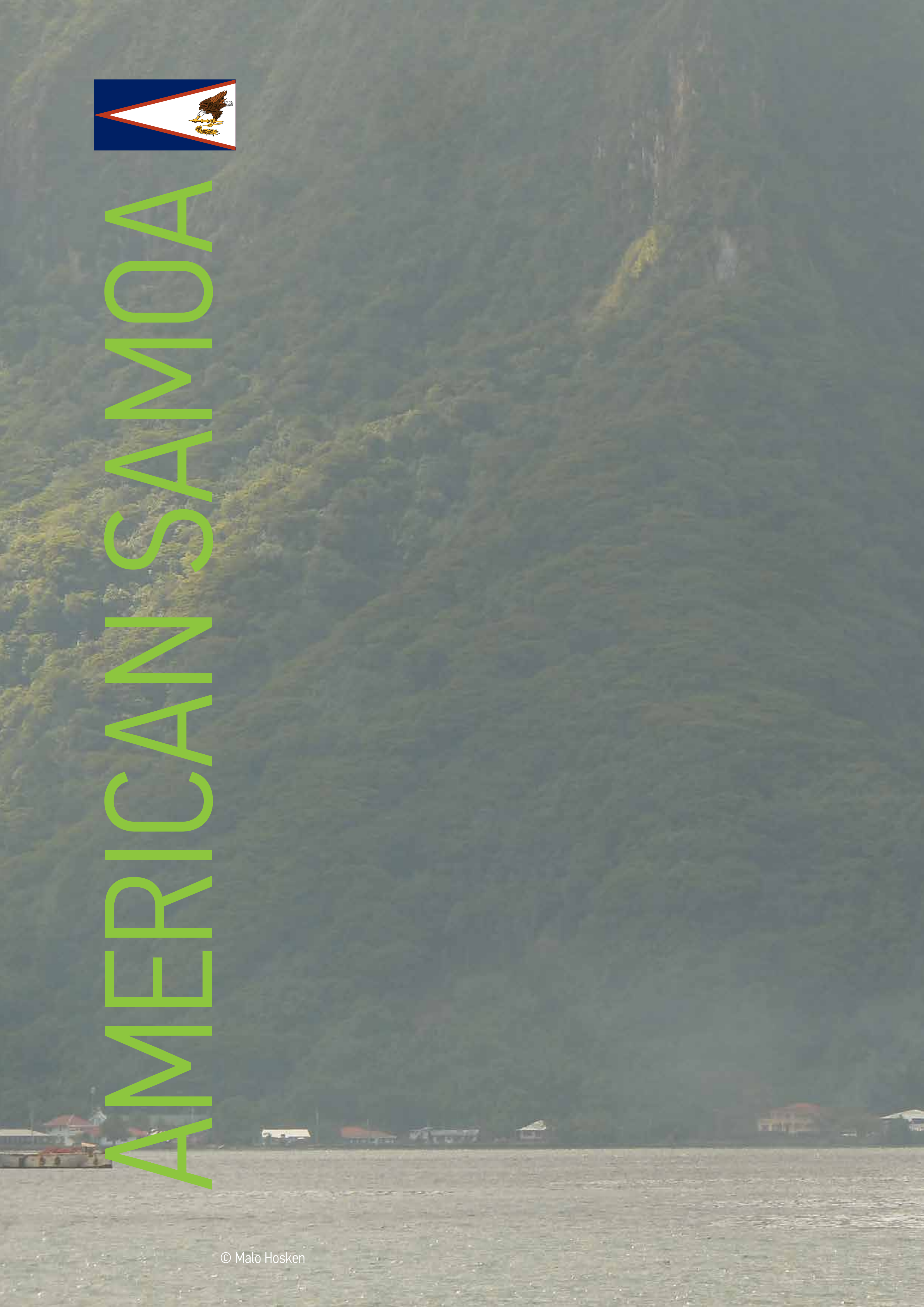
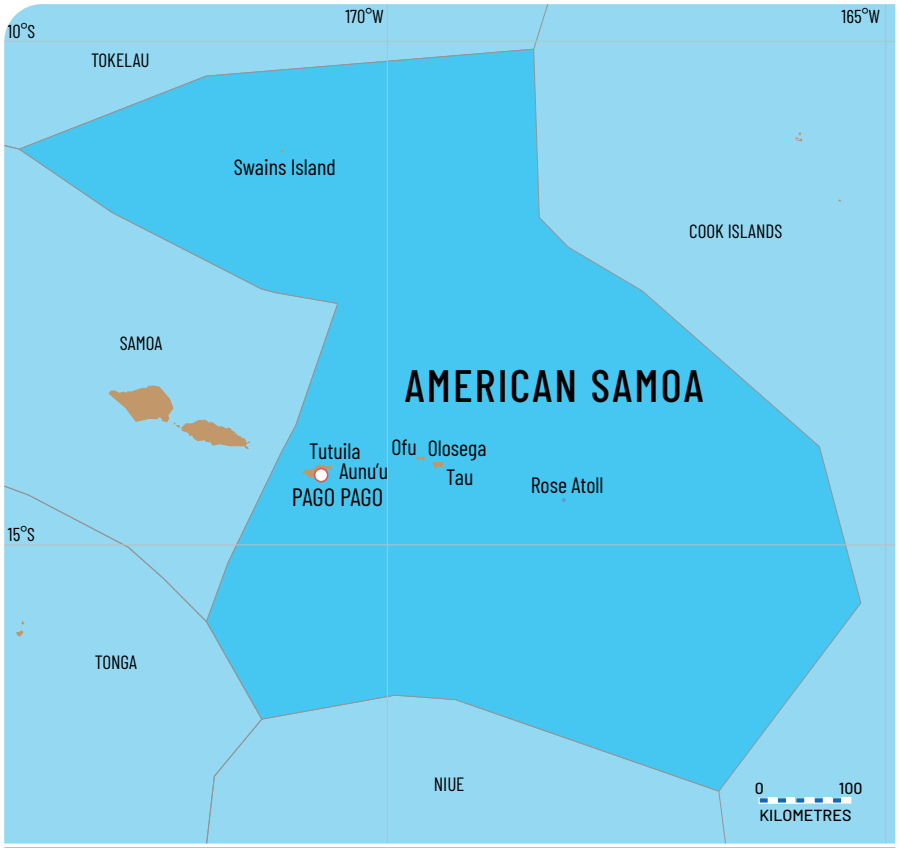
AMERICAN SAMOA

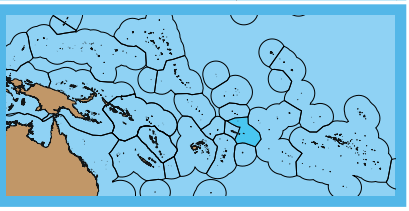


© Malo Hosken


CAPE HATTERAS

AMERICAN SAMOA





51% ♂ 49% ♀

POPULATION[i]

EEZ AREA
404,391 km²

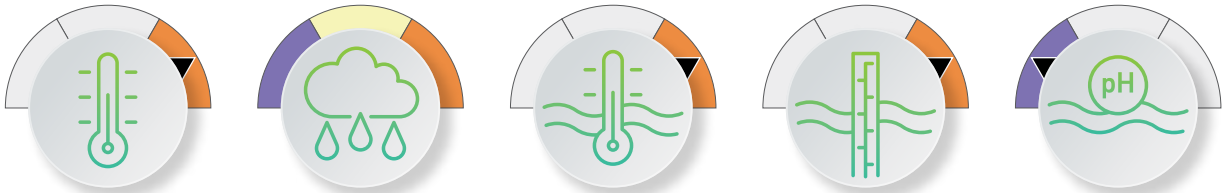
LAND IS 0.05% OF EEZ

LAND AREA[ii]
200 km²

* Annual average using 2014–2024 data

SUMMARY OF CLIMATE CHANGE PROJECTIONS

2050

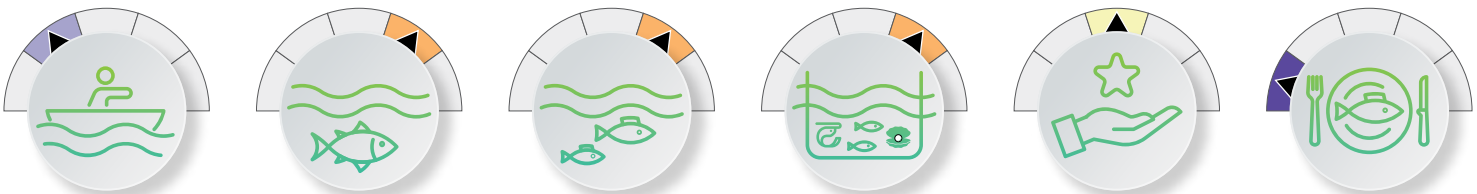


AIR TEMPERATURE | ANNUAL RAINFALL | SEA SURFACE TEMPERATURE | SEA LEVEL | OCEAN pH

CHANGE SCALE

DECREASE | STABLE | INCREASE

SUMMARY OF CLIMATE CHANGE IMPLICATIONS[iii]



COASTAL FISHERIES | OCEANIC FISHERIES | FRESHWATER FISHERIES | AQUACULTURE | LIVELIHOODS AND ECONOMIES | FOOD SECURITY

CHANGE SCALE

LARGE DECREASE | SMALL DECREASE | STABLE | SMALL INCREASE | LARGE INCREASE

i Data source: SPC Pacific Data Hub https://pacificdata.org/population-dashboard
ii Data source: SPC Statistics for Development Division https://sdd.spc.int
iii Relative to the Reference Periods 2010–2020 for coastal fisheries and 1980–2010 for oceanic fisheries.

RECOMMENDED ADAPTATION ACTIONS

These recommended adaptations are based on the key vulnerabilities and implications of climate change for fisheries and aquaculture (further details in Chapter 10) and should be initiated or strengthened. A range of supporting policies are provided in Table 10.1 for decision-makers to select those that are most appropriate to their context and priorities. Central to all future adaptation are the following principles:

1. Strengthen data collection by improving (or establishing) national fisheries and aquaculture monitoring systems linked to management decision-making.
2. Integrate local knowledge to inform adaptation actions for coastal and freshwater ecosystems, food security, and cultural heritage. Equity - especially gender equity – and social inclusion need to be a key focus.
3. Implement effective governance, including through community-based management and scaling-up of successful initiatives, to ensure adaptation actions reflect local needs and priorities.
4. Diversify and secure funding to support national- and community-level actions, alongside capacity building to sustain adaptation initiatives.

Food and nutrition security

Recommended adaptations

Food and Nutrition 1: Implement sustainable ecosystem-based approach to fisheries management

Food and Nutrition 4: Diversify blue food production systems

Food and Nutrition 7: Promote education and awareness on the importance of protecting aquatic habitats, species and the foods they supply

Sustainable livelihoods

Recommended adaptations

Livelihoods 4: Improve technical and business viability of fisheries

Economies and government revenue

Recommended adaptations

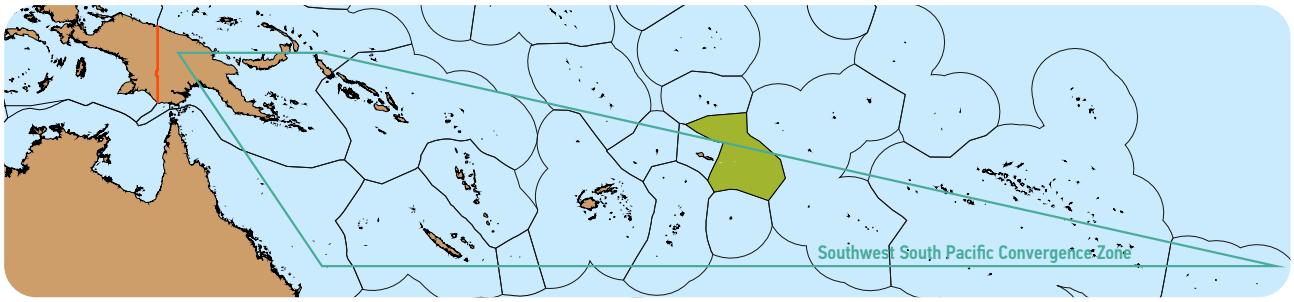
Economic Revenue 2: Develop policies and strategies that integrate climate change implications into fisheries and aquaculture management

Economic Revenue 3: Implement energy efficiency programs for fisheries and aquaculture

Economic Revenue 4: Promote improved safety at sea

Economic Revenue 6: Climate-proof infrastructure

Projected changes in atmospheric and oceanic climate



American Samoa is in the Southwest Pacific Convergence climate zone and is expected to experience the following climate changes by 2050 under a medium greenhouse gas emissions scenario (SSP2-4.5) and a high emissions scenario (SSP5-8.5)[iv], relative to 1995–2014 baseline (further details in Chapter 2).

		AIR TEMPERATURE	RAINFALL	SEA SURFACE TEMPERATURE	SEA LEVEL	OCEAN pH
2050	MEDIUM EMISSIONS (SSP2-4.5)	+0.7 to +1.1 °C	-2.3 to +5.5 %	+0.6 to +1.1 °C	+0.1 to +0.3 m	-0.1
	HIGH EMISSIONS (SSP5-8.5)	+0.9 to +1.6 °C	-2.8 to +6.4 %	+0.8 to +1.5 °C	+0.2 to +0.4 m	-0.1
	CONFIDENCE[v]	HIGH	MEDIUM	HIGH	HIGH	HIGH

American Samoa is also expected to experience the following changes to regional climate processes by 2090 under a medium and high greenhouse gas emissions scenario, relative to 1995–2014 baseline.

		TROPICAL CYCLONES	EL NIÑO SOUTHERN OSCILLATION (ENSO)	MARINE HEATWAVES
2090	MEDIUM EMISSIONS (SSP2-4.5)	Decrease in frequency; Increase in intensity	ENSO will continue as a source of interannual variability; La Niña and El Niño extremes are projected to increase	2–9 times more frequent (global projection)
	HIGH EMISSIONS (SSP5-8.5)			3–15 times more frequent (global projection)
	CONFIDENCE[v]	LOW TO MEDIUM	LOW	N/A

		OCEAN CIRCULATION	OCEAN STRATIFICATION	OCEAN OXYGEN CONTENT	NITRATE CONCENTRATION
2090	MEDIUM EMISSIONS (SSP2-4.5)	Intensification and poleward extension of northern and southern hemisphere subtropical gyres		−6.6 %	−0.60 mmol/m^3
	HIGH EMISSIONS (SSP5-8.5)		+0.58 kg/m^3 (between 0 and 200 m); Mixed layer depth shoals by 19.5 m (global)	−11.2 %	−1.00 mmol/m^3
	CONFIDENCE[v]	MEDIUM	VERY HIGH	HIGH	N/A

CONFIDENCE SCALE

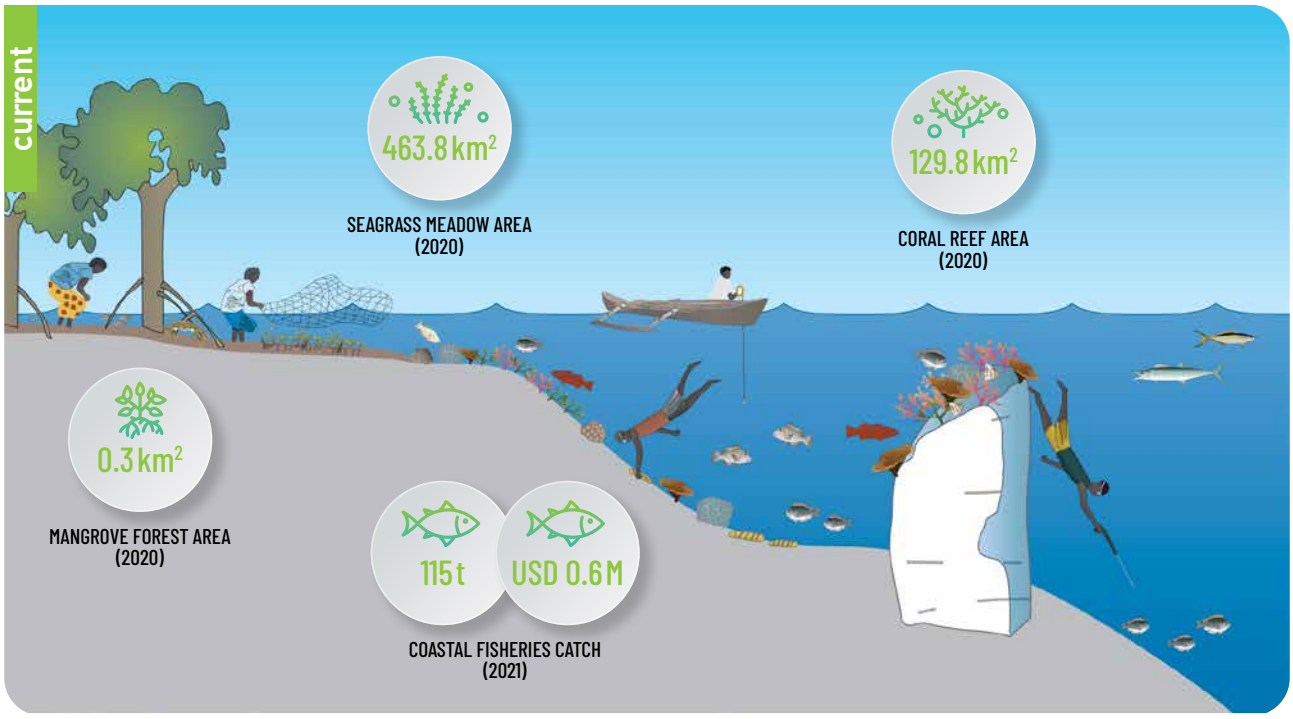
VERY LOW	LOW	MEDIUM	HIGH	VERY HIGH

iv The shared socioeconomic pathways (SSP) represent plausible futures of how society's choices might affect greenhouse gas emissions, and how those choices might influence climate change.

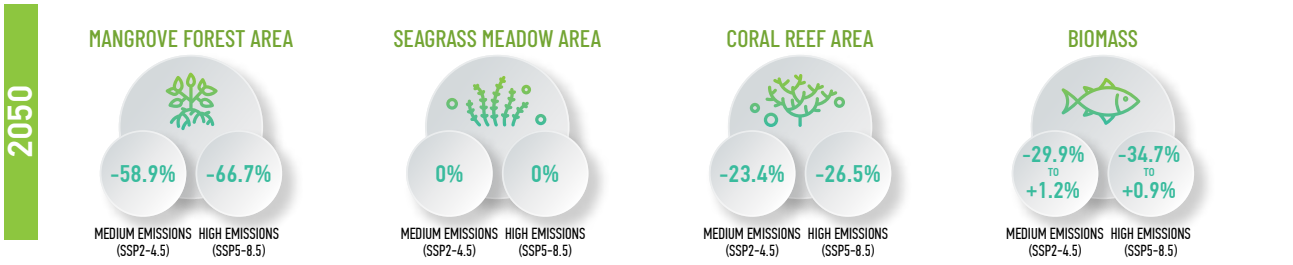
v Confidence levels reflect uncertainty in attribution of the observed impact to climate change.

Coastal fisheries

Coastal fisheries in American Samoa target demersal fish (including snapper, jobfish, emperor, surgeonfish, parrotfish and jacks), invertebrates (e.g. *palolo*) and species gleaned from intertidal habitats (e.g. octopus), and nearshore pelagic fish (including tuna and wahoo) using a range of fishing methods. Coastal fisheries are important for food, cultural sharing and recreation (further details in Chapter 3).



Coastal fish and invertebrates are expected to be directly impacted by increasing sea surface temperature, ocean acidification (declining pH), and changing rainfall patterns. And indirectly impacted by declines in coastal habitats (coral reefs, seagrass meadows and mangroves) by 2050. This will drive changes in habitat area, fish biomass and coastal fisheries catches.

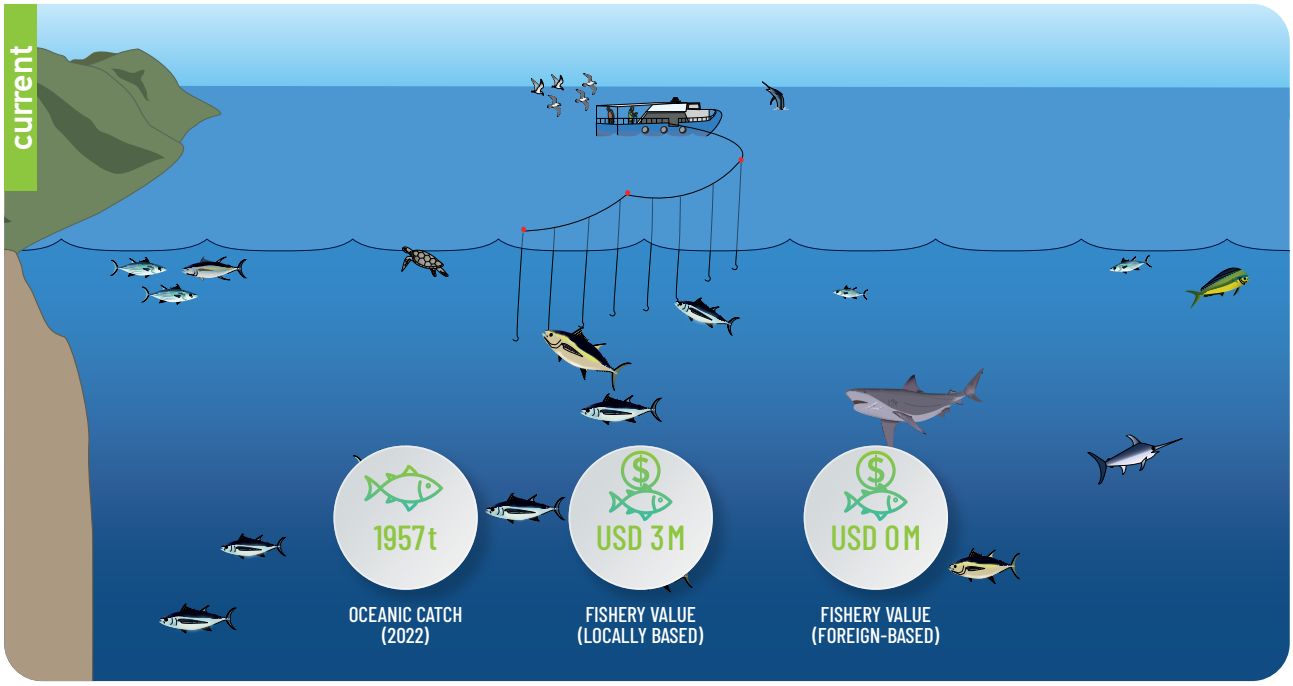


There is evidence that some stocks may be overfished and/or fishing rates are too high. Better stock assessments are needed.

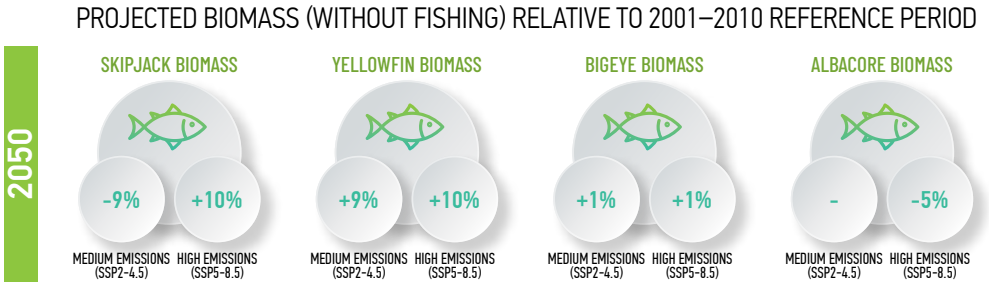
vi Relative to the Reference Period 2010–2020.

Oceanic fisheries

Offshore fisheries in American Samoa target four species of tuna – skipjack, yellowfin, bigeye and albacore – with the largest catch being of albacore. In 2021, there were 15 active locally based tuna vessels that are longliners consisted of *alia* catamarans and larger monohulls, and no offshore foreign based fleet, but foreign purse-seine vessels land their catch in American Samoa for processing at the cannery[vii]. The tuna fishery is important for livelihoods and provides government revenue (further details in Chapter 4).



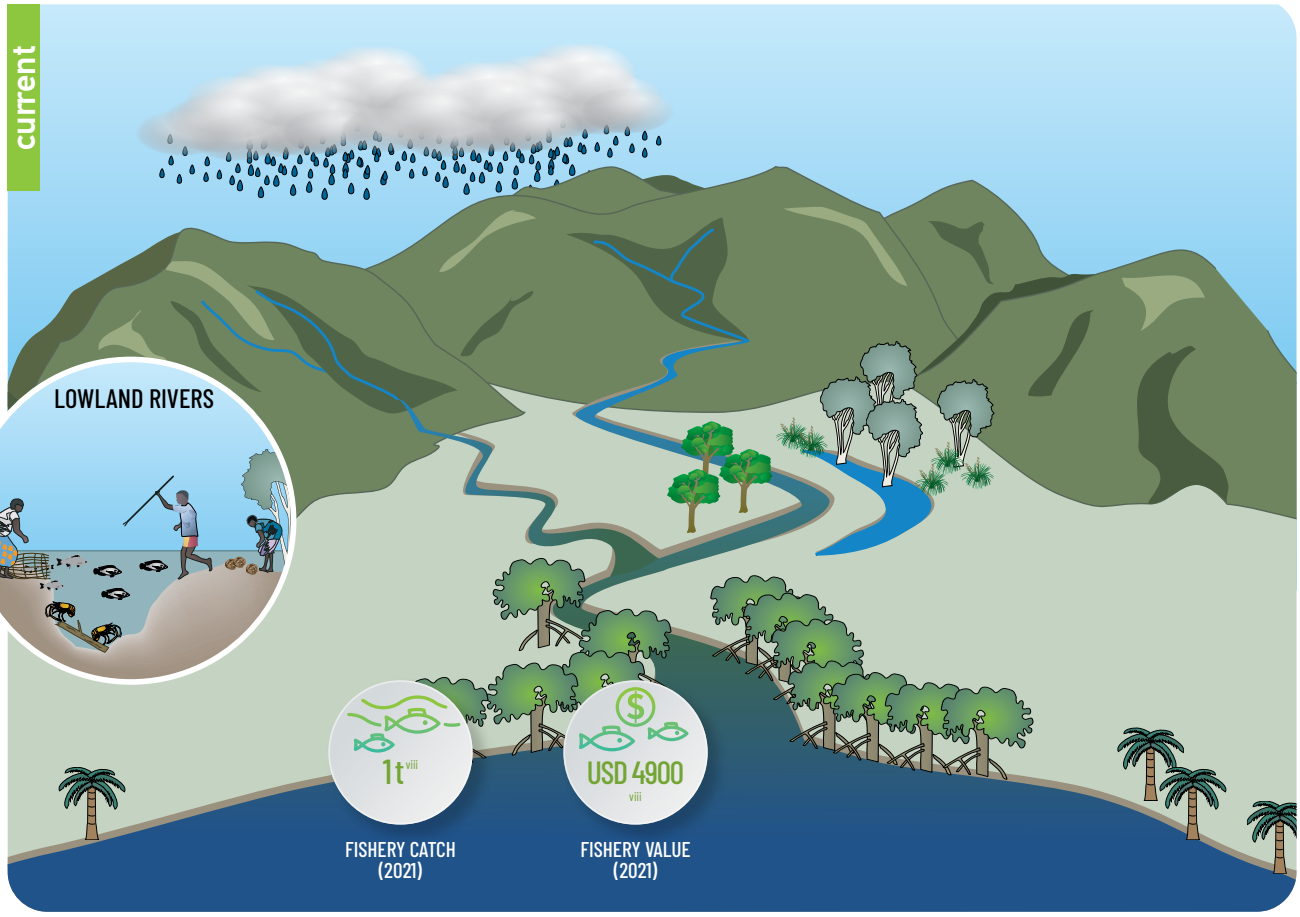
Offshore tuna are expected to be directly impacted by changes in ocean temperature, stratification and oxygen content, and indirectly impacted by changes in available spawning habitat area by 2050. This is expected to shift the distribution of tuna, with yellowfin, bigeye and albacore moving into high seas areas.



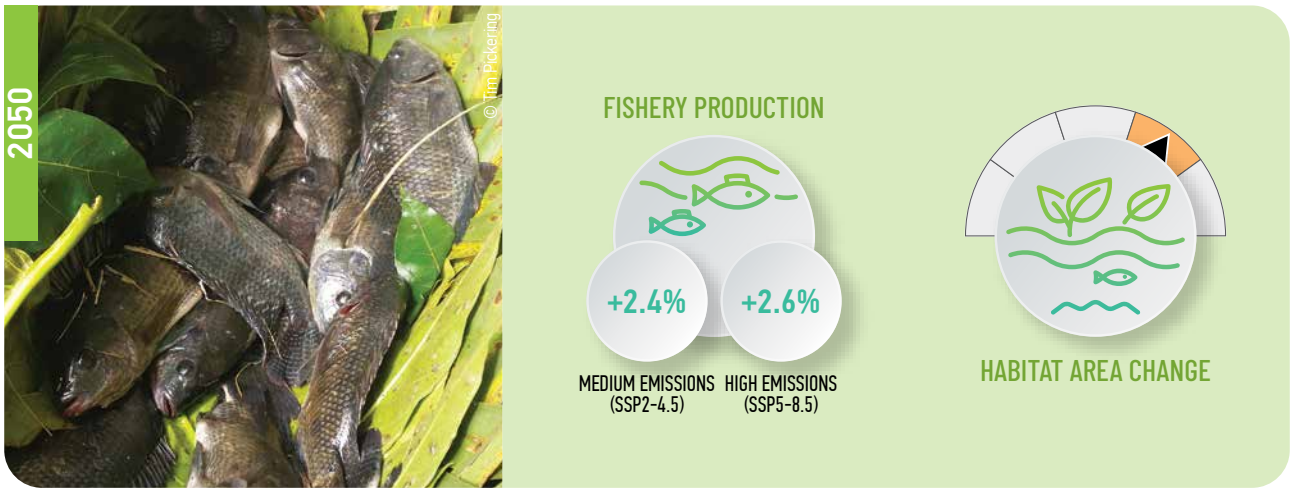
vii *Data from 2021: Gillett R., Fong M. (2023) Fisheries in the economies of Pacific Island countries and territories (Benefish Study 4). Pacific Community (SPC), Noumea, New Caledonia.*

Freshwater and estuarine fisheries

Freshwater and estuarine fisheries in American Samoa target *Macrobrachium* (freshwater prawns), and finfish (including flagtails, gobies and eels). The main habitats are lowland rivers. Freshwater and estuarine fisheries provide food and local livelihoods (further details in Chapter 5).



Freshwater and estuarine fish are expected to be directly affected by changes in rainfall patterns that drive river flow, and indirectly affected by increased duration of river flows and habitat accessibility by 2050. This is expected to provide opportunities for the expansion of fisheries and increased production.



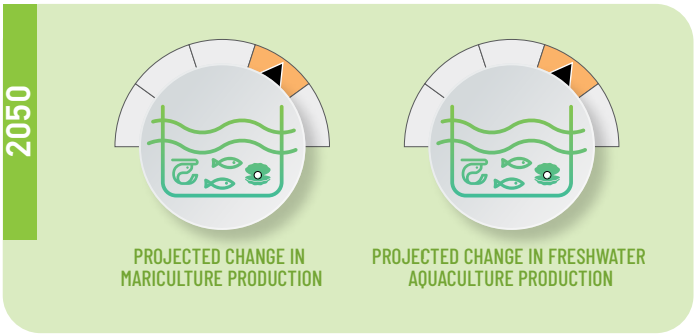
viii Fishery catch and value are likely underestimates due to unreported catches.

Aquaculture

The main commodities farmed in American Samoa are tilapia and giant clams (ranching for wild restocking). They provide food, local livelihoods and jobs (further details in Chapter 6).

Mariculture is expected to be directly impacted by increasing sea surface temperature, ocean acidification (declining pH), and more intense storms.

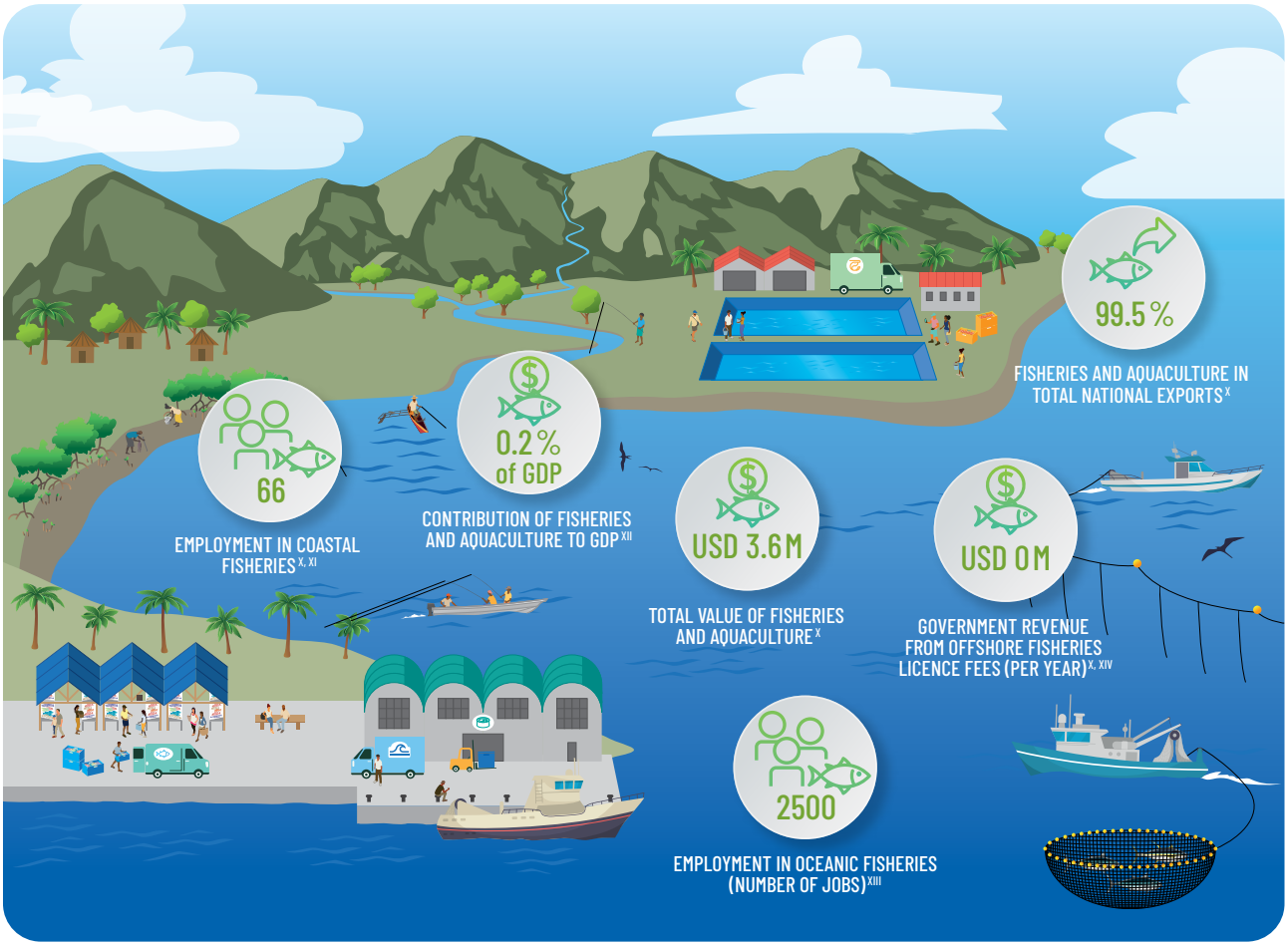
Freshwater pond aquaculture is expected to benefit from increases in freshwater habitat but be impacted by increasing temperatures and disease, changing rainfall, storms and sea-level rise. This will have implications for aquaculture production by 2050.



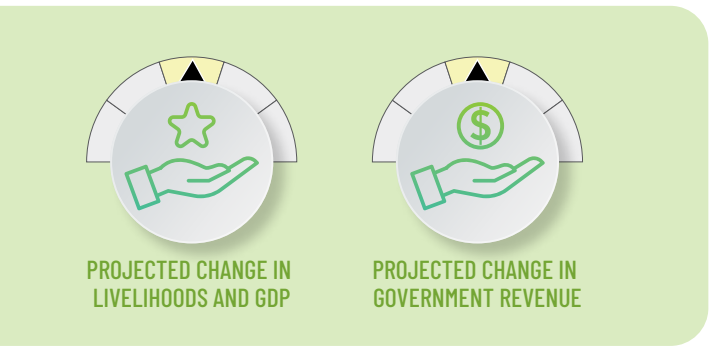
ix *Data source: Gillett R., Fong M. (2023) Fisheries in the economies of Pacific Island countries and territories (Benefish Study 4). Pacific Community (SPC), Noumea, New Caledonia.*

Livelihoods and economies

Fisheries and aquaculture are important for providing household income, livelihoods and jobs in American Samoa (further details in Chapter 7).



The projected change in tuna distribution may affect the capacity of other PICTs to supply tuna for processing, which could impact employment. No significant changes are expected to GDP or government revenue due to the low relative contribution of fisheries and aquaculture and because purse-seine fishing is not likely in the EEZ.



x Data source: Gillett R., Fong M. (2023) Fisheries in the economies of Pacific Island countries and territories (Benefish Study 4). Pacific Community (SPC), Noumea, New Caledonia.

xi Samonte, G., Damato, N., Peau, A. L., Brighouse, G., Que, N., Gaoteote, I., Shea, R., Schwarzmann, D., Flem, L. (2023). National Marine Sanctuary of American Samoa community profile, 2010–2019. National Marine Sanctuaries Conservation Series ONMS-23-08. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Office of National Marine Sanctuaries.

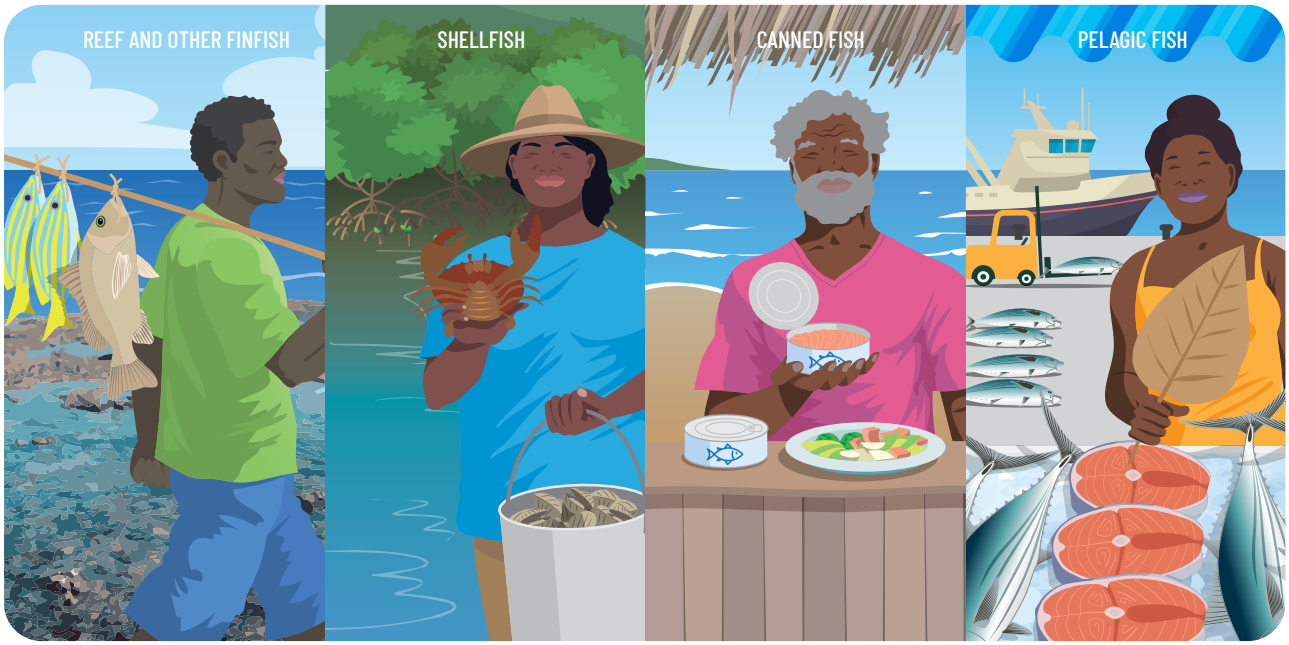
xii National GDP in 2020.

xiii Primarily in tuna-related employment, including harvest, processing, observers, government and ancillary services. Data source: FFA (2022) Tuna Fishery Report Card 2022. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

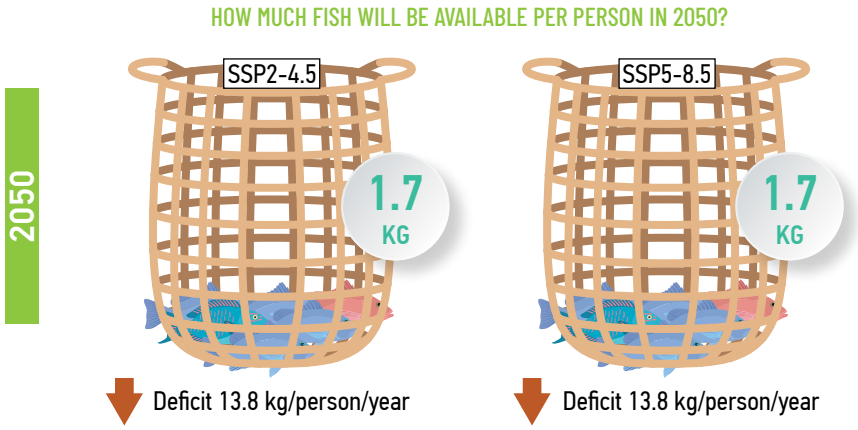
xiv Average value 2017-2021

Aquatic food security

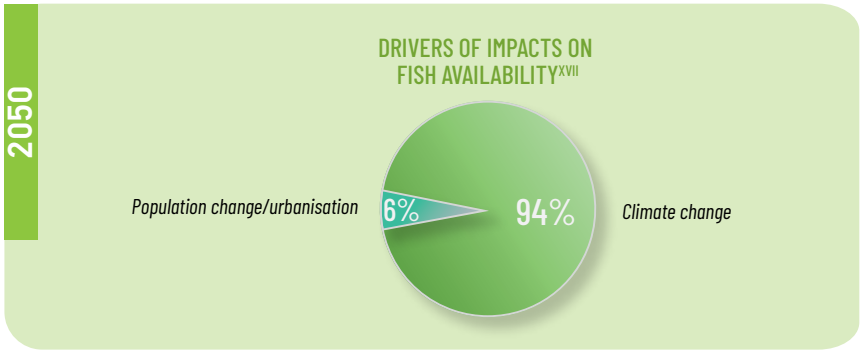
Aquatic (blue) foods provide a source of nutrition in American Samoa, and current consumption is 16 kg/person/year, including locally and imported reef and other finfish, shellfish, canned fish and pelagic fish (further details in Chapter 8)[xv].



American Samoa is projected to experience a deficit in fish supply by 2050 based on current fisheries catch rates and average consumption. This will be driven mostly by climate change impacts on fisheries. There is expected to be a decline in available whole fish by 2050[xvi] and possible insufficient access to aquatic foods, resulting in **high vulnerability**.



To meet the future needs of the population and address declining catch for local consumption under climate change, sustainable coastal and estuarine fisheries management is essential. A greater contribution from pelagic fish, canned fish and aquaculture, and other protein sources (e.g. agriculture), will also be required to support food security and good nutrition. Any adaptations should consider environmental and social safeguards and avoid maladaptation.



xv Data estimated for whole fish from: Sharp M.K., Andrew N.L. (2024) Aquatic food consumption in the Pacific region. Food Systems Brief No. 22. Pacific Community, Noumea, New Caledonia. Note that reef and other finfish include freshwater and estuarine fish.

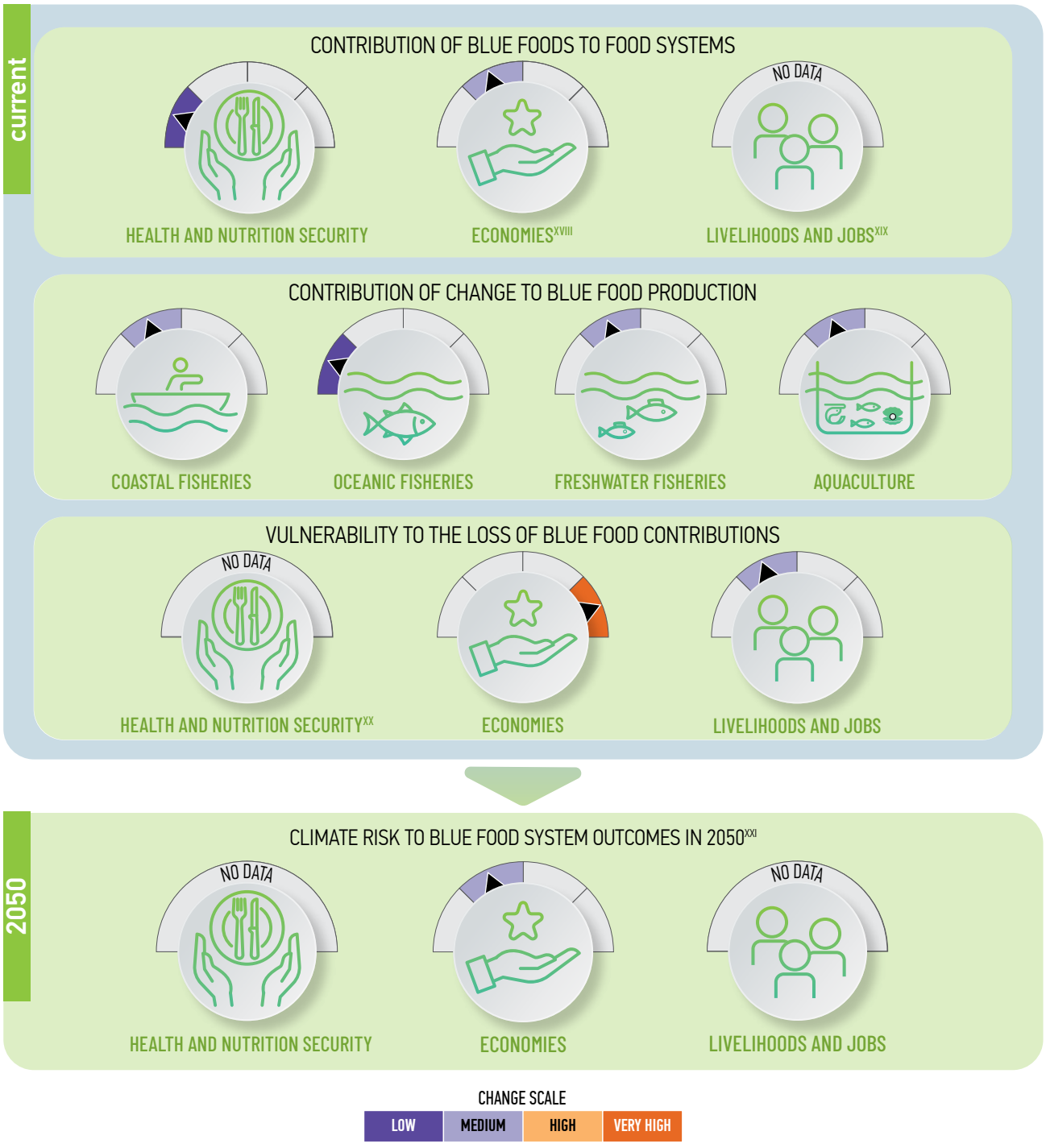
xvi Based on projected coastal, estuarine and freshwater fisheries catches by 2050 from Chapters 3 and 5.

xvii Based on current aquatic food consumption levels.

Blue food production systems

In the Pacific Islands region, blue foods contribute significantly to nutrition security and health, economies, livelihoods and jobs. By comparing contributions, climate impacts, and vulnerabilities across these outcomes, priority climate actions can be identified for sustaining their role in sustainable development under climate change (further details in Chapter 9).

In American Samoa, blue foods are most important for their economic contributions. Compared to other Pacific islands, projected climate impacts to blue food production by 2050 are medium-high. Socioeconomic conditions make American Samoa highly vulnerable to climate-induced economic losses.



The contributions of blue foods to sustainable development in American Samoa face medium levels of climate risk, though data gaps in nutrition and livelihoods hamper a holistic assessment. Priority climate actions can focus on reducing vulnerability through broader sustainable development and economic diversification.

xviii Including variables such as total fisheries production value and foreign access fees.
xix Including variables such as total number of jobs across supply chains, share of households for which fishing is the main source of income, and gender equity considerations.
xx Including nutrition-related health outcomes such as nutrient deficiencies and noncommunicable diseases.
xxi Risk is shown for a high-emissions scenario (SSP5-8.5). Rapid emissions reduction would reduce climate risk.