



Seventh SPC Regional Technical Meeting on Coastal Fisheries and Aquaculture

19–22 November 2024



Original: English

Information paper 11

Coastal fisheries science mandates

SPC FAME CFAP Science Section¹

¹ Tim Adams, Hannah Gilchrist, George Shedrawi, Léonore Page

Coastal fisheries science mandates

Regulatory and institutional requirements for coastal fisheries science

1. Coastal fisheries might seem very different from oceanic fisheries, but they are not so different in terms of their science and data requirements. Oceanic fisheries generate more money for Pacific Island governments than coastal but, apart from the money they put into some small island developing states' (SIDS) national budgets to fund public services and infrastructure (Table 1), tuna fisheries generally provide no greater direct benefit to the Pacific Island citizen, *on average across the whole region*, than coastal fisheries (Figure 1). And they involve far fewer target species. However, since the advent of the Western and Central Pacific Fisheries Commission, Pacific Island regional tuna fishery target and bycatch species have generated much more attention from governments, from donors, and certainly from science providers than the species that are important to Pacific Island coastal fisheries.

Table 1: Contribution of annual EEZ Access Fees² to Govt Revenue in SPC Island member administrations

SPC Island Member	Access fees as % of govt revenue	EEZ Access fees USD 2021
Tuvalu	76.30%	31,650,914
Kiribati	65.50%	116,989,340
Tokelau	49.00%	12,600,000
FSM	25.60%	72,300,000
Marshall Islands	18.90%	33,031,253
Nauru	18.00%	42,165,943
Solomon Islands	8.90%	42,110,205
Palau	7.00%	7,870,000
Cook Islands	4.70%	6,598,639
Niue	4.30%	883,086
PNG	3.10%	145,014,245
Vanuatu	1.50%	1,253,206
Tonga	0.50%	1,045,629
Samoa	0.37%	1,119,691
Fiji	0.01%	163,174
Wallis and Futuna	0.00%	0
French Polynesia	0.00%	0
New Caledonia	0.00%	0
American Samoa	0.00%	0
Northern Marianas	0.00%	0
Guam	0.00%	0
TOTAL	5.99%	514,795,325

(Data from Gillett & Fong 2023³, mainly from Table 30-2)

2. This is not to complain that too much attention is paid to oceanic fisheries science, but that not enough attention is paid to coastal fisheries science. Oceanic fisheries need a considerable level of international-standard scientific analysis and advice to implement the complex multinational governance infrastructure that is being built up around tropical Western and Central Pacific Ocean

² Although this column is labelled “EEZ access fees”, a certain proportion – a majority in at least two cases – of these fees are for the purchase of PNA Vessel Days EEZ fishing rights that are fished in other EEZs by agreement under the FSM Arrangement.

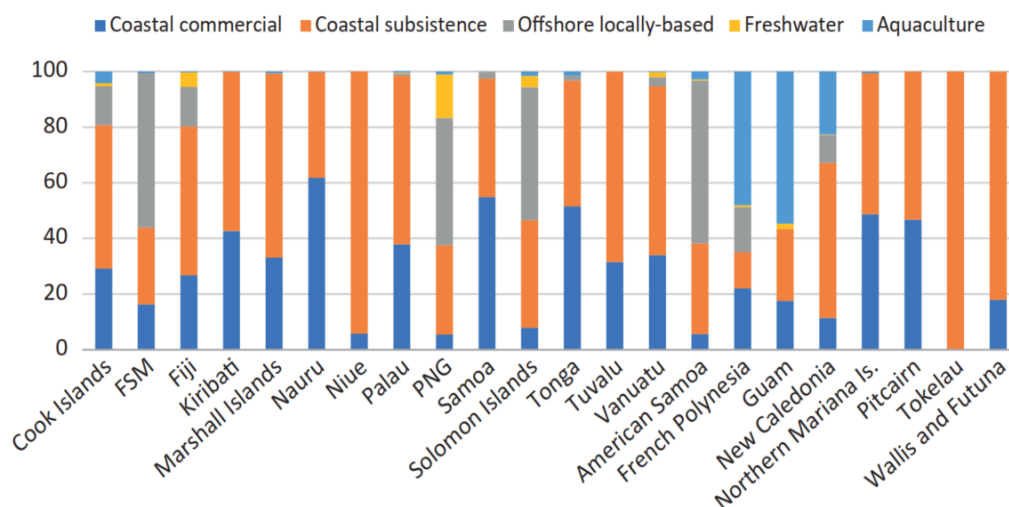
³ Gillett, R. & Fong M. (2023) Fisheries in the Economies of Pacific Island Countries and Territories (Benefish Study 4). Pacific Community, Noumea, New Caledonia.

(WCPO) tuna fisheries. This infrastructure is underpinned by the requirements of the *United Nations Convention on the Law of the Sea* (UNCLOS, which came into force in 1994), and the *United Nations Agreement for Implementing the Provisions of UNCLOS Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (the UN Fish Stocks Agreement, or UNFSA, which came into effect in 2001). And now the *WCPFC Convention* (effective 2004) – the most recent step in this binding chain of international treaty-level instruments – and which has been the main driving force behind the elaboration of the framework for managing transboundary and internationally-shared pelagic fish stocks in the SPC region. WCPFC now commissions and funds⁴ a considerable proportion of the work of the SPC Oceanic Fisheries Programme. Science is important to WCPFC and other international fisheries management bodies because these international agreements require decisions and actions to be justified by the “**best available scientific information**”⁵.

⁴ OFP is now the “Scientific Services Provider” to the WCPF Commission. The OFP stock assessment and data management activities supported by the Commission have major knock-on benefits for Pacific SIDS for management of the tuna fisheries within their own jurisdictions, and for their own regional and subregional tuna management processes (PNA, SPG, FFA etc).

⁵ The preamble of the WCPFC Convention records that WCPFC members are “*Mindful that effective conservation and management measures require the application of the precautionary approach and the best scientific information available*”, and Article 5 (b) requires the Commission to “*ensure that (measures to ensure long-term sustainability of highly migratory fish stocks in the Convention Area and promote the objective of their optimum utilization) are based on the best scientific evidence available*”. And the identification of the “*best scientific information available*” is done via a Scientific Committee established by Article 12 of the WCPFC Convention.

Figure 1a: Percentage contributions to GDP by fishery subsectors



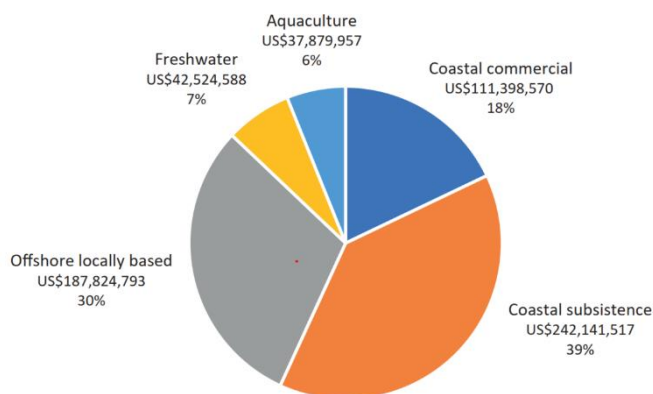
(From Gillett & Fong (2023): Table 30-5)

Figure 1b: Total regional fishery GDP

broken down by fishery subsector

(From Gillett & Fong (2023): Table 30-6)

Note that the Benefish4 report does not include fish processing and other onshore activities in the GDP calculation but concentrates on primary production.



- The drivers for Pacific Island *coastal* fisheries science have not developed in the same way in recent years. Coastal fisheries are national fisheries taking place within sovereign waters, involving largely non-migratory species, and do not absolutely require intergovernmental collaboration like oceanic fisheries. The need for the best available scientific information about coastal fisheries is not spelled out in *binding* intergovernmental legal instruments.
- The differential between regional oceanic and coastal fisheries science support has become increasingly obvious since WCPFC came into full operation. In 2007 – shortly after the WCPFC headquarters opened its doors in Pohnpei FSM – the SPC Oceanic Fisheries Programme budget was EUR 2,897,700 and it had 17 internationally-recruited staff. In the same year, the budget for the Coastal Fisheries Programme’s science section⁶ was EUR 2,378,900 and it had 12 internationally-recruited staff. In 2007, SPC’s investments in coastal fisheries and oceanic fisheries science were roughly equivalent, largely thanks to grant aid funding from the European Union for both oceanic and coastal science.
- Now, in 2024, regional support for SPC’s oceanic fisheries science has increased by 500%, while investment in SPC’s coastal fisheries science funding has shrunk to a third of its 2007 value. This hasn’t

⁶ Then called the SPC “Reef Fisheries Observatory”

so much been because funding for other coastal fisheries work had been massively reduced – in fact the coastal fisheries budget covering all CFAP sections increased by a factor of 240% during this period – but because for the last 15 years it has become more difficult for SPC to consistently obtain sufficient funding specifically for coastal fisheries science – whether SPC-managed programme funds or donor-directed project funds. The increasing priority that governments have placed upon the need to improve the regional scientific evidence-base for tuna fisheries decision-making has not carried through to coastal fisheries over the past 20 years.

6. Why? There could be many reasons for this apparent shift in priorities, possibly including:
 - A perception by agencies that coastal fisheries problems are conservation problems that can be solved by MPAs informed by conservation science;
 - A perception that most coastal fisheries problems can be identified and solved using non-quantitative information, and that community-based management does not need science because its decisions are based on other kinds of evidence and expertise;
 - An increased preference for delivery of aid or external coastal fisheries science projects directly to national governments or communities;
7. The erroneous assumption that Universities and NGOs have started sufficiently providing for the coastal fisheries science needs of all individual SPC island members;
8. Because island nation governments are now felt to be capable of fulfilling their own coastal fisheries science and information needs, making a regional support service for coastal fisheries science harder to support.
9. However, we think the main reason for the differential that has emerged between regional priorities for oceanic and coastal fisheries science is because of the high-level drivers embedded in various international conventions relating to oceanic fisheries as outlined in paragraphs 0 and 3 above, most importantly for this region in the form of the WCPFC Convention.
10. Ever since the first declarations of 200-nautical mile Exclusive Economic Zones in the late 1970s and early 1980s, tuna fisheries in the Pacific Islands region have been subject to disagreements between certain distant water fishing nations (DWFNs) wanting to promote the continuation of tuna fishing activities by their companies in the Pacific Islands region, and the Pacific Island nations whose EEZs now cover most of the best tuna fishing areas in the tropical and near-tropical western and central Pacific and who want to maximise the value of their rights to these fisheries for nation-building. And, when it comes to debates among the members of the implementing organisations of these Conventions, **“the best available science” plays a crucial role in deciding which arguments prevail.** The DWFN members of the WCPFC include the three largest economies in the world and can bring a high level of scientific expertise to bear witness in these arguments, but most Pacific Island fisheries authorities do not have access to PhD-level fisheries scientists specialising in oceanic stock assessment – except through SPC. So there has always been a strong regional justification for continuing and building on the work of the SPC FAME Oceanic Fisheries Programme⁷.

⁷ It has been to the SPC FAME OFP’s credit that it is not only able to make high-quality oceanic fisheries science available to its Pacific Island members to assist them in formulating their own proposals concerning WCPFC management measures, but OFP has been accepted by the whole WCPFC membership as the WCPFC “Science Provider” – as an impartial provider of evidence for WCPFC decision-making (at least when it comes to tropical and southern near-tropical WCPO tuna stocks).

11. Pacific Island *coastal* fisheries decision-makers, on the other hand, do not normally have to deal with high-profile international arguments. The struggle they face is not between nation-states, but usually between local small-scale fishers and the risk of depletion of local resources, and although foreign investors and fishers are sometimes involved, these are subject to national law and outside actors cannot simply veto the imposition of management measures as they can for regionally-negotiated management measures for highly migratory stocks in shared waters. Regional intergovernmental coordination of action is not *essential* for coastal fisheries, even if it is desirable for effecting economies of scale and sharing of scarce expertise and capacity-development activities^{8 9}.
12. However, even if there is no hard *regional* requirement for decisions affecting the conservation and management of coastal species to be justified by science, many SPC SIDS legal codes now do – albeit in different ways – require the application of scientific evidence to *national or local* decisions made about coastal fisheries (see Annex 1 for some examples). There are now clear national requirements for evidence-based decision-making in the management of certain coastal fisheries, and many SPC SIDS need access to a consistent source of evidence in making these decisions. At SPC we continue to receive requests for this kind of support, and we also see “wheels being reinvented” because not all of the service providers and practitioners in this field are in contact, or aware of each other’s activities. We also see some SPC SIDS members being left behind in coastal fishery science capacity because they are not a target for donor projects, external researchers, or even national budgets. We don’t expect that the SPC FAME Coastal fisheries science section should ever fulfil all the coastal fisheries science needs of all members, but we could do a lot more to develop a fundamental framework of agreed best-practice scientific methodologies for data-challenged coastal fisheries if it were considered a high priority by members.
13. There is now a concerted push through the Forum Secretariat’s “2050 Strategy for the Blue Pacific Continent¹⁰” and the SPC’s “Unlocking Blue Prosperity¹¹” initiative to achieve 100% effective management and 30% full protection for Pacific Island marine spaces. Yet very little of the current regional marine monitoring and analytical capacity is aimed at providing scientific support for 100% effective management of fisheries in *coastal* spaces. SPC has made remarkable strides in scaling-up much-needed community-based management of coastal fisheries, but both communities and governments will need consistent coastal fisheries scientific information support if they are to jointly achieve effective management over 100%of the waters of the Blue Pacific Continent.

⁸ Note that a “hard” requirement for coastal fisheries science is emerging in the special case of the aquarium fishery, which is almost entirely an export fishery and where CITES is beginning to control the trade through prohibitions and requirements for Non-Detrimental Findings before exports can be permitted (see IP4, this meeting: “An update on the CITES process concerning marine aquarium fishes”).

We are not aware of Marine Stewardship Council certifications for any coastal fisheries yet in the PSIDS region, but these would also have a requirement for science, as some members will be familiar with from their tuna fisheries undergoing MSC certification or re-certification.

⁹ There may also be other “soft” drivers for coastal fisheries stock assessment, production data and statistics:

- (a) to provide donor monitoring and evaluation auditors with evidence of the progress of development projects aimed at improving the status or management of coastal fisheries;
- (b) the potential use of coastal fishery surveys as indicators or early warning of climate change.

¹⁰ <https://forumsec.org/2050>

¹¹ <https://www.spc.int/ubpp>

Annex 1

National legislative and institutional requirements/drivers for science or evidence-based decision-making or science-based reporting in coastal fisheries: some examples.

Fiji

14. The 1941 Fisheries Act has no specific requirement for coastal fishery resource assessment, monitoring, analysis nor biology, nor for imposing active fishery management measures or procedures that would require regular assessment of the status of any coastal fisheries. The purpose of the 1941 Act was simply to provide for “the regulation of fishing” and its main management measures were precautionary minimum size limits and gear specifications. Coastal fisheries science and monitoring was not explicitly required, but was usually carried out to provide evidence to the Minister and Cabinet to help guide the development of new regulations which might have been identified as being necessary as a result of social and political dialogue. Regular monitoring of commercial fish market (and other outlet) throughput by species and total weight was carried out primarily to inform development planning and for public information, while nearshore fishery resource surveys were also carried out to help the Lands Department assess the compensation due for any customary fishing rights extinguished by foreshore reclamation or major coastal development.
15. A demarcated area (qoliqoli) survey was proposed in 1987 to provide information to customary fishing rights registrants so they could more effectively exercise their rights, in consultation with the District Commissioner and Divisional Fisheries Office, to control not only the issue of permits to fish within lagoons and reefs (which in Fiji are all subject to customary fishing rights), but which also may “exclude fishing for particular species of fish, or may exclude fishing in any particular areas, or may exclude fishing by any particular methods, or may contain any combination of such exclusions”. The withdrawal of USAID prevented this major project being funded, but the idea was later picked up under Government budgetary funding and a coastal fisheries survey team set about the enormous task of inventorying the fishery resources of over 200 different registered customary fishing rights areas. The 2015 Vision and Implementation Plan for a “Framework for the sustainable management of Fiji’s coastal fisheries resources” suggested an external review of the Marine Resource Inventory methodology to identify possibly more efficient alternatives, taking into account past research outputs.
16. The 2012 Offshore Fisheries Management Act did not repeal the 1941 Act (except for its application to the EEZ) but also introduced measures that are not specific to Offshore fisheries but cover all fisheries in Fiji Waters. And the primary purpose of this Act is “to make provision for the management, development and sustainable use of fisheries and living marine resources of the Republic”, which implies the need for at least some scientific input into determining just how much use of coastal fishery resources is sustainable. More explicitly:
 - Section 6 (b) requires the Ministry to “ensure that such measures [to ensure the long-term sustainability of fisheries resources...] are **based on the best scientific evidence available** and are designed to maintain or restore, where appropriate, target stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards”. This is standard oceanic fisheries management language, but in this case the resources are defined (under the definition of “fish”) as “any aquatic plant or animal, whether piscine or not, and includes any oyster or other mollusc, crustacean, coral, sponge, holothurian (bêche-de-mer), or other echinoderm, turtle and marine mammal, and includes their eggs, spawn, spat and all juvenile stages and any of their parts.”

- Section 6 (f) requires the Ministry to “**assess the impacts** of fishing, other human activities and environmental factors on target stocks, non-target species and species belonging to the same ecosystem or dependent upon or associated with target stocks”; and in (i) and (j) “to take into account the interests of artisanal, subsistence fishers and local communities including ensuring their participation in the management of fisheries”; and to “maintain traditional forms of sustainable fisheries management”.
17. Part IV provides for the designation of any fisheries important to the national interest or which require management measures to ensure sustainable use, and for the development of a Management Plan for each designated fishery. Among other things **the Management Plan needs to (s17(3)(c)) describe the status of the fishery, (s17(3)(g)) include an assessment of risk and (s17(3)(h)) identify requirements for monitoring, reporting, and assessment.**
- None of these possibilities appear to be confined to offshore fisheries, despite the name of the Act, and Section 3 says the provisions of the Act apply to all fishing and related activities, and to Fiji Fisheries Waters (which include internal waters, where most Fiji coastal fisheries occur). The only exception is for the application of conservation and management measures adopted by a regional fisheries management organisation, and these do not apply to Fiji internal waters, archipelagic waters or territorial sea unless express consent is granted by the State.
 - In summary, there is clear justification for monitoring, scientific analysis and evidence-based decision making in coastal as well as offshore fisheries under the latest Fiji fisheries legislation. However the requirement remains fairly general, and the more detailed science-related actions appear to be dependent on the designation of fisheries and the development of management plans for designated fisheries, whether oceanic or coastal.

Nauru

18. When the Nauru Fisheries and Marine Resources Authority (NFMRA) was created, the Nauru Fisheries Act (1997) and Regulations (1998) repealed the 1978 Marine Resources Act. Although the 1997 Act was well-designed for its purpose, it was aimed almost entirely at the management of tuna fisheries and contained no specific coastal fisheries measures although there was a registration system mandated by the 1998 Fisheries Regulations for small boats fishing in the territorial sea (which was never activated). However, the 1997 Act actually applied to all Nauru fisheries waters (**including all waters where coastal fisheries occur**), and to all persons, whether or not they were Nauruan citizens, and to all boats, including foreign boats. The 1997 Act also contained provisions requiring fisheries to be managed **according to the precautionary approach using the best scientific information available** and had provision for preparing fishery strategies for fisheries requiring particular attention, for these fisheries to be monitored and for various limitations to be enforced – many of which would require scientific input if such strategies were ever required. In theory, these strategies appeared to be applicable to coastal fisheries as well as oceanic fisheries.
19. A new Act was passed by Parliament in 2024 to take account of Nauru’s new flag State responsibilities in the purse-seine fishery. The 2024 Nauru Fisheries Management Act includes most of the provisions of the 1997 Fisheries Act and integrates the provisions of the Fisheries Amendment Act of 2017 that covered the authorisation and management of Nauru vessels fishing in areas beyond Nauru’s national jurisdiction. Section 6 (2) (d) of the 2024 Act is carried through from the 1997 Fisheries Act and continues to require the Minister, the Authority and any other person performing functions and exercising powers under this Act, to have regard to: the need to “*apply the precautionary approach to the management and conservation of fisheries and marine resources taking account of the best scientific information available...*”

20. So, based on the successive Marine Resources (1978), Fisheries (1997) and Fisheries Management (2024) Acts, the requirement for coastal fisheries science was clear, but remained very general, and these Acts were aimed mainly at the management of commercial or industrial tuna fisheries.
21. However, following several attempts to develop something acceptable to all coastal fishery stakeholders over a period of at least 15 years, **in 2020 Nauru enacted a Coastal Fisheries and Aquaculture Act** with much more specific requirements covering coastal fisheries. This legislation required, for example:
- The (NFMRA) Chief Executive Officer in the performance of a function or exercise of a power under this Act shall as far as is reasonably practicable: (a) ensure the application of conservation and management practices based on the **best available scientific advice** and generally recognised local and international customs, standards and best practices; (b) ensure the **application of the precautionary approach** which shall be applied to the management and development of the fisheries at a standard that is equal or superior to the standard in any applicable international instrument; (c) prevent over-fishing, in particular by **ensuring that levels of fishing effort do not exceed the availability of resources**; (d) **collect and share, in a timely manner, accurate data** concerning fisheries and aquaculture, as well as information from national and international research programmes;
 - Under Section 23 on the “*Determination of allowable catch in coastal fisheries waters*” - (1) **The Minister shall determine the total allowable catch**, the total applied effort or a combination of the same in coastal fisheries waters. (2) In determining the total allowable catch, the total applied effort or a combination thereof, the Minister shall apply necessary catch quotas or size limits: (a) in a particular area; (b) in respect of a particular species or a group of species of fish; or (c) in respect of the use of a particular gear, fishing methods or the type of fishing vessel.
 - Under Section 38 on “*Information and statistics*” - (1) The Chief Executive Officer shall **collect and analyse statistical and other information** on coastal fisheries and aquaculture. (2) Where required by the Chief Executive Officer, a person engaged in coastal fisheries or aquaculture activities shall provide in the prescribed form data, statistics and other information in relation to: (a) catches; (b) bycatches; (c) fishing methods; (d) fishing effort; (e) production; (f) production methods; or (g) any other relevant information. (3) The Chief Executive Officer may share the information received under subsection (2) with a Government Department, statutory authority, instrumentality of the Republic, agency or association.
 - Under Section 39 “*Annual report*” (1) The Chief Executive Officer shall, as soon as practicable at the end of each financial year, provide as part of the annual report of the Authority to the Minister, **a report on coastal fisheries and aquaculture** which includes: (a) an evaluation of any community fisheries management plans; (b) **statistical information on coastal fisheries and aquaculture**; and (c) any information relevant to the management and development of coastal fisheries and aquaculture. (2) **The annual report shall be presented to the Cabinet by the Minister.**
22. In summary, as of 2020 Nauru has a detailed mandate for coastal fisheries science and statistics, and a requirement for coastal fisheries reporting as part of the NFMRA annual report to Cabinet.

Cook Islands

23. The Cook Islands has long had a strong level of national engagement in coastal fisheries monitoring and science.

24. The Marine Resources Act (2005) is the main piece of legislation mandating research and monitoring of coastal fisheries. “The principal objective of this Act and the Ministry of Marine Resources is to provide for the sustainable use of the living and non-living marine resources for the benefit of the people of the Cook Islands.” As with most 21st century Pacific Island top-level national fisheries legislation, its main principle with respect to fishing in fisheries waters (i.e. coastal and oceanic fisheries) is that those performing functions or exercising powers under this Act, shall take into account environmental and information principles in relation to **achieving the sustainable** use of fisheries and the need to adopt measures to ensure the long term sustainability of the fish stocks – and that “(b) **decisions should be based on the best scientific evidence available** and be designed to maintain or restore target stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors; **the precautionary approach** should be applied”.
25. It also contains provision for the designation of fisheries that are important to the national interest, and which require specific management action to ensure sustainable use. Fishery Plans to implement this management can be prepared by MMR for national application, and local authorities in consultation with MMR can prepare fishery plans for the management of a designated fishery of local interest within their area of authority. The **status** of these designated fisheries needs to be assessed and reviewed from time to time.
26. The Marae Moana Act of 2017 has slightly modified the Marine Resources Act of 2005 to clarify that the “Ministry of Marine Resources also has the function of supporting the objectives of the marae moana under the Marae Moana Act 2017.” The marae moana includes all waters under Cook Islands jurisdiction, including the seabed, the water column and the airspace above those waters. Like the Marine Resources Act it upholds the principle that “decisions should be based on the **best available scientific and other information**”. And, “recognising that current information regarding ocean resources may be limited” it upholds the principle that “a lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation”. The Act finds its application through the Marae Moana Policy, and through spatial planning “delineating zones within the marae moana and specifying the reasons or uses for which each zone may or may not be used or entered.”
27. The Marae Moana Act specifies several types of zone that should be planned, and explicitly sets up a marine protected area¹² of 50 nautical miles (measured from each coastline) around all islands of the Cook Islands, “to protect the pelagic, benthic, coral reef, coastal, and lagoon habitats of the marae moana and, accordingly, all seabed minerals activities and large-scale commercial fishing in the area are prohibited, but other ecologically sustainable uses are permitted”. The **ecological sustainability of these other uses needs to be assessed**, and this is catered for under Section 27 which allows for Scheduled marine-based activities to be proposed by a Technical Advisory Group which, “with the advice of appropriate experts, prepares for approval by the Marae Moana Council a Schedule of marine-based activities for which management measures must be developed and implemented by agencies in order to reduce, minimise, or eliminate threats or potential threats that those activities pose to the achievement of the purposes of this Act”.
28. Each agency responsible for implementing the marae moana “must, in accordance with any regulations made under this Act, provide an annual marae moana agency report to the Marae Moana Coordination Office” that includes the following information: (a) a statement detailing the implementation status of all management measures for which that agency is responsible under this Act; and (b) all data collected that is relevant to the achievement of the purposes of this Act; and (c)

¹² ... or what might nowadays possibly be called an “Artisanal Stewardship Area”, in the terminology used in the Declaration of the 8th [Meeting of OACPS Ministers Responsible for Oceans, Inland Waters and Fisheries](#).

the results of all research held by the agency, whether or not the research was undertaken by the agency, that is relevant to the achievement of the purposes of this Act; and (d) any other prescribed information held by the agency. Or alternatively, the responsible agency can include that information in its annual report.

Regional mandates for coastal fisheries science

- 29. There are regional or subregional documents that reference scientific information support to Coastal Fisheries Management.
- 30. The “New Song for Coastal Fisheries – pathways to change: the Noumea Strategy” of 2015 highlighted the commonalities and brought a higher degree of regional collaboration to the urgent task of improving coastal fisheries management across PSIDS, particularly through community-based action. The New Song envisages 8 outcomes, with scientific support coming under Outcome # 2 (“Adequate and relevant information to inform management and policy”), as follows:

Outcome # 2: Adequate and relevant information to inform management and policy

Intermediate outcomes	Key players	Indicators
Government and community managers have good quality information to inform decisions	Fishers, managers (village chiefs, local fisheries administrators), networks, scientists, skilled data collectors	# of active databases, disaggregated by social factors # of fishers/communities providing high quality data # of trained data collectors, including in social and economic methods # of appropriate surveys and assessments completed Evidence that data is being used to inform decisions
Science is translated into simple and informative material to guide community management	Community members and fisheries staff with resource management people, academics, networks, capacity providers (SPC, FFA, MPI, NGOs), scientists	Management plans guided by data # of resources available to the community # of fisheries programmes integrated into school curricula # of evidence-based decisions Curricula
Communities have a greater understanding of status, biology and habitats of key species (in addition to existing local ecological knowledge)	Communities (traditional knowledge), managers, networks, government, research institutes, extension staff	# of extension staff Data easily accessible # communities receiving feedback # relevant publications being produced Incorporation of coastal fisheries management in school curricula # of schools with above curricula

- 31. Although a role for coastal fisheries scientific support is laid out here in a regional ministerial-level document, it is not a particularly strong role and the need for coastal fishery surveys and assessments to provide good quality information to inform the decisions of government and community managers was not clearly referenced in the FAME Business Plan, where Key Result Area 4.1 – about the provision of “high-quality stock and fisheries assessments” – is restricted to “key oceanic fisheries”. The New Song is currently being reviewed along with the Forum Leaders future of fisheries Roadmap, and an Implementation Plan is being developed to provide more nuance to the FAME Business Plan.
- 32. The recent Commonwealth¹³ Heads of Government meeting in Samoa issued the “Apia Commonwealth Ocean Declaration” which included a commitment “to collectively improving the sustainability of fisheries, including small scale and artisanal fisheries, and to prevent, deter and eliminate illegal, unreported, and unregulated (IUU) fishing, including by: ... iii) establishing

¹³ SPC PSIDS Commonwealth members are Fiji, Kiribati, Nauru , PNG, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu

*conservation and management measures informed by the **best available scientific evidence**, taking a precautionary approach where scientific information is absent or inadequate;”*

Relevance to SPC SIDS members coastal fisheries science development

33. One common thread now running through many national fisheries Acts, as well as several regional fisheries non-binding commitments, is the requirement or desire that management measures should be informed by the “best available scientific evidence”, and for implementers to act in accordance with the Precautionary Approach. This broadly echoes the UN Fish Stocks Agreement (UNFSA) and the WCPFC Convention (the latter of which recalled that “effective conservation and management measures require the application of the precautionary approach and the best scientific information available”). However, the scope of UNFSA and the WCPFC Convention only covers “internationally-managed” fisheries for highly migratory, (boundary-) straddling or high seas-only stocks, while Pacific Island national fisheries acts and the CHOGM Apia declaration now also apply this approach to nationally and locally-managed coastal fisheries.
34. UNFSA Annex II outlines the basics of the Precautionary Approach, and the modern implementation of this approach is through Harvest Strategies and Management Procedures which apply Control Rules in accordance with agreed target (management objective) reference points (TRPs) and limit (conservation action trigger) reference points (LRPs).
35. If the letter of the law is to be applied, the development of a full Precautionary Approach for highly-multispecies, data-limited and community-managed coastal fisheries will be very challenging, recalling the struggles that WCPFC is still facing in applying the same approach to single-species, data-rich, institutionally-managed tuna stocks – a process that started a decade ago¹⁴. However, it is likely the drafters of these Acts were referring not to the detailed application of the Precautionary Approach as laid out in the whole of UNFSA Article 6, but to the generalised approach summarised in UNFSA Article 6 para 2, which is essentially a **risk management** approach, where States are required “*to be more cautious when information is uncertain, unreliable or inadequate. And where the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.*”

There are methods for performing risk assessments to inform the fundamentals of a precautionary approach to fisheries management for extremely data-limited, or data-less fisheries, including through (for example) tools used in the Ecosystem Approach to Fisheries (EAF¹⁵) such as Productivity Susceptibility Assessments (PSA). Many FFA/SPC member countries became familiar with the EAF because of the assistance by both organisations in developing ecosystem-based national tuna management plans in the 2000s, before SPC, through WCPFC, began developing the more targeted and detailed Harvest Strategy Approach. And some of these tools can be used on coastal fisheries to provide information useful to communities, while developing more rigorous data-informed indicators such as length-based spawning potential ratio (LBSPR) indicators for the management of other coastal fisheries – particularly those concentrating on particular species for commerce and export, or on species which appear particularly susceptible to overfishing, or are otherwise important. IkaSavae is projected to be a key monitoring tool for all these tiers of coastal fishery assessment complexity, and SPC will need to consult with members and with experts in academia and other regions about developing and maintaining a set of regional best-practice standards and procedures for the appraisal of coastal stocks, their supporting ecosystems and the fisheries that depend upon them.

¹⁴ See WCPFC [CMM 2014-06](#) and for a general description of progress see [WCPFC Harvest Strategy | WCPFC](#)

¹⁵ Eg <https://www.fao.org/fishery/en/eaf-net/about/what-is-eaf>