Opportunities and challenges for coastal fisheries and aquaculture in Pacific Island Countries and Territories

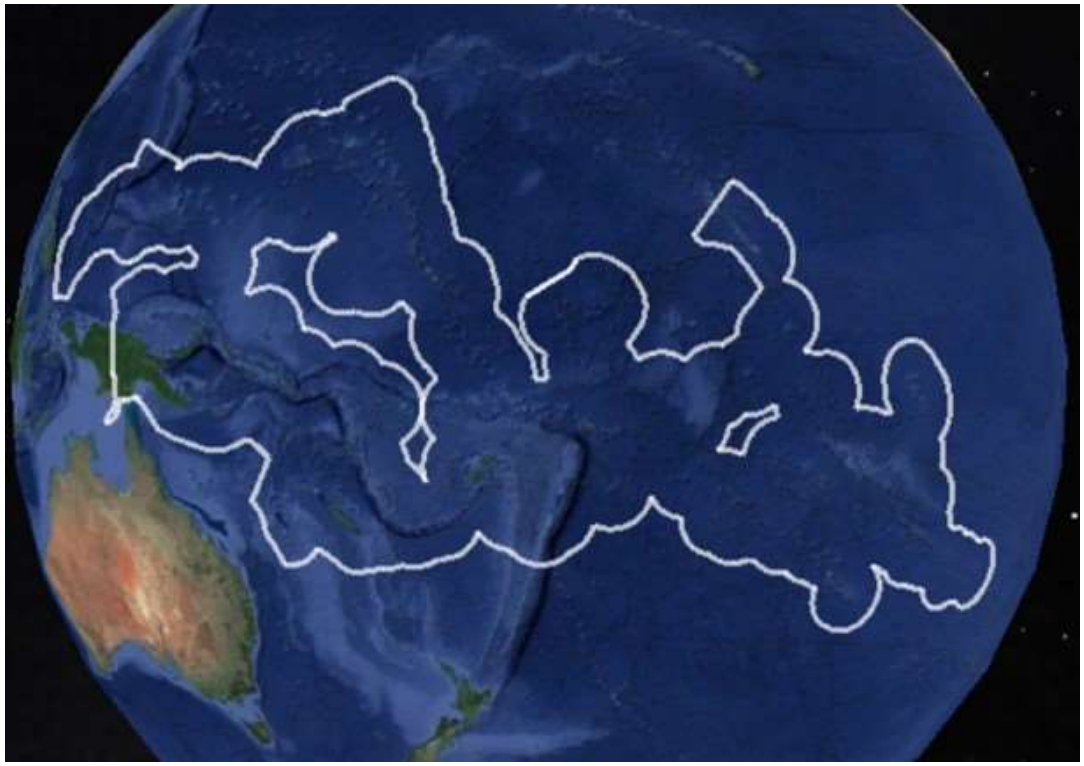
27 November 2023

Overview

- Regional context and SPC's role
- Coastal fisheries of Pacific Island Countries and Territories
- Opportunities and challenges for coastal fisheries
- Aquaculture in Pacific Island Countries and Territories
- Opportunities and challenges for aquaculture
- Pathways to results in Pacific Island Countries and Territories
- Summary

Regional context

- The blue Pacific continent
- 22 Pacific Island countries and territories
- 12 million people
- 22% of the global EEZ
- ~30% of annual global tuna supply
- 90% of people within 5 km of the coast
- 88% of households consume fish weekly



Regional context

Thematic Area – Resources And Economic Development

Strategic Pathways

Governance	Strengthen regional mechanisms, including community involvement to reflect cultural values and traditional knowledge, to build a greater level of accountability and transparency to address the sustainable management and development of resources.
Inclusion and Equity	Increase opportunities for all Pacific peoples including women and girls to engage in economic activity including in the management of their resources and further development of MSMEs, including in cultural industries and professional sport.
Education, Research and Technology	Adopt appropriate scientifically based research, technology and forms of innovation to enhance economic policy development and the sustainable management and value-added development of the region's resources.
Resilience and Wellbeing	Strengthen the resilience of Pacific economies, including through the sustainable management and development of the region's resources, reflecting the value of our ecosystem goods and services.
Partnerships and Cooperation	Ensure strategic and genuine regional and international partnerships to accelerate economic growth, valuate our ecosystem goods and services, and harness blue and green economies.

Level of Ambition

All Pacific peoples benefit from a sustainable and resilient model of economic development, including enabling public policy and a vibrant private sector and others, that brings improved socio-economic wellbeing by ensuring access to employment, entrepreneurship, trade, and investment in the region.

SPC's role

Mission

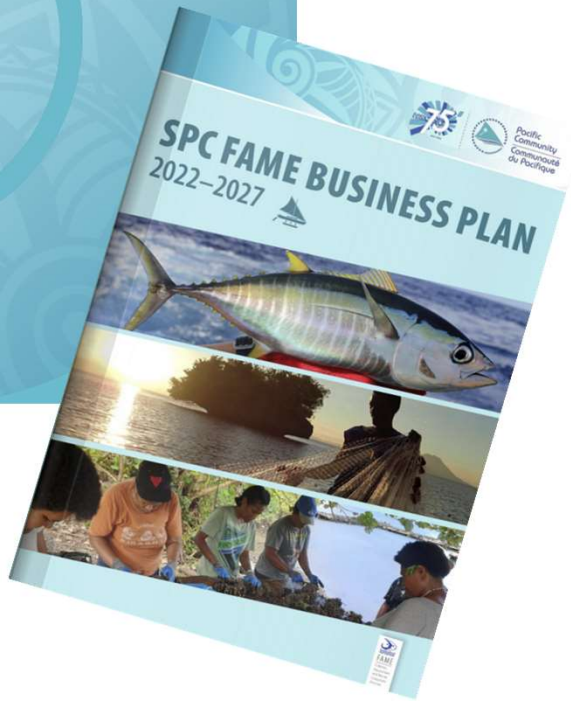
To progress all Pacific peoples' rights and well-being through science and knowledge, guided by our deep understanding of Blue Pacific contexts and cultures.

- Climate Change and Environmental Sustainability
- Educational Quality and Assessment
- Fisheries, Aquaculture & Marine Ecosystems
- Geoscience, Energy and Maritime
- Human Rights and Social Development
- Land Resources
- Public Health
- Statistics for Development

SPC's role


BLUE PACIFIC 2050
2050 Strategy for the Blue Pacific Continent


Pacific Community
Communauté du Pacifique
STRATEGIC PLAN 2022–2031
Sustainable Pacific development through science, knowledge and innovation


SPC FAME BUSINESS PLAN
2022–2027

SPC's role – FAME in oceanic and coastal fisheries and aquaculture

- Science on fish population status and impacts of fisheries on non-target species and marine ecosystems
- Work closely with members at national level and through various regional and sub-regional fisheries organizations
- National science and technical capacity building
- Technical support to enhance the management of coastal fisheries and aquaculture, and the sustainable development of nearshore livelihoods
- Support approaches to ensure equitable benefit from fisheries, in particular gender and social inclusion

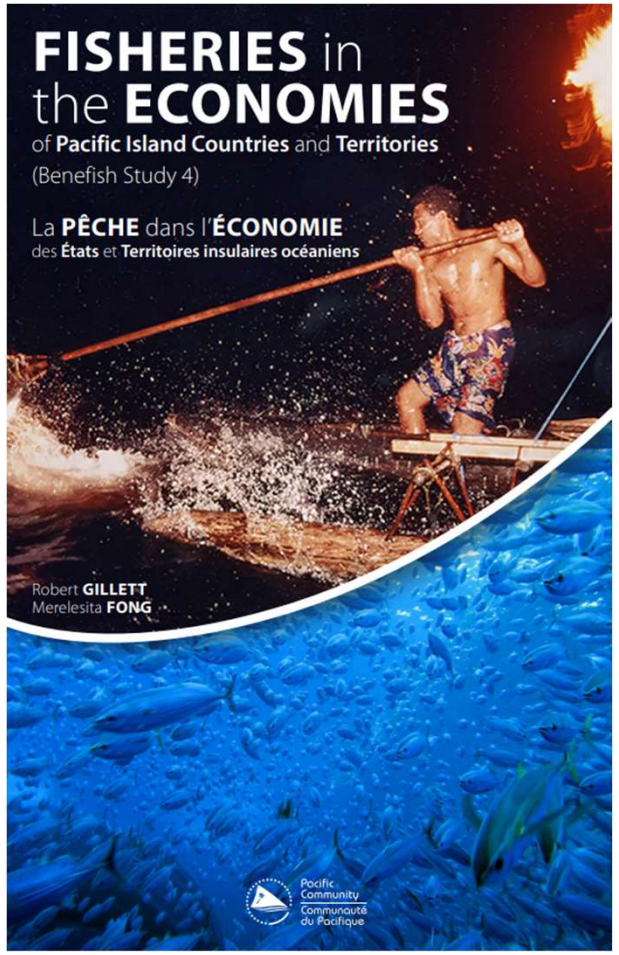
SPC's role

- Example of our work is this recent publication *Fisheries in the Economies of Pacific Island Countries and Territories*

  https://purl.org/spc/digilib/doc/ppizh

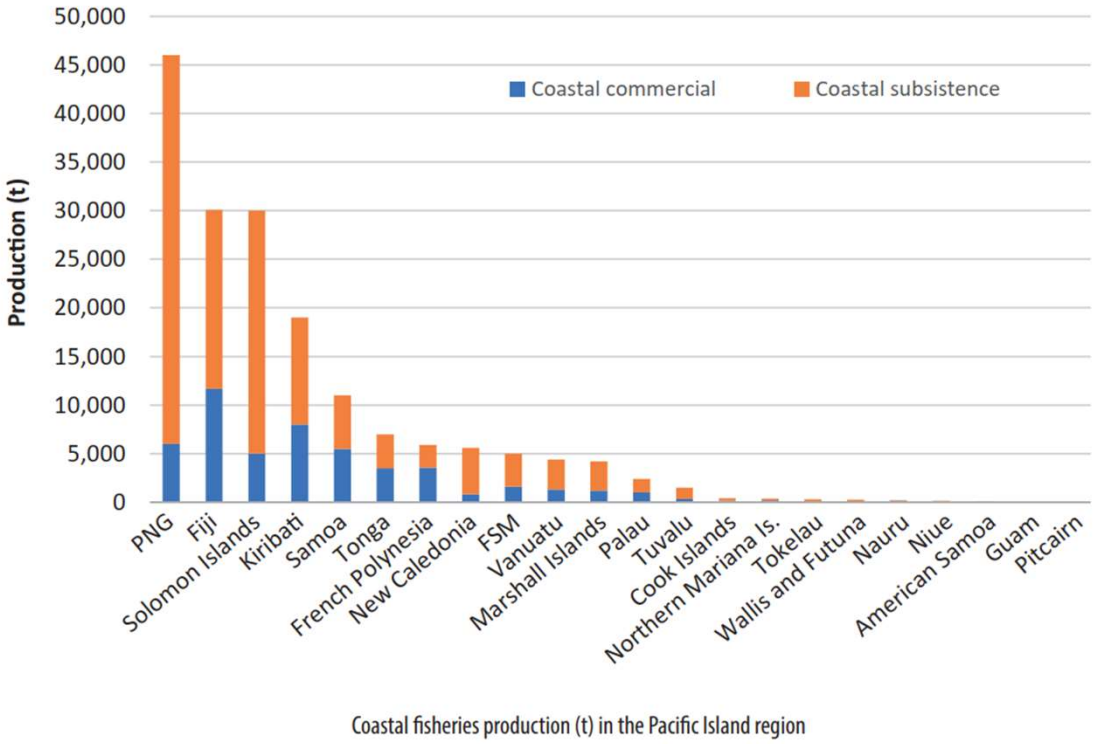
- Total fishery and aquaculture production of the 22 PICTs in 2021 was estimated to be US$2.5 billion

- Total volume of fisheries production in 2021 estimated to be 1.56 million tonnes



Coastal fisheries of Pacific Island Countries and Territories

- Diverse fisheries and methods
- Significant sustenance and artisanal fisheries
- Commercial fisheries oriented to local market
- Limited exports – low volume and high value species
- Scale of fisheries driven by two key factors – habitat and population size



Coastal fisheries production (t) in the Pacific Island region

Coastal fisheries of Pacific Island Countries and Territories

- Significant harvest never goes through markets
- Most catch is consumed locally
- Some inter-island trade
- Most fish consumed locally is landed whole and sold with limited processing
- Most fish is sold within 24-hours of catch
- Annual per capita supply of coastal fish decreased by 14% over 2007-2021

Opportunities and challenges for coastal fisheries

- Coastal fisheries generally fully exploited
- Differences within and between islands
- High frequency of natural disasters
- Climate change impacts
- Spatial scale of blue Pacific continent
- Low population
- Distance to markets

Opportunities and challenges for coastal fisheries

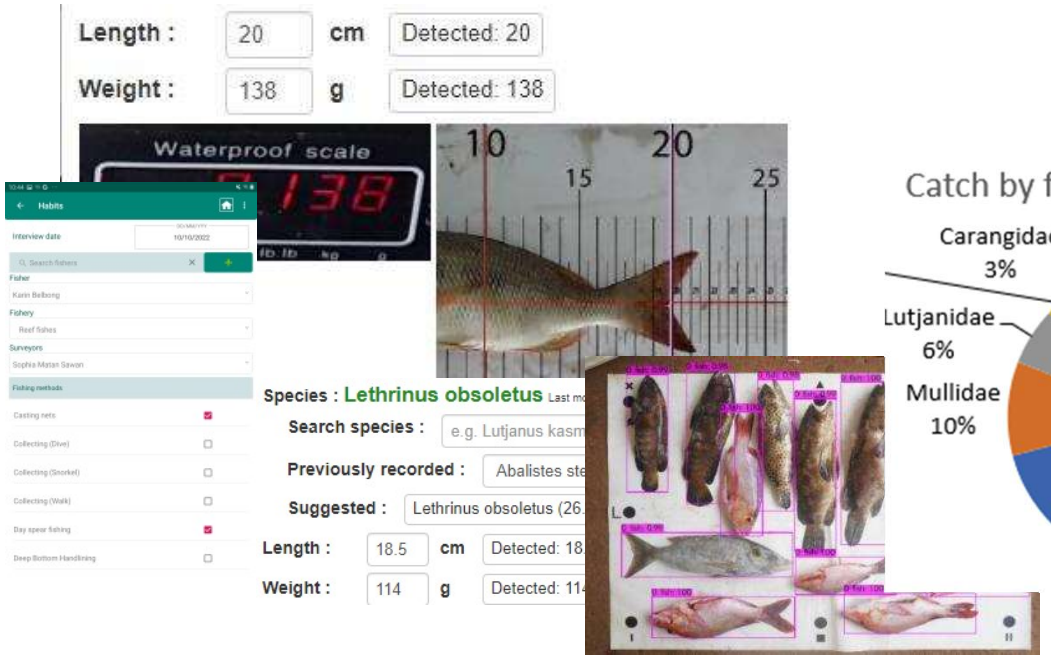
- Some as yet undeveloped fisheries
- Small pelagics, deepwater squids and anchored Fish Aggregation Devices
- Deepwater squids - diamondback squid (*Thysanoteuthis rhombus*), neon flying squid (*Ommastrephes bartramii*), and loligo squid (*Loligo vulgaris*)
- Bioeconomic analyses and exploratory fishery positive
- Use deepwater dropline techniques and squid jigging machines

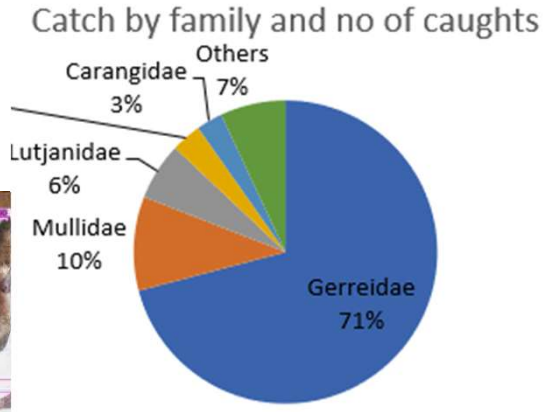
Opportunities and challenges for coastal fisheries

- Increasing deployment of anchored Fish Aggregation Devices (aFADs)
- Opportunities in gear
- Opportunities in associated data collection technology – HiFAD
- Potential for more stable supply
- Potential for local value add and associated infrastructure

Opportunities and challenges for coastal fisheries

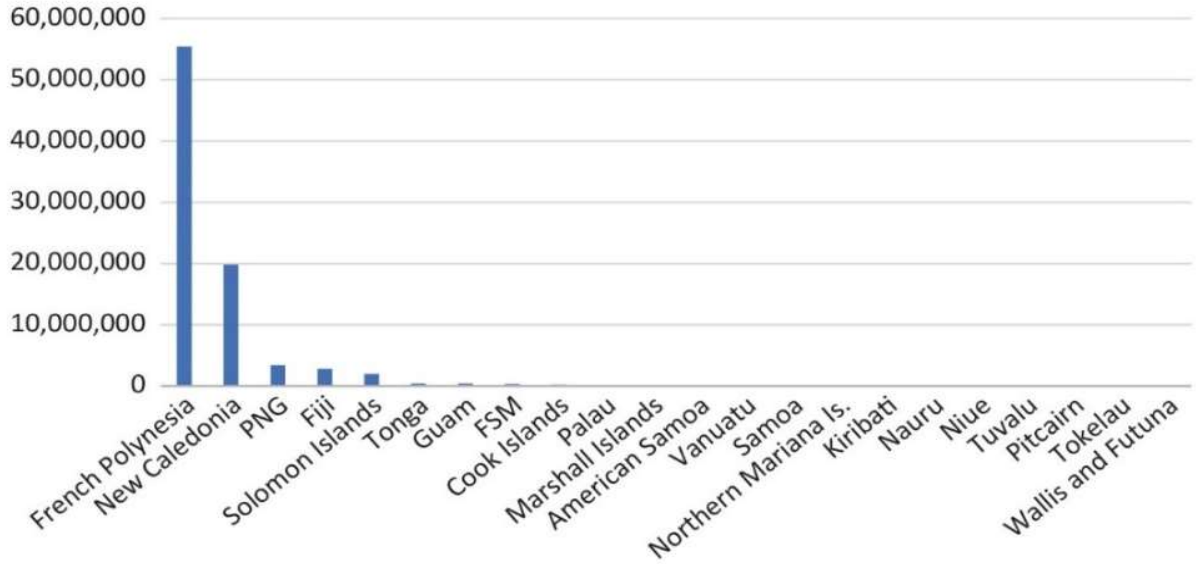
- Increasing digitalisation of coastal fisheries data collection

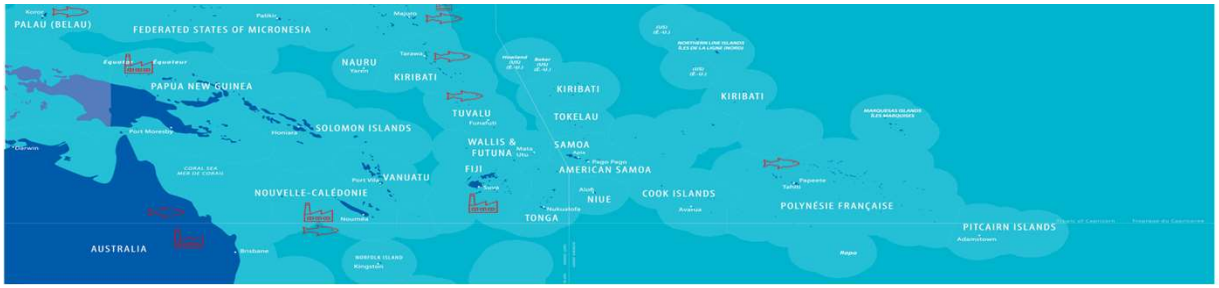




Aquaculture in Pacific Island Countries and Territories

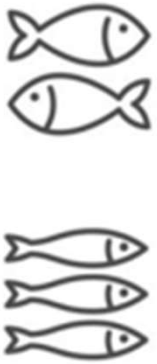
- Current significant production limited to two members
- An historical focus on high value traditional markets
- Total volume of aquaculture production in 2021 was 7,573 tonnes and 8,825,931 pieces





Aquaculture in Pacific Island Countries and Territories

Food security



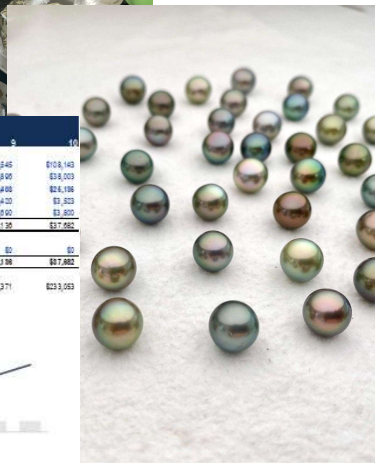
Low capital economic development

High capital economic development

Opportunities and challenges for aquaculture

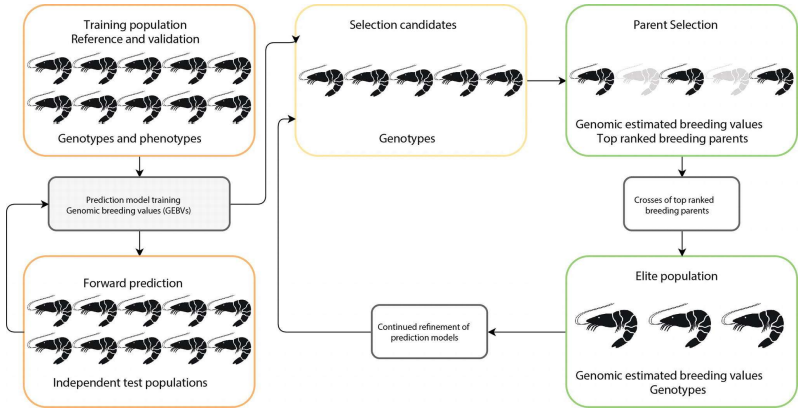
- **Accessing global markets**
- Product shelf stability
- Border biosecurity
- Transport networks

- **Access to capital**
- Traditional land tenure
- Micro-financing / insurance

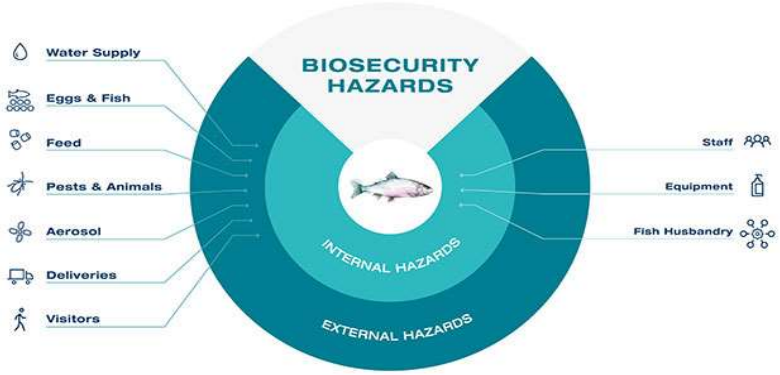


Opportunities and challenges for aquaculture

- **Domestication**
- Genetic improvement
- Broodstock maintenance



- **Disease management**
- Greater risks at higher intensity
- But isolation advantage



Opportunities and challenges for aquaculture

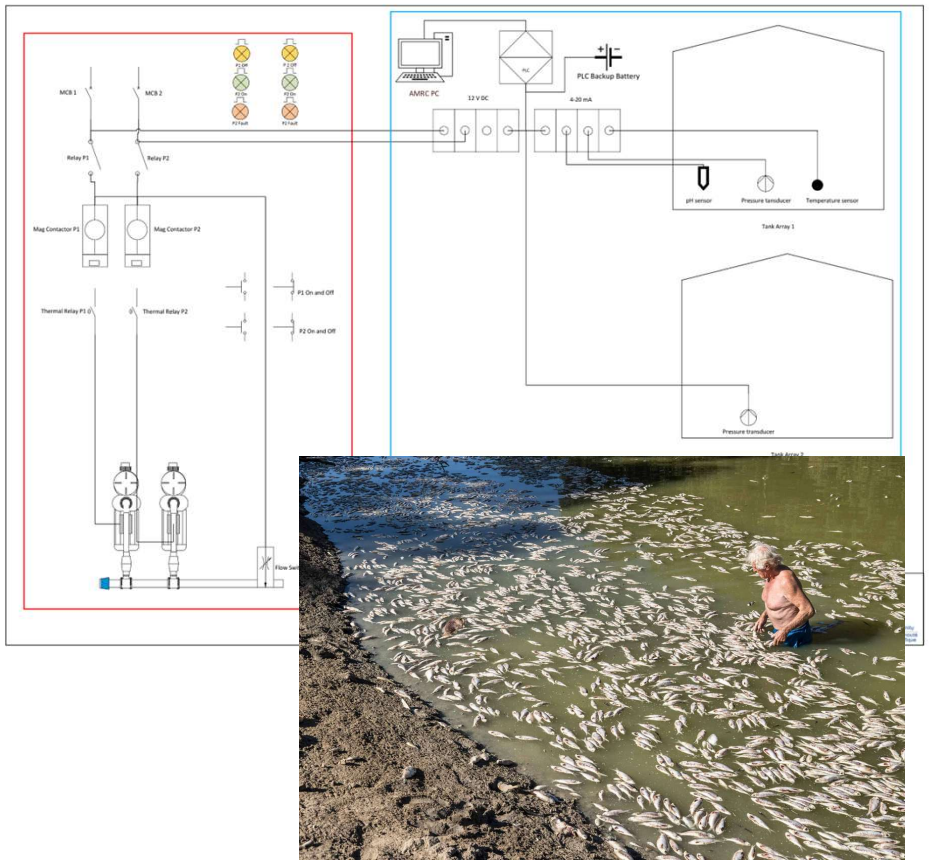
- **Feed sustainability**
- Feed supply
- Local design and production
- Local inputs

- **Labour issues**
- Local competition for skills
- Extensive methods
- Labour migration

Opportunities and challenges for aquaculture

- **Technology adoption**
- Data collection is key
- Disjoint between new technology and capital availability

- **Water Quality Management**
- Optimal water quality critical
- Tropical climate
- Infrastructure limitations

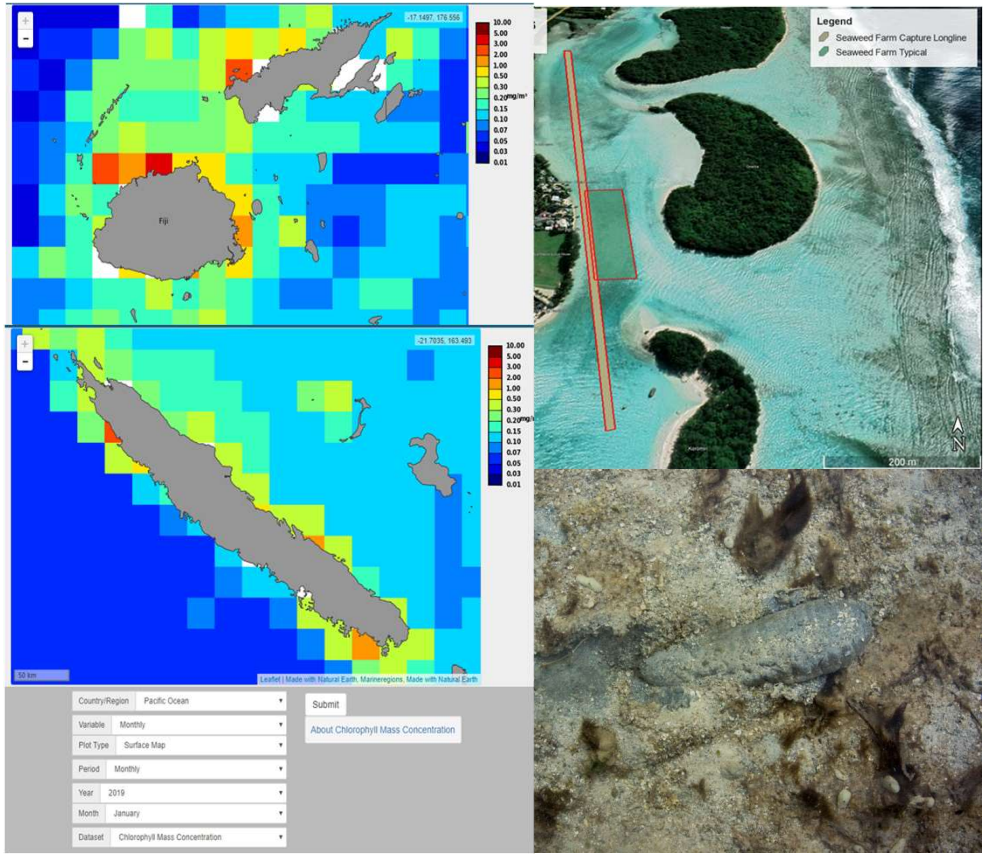


Opportunities and challenges for aquaculture

- **Environmental impact**
- Fed aquaculture has greater environmental impacts
- Integrated Multi Trophic Aquaculture (IMTA)

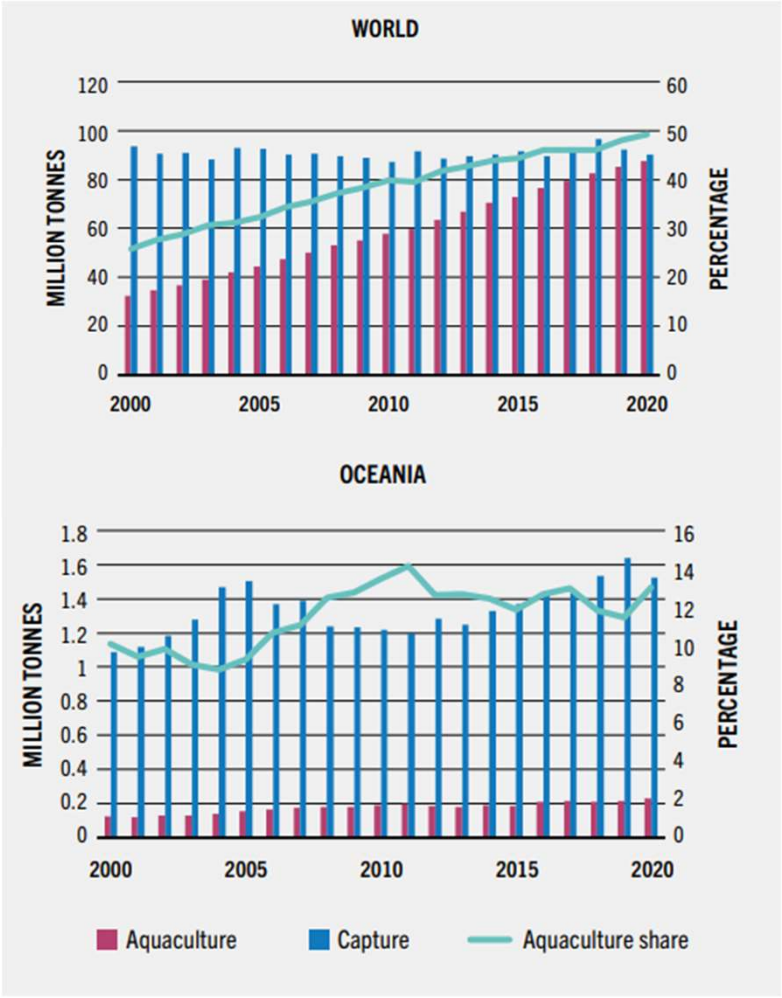
- **Resource competition**
- Water, space, food

- **Regulatory and legal**



Opportunities and challenges for aquaculture

- Increase aquaculture production
- Oceania is behind global pace of development
- Most Pacific Island Countries and Territories want to develop aquaculture
- Regional aquaculture strategy in preparation
- New access infrastructure in planning

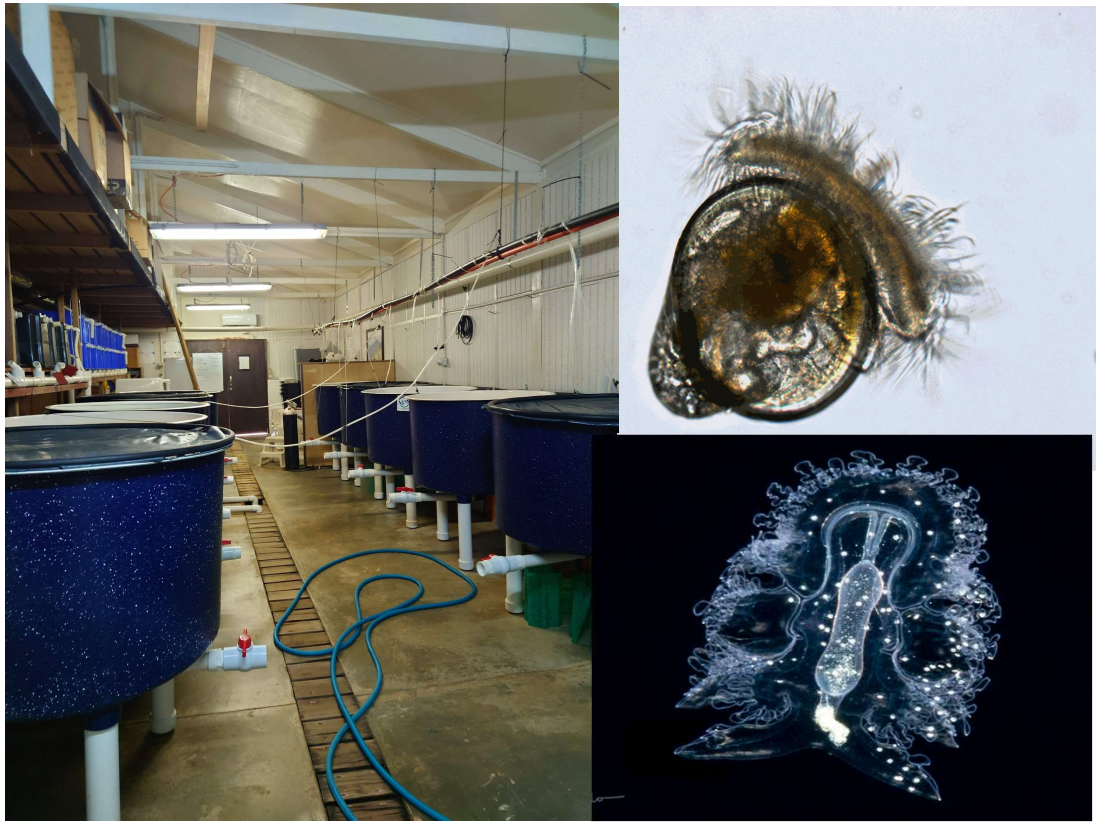


Opportunities and challenges for aquaculture

- Diversification from traditional products – pearl meat
- Development of endemic species – freshwater eels
- Incorporating biodiversity, habitat restoration and climate change imperatives

Opportunities and challenges for aquaculture

- Enhancing capture-based aquaculture systems
- Developing full-cycle aquaculture
- Developing and improving broodstock
- Developing live feeds
- Developing sustainable local feeds



Opportunities and challenges for aquaculture

- New infrastructure needs – hatcheries, grow-out, processing and value-add
- Land-based mariculture
- Flow-through and pumping systems
- Recirculating aquaculture systems (RAS) with tanks
- Engineering and data systems
- Laboratory and quality control technology

Opportunities and challenges for aquaculture

- Current products of particular interest for development
  - Black pearl, freshwater pearls
  - Giant clams
  - Sea cucumbers
  - Rabbitfish, tropical groupers, milkfish
  - Trochus
  - Shrimps/prawns
  - Seaweeds

Opportunities and challenges for aquaculture

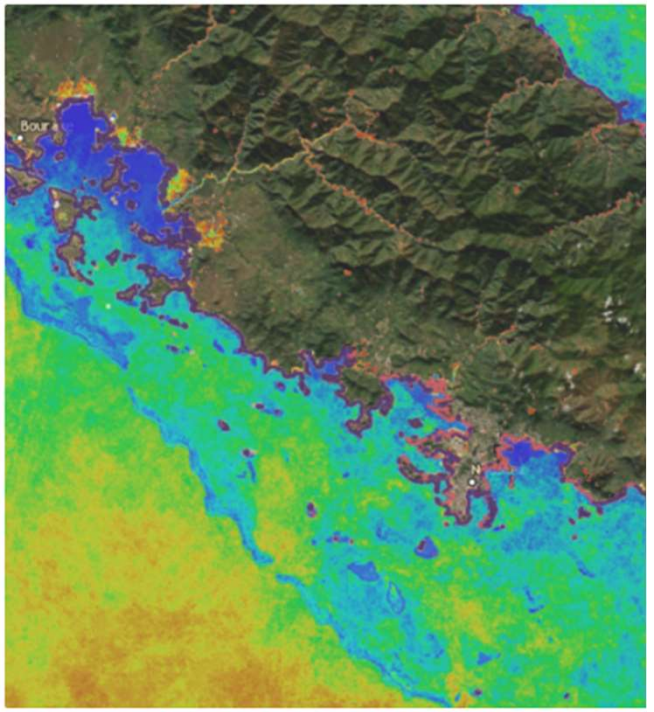
- Case study: Rewa River rock oysters
- Down-scale technologies
- Small-scale high-value unfed aquaculture
- Biodiversity benefits
- Depuration requirements
- Significant value add

Pathways to results in Pacific Island Countries and Territories

- Use the public domain information – the Pacific Data Hub and SPC Digital Library
- Use the latest publications – Fisheries in the Economies of PICTs
- Use the available tools – Digital Earth Pacific
- Work with the in-region experts – including SPC and PIFS

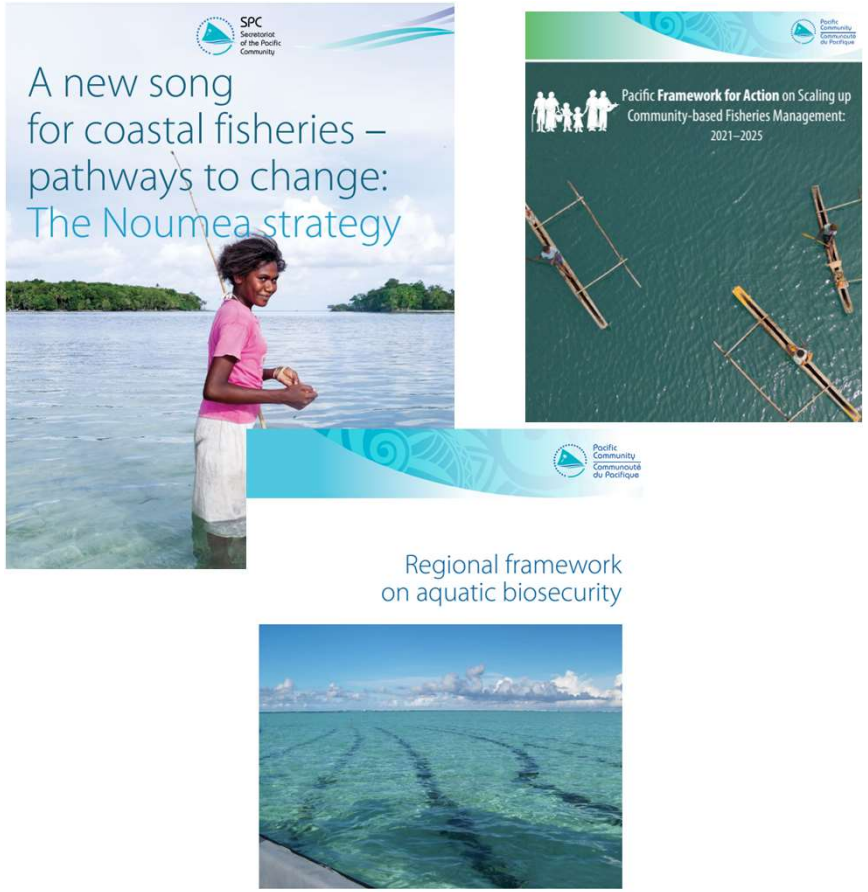
Digital Earth | Digital Earth Pacific

Water Observations from Space (WOFS)



Pathways to results in Pacific Island Countries and Territories

- Start the conversation at the right level
- Recognize the complexity and diversity
- Take the opportunity of the 2050 Strategy for the Blue Pacific Continent
- Develop real partnerships on strategic timelines



Summary

- The blue Pacific continent is vast
- SPC applies science and technical skills to sustainable development across the region
- Coastal fisheries opportunities in squid, aFADs and technology
- Significant broad opportunities in aquaculture
- Talk to the right people and take a partnership approach