

# Samoa 2012

## Environmental Outlook

Developing a vision for the next 50 years



Fa'a-Samoa  
integrated management  
conservation  
community  
climate change  
sustainable development  
diversity  
coral reef  
environment  
island nation  
livelihood  
indicators  
water  
Pacific Ocean  
forests  
culture

# Samoa's rich history, culture, and future livelihood is tied to our environment

Samoa's rich cultural heritage and future prosperity depends on a healthy environment. Over the past 50 years, Samoa's environment has been pressured by increasing population and development, agricultural expansion, invasive species of plants and animals, and disasters such as tsunamis, cyclones, and fires. Each of these threatens the health of our environment, thereby threatening the wellbeing of Samoan people and *Fa'a-Samoa* – our traditional way of life.

About 81% of total land area is under customary ownership. Creating partnerships between communities and government will ensure the sustainable management

of resources and monitoring of any adverse impacts to our livelihoods.

The State of the Environment outlook report for Samoa will provide key information from which the country can chart its course over the next 50 years. People can learn how to use limited resources more efficiently. Sustainable management practices coupled with changes in behaviour will reduce pressure on the environment, leading to a healthier, more sustainable and biodiversity-rich environment. This will improve quality of life for all Samoans, now and for future generations.



## Expert assessment of Samoa's environment



### Cloud forest–Very good; Uplands–Fair

Cloud forest habitat is in very good condition, with high forest cover, minimal invasive species, and presence of key mammal (flying fox) and bird species. In comparison, upland native forest habitat is in fair condition, with moderate to high rates of clearing for agriculture and grazing, and high numbers of invasive species, yet supporting key mammal and bird species.



### Rivers and Streams–Good to Poor

Upslope streams are generally in good condition with low levels of nutrients, high dissolved oxygen, and high abundance of fish and prawns. This declines to poor condition further downstream towards the coast, as streams pass through cleared, agricultural, and developed lands. Rivers and streams in some areas are being abstracted for water supplies and hydropower generation, affecting this important habitat.



### Lowlands–Poor

Native forest cover is limited to steep slopes; most areas are occupied by settlement, agriculture and other uses. Remaining vegetation is mainly secondary growth and includes many plant and bird species that are introduced or have become invasive. However, flying foxes and several other native species are increasing in numbers and are adapting well to changing habitats.



### Nearshore Marine–Fair

High disturbance from cyclones, tsunamis and crown of thorns outbreaks has reduced live coral cover in many areas, and fish abundance is low due to overharvesting and habitat disturbance. This is balanced by high diversity of fish and coral species, strong observed coral recruitment, healthy seagrass and macroalgal beds and generally good water quality in most areas, due to strong ocean flushing.



### Coastal Strand–Poor

This habitat has the most development, including Apia, and is expected to have associated impacts from land alteration, waste disposal, and invasive species. Shoreline modification is extensive, however remaining intact stands of mangroves are in good condition, supporting a high diversity of fish, birds, and crabs, and strong ability for regeneration.



### Offshore Marine–Fair

While pelagic fisheries are reduced and whale and turtle populations are low or declining, dolphins and seabirds retain resident and migratory populations, and deep benthic habitats are historically undisturbed.

Very good      Very poor



# Celebrate

## Untouched cloud forest

Samoa's cloud forest provides habitat for a wide variety of species that are important for Samoan culture, including *ma'oma'o*, *pe'a* (flying fox), and *manumea*. Intact forests are Samoa's lungs, absorbing carbon dioxide and pollutants from the air and giving off the oxygen we breathe. This habitat is globally rare and needs our protection.

## Waterfalls and crater lakes

Upland waterfalls are an important feature of the Samoan landscape, and are rare for Polynesian islands. Lake Lanoto'o is listed as a wetland of international importance.

## Use of indigenous species

Samoa's culture is closely tied to the environment, most notably through the use of plants and animals, including medicinal plants such as *nonu*; plants for construction or for making handicrafts such as *ifilele*; and traditional foods.

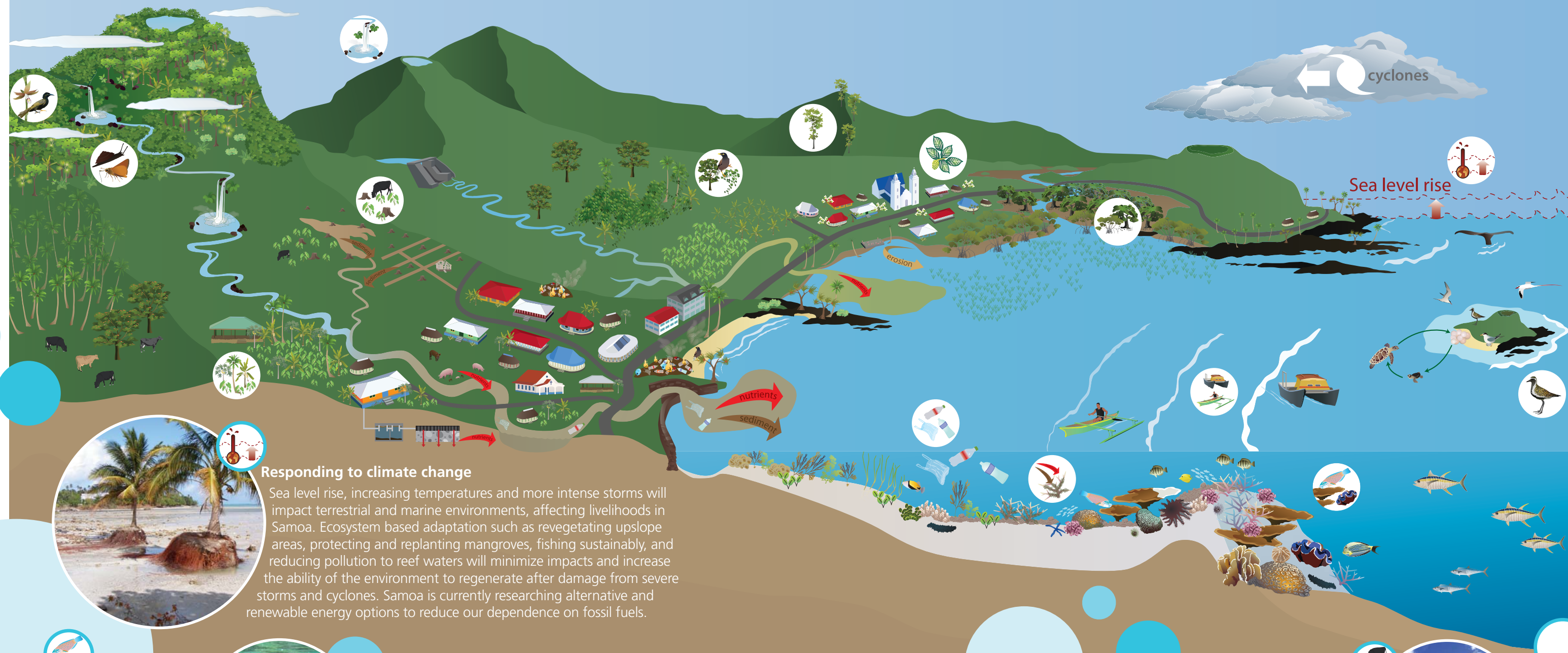
## Traditional mixed agriculture

Many Samoan villages continue to practice mixed agriculture as they have for thousands of years. Our land-based resources need to be protected as they support crops and livestock, as well as productive and diverse forests and grasslands.

## Rich biodiversity

Did you know there are 64 species of land snails and 50 species of moths and butterflies, over half of which only occur here? Samoa also has 215 native fern species, including *laugasēsē*, commonly used for medicinal purposes and in traditional events. The smallest spider in the world, *Patu marplei*, is found in the montane forest of Upolu.

## Samoa's unique habitats and culture



## Our environment. Our heritage.

## Responding to climate change

Sea level rise, increasing temperatures and more intense storms will impact terrestrial and marine environments, affecting livelihoods in Samoa. Ecosystem based adaptation such as revegetating upslope areas, protecting and replanting mangroves, fishing sustainably, and reducing pollution to reef waters will minimize impacts and increase the ability of the environment to regenerate after damage from severe storms and cyclones. Samoa is currently researching alternative and renewable energy options to reduce our dependence on fossil fuels.

## Protected areas

O le Pupū Pu'e National Park was the first protected area in the South Pacific, while Palolo Deep was the first marine reserve in the region. Protected areas are a refuge for threatened plant and animal species, which can then repopulate surrounding areas.

## Migratory species

Many migratory species such as whales, whale sharks, and *laumei* (turtles) pass through Samoa's waters. Rare turtle species such as green sea turtles feed and rest on the reef flats while hawksbill turtles and shorebirds such as *tuli* (Pacific golden plover) nest on the beaches of smaller islands.

## Sediment & nutrient inputs

Sediment and nutrients from soil erosion caused by poor agriculture and land use practices, and nutrients from leaking septic tanks affect our rivers, decreasing water quality and making our water unsafe to drink. As the rivers flow into the ocean, these nutrients stimulate excessive algae to grow, smothering corals. We can help by minimizing erosion of soil and using well designed and maintained septic systems.

## Changing land use

Much of our remaining forests are being cleared for agriculture and development. Key forest areas which are particularly rich in species and intact habitats have been identified in Samoa and are being targeted for conservation action.

## Mangroves and reefs protect our coast

Natural disasters such as cyclones, tsunamis, and severe storms impact reefs, forests, and wildlife, as well as human settlements and infrastructure. Mangroves and coral reefs are our first line of defense, helping to protect Samoa's shoreline from coastal erosion caused by these extreme events.

## Invasives are taking over

Invasive species like *fue lautetele* (merremia) and *fa'apasi* (African tulip) grow quickly in disturbed areas and are causing declines in forest quality, while myna birds and rats threaten native birds. Marine invasives such as introduced algae, fish, and invertebrates also threaten our marine and freshwater environments. Careful management is needed to protect forest and coastal resources and preserve Samoa's biodiversity.

## Where are all the big fish?

Bigger fish produce more offspring. Limiting the number and sizes of fish we catch; using sustainable fishing practices; and protecting mangroves and seagrass habitat for young fish will help ensure that local fishing remains part of the Samoan way of life.

## Ifilele is becoming rare

Did you know the *ifilele* tree, used to produce 'ava bowls, is now becoming rare as a result of over harvesting? Seventy-five other marine and land species are currently at risk of extinction in Samoa. Conserving habitat, managing invasive species, and setting limits on use will keep *Fa'a-Samoa* alive by preserving culturally important species for future generations.

## Keep Samoa clean and beautiful

Where does your garbage go? Most goes to a landfill, but some of it is burned illegally, and lots ends up as litter in our streams, lagoons, and ocean. Garbage should be put out for collection, and not dumped where it can damage our forests, rivers and reefs.



# The 2012 State of Environment outlook report for Samoa: the way forward!

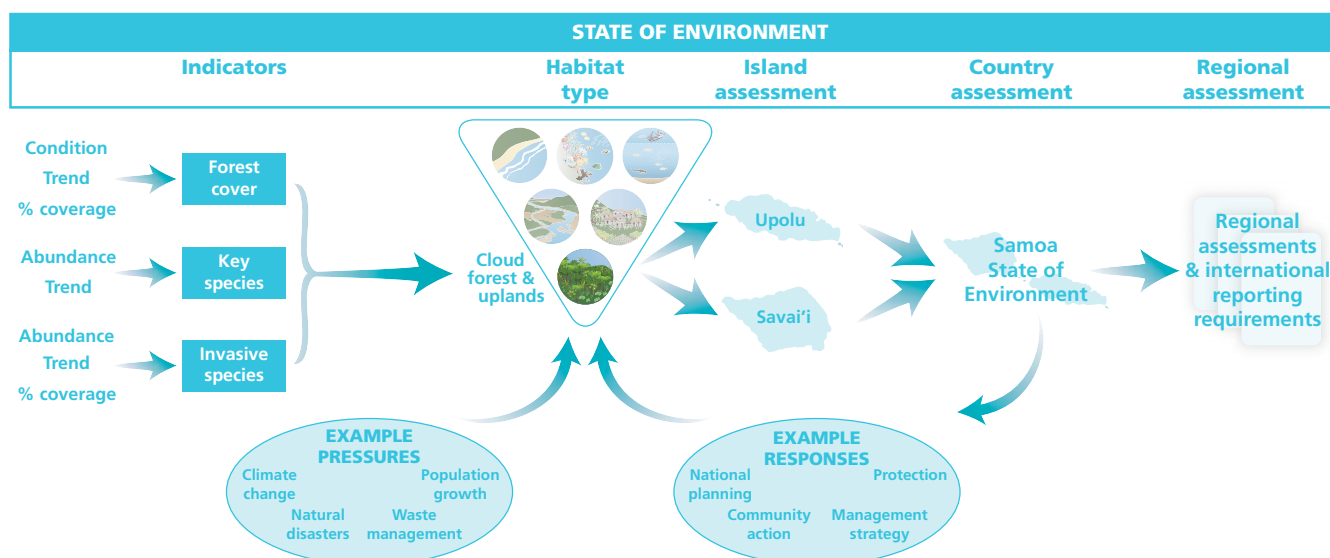
This document is the initial stage of assessment for Samoa's State of the Environment (SoE), which is currently underway. Understanding the current status of our resources is critical to advise policy and develop management plans to ensure that cultural and environmental resources are conserved for future generations. This developing framework is intended to support national planning processes including the SDS, NBSAP, NAPA, NAP, IWRM, and NEMS.\* It will also contribute to the development of a regional framework that will simplify and reduce regional and international reporting requirements for Samoa and other Pacific island countries.

A workshop was held in Apia in April 2012 to develop an assessment framework based on six key habitats in Samoa: cloud forest and uplands, lowlands, coastal strand, nearshore marine, offshore marine, and rivers

and streams; as well as other key resource areas such as climate change, air quality, waste disposal, renewable energy, and population pressures. It will also assess the status of Samoa's species of high conservation value, especially those that are endemic and critically endangered.

The health of each of these habitats will be combined to describe the overall condition of Samoa's environment and culturally important natural resources. Samoa is leading the Pacific in the use of this habitat-based assessment, which will be important in the development of common regional approaches.

Based on preliminary evaluations of each habitat, these resources are currently under threat. However, acting now can ensure that our environment is protected, while supporting sustainable use and improving the quality of life in Samoa.



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\*SDS = Strategy for the Development of Samoa; NBSAP = National Biodiversity Strategy & Action Plan; NAPA = National Adaptation Programme of Action; IWRM = Integrated Water Resources Management Strategy; NEMS = National Environment and Development Strategies; NAP = National Action Programmes for Sustainable Land Management