.</p>
Indicators used for assessment	Initiatives reviewing legislation and developing an integrated biodiversity policy
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with R2R project staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target C4.2 Review status of all byelaws relating to biodiversity and where possible amend the relevant national legislations in order to enforce the bye laws

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	Local byelaws are developed and enforced by island Kaupules. As

Target C4.2 Review status of all byelaws relating to biodiversity and where possible amend the relevant national legislations in order to enforce the bye laws

	<p>such they are guided by Island Strategic Plans (ISPs), which are in turn aligned with Te Kakeega III: National Strategy for Sustainable Development 2016-2020 (TKIII). As TKIII is also aligned with national legislation, local byelaws should (in theory) be consistent with national biodiversity legislation. In practice some inconsistencies likely occur, however these have not been systematically documented.</p> <p><u>Department of Environment</u></p> <p>DoE works together with Kaupule particularly on issues related to environment, biodiversity, waste, conservation areas. Kaupule with Falekaupule will then develop their own set of laws which will then be passed by Government (Parliament) as sets of bye laws.</p> <p><u>Assessment</u></p>
Indicators used for assessment	Initiatives reviewing byelaws and amending national legislation
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators: <i>Environmental Cass Prosecuted</i>
Relevant websites, web links, and files	TKIII
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target C4.3 Increase public awareness and understanding on the law and how important especially to comply

Progress	On track to exceed target / <i>On track to achieve target</i> / <i>Progress towards target but at an insufficient rate</i> / <i>No significant change</i> / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019
Additional information	All government departments and kaupule make regular efforts to increase public awareness and understanding of relevant laws, byelaws, and regulations, including the Department of

Target C4.3 Increase public awareness and understanding on the law and how important especially to comply

	<p>Environment, Department of Fisheries, and Department of Waste Management.</p> <p><u>Department of Environment</u> The GoT organises an annual national environment week in order to raise public awareness of environmental issues. In recent years, awareness-raising initiatives organised by the DoE have included radio broadcasts, events with local schools, educational visits to the Funafuti Conservation Area (FCA), and events promoting local agricultural products and the consumption of local foods.</p> <p><u>Department of Fisheries</u> The Department of Fisheries annual workplan includes a public awareness program. For example, in 2018 the department organised a series of 10 radio programs, managed the departmental library and website, and published and distributed various reports.</p> <p>The Support Program for Outer Islands includes four annual trips by the Department of Fisheries staff to the outer islands for carrying out community capacity building workshops and school awareness raising programs, among other activities.</p> <p><u>Department of Waste Management</u> Goal 2 of Tuvalu's Integrated Waste Policy and Action Plan 2017-2016 is that "stakeholders fully understand the merits of proper waste management and co-share the responsibility of managing waste". The 2019 annual implementation review of this policy noted that DWM had made progress towards achieving this goal, including conducting numerous public awareness programs targeting schools, communities, and others. Activities conducted included distributing posters and pamphlets, conducting fortnightly radio programmes, sharing relevant information using social media, and integrating waste management into school curricula.</p> <p><u>Assessment</u> Significant efforts have been made in promoting public awareness of environmental issues and legislation. Public awareness of some environmental issues (such as climate change) is very high, however more could be done to encourage behaviour change in areas such as waste management and combatting IAS.</p>
Indicators used for assessment	Awareness raising initiatives
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / <i>Based on partial evidence</i> / <i>Based on limited evidence</i>

Target C4.3 Increase public awareness and understanding on the law and how important especially to comply

Explanation for level of confidence	Based on interviews with DoE, DoF, and DWM staff, and review of supporting documents.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system is in place
Relevant websites, web links, and files	n/a

Cross-Cutting Theme Five. Monitoring and Evaluation

Target C5.1 Construct the NBSAP logframe
and

Target C5.2 To undertake regular reviews of the NBSAP

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>Department of Environment</u></p> <p>Tuvalu's current NBSAP covers the period 2012-16 and therefore requires updating. A revised version has been drafted, that covers the period 2018-21. This draft is currently under review by line Ministries and is expected to receive Cabinet approval by the end of 2020</p> <p><u>Assessment</u></p> <p>Although a revised NBSAP is long overdue, some progress is being made by DoE.</p>
Indicators used for assessment	<p>Completed NBSAP logframe</p> <p>Completed reviews of NBSAP.</p>
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	Current NBSAP

Target C5.1 Construct the NBSAP logframe

and

Target C5.2 To undertake regular reviews of the NBSAP

Level of confidence in assessment	Based on comprehensive evidence / Based on partial evidence / Based on limited evidence
Explanation for level of confidence	Based on interviews with DoE staff, and review of supporting documentation (draft 2018-21 NBASAP)
Adequacy of monitoring information to support assessment	Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed
How is the target monitored? Is there a monitoring system in place?	Target monitored by DoE staff
Relevant websites, web links, and files	n/a

Target C5.3 Establish clear coordinating framework among the national, regional and international organizations

Progress	On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown
Date of progress assessment	October 2019
Additional information	<p>Although Tuvalu's extremely small population size, small number of government staff, and small number of civil society organisations should limit barriers to communication between national actors, a coordination framework would facilitate the sharing of information and more efficient use of human and financial resources. No significant progress has been made in establishing such a framework.</p> <p>Similarly, no significant progress has been made in establishing a coordination framework linking national actors to regional and international organizations.</p>
Indicators used for assessment	Presence/absence of functioning coordinating framework
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	Based on comprehensive evidence / Based on partial evidence / Based on limited evidence
Explanation for level of confidence	Based on interviews with government and civil society stakeholders
Adequacy of monitoring information to support assessment	Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed

How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a


Priority Theme One. Climate Change and Disaster Risk Management

Target P1.1 Improve knowledge on the impact of climate change and natural disasters on biodiversity
and

Target P1.2 Ensure meteorology and climate change information systems are relevant to biodiversity protection and conservation.

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>With an average elevation of approximately 1m above sea level, and a high degree of dependence on natural resources for subsistence purposes, Tuvalu is extremely vulnerable to the impacts of climate change and natural disasters.</p> <p><u>R2R project</u></p> <p>The R2R project (in collaboration with the Department of Environment and Department of Fisheries) has implemented systematic monitoring of lagoon and coastal water (measuring variables including temperature, conductivity, dissolved oxygen, chlorophyll, and pH) at multiple sites around all 9 of Tuvalu's islands, to assess impacts of climate change on biodiversity. In addition, the Department of Fisheries monitors sea water quality (levels of nitrate, ammonia, etc.)</p> <p><u>Tuvalu Meteorological Service</u></p> <p>Since 1942 the TMS has systematically recorded climate data (including temperature, rainfall, air pressure, humidity, and wind speed and direction) from weather stations on four islands (Funafuti, Nanumea, Nui, and Niulakita). In addition, they record sea level and temperature from a tidal gauge at Funafuti wharf.</p> <p>This data is used to produce the monthly Tuvalu Climate Bulletin, which includes a 3-month rainfall projection, and information regarding the current El Nino Southern Oscillation (ENSO) phase affecting Tuvalu. This bulletin is distributed by email to civil servants, Kaupule members, NGOs, and other relevant stakeholders.</p> <p>The TMS's forecasting section also produces Ocean Outlook – a monthly email bulletin that focuses on sea temperature and likely</p>

Target P1.1 Improve knowledge on the impact of climate change and natural disasters on biodiversity
and
Target P1.2 Ensure meteorology and climate change information systems are relevant to biodiversity protection and conservation.


	<p>fish movements.</p> <p>TMS's information systems have received funding support from SPREP (funding IT infrastructure) and SPC (funding community awareness-raising programmes, printing educational posters, and supporting a mini climate forum).</p> <p><u>Assessment</u></p> <p>P1.1: Useful data is being recorded both on the national impacts of global climate change (such as changes in weather patterns, average sea temperatures, average sea levels, and frequency of extreme weather events), and the impacts of climate change on national biodiversity. However, it is uncertain whether this biodiversity monitoring will continue once the R2R project comes to an end in 2020.</p> <p>P1.2: TMS collects high quality data on a range of variables relevant to biodiversity protection and conservation. However, limited human resources and technical capacity do constrain the degree to which this data is utilised.</p>	
Indicators used for assessment	Initiatives aimed at improving information and capacity regarding climate change and biodiversity	
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators:	
	<p><i>Funding for climate change adaptation/mitigation and ecosystem management</i></p>	 <p>Status Good</p> <p>Trend Unknown</p> <p>Data confidence High</p>
Relevant websites, web links, and files	n/a	
Level of confidence in assessment	Based on comprehensive evidence / Based on partial evidence / Based on limited evidence	
Explanation for level of confidence	Based on interviews with TMS and R2R project staff	
Adequacy of monitoring information to support assessment	Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed	
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place	

Target P1.1 Improve knowledge on the impact of climate change and natural disasters on biodiversity
and

Target P1.2 Ensure meteorology and climate change information systems are relevant to biodiversity protection and conservation.

Relevant websites, web links, and files	n/a
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Target P1.3 Develop 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

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>	
Date of progress assessment	October 2019	
Additional information	<p>No significant efforts have been made to develop contingency plans to protect Tuvalu's biodiversity following extreme events associated with climate change and natural disasters (such as catastrophic inundation following dramatic sea-level rise). It is not clear what activities could be usefully included in such a contingency plan.</p> <p>While no significant efforts have been made to develop contingency plans to protect Tuvalu's culture and traditions following extreme events associated with climate change and natural disasters, efforts have been made to preserve and promote the use of traditional knowledge and cultural practices in general (see Priority Theme 2).</p>	
Indicators used for assessment	Presence/absence of contingency plans	
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators:	
	<i>Funding for climate change adaptation/mitigation and ecosystem management</i>	 <p>Status Good</p> <p>Trend Unknown</p> <p>Data confidence High</p>
Relevant websites, web links, and files	n/a	
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>	
Explanation for level of confidence	Based on interviews with DoE, TMS, and Tuvalu National Council of Women (TNCW) staff	
Adequacy of monitoring information to support	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) /</i>	

Target P1.3 Develop 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

assessment	No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Priority Theme Two. Traditional Knowledge, Cultural Practices, Indigenous Property Rights

Target P2.1 Foster and promote the use of traditional knowledge and cultural practices in the conservation and management of biodiversity in Tuvalu

and

Target P2.2 Preservation of traditional knowledge and cultural practices pertinent to the conservation and management of Tuvalu

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>The use of traditional NRM practices (such as traditional fishing methods) can still be observed in Tuvalu, particularly in the outer islands. However, the persistence of this knowledge and these cultural practices is threatened by emigration of Tuvaluans seeking employment overseas, by internal migration (from the outer islands to Funafuti), by high and increasing consumption of cheap, imported, processed food, and by the limited interest of young people in learning traditional practices (such as traditional weaving and handicrafts) from island elders.</p> <p><u>TNCW</u></p> <p>TNCW has been working to protect and revive traditional handicrafts, including weaving baskets, mats, and fans. Although each of Tuvalu's nine islands traditionally followed unique and recognisable weaving styles, some have already been lost and most are gradually disappearing as elders pass away without the knowledge being adequately documented or passed on to younger people. The protection of these traditional cultural practices is also associated with the protection of traditional natural resource management and biodiversity conservation practices.</p> <p><u>R2R project</u></p> <p>The 2016 R2R community BIORAP included a focus on traditional uses and cultural importance of species found in Tuvalu.</p>

Target P2.1	Foster and promote the use of traditional knowledge and cultural practices in the conservation and management of biodiversity in Tuvalu
and	
Target P2.2	Preservation of traditional knowledge and cultural practices pertinent to the conservation and management of Tuvalu

	<p><u>TANGO</u></p> <p>Between 2016 and 2017 the United States Agency for International Development (USAID) supported a project focusing on promoting traditional knowledge under 11 focal areas.</p> <p>Since 2018, the Forest People Program have supported a project promoting traditional knowledge in marine management, particularly with regards to LMMAs. This work has included awareness-raising, community consultations, and community monitoring of LMMAs.</p> <p>Efforts to preserve and promote traditional knowledge and cultural practices have centred on Kaupules. These traditional island councils develop ISPs and byelaws, which integrate traditional knowledge and cultural practices.</p> <p><u>Assessment</u></p> <p>While significant work has been done regarding the protection and promotion of traditional knowledge and cultural practices, only some of this work has had a specific focus on biodiversity. Also, the magnitude of threats being faced by biodiversity, and the pace of change with regards to the decline of traditional knowledge and cultural practices may mean that these efforts are currently insufficient to fully achieve their goals.</p>
Indicators used for assessment	Initiatives preserving and promoting traditional knowledge and cultural practices used for biodiversity conservation and management
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with TANGO, TNCW, DoE, and R2R project staff, and review of supporting documentation.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place

Target P2.1 Foster and promote the use of traditional knowledge and cultural practices in the conservation and management of biodiversity in Tuvalu

and

Target P2.2 Preservation of traditional knowledge and cultural practices pertinent to the conservation and management of Tuvalu

Relevant websites, web links, and files

n/a

Target P2.3 Foster and promote the equitable sharing of benefits derived from biodiversity




Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	DoE is working closely with a regional access and benefit sharing (ABS) project implemented by SPREP to establish appropriate systems and policies covering all issues regarding ABS. The policy is expected to be finalised during 2020.
Indicators used for assessment	Initiatives implemented aimed at promoting equitable sharing of benefits
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	n/a
Relevant websites, web links, and files	n/a

Priority Theme Three. Conservation of Species, Ecosystems (Marine, Coastal, Land terrestrial) and Genetic Diversity


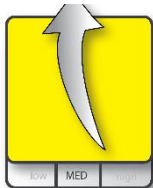
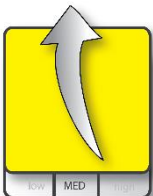


Target P3.1 To protect and conserve diversity of ecosystems
and
Target P3.2 To preserve, protect and conserve diversity of species

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>The work of several government departments and other stakeholders contribute to the achievement of these targets, including the Department of Environment, Department of Agriculture, Department of Fisheries, Department of Education, and the R2R project.</p> <p><u>R2R project</u></p> <ul style="list-style-type: none"> · Priority setting In the 2018 the R2R project conducted consultations with the Department of Fisheries to establish marine and terrestrial bio-indicators (target species for monitoring) and developed monitoring plans for local conservation areas in all the outer islands. This monitoring plans have an integrated approach whereby it looks at whole island approach in order to conserve and protect the species. · Monitoring The R2R project has implemented systematic monitoring of lagoon and coastal water (measuring variables including temperature, conductivity, dissolved oxygen, chlorophyll, and pH) at multiple sites around all 9 of Tuvalu's islands. A scientific BIORAP is planned for 2020, to generate data on the conservation status of marine, terrestrial, and avian species. This initiative will be implemented in partnership with other relevant national projects. · Coral nurseries The R2R project has addressed coral bleaching in the FCA by surveying for corals that are more resilient to increased water temperatures and replanting them in two coral nurseries within FCA. The initial results of this work are very positive, with significant new coral growth observed. · PA management In 2018 the R2R project updated and verified data on all existing PAs. · Natural resources management In 2018 the R2R project implemented SLM initiatives and with including non-government organisation Alofa Tuvalu (a Japanese funded project) implemented planting more than 3,000 mangroves along the coast of Avalau (one of the islets of Funafuti) and compiled a natural resource inventory and indicators for land and water.

Target P3.1	To protect and conserve diversity of ecosystems
and	
Target P3.2	To preserve, protect and conserve diversity of species

	<p><u>Department of Environment</u></p> <p>Tuvalu's Environmental Protection Act (2008) defines DoE's role in protecting Tuvalu's biodiversity, including 'the protection and conservation of Tuvalu's endemic species' and 'the implementation of special measures to conserve Tuvalu's biological diversity'. However, DoE's ability to implement targeted initiatives to conserve Tuvalu's ecosystems and species is restricted by its limited human resources (a total of five staff members) and financial resources. Environment works in partnership with relevant stakeholders and its Projects including Non-Government organisations in achieving this initiative.</p> <p><u>Department of Fisheries</u></p> <p>The primary objectives of the Department of Fisheries include combating Illegal, Unregulated and Unreported (IUU) fishing, reducing pressure on inshore resources through the use of FADs, establishing conservation areas, byelaws, and other management measures, developing management plans for priority species. The department works to ensure that all fisheries resources are managed sustainably.</p> <p><u>Assessment</u></p> <p>While efforts have been made to conserve Tuvalu's ecosystems and species, they are likely not sufficient to generate sustainable long-term conservation outcomes in the face of the multiple threats being faced by biodiversity (including unsustainable NRM, inadequate waste management, and ecosystem modification associated with climate change).</p>	
Indicators used for assessment	Initiatives implemented for conserving ecosystems and species	
Any other tools or means used for assessing progress	Tuvalu SoE 2020 Indicators:	
	Native tree cover	 <p>Status Poor</p> <p>Trend Stable</p> <p>Data confidence High</p>
	Wetlands	 <p>Status Fair</p> <p>Trend Deteriorating</p> <p>Data confidence Medium</p>  <p>Status Fair</p> <p>Trend Unknown</p> <p>Data confidence Medium</p>

Target P3.1 To protect and conserve diversity of ecosystems
and
Target P3.2 To preserve, protect and conserve diversity of species

	<i>Live coral cover'</i>	
	<i>Lagoon water quality</i>	 <p>Status Poor</p> <p>Trend Deteriorating</p> <p>Data confidence Medium</p>
	<i>Terrestrial protected areas</i>	 <p>Status Fair</p> <p>Trend Improving</p> <p>Data confidence Medium</p>
	<i>Marine protected areas</i>	 <p>Status Fair</p> <p>Trend Improving</p> <p>Data confidence Medium</p>
	<i>IUCN Red List summary</i>	 <p>Status Good</p> <p>Trend Deteriorating</p> <p>Data confidence Medium</p>
	<i>Status of threatened, endemic, or migratory species</i>	 <p>Status Good</p> <p>Trend Deteriorating</p> <p>Data confidence Medium</p>
Relevant websites, web links, and files	Environmental Protection Act (2008)	
Level of confidence in	Based on comprehensive evidence / Based on partial evidence /	

Target P3.1 To protect and conserve diversity of ecosystems and

Target P3.2 To preserve, protect and conserve diversity of species

assessment	<i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE and R2R project staff and review of supporting documents.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target P3.3 To protect and conserve the genetic diversity of Tuvalu

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change/ Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>R2R</u></p> <p>The 2016 R2R Community-Based BIORAP included some consideration of genetic diversity, particularly in the context of plants cultivated as food crops.</p> <p><u>Department of Environment</u></p> <p>DoE is working closely with a regional ABS project implemented by SPREP to establish appropriate systems and policies covering all issues regarding ABS. This includes consideration of conservation of genetic resources.</p> <p><u>Assessment</u></p> <p>Although the conservation of genetic diversity is included in TKIII (in the context of SDG target 2.5), few specific initiatives have been implemented aimed at conserving the genetic diversity of Tuvalu's biodiversity.</p>
Indicators used for assessment	Initiatives implemented aimed at protecting genetic diversity
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of	Based on interviews with national stakeholders and review of

Target P3.3 To protect and conserve the genetic diversity of Tuvalu

confidence	relevant documents.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Priority Theme Four. Community – Empowerment, Involvement, Awareness and Understanding and Ownership

Target P4.1 Building capacities of Falekaupule and their respective people to manage and conserve their island ecosystems to provide sustainable benefits and livelihoods and

Target P4.2 Empowering communities to lead in the management and conservation of their island biodiversity

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>The GoT recognises that successful biodiversity conservation and sustainable NRM requires local government (Falekaupule) and local communities who are empowered to lead conservation and management efforts. As such, most initiatives implemented by government departments (such as DoE and DoA) and CSOs include a focus on community capacity building and empowerment.</p> <p><u>TANGO</u></p> <p>TANGO has organised several community consultations. By involving communities in activities such as monitoring of biodiversity within LMMAs, community members develop a sense of ownership of the project and can be empowered to sustain the project activities beyond the life of the project.</p> <p><u>R2R project</u></p> <p>The R2R project has organized a variety of community consultations and training events (such as “training of trainers” workshops) on all outer islands. In 2018 the R2R project organised training of R2R Island Officers in “Community-based Ecosystem Approaches to Fisheries Management” by experts from the Fiji LMMA Network, including development of management and</p>

Target P4.1 Building capacities of Falekaupule and their respective people to manage and conserve their island ecosystems to provide sustainable benefits and livelihoods and

Target P4.2 Empowering communities to lead in the management and conservation of their island biodiversity

	monitoring plans. <u>Assessment</u> Significant efforts have been made building the capacity of and empowering communities, through the work of several government departments and other stakeholders.
Indicators used for assessment	Initiatives implemented building capacity of communities and empowering communities for conservation and management
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with government and CSO staff, and review of supporting documents.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target P4.3 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

Progress	<i>On track to exceed target</i> / <i>On track to achieve target</i> / <i>Progress towards target but at an insufficient rate</i> / No significant change / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019
Additional information	Local byelaws are developed and enforced by island Kaupules. As such they are guided by Island Strategic Plans (ISPs), which are in turn aligned with Te Kakeega III: National Strategy for Sustainable Development 2016-2020 (TKIII). As TKIII is also aligned with national legislation, local byelaws should (in theory) be consistent with national biodiversity legislation. In practice some inconsistencies likely occur, however these have not been systematically documented.

Target P4.3 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><u>Department of Environment</u></p> <p>As island Kaupules have a mandate to develop and enforce their own byelaws (such as those defining local management of protected areas), national government departments have limited authority regarding the content of these byelaws. The DoE regularly engages Kaupules to advise them on the development and enforcement of byelaws and raise awareness of relevant national legislation.</p>
Indicators used for assessment	Initiatives aimed at reviewing and aligning byelaws
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	TKIII
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Priority Theme Five. Sustainable Use of Natural Resources

Target P5.1 Augment the management of existing conservation areas throughout the nation

Progress	<i>On track to exceed target</i> / On track to achieve target / <i>Progress</i>
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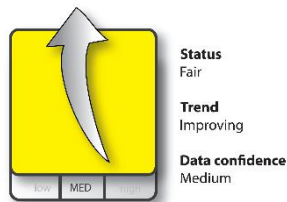

Target P5.1 Augment the management of existing conservation areas throughout the nation

	<i>towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>Tuvalu's PA network consists of one conservation area established under national legislation (the Funafuti Conservation Area Act), managed by the Funafuti Kaupule, and 12 LMMAs established by and under the management of outer island Kaupules. These LMMAs generally consist of a core no-take zone and a surrounding management zone in which some fishing is permitted (including fishing using traditional methods).</p> <p>Management, monitoring, and enforcement of LMMA regulations is carried out by the community members themselves and guided by Island Management and Monitoring Plans (IMPs) (which link to ISPs, and national plans). Support for management is provided by DoE and Department of Fisheries.</p> <p>While some poaching does occur, local byelaws enforced by outer island Kaupules include strict penalties (such as being required to feed the entire island community), which keep this to a minimum. Poachers are penalised using traditional means, such as prohibiting them from joining community activities.</p> <p><u>R2R project</u></p> <p>The R2R project has been working to improve management of PAs in Tuvalu, particularly LMMAs, by:</p> <ul style="list-style-type: none"> · updating and verifying data on all existing PAs · demarcating LMMA boundaries using buoys and solar-powered lights · raising awareness of community members of PA regulations · distributing monitoring equipment to outer island communities, such as boats, binoculars, GPS equipment, and diving equipment.
Indicators used for assessment	Initiatives implemented aimed at improving PA management
Any other tools or means used for assessing progress	GEF Management Effectiveness Tracking Tool (METT)
Relevant websites, web links, and files	METT Handbook (2016)
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with R2R project and DoE staff, and review of supporting documents
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>

Target P5.1 Augment the management of existing conservation areas throughout the nation

How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target P5.2 Increase the number of new conservation areas throughout the nation

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>	
Date of progress assessment	October 2019	
Additional information	<p><u>R2R project</u></p> <p>The R2R project has been working in partnership with DoE and the Fisheries Department to strengthen and expand Tuvalu's PA network, particularly LMMAs (in terms of number of PAs, size of PAs, and management effectiveness of PAs). Since the project inception, Tuvalu's PA network has increased from 12 PAs (FCA plus 11 LMMAs), to 14 (FCA plus 13 LMMAs). In addition, some LMMAs have increased in size, and are under improved management.</p>	
Indicators used for assessment	Number of PAs established	
Any other tools or means used for assessing progress	Links to Tuvalu SoE 2020 Indicators:	
	Terrestrial protected areas	 <p>Status Fair</p> <p>Trend Improving</p> <p>Data confidence Medium</p>
	Marine protected areas	 <p>Status Fair</p> <p>Trend Improving</p> <p>Data confidence Medium</p>
Relevant websites, web links, and files	World Database on Protected Areas (WDPA)	
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>	
Explanation for level of confidence	Based on interviews with R2R project, DoE, and Fisheries Department staff, and review of supporting documents.	
Adequacy of monitoring	Monitoring related to this target is adequate / Monitoring related	

information to support assessment	<i>to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	Data on number of PAs is monitored by R2R project staff
Relevant websites, web links, and files	n/a

Target P5.3 Create alternative livelihoods through the sustainable use of relevant biodiversity to provide sustainable livelihood and income to communities and families

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	Aside from initiatives promoting sustainable agriculture, few initiatives have focused on creating alternative livelihoods through sustainable use of biodiversity. Women do collect and make handicrafts out of shells and do waving our of pandanus plants to sell as a way of earning income to families, in a sustainable manner.
Indicators used for assessment	Initiatives promoting sustainable livelihoods through sustainable use of biodiversity
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoE and Department of Agriculture (DoA) staff, and review of supporting documents.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	
Relevant websites, web links, and files	

Priority Theme Six. Trade, Biosecurity and Food Security

Target P6.1 Foster and promote traditional agriculture and agroforestry and
 Target P6.2 Foster and promote the production and consumption of local food

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>Although Tuvalu's small land area, high population density (particularly on Fongafale (Funafuti), thin, poor soils, limited fresh groundwater, and susceptibility to saltwater inundation limits the availability of suitable agricultural land, some traditional food crops can be grown at a level sufficient for household consumption. Examples include giant swamp taro (<i>Cyrtosperma chamissonis</i>), known as 'pulaka', common taro <i>Colocasia esculenta</i>, and bananas and plantains (<i>Musa</i> cultivars).</p> <p>In recent years, Tuvalu's growing cash economy and increased access to international markets has led to a high and growing consumption of cheap, imported food products and decreased consumption of traditional foods. The impacts of these changes in consumption patterns can be seen in increased levels of obesity and associated Non-Communicable Diseases (NCDs) (such as diabetes and heart disease).</p> <p><u>TNCW</u></p> <p>Since 2017 TNCW and DoA have organised a home gardening competition for representatives of each of Tuvalu's nine islands, with funding from SPC. Participants are provided with seedlings and tools and encouraged to grow produce such as cabbage and tomato.</p> <p><u>Department of Agriculture</u></p> <p>DoA have recently commenced an integrated agriculture project, with funding from the Food and Agriculture Organisation (FAO) that encourages farmers to follow traditional agriculture and agroforestry techniques.</p> <p>DoA have also implemented an Australian Centre for International Agricultural Research (ACIAR) funded project focused on improving soil health in home gardens through composting and efforts to combat salinity.</p> <p><u>Department of Environment</u></p> <p>The EU-SPC Global Climate Change Alliance (GCCA) Pacific Small Island States (PSIS) project included the establishment of an education site for promoting traditional agricultural techniques and planting local fruit trees and vegetables.</p> <p><u>R2R</u></p> <p>In 2018 the R2R project (with UNDP and the SPC Geoscience Division) undertook groundwater assessments on the islands of Nanumea and Nukufetau in order to assessment their potential for</p>

Target P6.1 Foster and promote traditional agriculture and agroforestry and
 Target P6.2 Foster and promote the production and consumption of local food

	development as a water supply for domestic use, agriculture, and for emergencies. In 2019, the R2R project(with DoE and DoA) organised home gardening competitions and an agroforestry competition for Funafuti and two outer islands. Participants were provided with seedlings and tools to encourage and promote this type of activity in the future.
Indicators used for assessment	Initiatives promoting traditional agriculture and consumption of local food products
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with government and CSO staff, and review of supporting documents
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target P6.3 To increase awareness and understanding of the people on the linkages between food security and biodiversity

Progress	<i>On track to exceed target</i> / <i>On track to achieve target</i> / Progress towards target but at an insufficient rate / <i>No significant change</i> / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019
Additional information	While efforts have been made to promote the cultivation and consumption of local and traditional foods (see targets P6.1 and P6.2) (by the DoE, DoA, and TNCW), these have generally been made in the context of promoting traditional culture and reducing the prevalence of NCDs such as diabetes, through healthy eating. These efforts have generally not focused on food security and/or biodiversity. <u>Taiwan International Cooperation and Development Fund</u> ICDF has supported several initiatives aimed at promoting



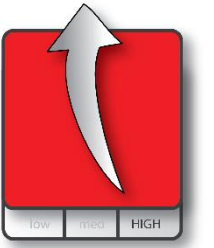

	<p>biodiversity-friendly horticulture in Tuvalu. These have included a demonstration farm, promoting home gardening, and a composting facility.</p> <p><u>R2R</u> The R2R project includes efforts to raise awareness among the public of the links between food security and biodiversity.</p> <p><u>Department of Environment</u> In 2019, DoE implemented a program during National Environment Week that documented traditional foods. This was open to the public and was intended to not only promote traditional dishes but also to advocate on NCDs. DoE is seeking funding to expand this activity in the future. This is an ongoing event which the Department is hosting every year with partnerships with other Government Department with the aim to promote awareness.</p> <p><u>Department of Fisheries</u> Food security is a priority for the Department of Fisheries. Various departmental activities include working with local communities to increase awareness and understanding of the linkages between sustainable livelihoods, food security, and biodiversity.</p>
Indicators used for assessment	Initiatives raising awareness of food security and biodiversity
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with government and civil society stakeholders, and review of supporting documentation.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Priority Theme Seven. Waste and Pollution Management

Target P7.1 To ensure the impacts of waste on biodiversity is minimized
and
Target P7.2 Enhance capacity and understanding on impact of waste on biodiversity

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<p><u>Department of Waste Management</u></p> <p>Waste management in Tuvalu is implemented by the Department of Waste Management (DWM), working under the Waste Management Act and associated regulations (on litter control, single-use plastics, and waste levy).</p> <p>The import of single-use plastics has been banned since August 2019, although sale is still permitted of single-use plastics imported before that date.</p> <p>DWM is in the process of implementing a nation-wide recycling program. Currently 14 products can be recycled, including aluminium cans, plastic bottles, and batteries (with additional items planned to be included in the future). An import levy is charged on these items when they enter the country (for example, \$0.10 per aluminium can), 50% of which is refunded when the empty can is returned to the government waste transit station. Currently eligible items are being collected, compacted, and stored by DWM, with overseas processing (potentially in Fiji) yet to be organised.</p> <p>DWM also employs an Education and Awareness Officer whose role includes monthly visits to schools and local communities (on Funafuti and the outer islands) to raise awareness and understanding of waste management.</p> <p>Waste collection services in Tuvalu are well organised, with daily collection of household waste, green waste, and other waste (including bulky items, scrap metal, and hazardous waste). Green waste is shredded and mulched at the transfer station and sold as compost (\$2 for a small bag) and soil (\$3 for a small bag).</p> <p>Household waste is deposited at landfill sites on each island. The Funafuti landfill is already significantly over capacity, and likely leaching pollution into the lagoon. Disputes with local landowners are preventing DWM from increasing the size of the landfill site.</p> <p>The EU is currently providing funding to the GoT to improve waste management practices. While not specifically focused on reducing impacts on biodiversity, if successfully implemented this work should reduce impacts of waste on biodiversity and build national capacity for waste management.</p> <p><u>Assessment</u></p> <p>Waste management may be the single most significant environmental</p>

Target P7.1 To ensure the impacts of waste on biodiversity is minimized
and
Target P7.2 Enhance capacity and understanding on impact of waste on biodiversity

	issue currently facing Tuvalu. While significant efforts are being implemented to improve waste management, the current situation (particularly regarding Funafuti landfill) is very challenging, and the work completed to date has not been sufficient to fully meet these targets.	
Indicators used for assessment	Initiatives to reduce impact of waste on biodiversity	
Any other tools or means used for assessing progress	Links to Tuvalu SoE 2020 Indicators:	
	<i>Per capita generation of municipal waste</i>	 <p>Status Poor</p> <p>Trend Deteriorating</p> <p>Data confidence Medium</p>
	<i>Household waste capture rate</i>	 <p>Status Poor</p> <p>Trend Unknown</p> <p>Data confidence Low</p>
	<i>Household waste recycled</i>	 <p>Status Poor</p> <p>Trend Improving</p> <p>Data confidence High</p>
	<i>Access to and quality of sewage treatment</i>	 <p>Status Poor</p> <p>Trend Stable</p> <p>Data confidence Medium</p>
Relevant websites, web links, and files	Environment Protection (Litter and Waste Control) Regulations 2013 Waste Management (Prohibition on the Importation of Single-Use Plastic) Regulation 2019 Waste Management (Levy Deposit) Regulation 2019	

Target P7.1 To ensure the impacts of waste on biodiversity is minimized and
 Target P7.2 Enhance capacity and understanding on impact of waste on biodiversity

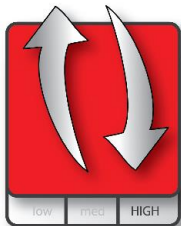

Level of confidence in assessment	<i>Based on comprehensive evidence</i> / Based on partial evidence / <i>Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DWM and EU staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate</i> / <i>Monitoring related to this target is partial (e.g. only covering part of the area or issue)</i> / No monitoring system in place / <i>Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Priority Theme Eight. Management of Invasive Species

Target P8.1 Establish management plans to control and eradicate invasive species

Progress	<i>On track to exceed target</i> / <i>On track to achieve target</i> / Progress towards target but at an insufficient rate / <i>No significant change</i> / <i>Moving away from target</i> / <i>Unknown</i>
Date of progress assessment	October 2019
Additional information	<p>Tuvalu's Environment Protection Act (2008) mandates the control and eradication of invasive species to the DoE. However, in practice this is handled by DoA's Plant Protection section.</p> <p>Tuvalu's native biodiversity is threatened by a variety of IAS, including the kou leafworm (<i>Ethmia nigroapicella</i>), coconut scale insect <i>Aspidiotus destructor</i>, pink mealybug (<i>Maconellicoccus hirsutus</i>), trailing daisy (<i>Sphagnetocola trilobata</i>), Rats (<i>Rattus spp.</i>), yellow crazy ant (<i>Anoplolepis gracilipes</i>), and seaweed (<i>Sargassum polycystum</i>).</p> <p><u>Department of Agriculture</u></p> <p>Tuvalu's biosecurity is managed by the Plant Protection section of the DoA. To date, no management plans have been produced for controlling or eradicating IAS, and no sites are managed specifically for IAS. However, efforts have been made to control/eradicate yellow crazy ant on Nukufetau, Nanumanga, and Nui, and surveys have been conducted for the coconut scale insect.</p> <p>The Tuvalu Invasive Species committee (established in 2015)</p>

Target P8.1 Establish management plans to control and eradicate invasive species

	<p>appears to no longer be active.</p> <p><u>R2R</u> The R2R project has undertaken efforts to control the outbreak of <i>Sargassum</i> seaweed in Funafuti lagoon. More than 1,000 Vetiver grass plants have been planted along the lagoon shore in order to intercept organic pollutants leaking from poorly constructed household septic tanks and therefore reduce nutrient availability for the <i>Sargassum</i>. Monitoring data generated by the R2R project indicates that this approach has been effective, at least in the short term.</p> <p>Department of Environment The Department of Environment has secured GEF Funding working together with SPREP and other Pacific Island Countries through a regional Invasive Species Project. The Project will be for duration of 5 years. It is proposed at the end of the Project, Tuvalu IAS will be strengthen and Tuvalu will be able to develop its NISSAP (National Invasive Strategic Action Plan) in order to combat invasive species in the country. The Project also will ensure that public are fully aware of the adverse impacts of invasive species on biodiversity and their livelihood.</p> <p><u>Assessment</u> While some efforts have been made to control the spread of <i>Sargassum</i> in Funafuti lagoon, no specific IAS management plans have been developed or implemented to date.</p>	
Indicators used for assessment	Initiatives to control or eradicate invasive species	
Any other tools or means used for assessing progress	Links to Tuvalu SoE 2020 Indicators:	
	<i>Invasive alien species under management or eradicated</i>	 <p>Status Poor</p> <p>Trend Mixed</p> <p>Data confidence High</p>
	<i>Priority sites with invasive species managed</i>	 <p>Status Poor</p> <p>Trend Mixed</p> <p>Data confidence High</p>
Relevant websites, web links, and files	Environment Protection Act (2008) Biosecurity Act (2006)	
Level of confidence in assessment	<i>Based on comprehensive evidence</i> / <i>Based on partial evidence</i> / <i>Based on limited evidence</i>	

Target P8.1 Establish management plans to control and eradicate invasive species

Explanation for level of confidence	Based on interviews with DoA staff and R2R project staff.
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place
Relevant websites, web links, and files	n/a

Target P8.2 Upgrade capacity, equipment and infrastructure to enforce biosecurity at all points of entry including inter island transportation

Progress	<i>On track to exceed target / On track to achieve target / Progress towards target but at an insufficient rate / No significant change / Moving away from target / Unknown</i>
Date of progress assessment	October 2019
Additional information	<u>Department of Agriculture</u> Tuvalu's biosecurity is managed by the Plant Protection Sector of the DoA. The biosecurity team includes only four staff members. No external funding has been received in recent years for upgrading biosecurity capacity and equipment, and the Tuvalu Invasive Species committee (established in 2015) appears to no longer be active. Internal government budget allocations are insufficient for significantly expanding national biosecurity capacity.
Indicators used for assessment	Initiatives to build capacity for biosecurity
Any other tools or means used for assessing progress	n/a
Relevant websites, web links, and files	n/a
Level of confidence in assessment	<i>Based on comprehensive evidence / Based on partial evidence / Based on limited evidence</i>
Explanation for level of confidence	Based on interviews with DoA Staff
Adequacy of monitoring information to support assessment	<i>Monitoring related to this target is adequate / Monitoring related to this target is partial (e.g. only covering part of the area or issue) / No monitoring system in place / Monitoring is not needed</i>
How is the target monitored? Is there a monitoring system in place?	No monitoring system in place

Target P8.2 Upgrade capacity, equipment and infrastructure to enforce biosecurity at all points of entry including inter island transportation

Relevant websites, web links, and files	n/a
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Section IV. National Contribution to Aichi Targets



Target 1. By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has contributed to the achievement of this ABT, however with a total national population of less than 11,000, its potential for significant impact is limited. Awareness-raising efforts are integrated into the work of most government departments and CSOs, and awareness of some environmental issues (notably human-induced climate change) is high among the general public. Examples of awareness-raising initiatives implemented include radio broadcasts during the annual Environment Week organised by the DoE, activities promoting home gardening and the consumption of local food products organised by the DoA, activities raising awareness of fishing regulations among coastal fishers on Tuvalu's outer islands organised by the Fisheries Department, activities raising awareness of appropriate waste management practices (including recycling) among school children organised by the DWM, the monthly Tuvalu Climate Bulletin prepared and distributed by the Tuvalu Meteorological Service, community engagement efforts organized by TANGO, and activities associated with International Women's Day and World Water Day organised by the R2R project.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides support for the implementation of SDGs 12 (particularly target 12.8), 13 (particularly 13.3), and 15.



Target 2. By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has contributed to the achievement of this ABT. National development is guided by TKIII (which will be replaced by TKIV in 2021), which is closely aligned with the SDGs, the SIDS Accelerated Modalities of Action (SAMOA) Pathway, and the UNFCCC's Paris Agreement. TKIII includes an explicit goal to 'protect, restore and promote sustainable use of terrestrial ecosystems; halt and reverse land degradation; protect and prevent biodiversity loss'.

Development activities are subject to EIA under Tuvalu's 2014 Environment Protection (Environmental Impact Assessment) Regulations. DoE's EIA section has been working to promote the consistent application of these regulations, particularly for developments such as port construction, seawall construction, and land reclamation projects.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides some support for the implementation of SDG 15, particularly target 15.9.



Target 3. By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. Although no harmful incentives are in place, few positive incentives have been established to date. DWM are in the process of implementing a recycling program, with currently 14 classes of products (including aluminium cans and plastic bottles) subject to an import levy, collected after use (with 50% of the levy refunded upon collection), compacted, and stored in preparation for future offshore processing.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDG 12.



Target 4. By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has contributed to the achievement of this ABT. National policy regarding sustainable production and consumption is guided by TKIII. This document includes specific goals and strategies regarding the economy, private sector, employment and trade, natural resources, the environment, and ocean and seas. In terms of sustainable natural resources management, TKIII focuses on fisheries (oceanic and coastal), agriculture, land management (including landfill and reclamation), and potential impacts of climate change on natural resources. Strategies outlined in TKIII are being implemented through the work of various government departments, including DoE, DoA, DWM, and the Fisheries Department, and include projects aimed at promoting sustainable agriculture, sustainable fisheries, and improving compliance with national environmental legislation.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides support for the implementation of SDGs 2 (particularly target 2.4), 12, 14, and 15.



Target 5. By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. With a total land area of only 26km², and an EEZ of about 900,000km², Tuvalu's marine habitats (including open ocean, coastal/inshore waters, reefs, lagoons, and intertidal flats) are far more extensive than terrestrial habitats (including inland broadleaf forest and woodland, coastal littoral forest and scrub, mangroves and swampy wetlands, coconut woodland and agroforest, excavated taro pits, and intensive vegetable and food gardens). Tuvalu's marine habitats (with the exception of coral reefs) are not significantly declining or fragmenting. Degradation of coral reefs is largely a result of increased average seawater temperatures and the impacts of powerful cyclones – factors over which Tuvalu has no control.

Tuvalu's high human population density has resulted in the persistence of very little undisturbed terrestrial habitat. What remains is threatened by pressures including construction of residential buildings and inappropriate disposal of solid waste. While rates of habitat loss and degradation have not been calculated, efforts are being made to reduce the impacts of development projects on biodiversity (such as through conducting EIAs) and improve national capacity for waste management.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDG 15, particularly target 15.5.



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.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has contributed to the achievement of this ABT. The Fisheries Department monitors both oceanic and coastal fisheries, to promote sustainable harvest and avoid overfishing. Tuvalu's oceanic fisheries consists of Purse Seine and Longline tuna fishing vessels (primarily targeting skipjack tuna, (*Katsuwonus pelamis*)), managed through the issuing of fishing licenses (309 vessels licensed to fish in Tuvalu's EEZ in 2018) and the Vessel Day Scheme (VDS).

The Fisheries Department seeks to combat IUU fishing by conducting surface patrols (three operations were conducted in 2018), boarding and inspecting fishing vessels, issuing fines (US\$250,000 in fines

were issued in 2018), by supporting the Tuvalu National Observer Program (TNOP) (which places Tuvaluan observers (80 currently active) aboard foreign fishing vessels), and through the Vessel Monitoring System (VMS). Tuvalu's efforts to combat IUU fishing saw the lifting, in 2018, of the 2014 EU Yellow Card which identified Tuvalu as potentially non-cooperating in fighting IUU fishing.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides support for the implementation of SDG 14, particularly target 14.4



Target 7. By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made some contribution to the achievement of this ABT. With a total land area of only 26km², a high population density (estimated at more than 2,000 persons/km² in Fongafale, Funafuti), often brackish groundwater, and largely thin, saline, nutrient-poor soils, Tuvalu has very limited good agricultural land. Most agriculture is limited to household consumption (including giant swamp taro (*Cyrtosperma chamissonis*) and common taro (*Colocasia esculenta*)); very little aquaculture or forestry is practiced. A number of initiatives have been implemented in recent years aimed at promoting sustainable agriculture, with funding from international donors including UNDP, GCCA, FAO, and SPC.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides some support for the implementation of SDGs 2 (particularly target 2.4) and 12 (particularly target 12.2).



Target 8. By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contributed to the achievement of this ABT. As a Pacific Island Nation with an extremely small total land area (26km²) and a high population density (estimated at over 2,000 persons/km² in Fongafale, Funafuti), pollution and waste management are priority issues for Tuvalu. Although solid waste (household waste, green waste, etc.) collection services managed by DWM are reasonably effective, little sorting of waste takes place, and storage of waste at (already overcapacity) landfill sites is not a sustainable long-term solution. DWM is receiving significant financial and technical support from the EU for improving waste management, including implementing bans on importing single-use plastic products, and a recycling programme (14 classes of products are currently collected and compacted, although offshore processing is yet to be initiated).

Pollution arising from poorly constructed household septic tanks is still problematic, with waste contaminating the thin groundwater 'lenses' that form under coral atolls, and lagoons (with significantly elevated levels of E.coli bacteria found in Funafuti lagoon close to densely-populated Fongafale islet). This influx of nutrients has exacerbated the growth of invasive Sargassum seaweed in Funafuti lagoon, with attempts being made to capture excess nutrients and reduce coastal erosion through planting Vetiver grass species along Fongafale's lagoon coastline.

Efforts are currently underway to update Tuvalu's National Implementation Plan for the sound management of chemicals in Tuvalu.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDGs 6 (particularly target 6.3) and 14 (particularly target 14.1).



Target 9. By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made minimal contribution to the achievement of this ABT. Although Tuvalu is affected by several notable IAS, including the kou leafworm (*Ethmia nigroapicella*), coconut scale insect *Aspidiotus destructor*, rats (*Rattus spp.*), and yellow crazy ant (*Anoplolepis gracilipes*), national capacity for biosecurity is very limited (including in terms of human resources, equipment, training, and financial resources). Although key IAS have been identified and pathways are largely understood, no targeted strategies for control or eradication have been developed or implemented, and only limited measures are in place for preventing future IAS introduction and establishment.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides little support for the implementation of SDG 15, specifically target 15.8.



Target 10. By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. Tuvalu's nine islands include coral atolls and reef islands, and as such include extensive coral reefs. These are threatened by a variety of factors including tropical cyclones, climate change (resulting in increased average water

temperature, increased sea level, and changes in pH), reef channel blasting and dredging, overharvesting of marine resources, pollution, rock and sand mining, and sedimentation. Although TKIII includes national priorities regarding climate change adaptation, increasing resilience, and protecting marine ecosystems, and work has been done to promote sustainable management of natural resources and better waste management, few initiatives have been implemented that specifically address threats to Tuvalu's coral reefs.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support to the implementation of SDG 14, particularly target 14.2.



Target 11. By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has contributed to the achievement of this ABT, with 19% of terrestrial areas (about 5km²) protected. However, due to having a vast marine area (an Exclusive Economic Zone (EEZ) of 900,000km²) it is not realistic for Tuvalu to establish and manage PAs covering 10% of coastal and marine areas.

To date, Tuvalu has established nine PAs, one associated with each of the nation's nine islands. This network consists of one marine protected area (MPA) established under national legislation (the Conservation Areas Act and Funafuti Conservation Area Order), and eight Locally Managed Marine Areas (LMMAs). Covering a total area of nearly 240km², these PAs predominantly cover marine areas (235km²), however five PAs also include a terrestrial component (FCA, Vaitupu LMMA, Nukulaelae LMMA, Nukufetau LMMA, and Nui LMMA). This terrestrial area only covers a total of 5km², or 2% of the total area of these five PAs.

Although no PAs have dedicated management plans, their management is guided by IMPs (which in turn are informed by ISPs and national policy (TKIII)). Despite recent efforts to improve PA management by the R2R project, management capacity remains rather limited, with few dedicated staff, limited human and financial resources, and patchy enforcement of PA regulations.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides support for the implementation of SDG 14 (particularly target 14.5), and limited support for the implementation of SDG 15.



Target 12. By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. The IUCN Red List has assessed 1,361 species that are found in Tuvalu, of which 111 are listed as globally threatened (Critically Endangered/CR, Endangered/EN, or Vulnerable/VU). Notable examples include Beck's Petrel (*Pseudobulweria becki*, CR), the Green Turtle (*Chelonia mydas*, EN), the Longfin Mako (*Isurus paucus*, EN), and the Thorny Seahorse (*Hippocampus hystrix*, VU). No Red List assessments have been conducted at the national level, and no Red List index has been generated. Tuvalu is home to one endemic species, the Tuvalu forest gecko (*Lepidodactylus tepukapili*), which is yet to be assessed by the Red List. Key threats to Tuvalu's biodiversity include climate change (and associated sea-level rise, more severe weather events, and changes in sea temperature and pH), IAS, overharvesting (particularly of marine species), habitat loss and degradation, and pollution.

The main work that has been conducted aimed at improving the conservation status of threatened species has been the establishment and management of PAs (FCA and 14 LMMAs), with the support of initiatives including the R2R project. Few projects have explicitly focused on species conservation, with most initiatives promoting an integrated approach to conservation and sustainable development. The R2R project is planning to implement a 'scientific BIORAP' which will collect detailed data on the status of priority species.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDG 15, particularly targets 15.5.



Target 13. By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made minimal contribution to the achievement of this ABT. While some efforts have been made to promote traditional agricultural techniques and the consumption of local food crops, very little has been done specifically aimed at maintaining the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives. No strategies have been developed or implemented for minimizing genetic erosion and safeguarding genetic diversity.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides little support for the implementation of SDG 2, specifically target 2.5.



Target 14. By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. Tuvalu's ecosystems provide a variety of essential ecosystem services, including coastal protection, shade and temperature regulation, soil formation, food, timber and fuelwood, water regulation, and traditional medicines. Although the importance of ecosystem services are not formally recognised in TKIII or Tuvalu's Environment Protection Act, they are restored and safeguarded indirectly by the work of various government departments and CSOs, including efforts by DoE to improve implementation of EIA regulations, efforts by DoA to promote sustainable agricultural practices, efforts by the Fisheries Department to regulate coastal and marine fisheries, and efforts by DWM to improve waste management practices.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDG 15, particularly target 15.1.



Target 15. By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. With a total land area of only 26km²(comprising nine atolls and islands distributed across a vast area of ocean), very little forested land, and a high human population density (estimated at more than 2,000 persons/km² on Fongafale islet, Funafuti), Tuvalu has very limited scope for meaningful contribution to global carbon stocks through restoration of degraded ecosystems. That said, significant efforts have been made in recent years in replanting mangroves (several thousand planted to date) as a tool for combatting coastal erosion and desertification, climate change adaptation, and raising awareness of local communities in environmental issues.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDGs 13 and 15.



Target 16. By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made minimal contribution to the achievement of this ABT. While Tuvalu is a party to the Nagoya Protocol, little has been done to date in terms of implementation.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides little support for the implementation of SDGs 2 (particularly target 2.5) and 15 (particularly target 15.6).



Target 17. By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made minimal contribution to the achievement of this ABT. An update to Tuvalu's current 2012-16 NBSAP is yet to be completed.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides little support for the implementation of SDGs 14 and 15.



Target 18. By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made limited contribution to the achievement of this ABT. Although some efforts have been made to protect and promote Tuvalu's traditional knowledge and cultural practices (particularly by local CSOs TANGO and TNCW, and with the financial support of international donors such as USAID), much traditional knowledge and many traditional cultural practices are believed to be in decline, or already lost. That said, the majority of Tuvalu's PA network comprises LMMAs, which are managed by local government (Kaupule), in accordance with traditional NRM practices. In addition,

DoE is planning to establish a traditional network which will connect Tuvalu's LMMA network with others in the region, promote traditional NRM practices, and also protect other elements of traditional knowledge.

Much of this knowledge is held by elders, with socio-economic changes (such as internal and international migration) resulting in young people showing limited interest and experiencing little incentives to take custody of this traditional knowledge and preserve traditional cultural practices. Without a clear national strategy, efforts to comprehensively document traditional knowledge and cultural practices, and efforts to apply it to modern contexts (including appropriate incentives), it is likely that much will continue to be lost.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides limited support for the implementation of SDGs 2 (particularly target 2.5) and 15.



Target 19. By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made some contribution to the achievement of this ABT. As a Least Developed Country (LDC) with an extremely population size (estimated at 10,645 by Tuvalu's Ministry of Finance, Economic Planning and Industries in 2017) and limited higher education infrastructure (a small campus of USP in Funafuti), Tuvalu has limited scope for making significant contributions to global knowledge, science, and technology relating to biodiversity. That said, a number of relevant initiatives and surveys have been conducted.

The R2R project has completed rapid community-based biological surveys of Funafuti and the outer islands, and is planning further scientific surveys in the near future; a preliminary assessment of Tuvalu's plants, fishes, birds and insects was carried out in 1998 by Seluka et al; comprehensive marine surveys have been carried out at several islands since 2010 (including by Job & Ceccarelli in 2012, Alefaio et al. in 2016); a bird survey of FCA was conducted by Watling in 1998; an illustrated book on the plants of Tuvalu was produced by Thaman et al. in 2012.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides some support for the implementation of SDGs 14 (particularly target 14.8) and 17 (particularly target 17.6).



Target 20. By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be

developed and reported by Parties.

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description

Tuvalu has made some contribution to the achievement of this ABT. The Ministry of Foreign Affairs, Trade, Tourism, Environment & Labour (which includes the DoE) receives more than 5% of the government's annual budget. Tuvalu receives significant investment from international donors including the Republic of China (Taiwan), Australia, the EU, SPC, and GEF for projects relevant to implementing the Strategic Plan. However, Tuvalu is yet to make significant progress towards establishing a planned Trust Fund for Biodiversity, and current levels of financing may not be sufficient to address existing threats to biodiversity.

Based on the description of your country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals

This contribution provides some support for the implementation of SDGs 15 (particularly target 15.10) and 17 (particularly targets 17.1 and 17.3).

Section V. Updated Biodiversity Country Profile

Biodiversity Facts

Status and trends of biodiversity, including benefits from biodiversity and ecosystem services

Tuvalu is a small Polynesian island nation located south of the equator (from 6° to 10° south) in the western Pacific Ocean, south of Kiribati and north of Fiji. It is the fourth smallest nation in the world by land area, with a total area of only 26km². The islands consist of five coral atolls (Nanumea, Nui, Nukufetau, Funafuti, and Nukulaelae), three table reef islands (Nanumaga, Niutao and Niulakita), and one composite which shares characteristics of both forms (Vaitupu). These extend in a chain nearly 600km long, resulting in Tuvalu's EEZ extending over 900,000km². All islands are extremely low-lying, with an average elevation of about 1m above sea level, and a maximum elevation of less than 5m. As a result, Tuvalu is one of the most vulnerable countries in the world to climate change and associated rising sea levels.

Tuvalu has a hot, humid tropical maritime climate, with an average annual temperature of 30°C, and little seasonal variation. Average annual rainfall is about 3,500mm, with a wet season between November and February.

Tuvalu's population was estimated at 10,645 in 2017. This represented a decline of 1.3% since 2012, due to emigration. Funafuti, the capital is by far the most populous island with 6,320 residents (59%). With a total land area of only 2.8km², Funafuti experiences a population density of more than 2,000 people per km².

From a geological perspective, Tuvalu's islands are very young, with poorly developed, infertile, sandy or gravel coralline soils. The flora is dominated by introduced, exotic species, as a result of extensive habitat modification, selective removal of indigenous species (for example for construction purposes), and widespread planting of coconuts and other food plants by early settlers. A total of 362 plant species have been recorded in Tuvalu, of which only 59 (16%) are likely to be native, and none are endemic.

Tuvalu is home to no indigenous land mammals, amphibians, or freshwater fish. The native terrestrial fauna is largely made up of insects, land crabs, and a few species of lizard (including the endemic Tuvalu forest gecko *Lepidodactylus tepukapili*, known only from Fuakea and Tepuka islets, Funafuti).

Forty-nine bird species are known, twelve of which are globally threatened (including the critically endangered Beck's petrel (*Pseudobulweria becki*). Unsurprisingly, these are dominated by seabirds such as petrels, shearwater, and terns.

The marine environment is comprised of 6 major ecosystem types (oceanic, outer reef, lagoonal, back reef, lagoon floor, patch reefs, and natural channels between the ocean and lagoon). These ecosystems produce the sediment required for island building and

maintenance, and support communities of corals, other invertebrates, algae, plankton, fish, and marine mammals and reptiles. Over 600 species of fish have been recorded.

Key benefits from biodiversity and ecosystem services provided include nutrition (subsistence fishing, farming, and harvest of plant products), medicine, fuel, construction, boatbuilding materials, compost, traditional handicrafts, and cash income (selling fish).

Main pressures on and drivers of change to biodiversity (direct and indirect)

Tuvalu's biodiversity is threatened by a variety of pressures. Human-induced climate change is resulting in sea level rise (which increases risk of inundation, habitat modification, coastal flooding, saltwater intrusion into underground aquifers, and damage from storm surges), more frequent and severe weather events (such as cyclones and droughts), increases in water and air temperature (which lead to coral bleaching), and ocean acidification (which inhibits the growth of shellfish).

A large number of IAS are found in Tuvalu, including rats (*Rattus spp.*), plant weeds (such as *Mikania micrantha*, *Cenchrus echinatus*, *Wedelia trilobata*, and *Lantana camara*), insect pests of agricultural crops (such as the coconut scale insect *Aspidiotus destructor*, termite *Neotermes rainbowi*, and pink mealy bug *Macinelllicocus hirsutus*), crown of thorns starfish (*Acanthaster planci*), cane toads (*Rhinella marina*), and *Sargassum* seaweed.

Several threats to Tuvalu's biodiversity can be summarised as arising from deleterious human actions and negative attitudes towards the environment, leading to inappropriate behaviour such as littering and other pollution (resulting from inadequate sanitation systems), over-fishing and hunting (such as of sea cucumbers and giant clams), use of destructive fishing practices (such as fine-mesh nets), unsustainable extraction of natural resources, increasing consumption patterns arising from local increases in human populations (such as migration from outer islands to Funafuti), demands and changing lifestyles, institutional weaknesses, ignorance and lack of knowledge, and natural factors.

Measures to Enhance Implementation of the Convention

Implementation of the NBSAP

Tuvalu became a CBD Party in 2002. Between 2002 and 2012, Tuvalu's environmental efforts were guided on the 1997 Tuvalu National Environmental Management Strategy (NEMS), which provided a policy framework and enabled the development of key environmental policies. Tuvalu's first NBSAP was intended to cover the period 2012-16 (but is yet to be updated), and established objectives and priority actions on the following themes:

- capacity building, education, training, awareness and understanding
- sustainable development and environment management
- mainstreaming and financing mechanisms
- legal framework for biodiversity and law enforcement
- monitoring and evaluation

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- climate change and disaster risk management
 - traditional knowledge, cultural practices, indigenous property rights
 - conservation of species, ecosystems (marine, coastal, land terrestrial) and genetic diversity
 - community empowerment, involvement, awareness, understanding and ownership
 - sustainable use of natural resources
 - trade biosecurity and food security
 - waste and pollution management
 - management of invasive species.

Tuvalu is currently in the process of finalising a new NBSAP, to cover the period 2018-21. A draft is currently under review by line ministries, prior to Cabinet approval (expected in late 2019 or early 2020). This Strategy defines targets associated with the following themes:

- conservation of ecosystems
- conservation of threatened species
- sustainable use of natural resources
- invasive species management
- traditional knowledge, cultural practices & indigenous property rights
- climate change linked to biodiversity
- information management.

Actions taken to achieve the 2020 Aichi Biodiversity Targets

Several priority actions identified by Tuvalu's 1997 NEMS, 2012 NBSAP, 2015 NEMS, and 2016 TKIII have been implemented. These include the development of Tuvalu's Integrated Waste Policy Action Plan, establishment of protected areas (including Locally Managed Marine Areas (LMMAs)), development and implementation of EIA policies, and the development of other environmental legislation such as the 2008 Environment Protection Act, the 2008 Conservation Areas Act, the 2008 Funafuti Conservation Area Order, and the 2010 Ozone Depleting Substances Regulations.

Tuvalu has established a total of 14 PAs. One, Funafuti Conservation Area (FCA) is gazetted under formal legislation. The others consist of LMMAs, established and managed by local communities in accordance with traditional management practices. Since 2009, much work has been carried out consulting local communities in Funafuti and the outer islands to determine knowledge about the environment, and perceived trends and threats to biodiversity. A key challenge is to institute management systems that will be ongoing and self-financing. Protected area management plans are integrated into integrated Island Management Plans.

Other notable biodiversity initiatives that have been implemented include the GEF-funded Ridge to Reef project, which includes components on biodiversity conservation, integrated

land and water management, improved governance and institutional strengthening, and knowledge management, and the NAPA-I and NAPA-II projects which focused on increasing the resilience of outer island communities to future climate change risks of declining marine resources and intensifying hazards.

Support mechanisms for national implementation

Tuvalu has actively participated in various national, regional, and international capacity-building environmental initiatives. Examples include the New Zealand-funded Tuvalu Fisheries Support Programme (TFSP) through which the country is improving its capacity for sustainable management of fisheries resources, and support from the EU (via the European Development Fund (EDF)) for implementing Tuvalu's Integrated Waste Policy Action Plan 2017-26.

Mechanisms for monitoring and reviewing implementation

Collection of baseline data on quantity, mass and species caught began in December 2008 for the inshore Funafuti fishery. In the outer islands, except Niulakita, Community Fisheries Centres are collecting data on fish mass and species only. In 1993, Tuvalu established a tide gauge to monitor sea level rise, sea pressure, sea temperature, wind speed and wind direction.

Appendix 1 Stakeholders Consulted

#	Name	Organisation	Position
1.	Soseala Tinilau	Department of Environment	Director
2.	Tilia Tima	Department of Environment	Biodiversity Officer
3.	Reuben Kausea	Department of Environment	Information Knowledge Management Officer
4.	Hilary Boyes	Department of Environment	Volunteer (New Zealand)
5.	Ivy Tumua	Ridge to Reef Project	Project Coordinator
6.	Feagaiga Penivao	Ridge to Reef Project	LMMA Officer
7.	Tautalo Iese	Department of Fisheries	Acting Senior Fisheries Officer
8.	Selotia Tausi	Department of Agriculture	Acting Director
9.	Evolini Mami	Department of Agriculture	Plant Protection Officer
10.	Kaai Fanoiga	Department of Education	Acting Director
11.	Falili Simeona	Department of Education	Pre-service Training Officer
12.	Emily Lafai	Department of Waste Management	Waste Regulatory Officer
13.	Taape Moriicao	Department of Local Government	Acting Director
14.	Fatasi Malologa	Lands and Survey Department	Director
15.	Eli Faleti	Tuvalu Meteorological Service	Climate Officer
16.	Teresa Lifuka-Drecala	TANGO	Director
17.	Luma Lotoala	TANGO	Project Manager
18.	Polu Tanei	Tuvalu Electricity Corporation	RE and EE Manager
19.	Namoto Kelisiano	Tuvalu Electricity Corporation	Generation Manager
20.	Pula Fangu	Tuvalu National Council of Women	Coordinator
21.	Andreja Vidal	EU Delegation for the Pacific	Project Manager - Climate Change, Energy, Circular Economy

Appendix 2 Selected Bibliography

Alefaio, S, Italeli, S, Kaitu, L, Kaly, U, Lopati, P, Makolo, F, Petaia, L, Petaia, M, Taula, H, Tetoa, F and Vaguna A 2018, Creel Survey Report No. 2, Tuvalu Fisheries Department Coastal Fisheries Division

Alefaio, S, Finauga, M, Italeli, S, Kaitu, L, Kaly, U, Lopati, P, Makolo, F, Petaia, M, Taufilo, M, Taula, H and Tetoa, F 2016, Creel Survey Report No. 1, Tuvalu Fisheries Department Coastal Fisheries Division

Australian Bureau of Meteorology and CSIRO 2011, Current and future climate of Tuvalu, Pacific Climate Change Science Program, International Climate Change Adaptation Initiative

Berdach, J 2003, Case Study: The Funafuti Conservation Area, Funafuti Atoll, Tuvalu, Drawing Lessons for Future Marine Conservation Planning and Management, Pacific Region Environmental Strategy, Asian Development Bank

FAO 2015, Global Forest Resources Assessment 2015, Country Report, Tuvalu

Government of Tuvalu 1997, Tuvalu: National Environment Management Strategy

Government of Tuvalu 2008, Conservation Areas Act

Government of Tuvalu 2008, Environmental Protection Act

Government of Tuvalu 2009, Tuvalu National Biodiversity Strategy and Action Plan Fourth National Report to the Convention on Biological Diversity

Government of Tuvalu 2009, Waste Operation and Services Act

Government of Tuvalu 2011, Action Plan for Implementing the Convention on Biological Diversity's Programme of Work on Protected Areas

Government of Tuvalu 2012, Enetise Tutumau 2012-2020: Master Plan for Renewable Electricity and Energy Efficiency in Tuvalu

Government of Tuvalu 2012, Te Kaniva – Tuvalu Climate Change Policy

Government of Tuvalu 2013, Environment Protection (Litter and Waste Control) Regulations

Government of Tuvalu 2013, Fakanofonofoga Mo Vai Mote Tumaa – Sustainable and Integrated Water and Sanitation Policy 2012-2021

Government of Tuvalu 2014, Environment Protection (Environmental Impact Assessment) Regulations

Government of Tuvalu 2014, Tuvalu National Biodiversity Strategy and Action Plan 2012-2016

Government of Tuvalu 2015, Second National Communication of Tuvalu to the United Nations Framework Convention on Climate Change

Government of Tuvalu 2015, Tuvalu Department of Environment National Environmental Management Strategy 2015-2020

Government of Tuvalu 2016, Moeakiga O Malefatuga II, Funafuti Strategic Plan 2016-20

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

Government of Tuvalu 2016, Tuvalu Integrated Waste Policy and Action Plan: Towards Cleaner and Healthier Islands 2017-2026

Government of Tuvalu 2016, Tuvalu National Biodiversity Strategy and Action Plan: Fifth National Report to the Convention on Biological Diversity

Government of Tuvalu 2017, Tuvalu Population & Housing Mini-Census 2017 – Preliminary Report, Funafuti, Tuvalu

Government of Tuvalu 2017, The 2017 Tuvalu Outer Atoll Community-Based Ridge-To-Reef (R2R) Rapid Biodiversity Assessment of the Conservation Status of Biodiversity and Ecosystem Services (BES) in Tuvalu

Government of Tuvalu 2018, Fisheries Department Annual Report 2018

Government of Tuvalu 2019, Integrated Environment and Natural Resources Policy 2019-2020

Government of Tuvalu 2019, The 2nd Annual Review of the Implementation Status of Tuvalu's Integrated Waste Policy and Action Plan 2017-2026

Government of Tuvalu 2019, Waste Management (Levy Deposit) Regulation

Government of Tuvalu 2019, Waste Management (Prohibition on the Importation of Single-Use Plastic) Regulation

Government of Tuvalu 2020, Tuvalu State of Environment Report 2020 (draft)

Job, S and Ceccarelli D 2012, Tuvalu Marine Life Scientific Report, Alofa Tuvalu

Lane, J 1993, Tuvalu: State of the Environment Report, SPREP

Sagapolutele, F, Wander, A, and Prince, A 2019, Tuvalu – Waste Audit Report, Pacific Region Infrastructure Facility

Seluka, S; Panapa, T; Maluifenua, S; Samisoni, L and Tebano, T, 1998. A Preliminary Listing of Tuvalu Plants, Fishes, Birds and Insects. Atoll Research Programme, University of the South Pacific, Tarawa, Kiribati

Thaman, R 2016, The Flora of Tuvalu: Lakau Mo Mouku o Tuvalu

Thaman, R, Penivao, F, Teakau, F, Alefaio, S, Saamu, L, Saitala, M, Tekinene, M and Fonua, M 2017, report on the 2016 Funafuti Community-Based Ridge-To-Reef (R2R) Rapid Biodiversity Assessment of the Conservation Status of Biodiversity and Ecosystem Services (BES) in Tuvalu, Ridge to Reef project

UNDP 2013, Project Document: Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity

UNDP 2015, Project Document: Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu

UNDP 2017, Project Implementation Review (PIR) Tuvalu LDCF II: Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity

UNDP 2018, Project Implementation Review (PIR) Tuvalu LDCF II: Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity

UNDP 2019, Mid-Term Evaluation Report 2019: Implementing a "Ridge to Reef" approach to protect biodiversity and ecosystem functions in Tuvalu

Watling, D 1998. Funafuti Marine Conservation Area, Tuvalu. Report of the Bird Survey. Environmental Consultants Fiji, Ltd. Suva. Fiji

Appendix 3 Aichi Biodiversity Targets

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society



Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.



Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.



Target 3

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.



Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use



Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.



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.



Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.



Target 8

By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.



Target 9

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.



Target 10

By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity



Target 11

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem

services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.



Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.



Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services



Target 14

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.



Target 15

By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.



Target 16

By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building



Target 17

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.



Target 18

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.



Target 19

By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.



Target 20

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Appendix 4 Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS



Appendix 5 Global Strategy for Plant Conservation Targets 2011-2020

Objective I: Plant diversity is well understood, documented and recognized

- Target 1: An online flora of all known plants.
- Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action.
- Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared.

Objective II: Plant diversity is urgently and effectively conserved

- Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration.
- Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity.
- Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity.
- Target 7: At least 75 per cent of known threatened plant species conserved in situ.
- Target 8: At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes.
- Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge.
- Target 10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded.

Objective III: Plant diversity is used in a sustainable and equitable manner

- Target 11: No species of wild flora endangered by international trade.
- Target 12: All wild harvested plant-based products sourced sustainably.
- Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care.

Objective IV: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on earth is promoted

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- Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.

Objective V: The capacities and public engagement necessary to implement the Strategy have been developed

- Target 15: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy.
- Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy.

