

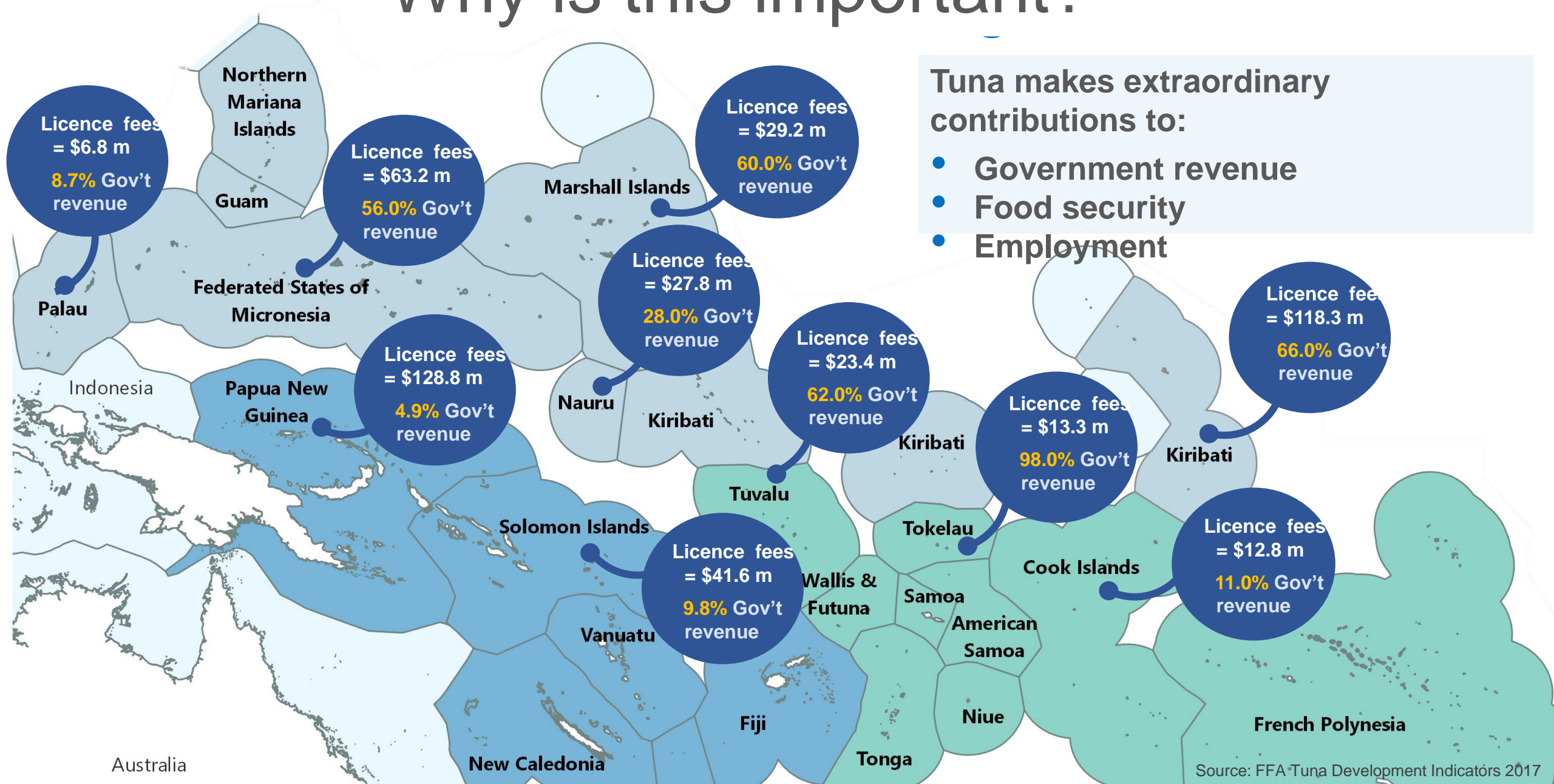
# Socio-economic impacts of climate-driven tuna redistribution in the Pacific Ocean



# Why is this important?

Tuna makes extraordinary contributions to:

- Government revenue
- Food security
- Employment





## A REGIONAL ROADMAP FOR SUSTAINABLE PACIFIC FISHERIES



### Introduction

In proposing the Framework for Pacific Regionalism, Sir Mekere Morauta, stated that, *we see a region that is at a crossroads and one that needs regionalism more than ever before. Nowhere is this more true than in fisheries, the region's largest shared natural resource and a sector in which regional cooperation has already provided real results – but can do much more.*

In 2010, Pacific Islands Forum Leaders were presented with the outcomes of a forward-looking study on the Future of Fisheries, which identified very broad focal areas to achieve a best-case scenario for the region over the following 25 years. Five years on, it is clear that our region is instead following a pathway of missed opportunities.

Bigeye tuna is overfished, and the region's longline fisheries – although targeting the highest value tuna species – are barely economic. Despite controls on fishing effort, purse seine catches continue to increase, driving down the value of the catch. Fishing on the high seas is virtually uncontrolled. Although tuna fisheries are seen as an important opportunity for economic development, we are still in the situation of allowing two-thirds of our tuna to be harvested by foreign fishing boats; and nearly 90% is taken out of the region for processing. Larger and more developed countries are taking our fish to create their profits, exports and jobs.

Inshore fisheries resources have supported the survival of coastal communities since our Islands were first settled. They are enormously important for food security and livelihoods, but are under threat from growing populations and, in the longer term, from the impacts of climate change. Finfish resources in many areas are now overfished to meet local demand, while high value export species like *bêche-de-mer* have been driven almost to extinction. Only a concerted effort to improve the management of coastal fisheries and provide alternative livelihoods and protein sources can prevent a decline in fish supplies and further degradation of the coastal environment. Traditional 'top-down' management is not working and there is a need to empower coastal communities to manage and use their fisheries resources sustainably. Although aquaculture has potential, it currently makes only a tiny contribution to fisheries production in FFA member countries. This paper therefore focuses on tuna and coastal fisheries.

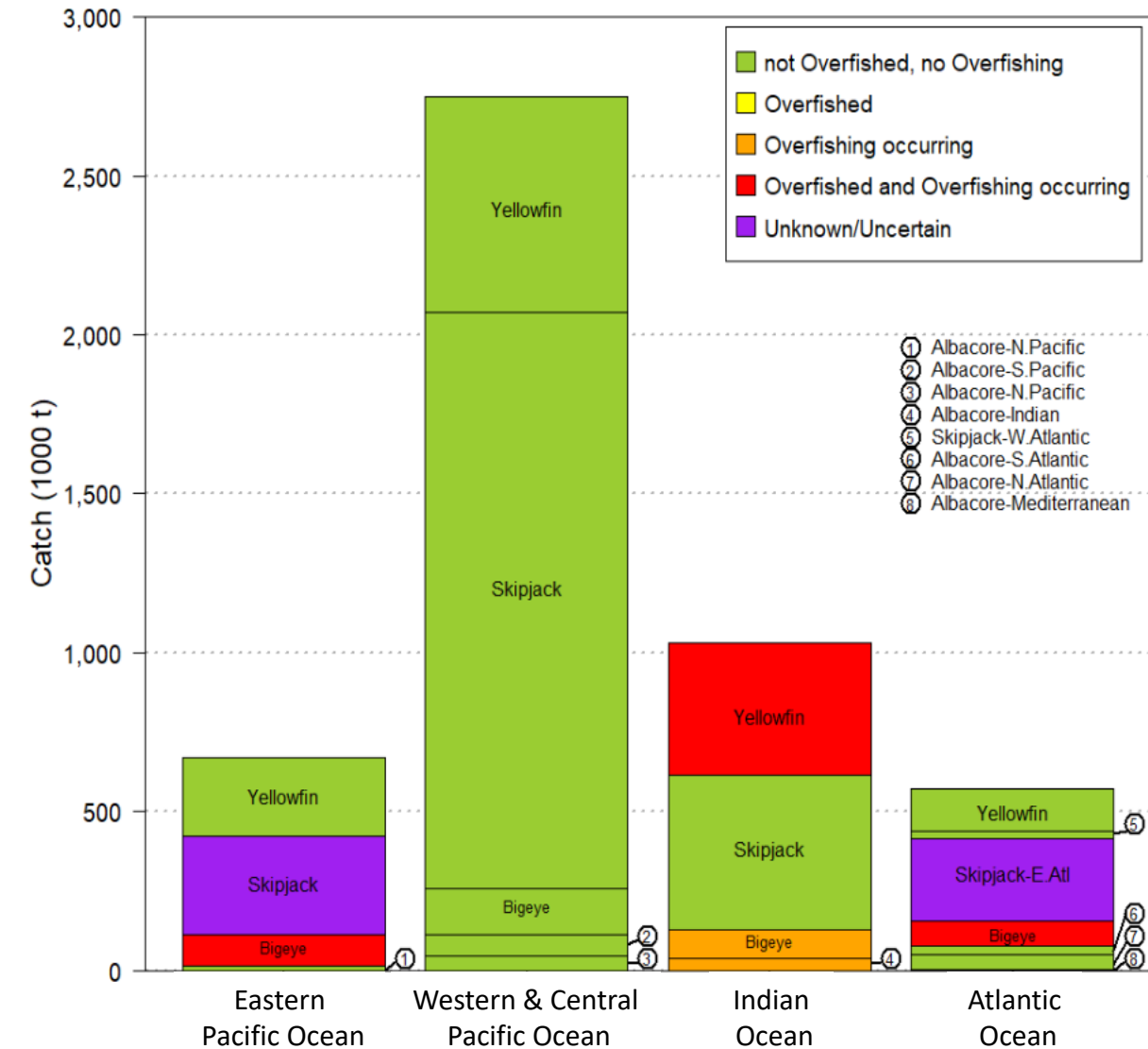
This brief paper outlines seven clear goals for oceanic and coastal fisheries for the next ten years, as well as indicators that can be used to measure progress. To achieve these goals will require commitment by leaders to 11 strategies that will allow our region to take control of the future of our fisheries. As a Regional Roadmap, the strategies outlined below will be facilitated through regional agencies (primarily the Forum Fisheries Agency and the Secretariat of the Pacific Community) working together. However, it is important to note that many of the issues require high-level political direction and whole-of-government implementation at the national level.

# Leaders' Roadmap

## Goals

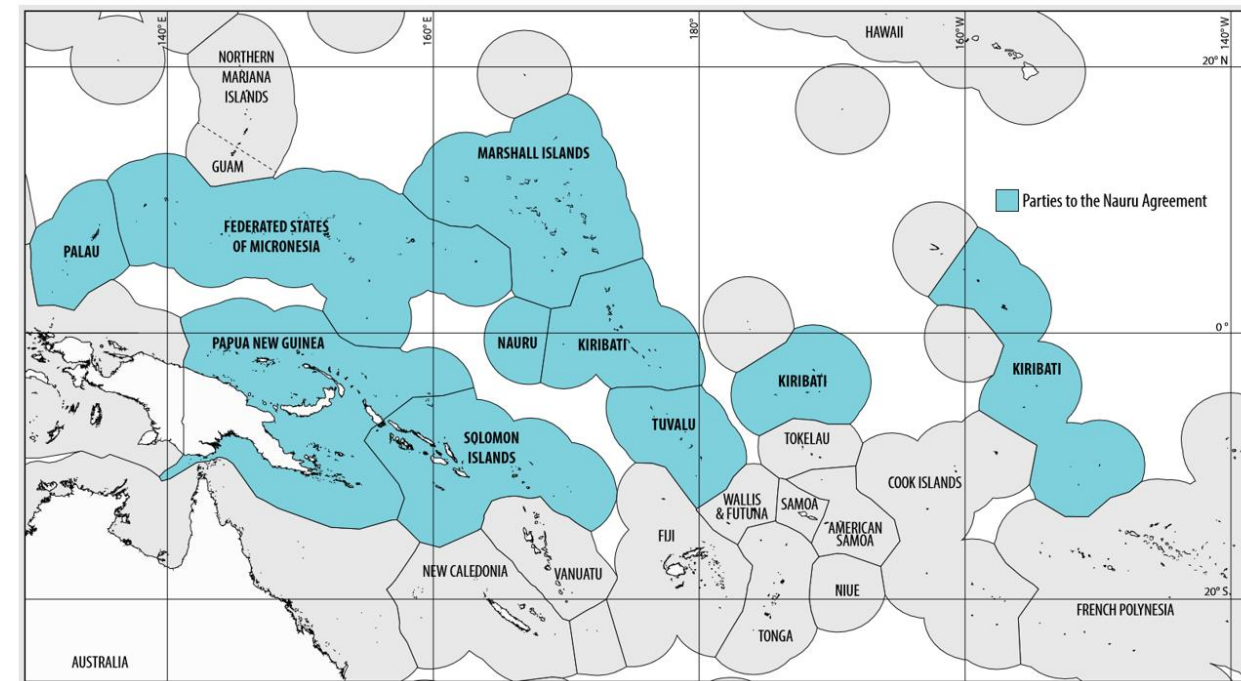
- Sustain tuna resources
- Add value to tuna
- Increase employment
- Allocate more tuna for domestic food security

# Sustainability goal



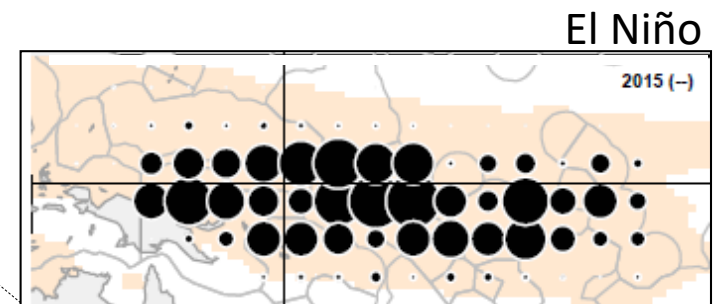
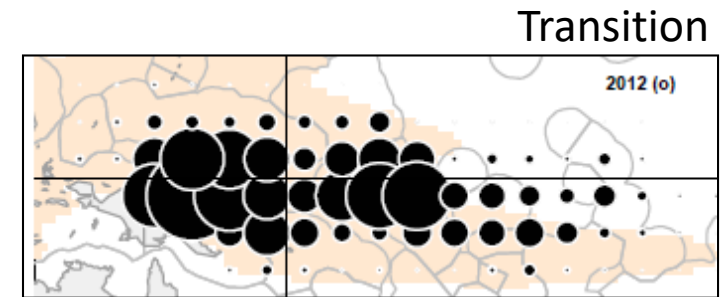
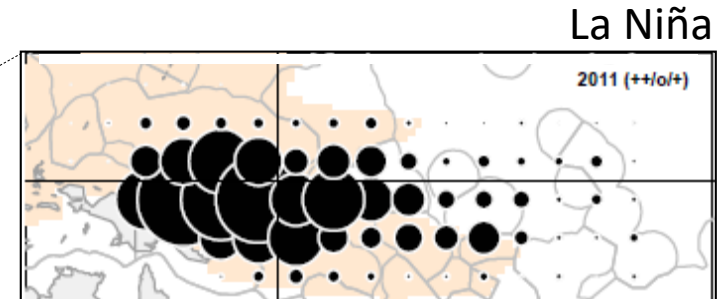
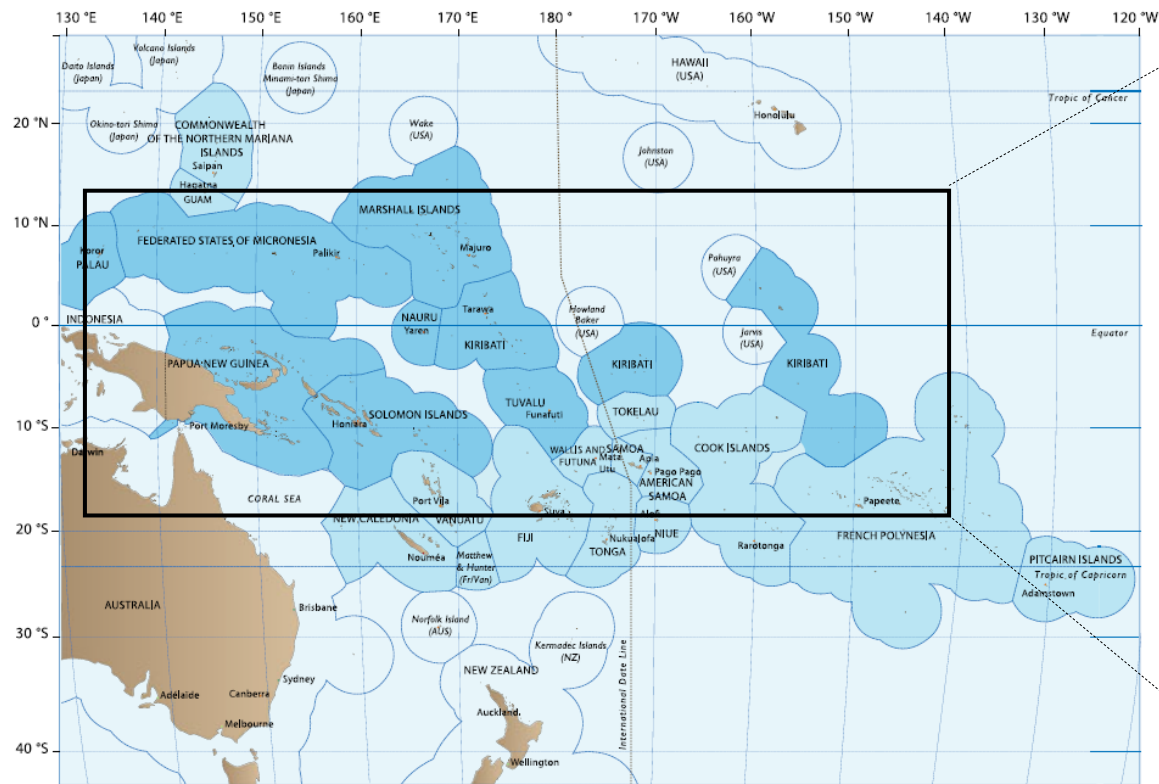
## Parties to the Nauru Agreement (PN) 'Vessel Day Scheme'

- 95% of tuna catch from Pacific Islands reg
- 50% of WCPO tuna catch



# PNA vessel day scheme

- Accounts for effects of climatic variability on tuna catches

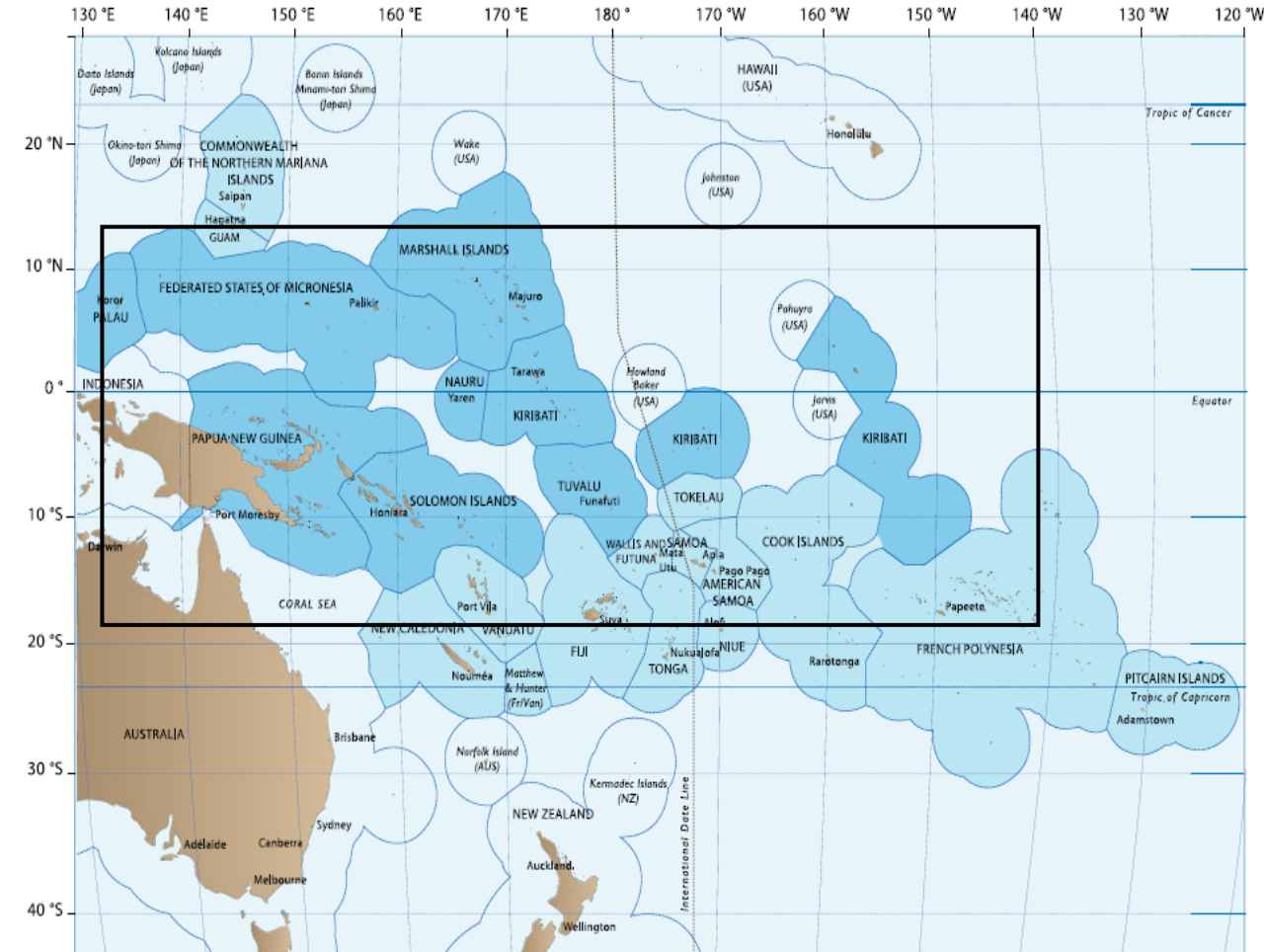


- Puisse ses efforts

Water >28.5°C



# PNA vessel day scheme



## Main features

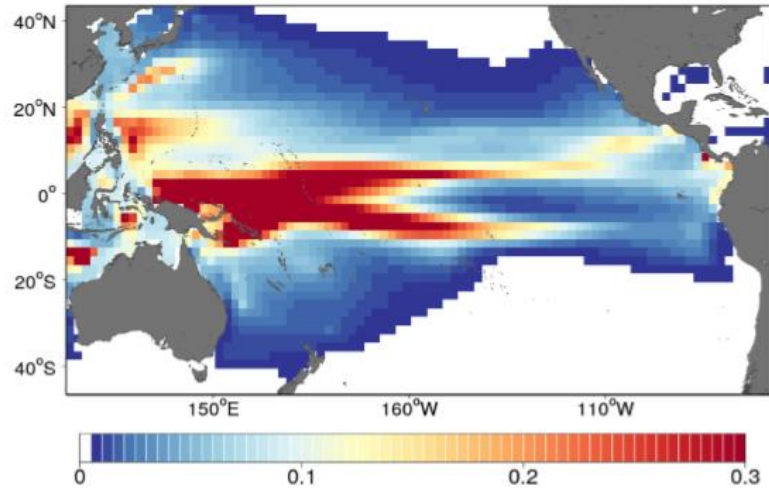
- Purse-seine fishery; 1.4 million tonnes p.a.
- ‘Cap and trade’ scheme
- Shares benefits equitably among eight member countries
- World class co-operative fisheries management

# Key question

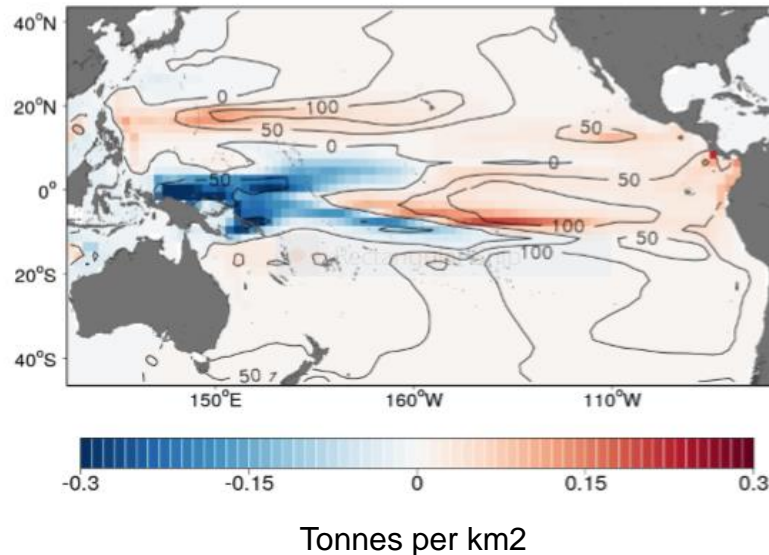
Will climate change disrupt  
the socio-economic benefits  
derived from the PNA vessel  
day scheme?

# Tuna modelling

2005



2050



High emissions scenario (RCP8.5) 2050



Skipjack tuna

## Preliminary results

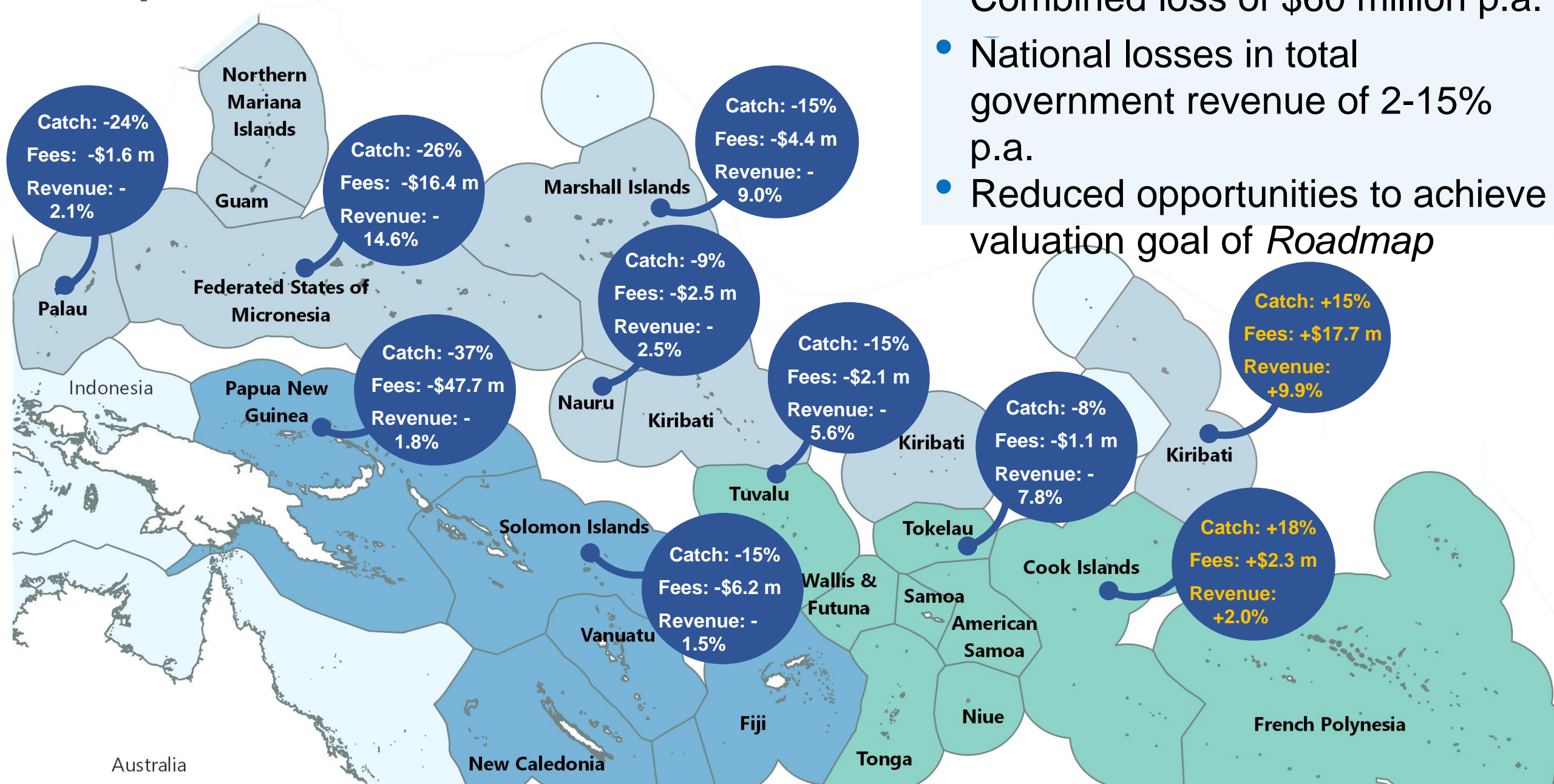
- > 10% of tuna in combined EEZs of 8 PNA countries likely to move to high seas
- Tuna catch from PNA EEZs could be reduced by 140,000 tonnes p.a.



# Implications for economies

2050

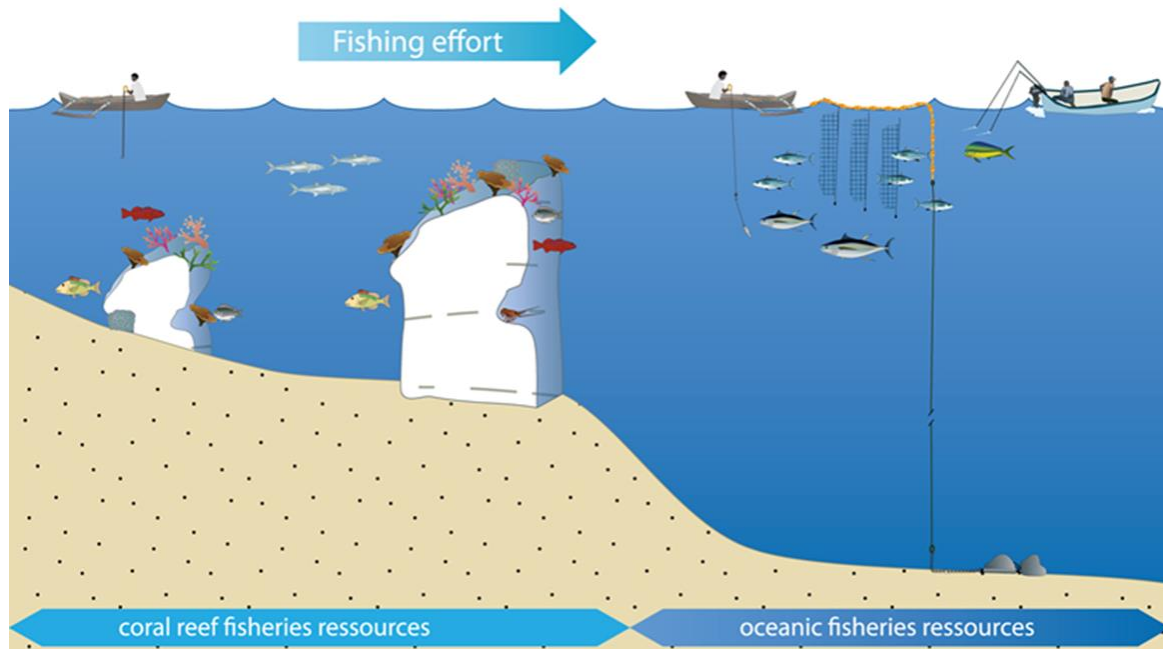
- Combined loss of \$60 million p.a.
- National losses in total government revenue of 2-15% p.a.
- Reduced opportunities to achieve valuation goal of *Roadmap*



# Mixed implications for food security

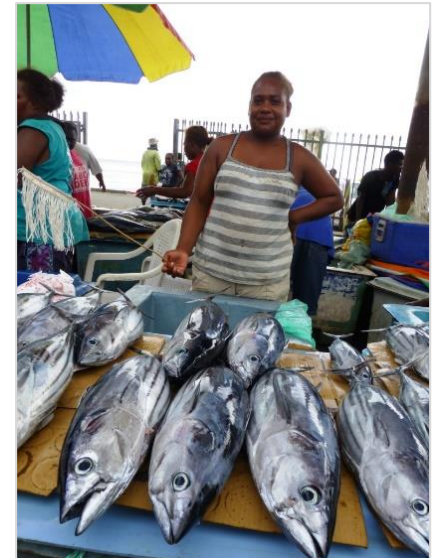
## Coastal communities

Sufficient tuna will still be available to enable communities to catch them easily around nearshore fish aggregating devices (FADs) as coral reefs degrade due to climate change



## Urban communities

Supply of tuna and bycatch to urban and peri-urban areas from transshipping operations in regional ports will be disrupted in some countries (e.g., Solomon Islands) as tuna move to the east



# Policy considerations

Pacific Island countries are in a good position to seek assistance to find solutions that enable them to retain the benefits from tuna, regardless of the impacts of climate change

- Many Pacific Island economies are 'tuna-dependent'
- Pacific Island countries have negligible GHG emissions

Improved climate-tuna models are needed to: 1) identify the risks with greater certainty; and 2) provide the best possible platform for negotiations



# Setting the stage for improved modelling

## ➤ WCPFC 'Resolution on Climate Change' in 2019

- Consider impacts of climate change on fish stocks in the Convention Area and any related socio-economic impacts

## ➤ Proposal to the Green Climate Fund for *Adapting tuna-dependent Pacific Island communities and economies to climate change*, which includes:

- Identifying the stock structure of all tuna species
- Increasing spatial resolution of modelling to 0.5 x 0.5 degrees
- Incorporating ocean forcings for all GHG scenarios
- Integrating enhanced biogeochemical models for the impacts of ocean warming/acidification on the food webs that support tuna



COMMISSION  
SIXTEENTH REGULAR SESSION  
Port Moresby, Papua New Guinea  
5 – 11 December 2019

RESOLUTION ON CLIMATE CHANGE AS IT RELATES TO THE WESTERN AND  
CENTRAL PACIFIC FISHERIES COMMISSION

Resolution 2019-01

