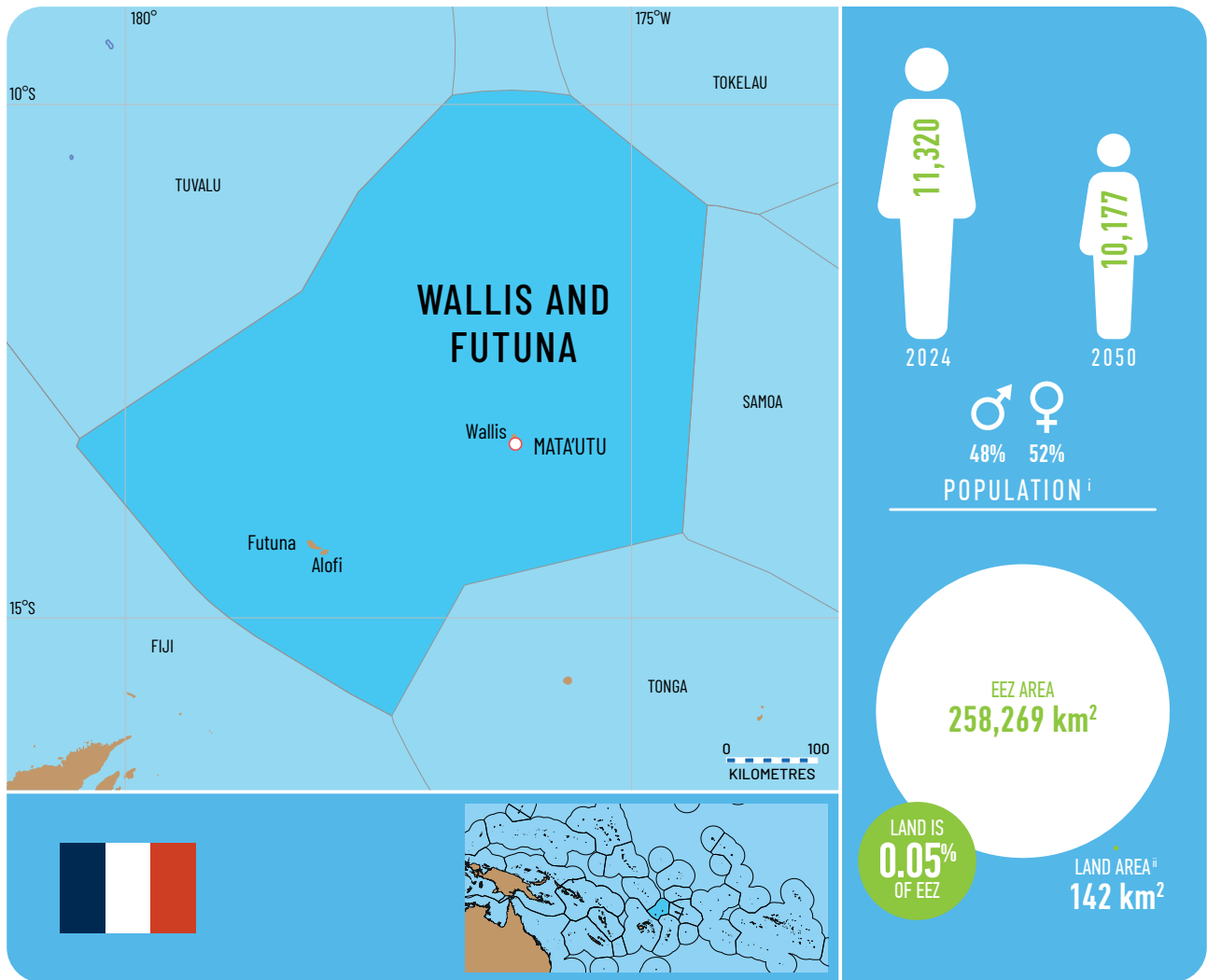


# WALLIS AND FUTUNA





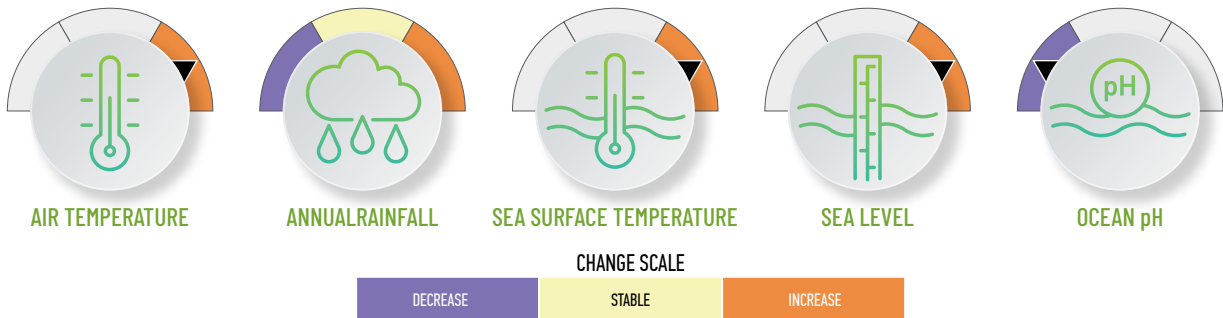
# WALLIS AND FUTUNA



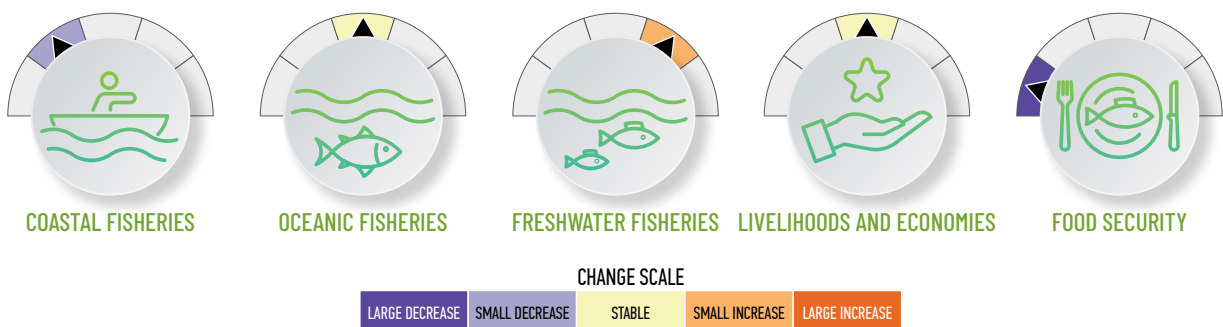
\* Annual average using 2014–2024 data

## SUMMARY OF CLIMATE CHANGE PROJECTIONS

2050



## SUMMARY OF CLIMATE CHANGE IMPLICATIONS<sup>iii</sup>



<sup>i</sup> Data source: SPC Pacific Data Hub <https://pacificdata.org/population-dashboard>

<sup>ii</sup> Data source: SPC Statistics for Development Division <https://sdd.spc.int>

<sup>iii</sup> 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, and should be initiated or strengthened. A range of adaptations and supporting policies are provided in Chapter 10 for decision-makers to select those that are most appropriate to their context and priorities (see Table 10.1). 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 2:** Sustain the production of coastal fish and invertebrates through context-specific management

**Food and Nutrition 4:** Diversify blue food production systems

**Food and Nutrition 5:** Promote the use of oceanic catches to fill the gap in aquatic resources needed for food and nutrition security

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



## *Economies and government revenue*

### Recommended adaptations

**Economic Revenue 1:** Implement climate-informed fisheries management

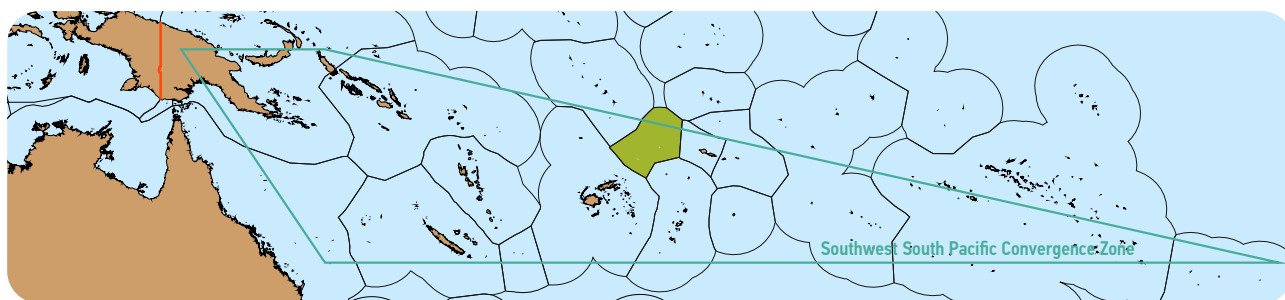
**Economic Revenue 2:** Develop policies and strategies that integrate climate change implications into fisheries and aquaculture management

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

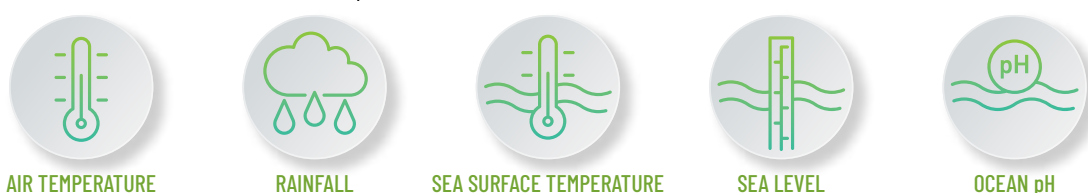
**Economic Revenue 4:** Promote improved safety at sea

**Economic Revenue 6:** Climate-proof infrastructure

# Projected changes in atmospheric and oceanic climate



Wallis and Futuna 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)<sup>iv</sup>, 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 <sup>v</sup>	HIGH	MEDIUM	HIGH	HIGH	HIGH

Wallis and Futuna 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.

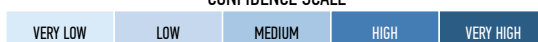


	TROPICAL CYCLONES	EL NIÑO SOUTHERN OSCILLATION (ENSO)	MARINE HEATWAVES
2090	MEDIUM EMISSIONS (SSP2-4.5)	Decrease in frequency; Increase in intensity	2–9 times more frequent (global projection)
	HIGH EMISSIONS (SSP5-8.5)		3–15 times more frequent (global projection)
	CONFIDENCE <sup>v</sup>	LOW TO MEDIUM	LOW



	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 <sup>3</sup>
	HIGH EMISSIONS (SSP5-8.5)		+0.58 kg/m <sup>3</sup> (between 0 and 200 m); Mixed layer depth shoals by 19.5 m (global)	-11.2 %
	CONFIDENCE <sup>v</sup>	MEDIUM	VERY HIGH	HIGH

CONFIDENCE SCALE

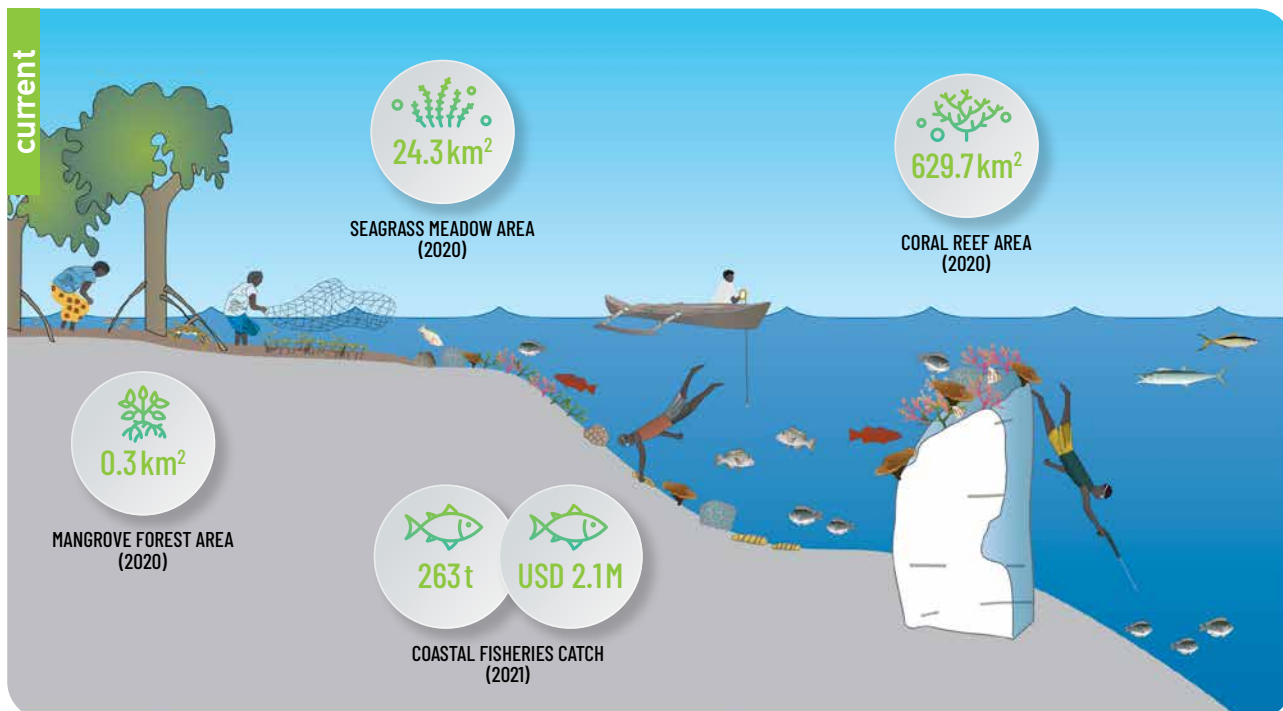


<sup>iv</sup> The shared socioeconomic pathways (SSP) represent plausible futures of how society's choices might affect greenhouse gas emissions, and how those choices might influence climate change.

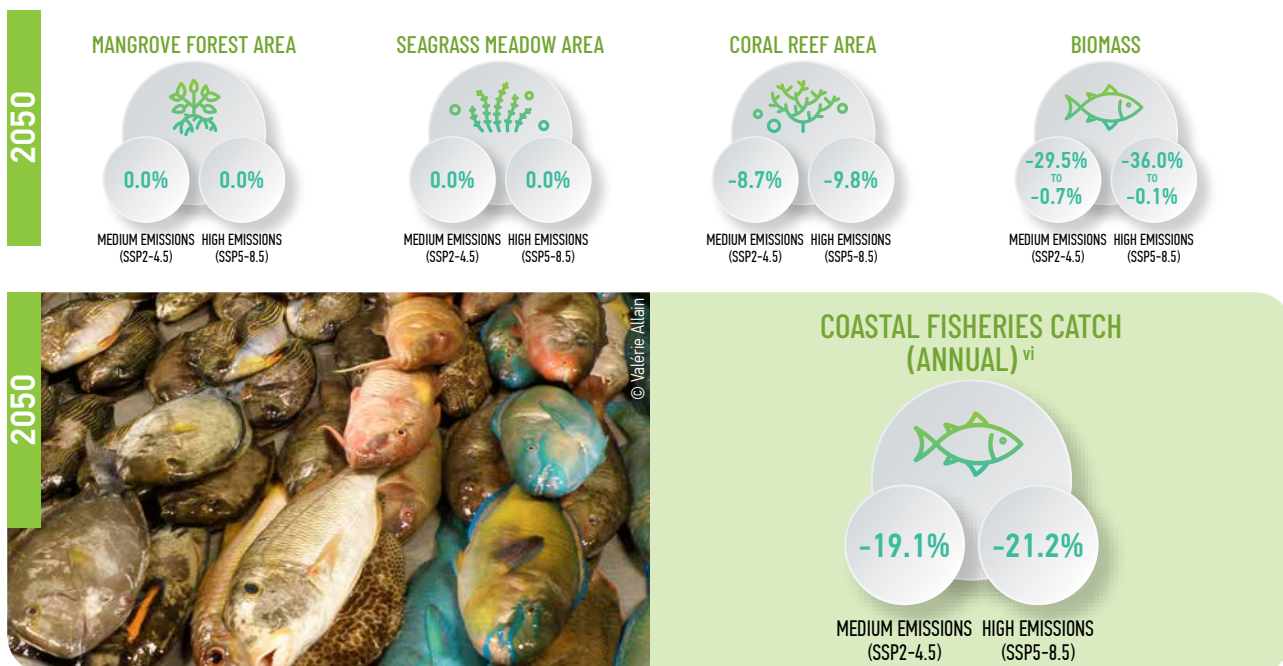
<sup>v</sup> Confidence levels reflect uncertainty in attribution of the observed impact to climate change.

# Coastal fisheries

Coastal fisheries in Wallis and Futuna target demersal fish (including unicornfish, surgeonfish and parrotfish), invertebrates for sale (e.g. lobster) and gleaned from intertidal habitats (e.g. trochus and green snail), and nearshore pelagic fish (including trevally and barracuda) using a range of fishing methods. These species are important for food, local livelihoods and jobs, and government revenue (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.

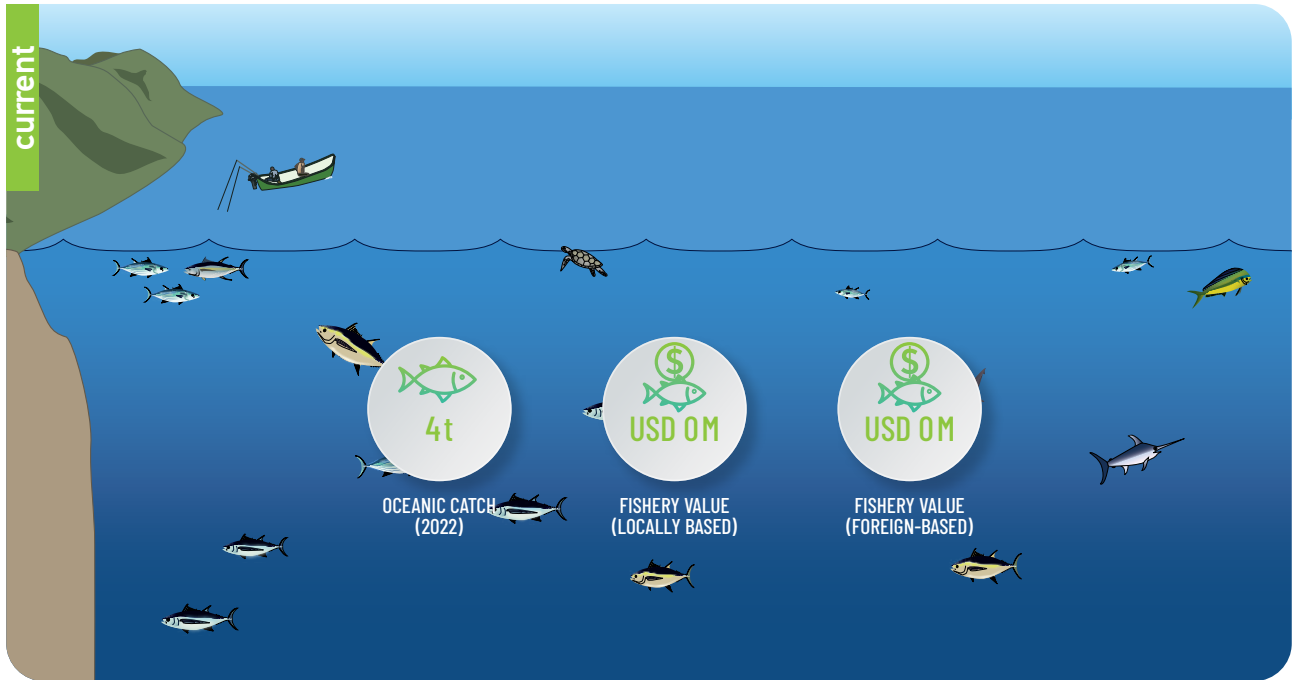


*There is evidence that some stocks may be overfished and/or fishing rates are too high. Better stock assessments are needed.*

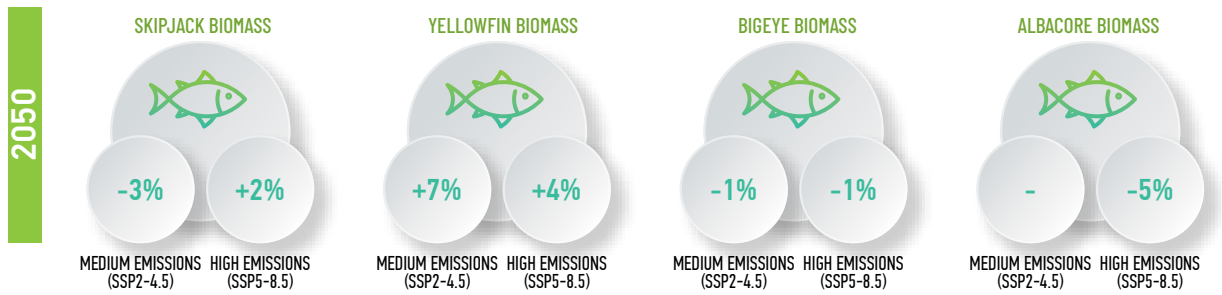
<sup>vi</sup> Relative to the Reference Period 2010–2020.

# Oceanic fisheries

In 2021, there were no locally based or foreign vessels offshore fishing within Wallis and Futuna’s exclusive economic zone (EEZ)<sup>vii</sup>. Some locally based trolling occurs in nearshore habitats for tuna.

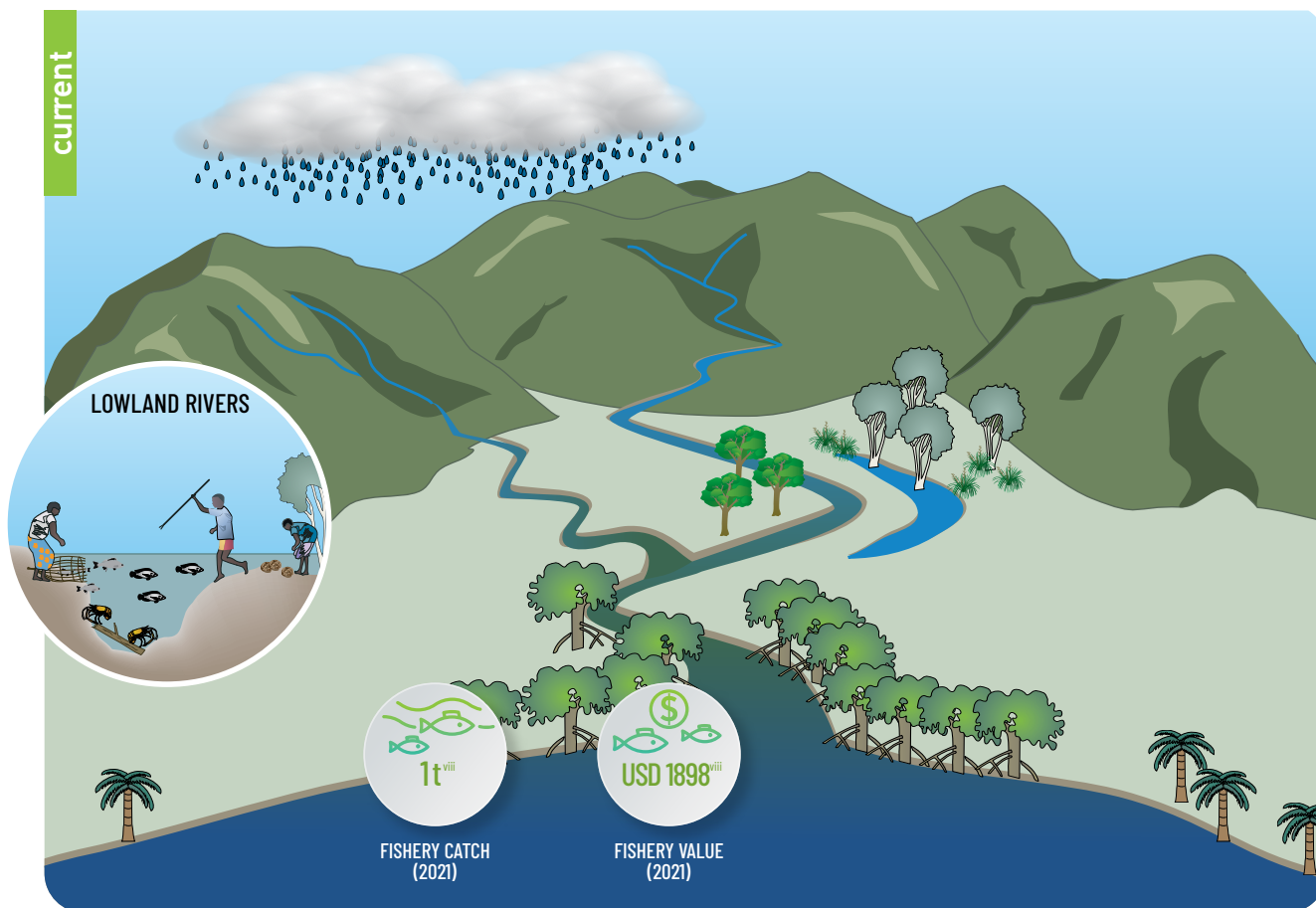


## PROJECTED BIOMASS (WITHOUT FISHING) RELATIVE TO 2001–2010 REFERENCE PERIOD

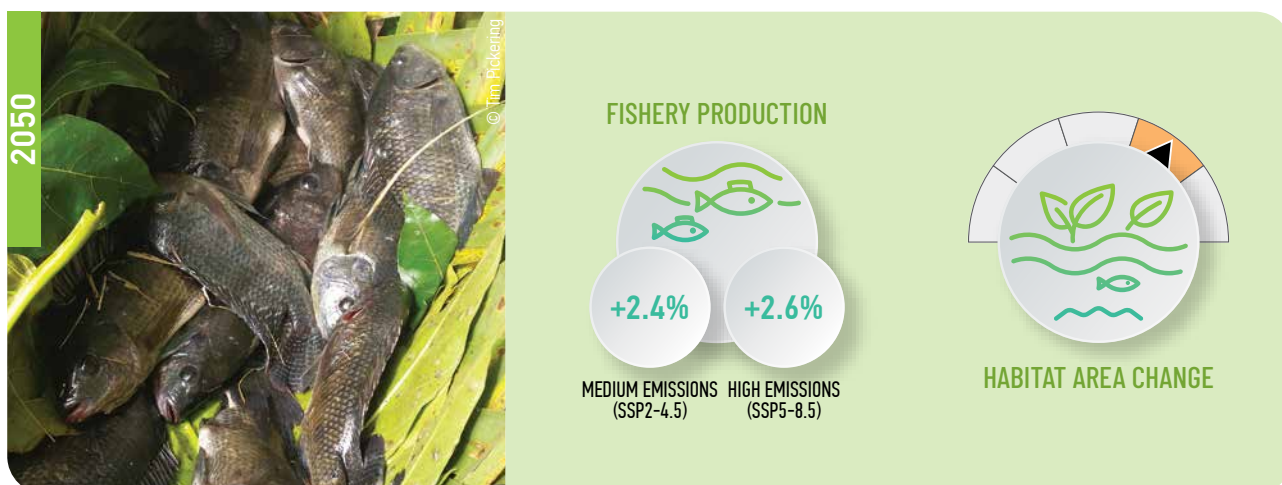


# Freshwater and estuarine fisheries

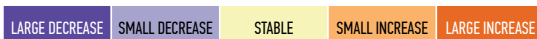
Freshwater fisheries in Wallis and Futuna target freshwater prawns (*Macrobrachium* spp.) in rivers. Freshwater fisheries provide some food for local communities (further details in Chapter 5).



Freshwater 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 expansion of fisheries and increased production.



CHANGE SCALE



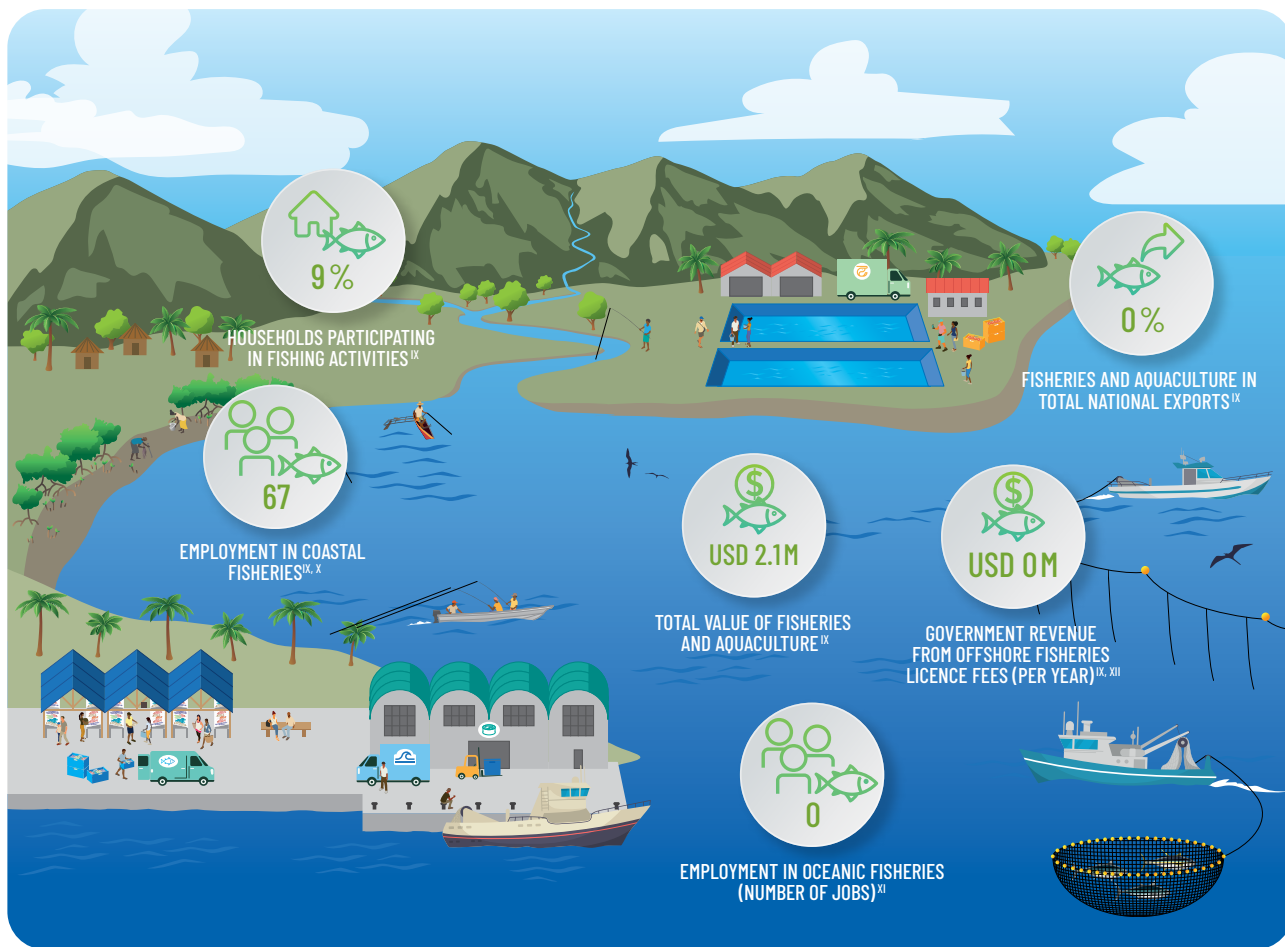
## Aquaculture

There is currently no aquaculture production, but future opportunities may exist with some interest in rock oysters and sea cucumbers.

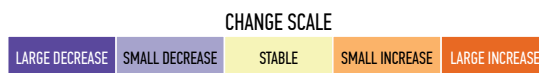
<sup>viii</sup> Fishery catch and value are likely to be underestimates due to unreported catches.

# Livelihoods and economies

Fisheries are important for local culture and trade and providing household income, jobs and livelihoods in Wallis and Futuna (further details in Chapter 7).



No significant impacts are expected on livelihoods and GDP due to the low relative contribution of fisheries and aquaculture. No significant impact is expected on government revenue because no purse-seine fishing is likely occurring in the EEZ.



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.

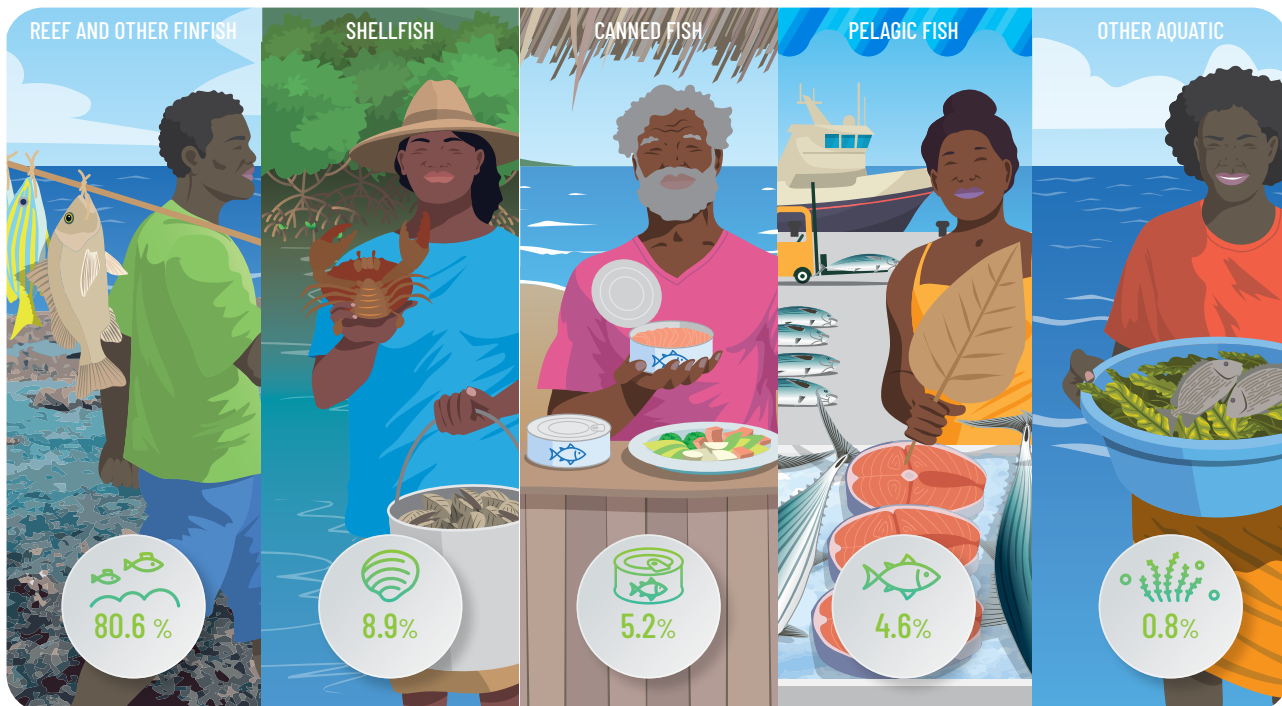
x Preuss B., Sabinot C., 2021. Étude pour la conception et la mise en œuvre d'un observatoire des pêches à Wallis et Futuna

xi Primarily in tuna-related employment, including harvest, processing, observers, government and ancillary services. Data source: Preuss B., Sabinot C., 2021. Étude pour la conception et la mise en œuvre d'un observatoire des pêches à Wallis et Futuna.

xii Average value 2017-2021.

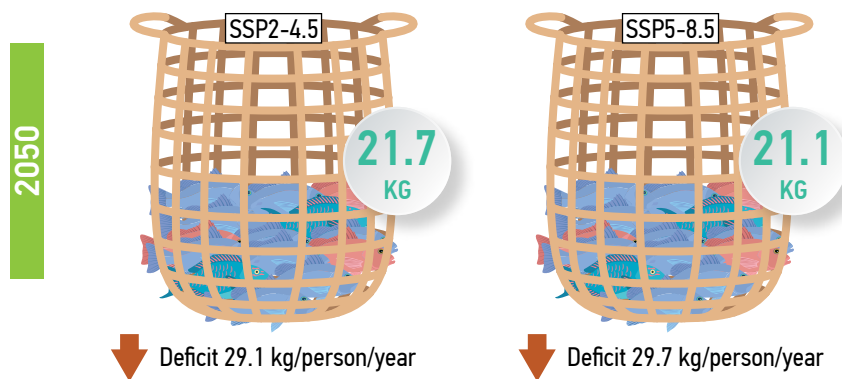
# Aquatic food security

Aquatic (blue) foods provide an important source of nutrition in Wallis and Futuna, and current consumption is 51 kg/person/year, including locally and imported reef and other finfish, shellfish, canned fish and pelagic fish (further details in Chapter 8)<sup>xiii</sup>.

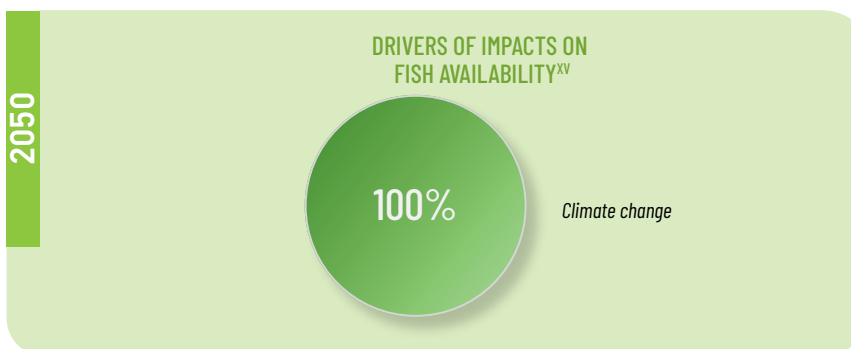


Wallis and Futuna is projected to experience a deficit in fish supply by 2050 based on current fisheries catch rates and average consumption. This will be driven by climate change impacts on coastal fisheries. There is expected to be a decline in available whole fish by 2050<sup>xiv</sup>, resulting in **high vulnerability**

## HOW MUCH FISH WILL BE AVAILABLE PER PERSON IN 2050?



To meet the future needs of the population and address declining catches 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.

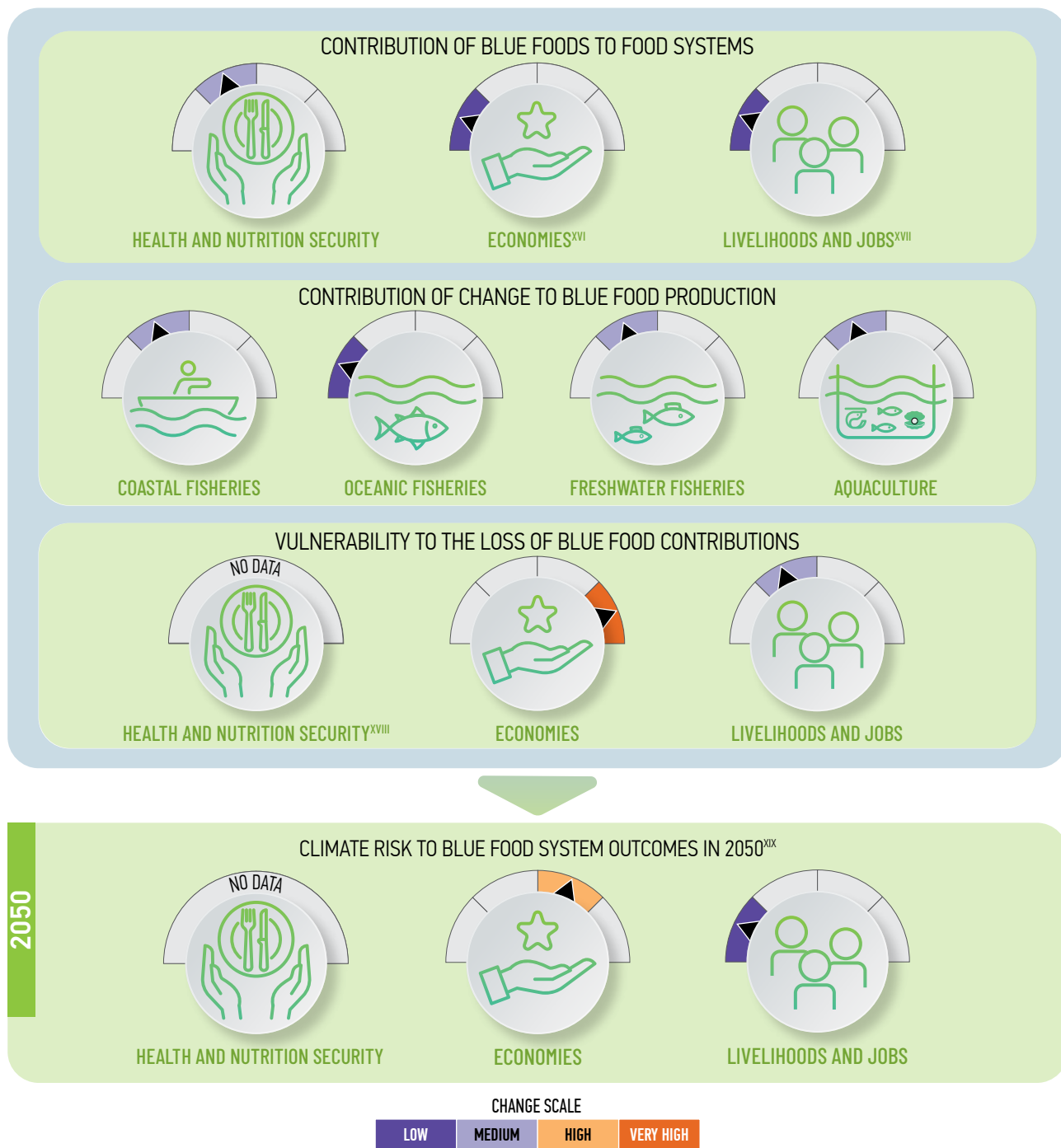


<sup>xiii</sup> Data estimated for whole fish from: Sharp M.K., Andrew N.L. (2024) Aquatic food consumption in the Pacific region. Food Systems Brief No. 22. Pacific Community, Noumea, New Caledonia. Note that reef and other finfish include freshwater and estuarine fish.  
<sup>xiv</sup> Based on projected coastal, estuarine and freshwater fisheries catches by 2050 from Chapters 3 and 5.  
<sup>xv</sup> Based on current aquatic food consumption levels.

# Blue food 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 Wallis and Futuna, blue foods are very important for nutrition security and health. Compared to other Pacific islands, projected climate impacts to blue food production by 2050 are medium to high. Socioeconomic conditions make Wallis and Futuna highly vulnerable to climate-induced losses.



Altogether, the economic contributions of blue foods to sustainable development in Wallis and Futuna face high levels of climate risk, though data gaps in nutrition preclude a holistic assessment. Priority climate actions can focus on reducing vulnerability through broader sustainable development and economic diversification.

<sup>xvi</sup> Including variables such as total fisheries production value and foreign access fees.

<sup>xvii</sup> 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.

<sup>xviii</sup> Including nutrition-related health outcomes such as nutrient deficiencies and noncommunicable diseases.

<sup>xix</sup> Risk is shown for a high-emissions scenario (SSP5-8.5). Rapid emissions reduction would reduce climate risk.

# SECTION 1

## CLIMATE CHANGE IMPLICATIONS FOR FISHERIES AND AQUACULTURE