



TONGA

STATE OF ENVIRONMENT REPORT

2019

SUMMARY

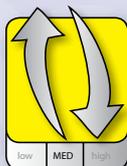
The Kingdom of Tonga's State of Environment (SoE) examines major drivers of change to the environment that emerge from global, regional and national factors. It evaluates the main environmental pressures created by these drivers, and examines their environmental impact. The SoE also gives actionable recommendations as a nation to improve the environment for sustainable growth. The SoE Report is a useful reference to guide national development efforts and to improve livelihoods. Information in the SoE Report will help improve decision-making on the environment and in the allocation of resources to better protect the environment and biodiversity.



ATMOSPHERE AND CLIMATE

INDICATOR STATUS AND TREND

GREENHOUSE GAS EMISSIONS¹



OZONE DEPLETING SUBSTANCES²



PHYSICAL CLIMATE



CLIMATE ADAPTATION



KEY FINDINGS

- Tonga's carbon dioxide emissions increased between 2000 and 2006. However, other non-carbon GHGs have steadily decreased since 2000.
- Consumption of ODS is generally decreasing based on data reporting since 1986 with HCFCs being phased out since 2011.
- Tonga's average temperatures are rising.
- Tonga is well aligned with international frameworks for climate change adaptation and key plans outlined in JNAP 1 and 2.

RECOMMENDATIONS

- Transparency and cooperation between government bodies particularly in data sharing.
- Strengthen monitoring and mechanisms for detecting illegal importers of ODS.
- Strengthen support for capacity building to assess atmospheric and climate conditions for climate change adaptation and mitigation.
- By 2028, Objectives 4 and 5 of the JNAP2 on building resilient actions and securing finances for implementation be achieved.
- Mainstream climate change resilience into legislations and policies.



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INLAND WATER

INDICATOR STATUS AND TREND

WATER STORAGE AND SUPPLY



WATER QUALITY



INFRASTRUCTURE



KEY FINDINGS

- No national water balance available to determine capacity.
- Aquifers around Mataki'eua have increasing salinity.
- Substantial water losses through transmission lines.
- Influence of climate change on water resources has not been modelled.

RECOMMENDATIONS

- Develop conjunctive water balance model to guide water management plan.
- Research for solutions to address seawater intrusion in low lying areas.
- Upgrade aging water infrastructure, and address the issue of leakage from distribution pipes.
- Model climate change effects on water availability.
- Approve and implement the Water Resources Bill 2016.



¹ Data updated from Tonga's Third National Communication Report 2019, which was not reflected in the SOE report.

² Data updated from Tonga's country profile <https://ozone.unep.org/countries/data>.

LAND AND PLANNING

INDICATOR STATUS AND TREND KEY FINDINGS

PROTECTED FOREST COVER



AGRICULTURAL LAND



LAND USE AND PLANNING



- About 4000ha of natural hardwood forest remain in Tonga.
- Only about 370 ha of rainforest under protection remain in Tonga including 'Eua forest and Toloa rainforest reserve.
- Unsustainable land use and reclamation has significant environmental impacts.
- More than 50 percent of agricultural land use is dominated by fallow.

RECOMMENDATIONS

- Strengthen protection and management of remaining forest areas and its associated species.
- Develop land-use zoning to guide land use and sustainable development.
- Ensure there is sufficient buffer zones along coastal areas vulnerable to storm surges and flooding through land-use spatial plans.
- Establish replanting programmes and monitoring for plant species nearing extinction.
- Promote resettlement and development inland, away from the coast.



COASTAL AND MARINE ENVIRONMENT

INDICATOR STATUS AND TREND KEY FINDINGS

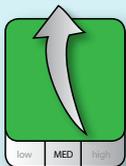
INSHORE FISHING



OFFSHORE FISHING



SPECIAL MANAGEMENT AREAS



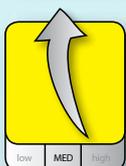
CORAL REEF HEALTH



LAGOON HEALTH



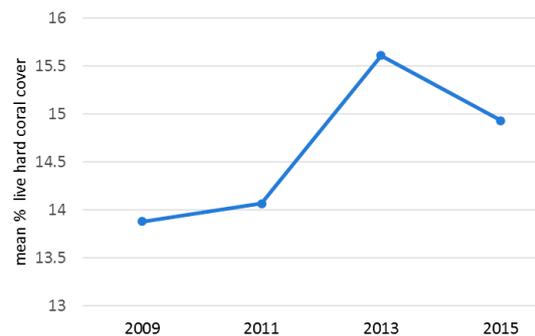
COASTAL EROSION



- Reef fishery is overfished.
- Measures in place to ensure Tuna fishery is sustainable at regional level.
- Fanga'uta Lagoon is in a poor state due to multiple pressures.
- Government commitment to 30% Marine Protected Areas by 2020.
- Nationally Determined Contributions (NDCs) to increase the number of marine protected areas from 2015 has been achieved.

RESPONSE

- Assess effectiveness of marine protected areas and SMAs with views to improve and expand protected areas.
- Secure funds for National Plan of Action for sharks (NPOA shark plan).
- Further incorporate science into MPAs and SMAs establishment and management.
- Rehabilitate Fanga'uta Lagoon.
- Develop land-use spatial plan to ensure sufficient buffer zones are in place to protect coastal erosion.
- Implement the plan on managing our ocean areas to enhance food security, support livelihoods and promote social well-being.
- Strengthen outreach programmes to build the capacity of communities in addressing environmental issues.



Coastal erosion. Source: Department of Environment, Tonga

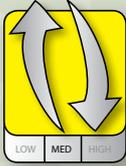
BIODIVERSITY

INDICATOR STATUS AND TREND KEY FINDINGS

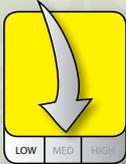
TERRESTRIAL PROTECTED AREAS



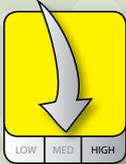
MARINE MAMMALS AND TURTLES



THREATENED AND ENDEMIC TERRESTRIAL SPECIES



INVASIVE SPECIES



- 15.9% of Tonga's land area is protected.
- Marine mammal populations are believed to be secure.
- Several terrestrial species are threatened or extinct.
- Cabinet had approved to develop a marine spatial plan for Tonga, and to be finalized by 2020.

RESPONSE

- Develop land-use spatial plans to protect and increase terrestrial protected areas.
- Implement turtle monitoring in Ha'apai and protect marine mammal breeding and nesting areas.
- Develop and implement recovery plans for threatened species.
- Review and update legislations, national frameworks and action plans for biodiversity conservation.

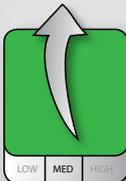


Penikoni 'Aleamotua, Citizen Science, Tonga

BUILT ENVIRONMENT

INDICATOR STATUS AND TREND KEY FINDINGS

ENERGY



SEWAGE AND SANITATION



MUNICIPAL AND SOLID WASTE



HAZARDOUS WASTE



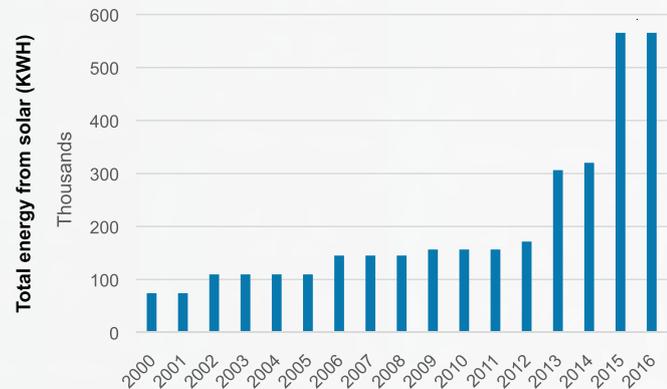
ENVIRONMENTAL IMPACT ASSESSMENT



- Energy generation from renewable sources is increasing.
- Leaking septic systems are causing health and environmental issues.
- Increasing number of EIA registrations and non-compliance.

RECOMMENDATIONS

- Strengthen the Department of Energy to drive focus on energy efficiency.
- Introduce levy of tax-based fee for government maintenance of septic tanks.
- Implement recycling initiatives and banning of selected imported goods.
- Monitor volumes of hazardous waste entering Tonga.
- Review EIA legislation and policy.



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CULTURE AND HERITAGE

INDICATOR STATUS AND TREND KEY FINDINGS

LANGUAGE AND KNOWLEDGE



HERITAGE SITES



CULTURAL INDUSTRIES



TONGA TRADITIONAL DIETS



- The Tongan language is changing due to strong English influence in schools.
- Traditional agricultural and fishing practices are being replaced with modern techniques.
- Traditional diets are in sharp decline due to high consumption of imported food leading to increase in non-communicable diseases.
- The market for cultural items relies on Tongans overseas.



Ha'amonga 'a Maui Trilithon.

RECOMMENDATIONS

- Strengthen the use of Tongan language in government correspondence and teaching in schools.
- Promote the preservation of traditional knowledge systems through educational programmes.
- Government to promote healthier traditional food diets through Ministry of Health and Ministry of Agriculture, Food and Forestry.
- Assess the economic potential of each cultural industry.

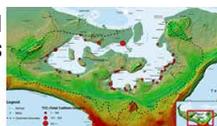
FANGA'UTA LAGOON

The Fanga'uta Lagoon catchment includes much of the capital of Tonga, Nuku'alofa, and is home to 47,529 people in 29 villages. This is 64% of the population of Tongatapu. Many communities are dependent on the ecosystem services provided by the lagoon. However, a range of human pressures are taking a toll on the Lagoon ecosystems and urgent management attention is required to reduce these pressures and rehabilitate the Fanga'uta Lagoon to a healthier state.

RECOMMENDATIONS

- Enact the Water Resources Bill 2016
- Introduce a proper zoning policy to allow adequate urban planning
- Legislation is required to urgently stop land reclamation in coastal areas
- Provide esplanade reserves in coastal areas, 15 m (50 ft) inland from mean high-water level
- Enforce fines for illegal dumping
- Include provisions under relevant legislations to authorize the Department of Environment and other relevant government organization to report and/or prosecute illegal land reclamation
- Ban fertiliser and pesticide use within 100 m of mean high tide level
- Replace leaking septic systems with fiberglass or plastic tanks
- Department of Environment secure funding for ongoing rehabilitation of Fanga'uta Lagoon
- Stop untreated liquid waste direct discharge into the lagoon from Vaiola hospital and other sources
- Quarterly monitoring of faecal coliforms and installation of automatic monitoring stations to record key water quality parameters
- Continue initiatives that encourage community involvement in lagoon management

High faecal coliform counts



Mangrove clearing for unplanned development

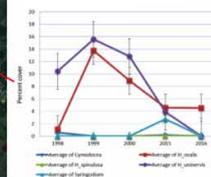
Illegal dumping



Leaking sewage

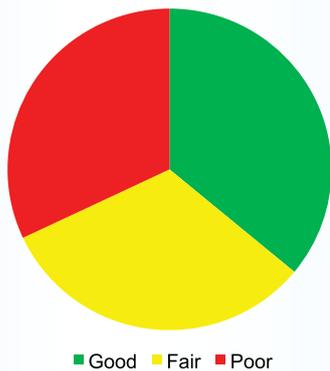


Declining seagrass cover

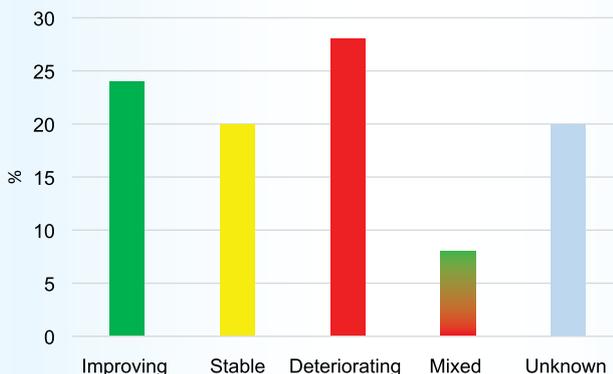


Examples of the pressures and environmental impacts on Fanga'uta Lagoon, Tongatapu

The Tonga SoE environmental indicators show that there is much room for improvement across all thematic areas. Indicators under the themes of Land and planning, and biodiversity in particular, require urgent attention. Actions to address environmental issues and reverse deteriorating trends are outlined in the SoE and accompanying National Environmental Management Strategy (NEMS).



% of SoE indicators in each state



% of indicators in each trend type

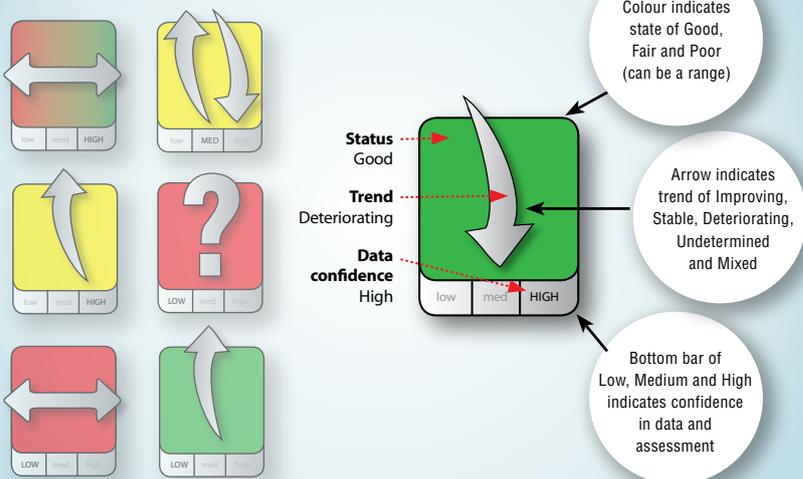
The State of Environment (SoE) report can assist government, individuals, civil society and the private sector to make better informed decisions regarding their relationship to and use of the environment. The SoE can assist government, individuals, civil society and the private sector to make better informed decisions regarding their relationship to and use of the environment.

The Tonga government has established a national data portal to store and share environmental data. They are also developing a reporting tool which links SoE report indicators with reporting to the Sustainable Development Goals (SDGs), Multilateral Environment Agreements (MEAs) and regional conventions such as Waigani and Noumea.

These tools make information available to decision-makers to help meet national reporting requirements and to help allocate resources to address critical environmental issues.

<https://tonga-data.sprep.org>

EXPLAINING THE INDICATOR SYMBOLS



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