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Overview of FAME priorities and direction

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Overview of FAME priorities and direction

Introduction

1. The overall goal and objectives of the Fisheries, Aquaculture and Marine Ecosystems (FAME) Division of SPC, in the development context of the Pacific Islands region, are laid out in the FAME Business Plan (see WP3). Briefly, the overall goal is: *That the fisheries resources of the Pacific region are sustainably managed for economic growth, food security and environmental conservation*. FAME's contribution to this goal is expressed through six Divisional objectives:
 - Enhance data collection and provide data management services for fisheries & marine ecosystems;
 - Provide analyses and advice for evidence-based fisheries management;
 - Support the sustainable development of aquaculture;
 - Identify diverse and sustainable marine-based livelihood options for fishing communities;
 - Provide, and facilitate access to, fisheries information; and
 - Support capacity development in fisheries and aquaculture among PICTs.
2. These objectives provide the framework for the development of work plans for the main organisational units of FAME, the Coastal Fisheries Programme (CFP) and the Oceanic Fisheries Programme (OFP), supported by the Information Section and Monitoring, Evaluation and Learning (MEL) units within the FAME Director's Office.
3. In this paper, we provide an outline of the key priorities to be addressed by these units over the next several years. For clarity, we discuss each unit separately, but note that a number of the Divisional objectives listed above are contributed to by both CFP and OFP, while the Information and MEL units operate across both programmes.

Key priorities and directions of the FAME Director's Office

4. The FAME Director's Office provides general oversight of the Division's work, supports regional and international cooperation and contribution on issues relating to FAME's work, develops funding and partnership opportunities and ensures that FAME is well integrated with the rest of SPC through involvement in Corporate-level planning and decision making. In addition, the Office incorporates two functions that work across both of the Division's substantive programmes – the Information Section and the MEL Unit.

Information Section

5. The Information Section supports objective 6 of the FAME Business Plan. In summary, the Section develops information and knowledge products in collaboration with all other FAME sections, as well as with, and for, all members. It also collects, organises and disseminates

relevant fisheries information, mainly to assist members achieving SDG 14: Conserve and sustainably use the oceans, seas and marine resources.

6. The priority ongoing work being conducted by the Information Section includes:
 - **The production of reference newsletters and information bulletins** that provide a current look at some of the most exciting research and case studies on marine-related topics of interest to the region: the tri-annual *SPC Fisheries Newsletter* and the three yearly Information Bulletins (*Women in Fisheries*, *Beche-de-mer*, and *Traditional Marine Resource Management and Knowledge*).
 - **The production of scientific and technical reports** to assist members and other FAME sections, as well as other paper-based information tools such as posters, brochures, leaflets and manuals.
 - **The provision of fisheries-related information in response to specific needs** expressed by members or as a response to needs identified at the regional level, using all available media, including Internet, web applications, social media, etc.
7. In addition to the continuation of the above, possible key new directions for the Information Section include:
 - **Producing tailor-made information for communities.** The Information Section will put a greater emphasis on developing information tools specifically targeting communities, in line with the New Song recommendations. This approach includes participatory media, which provide a platform for communities through which they can share knowledge and their own perspectives on fisheries management.
 - **Using interactive tools.** Information will be produced using a wide range of materials combining print with more interactive tools such as radio shows, videos and social media in order to enhance community engagement, elevate local voices, and support social and behavior change efforts.
 - **Elaborating information dissemination strategies.** The Information Section will work in collaboration with countries to refine their communication strategy to disseminate marine-related information to remote coastal communities. The produced contents could be multicast through many channels in order to maximize the reach at low costs tapping into existing national and provincial networks, using visits to villages, creating awareness events and building partnerships with mass media where appropriate.

Monitoring, Evaluation and Learning Unit

8. The FAME MEL Unit was established in 2015 and supports the FAME Division in MEL, reporting, project development and design, strategic planning, resource mobilisation and workshop facilitation. The MEL Unit also supports and contributes to SPC-wide initiatives to improve MEL and planning across the organisation.
9. The priority ongoing work being conducted by the MEL Unit includes:

- **Internal MEL support services** are provided to improve evidence on the outcomes of FAME's work and communicating these to members and partners, along with improved tools and systems to support MEL within FAME.
- **Regional MEL support:** The MEL Unit supports broader regional MEL activities through supporting or coordinating progress reporting on fisheries related strategies. This includes contributing to streamlining and harmonising regional reporting through:
 - coordinating reporting for the Future of Fisheries Roadmap / A New Song through the Coastal Fisheries Report Card;
 - supporting other CROP agencies in MEL (primarily FFA);
 - MEL support for large regional projects (e.g. Pathways); and
 - supporting international efforts to improve fisheries related MEL (e.g. contributions to MEL Handbook for SDG14; MEL for The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries).

It is envisaged that this regional work will continue to grow and develop as the role of MEL becomes more important in the mid-to-late stages of these international and regional agreements.
- **National MEL support:** In 2018, the FAME MEL Unit began providing technical / capacity development assistance in MEL to members, starting with Vanuatu. Some FAME projects also include specific MEL components as part of support provided to members. As members continue to strengthen their overall fisheries strategies and policies it is envisaged that this national level capacity development support will become a growing area of work.

Key priorities and directions of the Coastal Fisheries Programme

10. The Coastal Fisheries Programme supports all six of the FAME Business Plan objectives. In summary, the CFP provides science and technical support to PICTs to enhance the management of coastal fisheries, and the sustainable development of aquaculture and nearshore livelihoods across the region.
11. The CFP assists governments and administrations to develop scientifically informed and socially achievable coastal fisheries management policies and systems (national and community-based). It provides a regional framework for sustainable aquaculture, including planning, research and development, aquatic biosecurity and trade, for Pacific Island governments, the private sector and other stakeholders. It assists in developing sustainable nearshore fisheries in Pacific Island countries and territories to provide food security, sustain livelihoods, promote economic growth and assist climate change adaptation.
12. The CFP works in partnership with other SPC Divisions (Social Development Programme; RRRT; Land Resources), and collaborates with a wide range of universities, international, regional and local NGOs, and other CROP agencies (SPREP; FFA) to deliver the CFP work programme.
13. The CFP work priorities are guided by national requests and the frameworks and strategies in the “New Song for Coastal Fisheries – Pathways to Change” and the coastal fisheries component of the “Regional Roadmap for Sustainable Pacific Fisheries”. These involve a focus on:

Empowerment – developing policies and legislation that provide for the involvement of coastal communities in the management of their fisheries resources; supported by national controls on export commodities, communities will drive local management regimes with clear user rights. **Resilience** – implementing strategies to manage the various threats to coastal ecosystems. **Livelihoods** – adopting policies to develop alternative livelihoods for coastal communities that are impacted by declining fisheries resources (aquaculture, water-based tourism and small-scale fishing for tuna provide options, but many solutions will lie outside the fisheries sector). Key to this is the involvement of women, youth and disadvantaged groups in decision making and access to the benefits – **gender and human rights-based approaches** are being mainstreamed into all CFP work programme activities.

14. Organisationally, the work of the Coastal Fisheries Programme falls under two sections: Aquaculture; and Coastal Fisheries Science, Management and Livelihoods. These sections are supported by two cross-cutting areas: Coastal Information and Data – providing database and information service support and advice; and Fisheries Economics – providing economic advice, analysis and assessments of fisheries and aquaculture data and projects.
15. The key priorities and directions of each of the above work areas are summarised in the following sections.

Coastal Information and Data

16. The priority ongoing work being conducted by the Coastal Information and Data team includes:
 - **Developing and maintaining various databases, document repositories and GIS data** in support of aquaculture, science and management activities, and providing training on these tools as required.
 - **Developing applications and tools for data collection.** Legacy catch data is too often insufficient to provide insight on the status of the fisheries. Creel and market survey designs have been simplified to concentrate on the regular monitoring species composition and size of fish and invertebrates for a larger (and representative) sample of fishers (creel-surveys) and sellers (market surveys). The TUFMAN/TAILS applications will be modified to improve the creel data collection, and an online database for market data has been developed and is currently being tested. A mobile application is in development and will complete the system.
 - **Inventory of legacy surveys, datasets and associated documents.** Concern for historical data, raised in HOF10 and RTMCF1, has led to CFP initiating an inventory of legacy surveys, datasets and associated documents that exist in member countries. CFP continues to archive, preserve, make discoverable or disseminate on behalf of and according to the instructions of data owners. This activity will continue in 2019.
17. In addition to the continuation of the above, possible key new directions for the Coastal Information and Data team include:
 - **Migration of web applications to cloud** and redevelopment of some modules for improved access from the web.

- **Redesign of legacy applications** such as RFID and SEMCoS in line with changes in survey design and data analysis proposed by the science team and an offline/online architecture for data entry while in the field and synchronization at later time.

Aquaculture

18. The priority ongoing work being conducted by the Aquaculture Section includes:

- **Enhance regional and national capacity in aquaculture policy and planning** to establish clear priorities for aquaculture meeting current and future needs. Key ongoing programmes in support of this work are:
 - Working with in-house CFP expertise to provide technical support to members on the development of new and review of existing national aquaculture development and management plans.
 - Working with in-house CFP expertise to assist members in the area of aquaculture and aquatic biosecurity legislation.
 - Providing a sub-regional and regional roadmap on aquaculture and aquatic biosecurity.
- **Providing technical and analytical support for aquaculture** to support production and economic sustainability. Key ongoing programmes in support of this work are:
 - Strengthen technical and capacity limitations in the countries to address key aquaculture constraints in the area of feed, seed and broodstock management.
 - Provide technical support to member countries and territories to improve aquaculture infrastructure, especially to meet national responsibilities in brood stock management, to provide bio-secure facilities for quarantine, and to support fledgling private sector with aquaculture inputs (seed, feed).
 - Strengthen capacity of aquaculture associations or organizations to support their sector.
 - Build capacity of aquaculture staff and practitioners, including training exchanges.
 - Private sector development and up-scaling of production from research phase to commercial phase.
 - Improve networking and collaboration, technology, research, skills transfer and technical advice.
 - Strengthen domestic markets for aquaculture products to meet demand for fish locally and for import substitution.
- **Enhance the management of aquatic biosecurity risks:** As the Pacific does not have a tradition of local species domestication for aquaculture, suitable species have to be introduced. To protect the biodiversity of the region, there is a strong need for responsible practices, and regional capacity in biosecurity is very limited. Key ongoing programmes in support of this work are:

- Support members to improve aquatic biosecurity practices on relevant disease diagnosis, surveillance and reporting.
- Strengthen national capacities on risk analysis in aquaculture.
- Strengthen national capacities of quarantine of live aquatic organisms.
- Support countries to improve national infrastructure and operations for quarantine of live aquatic organisms.

19. In addition to the continuation of the above, possible key new directions for Aquaculture include:

- **Support good governance** in terms of policies, legislations, development and management plans. Absence of good governance is said to slow development in aquaculture.
- **Provide appropriate socioeconomic assessments** for priority commodities.
- **Strengthen aquaculture statistics and data bases** to improve aquaculture policy and decision making.
- **Strengthen community engagement in aquaculture** by ensuring technology is simple and accessible, and the aquaculture activity blends in with traditional rural lifestyles and other agricultural practices. The expansion of aquaculture in the Pacific will depend on providing better production methods for species currently being farmed as well as improving the infrastructure for propagating the species being farmed.
- **Identify opportunities to assess the contribution of aquaculture to addressing NCDs**, health issues and food security in the Pacific.
- **Identify opportunities for access to finance for aquaculture projects.**

Coastal Fisheries Science, Management and Livelihoods

20. The priority ongoing work being conducted by the CFSML section includes:

- **Assisting member countries to assess and manage finfish and invertebrate resources and their associated habitats** and to facilitate this through resource assessments, data analysis, interpretation, training, mentoring, and on-demand advice.
- **Assisting countries in strengthening coastal fisheries [and aquaculture] governance**, as a priority area under the New Song for Coastal Fisheries (in particular, Outcomes 1 & 5) and the FAME Business Plan (in particular, Objective 2.5 and 3.1). Key ongoing activities of the CFSML section in the governance area are:
 - Support to PICTs in drafting policies, management plans, laws and regulations in accordance with government priorities, including provision of related advice and mentoring.
 - Training of national fisheries and legal officers in preparing policies, management plans, laws and regulations, through national or regional workshops and short-term training attachments.

- Training of fishing communities and national fisheries officers in monitoring, control and surveillance (MCS) activities, through local workshops and accredited university courses, to improve compliance with fisheries legislation.
 - Development of a legal database for fisheries managers and publication of awareness materials for communities on pressing issues, such as illegal fishing by Blue Boats, or relevant fisheries regulations.
 - **Support member countries in sustainable livelihoods opportunities**, as an ongoing priority area under FAME Business Plan (objective 4). Key ongoing activities are:
 - Strengthened national FAD programmes in support of community-based tuna fishing, processing and marketing – fisheries departments and community youth are at the heart of this activity.
 - Training in sustainable fishing methods for food and income generation.
 - Support and development of non-extractive uses of coastal fisheries resources, e.g. community-based ‘no-kill’ sport fishing and other marine-based ecotourism.
 - Safety at Sea for fisheries development in support of coastal fisheries management.
21. In addition to the continuation of the above, possible key new directions for CFSML include:
- **Work towards the harmonisation of coastal fisheries data collection.** As agreed at HOF10, CFP continues to explore options to strengthen coastal fisheries data collection through the establishment of a data standardisation body. Advances were made at RTMCF1 in November 2017, where possible Terms of Reference for a formal body were discussed. Further, in November 2018, a group of coastal fisheries scientists held an informal e-conference on “new” approaches to data poor fisheries. The next step is to organise a face-to-face expert consultation in 2019, which is yet to be funded.
 - **Establish an appropriate framework for coastal fisheries data storage and use.** As agreed at RTMCF1, bilateral arrangements between SPC and PICTs for the storage and use of coastal fisheries data will need to be developed, particularly if CFP is to become a repository for all forms of coastal fisheries and aquaculture data following the request made at HOF10. A further effort will be to explore the possibility of developing a regional cooperative arrangement as an overall framework for coastal fisheries data collection and sharing in the Pacific. [See RTMCF Action Plan #10-14.]
 - **Roll out of proven alternative livelihood opportunities**, implemented in an integrated fashion, with parallel and complementary inputs from SPC Gender, Human Rights and Land Resources programs, and national tourism authorities. Opportunities include:
 - Promote fishing for near-shore small pelagic species.
 - Increased support in community-based ecotourism including ‘no kill’ sport fishing tourism – focus on communities that face urban migration issues.
 - Fish preservation, postharvest and value-adding – women and youth groups using low-tech methods for extending shelf life of and improving financial returns from local marine products.

- Maximized economic value from fish by-products – community-based businesses turning by-products into organic fertilizer and animal feed, women and youth focused.
- Examine livelihood opportunities and solutions that may lie outside the fisheries sector.

Key priorities and directions of the Oceanic Fisheries Programme

22. The OFP supports objectives 1, 2, 5 and 6 of the FAME Business Plan. To summarise, OFP provides scientific advice on the status of stocks and impacts of fisheries and the environment on both target and non-target species and the pelagic ecosystem, conducts research on the biology and ecology of these stocks, provides technical support in the collection and management of data from the fisheries, and provides capacity building opportunities to members across these fields of work.
23. OFP delivers its work to members both at the national level and through the various regional and sub-regional fisheries organisations of which they are members, including the Western and Central Pacific Fisheries Commission (WCPFC), the Pacific Islands Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement (PNA). In doing so, there is extensive collaboration with the Secretariats of these organisations, as well as with many NGOs, universities and government fishery agencies.
24. Organisationally, the work of the Programme falls into three sections – the Fisheries & Ecosystems Monitoring & Assessment (FEMA) section, the Data Management (DM) section and the Stock Assessment & Modelling (SAM) section – however, there is considerable integration across these areas in order to provide comprehensive services and support in oceanic fisheries to members.
25. The key priorities and directions of each of the above work areas are summarised in the following sections.

Fisheries & Ecosystem Monitoring & Analysis

26. The priority ongoing work being conducted by the FEMA section includes:
 - **Providing important biological inputs** for stock assessments and related scientific advice. This includes work on tuna age and growth, reproduction, movements, diet and trophic ecology. Key ongoing programmes in support of this work are:
 - The Pacific Tuna Tagging Programme, with annual tag release cruises and the regional tag recovery effort now funded substantially by WCPFC;
 - The WCPFC Tissue Bank, also funded by WCPFC, including the associated biological sampling conducted by members' observers and port-sampling staff;
 - Trophic ecology research voyages and associated laboratory analyses; and
 - PIRFO, the Pacific Islands Regional Fisheries Observer programme, coordinated collaboratively with FFA to provide training and accreditation of tuna fisheries observers in the region.

These programmes are undertaken with substantial collaboration and assistance from member fisheries offices, in particular national observer programmes. In addition to providing critical data for stock assessments, modelling the impacts of environmental variation and other management advice, they also provide opportunities for member fisheries scientists to enhance their capacity and skills through direct participation in this work.

- **Modelling the impacts of environment variation, including climate change**, on tuna and the pelagic ecosystem. OFP pioneered the development of the SEAPODYM model, a key platform for understanding the interaction of environment and tuna, in the late 1990s, and we continue to collaborate with the French organisation Collecte Localisation Satellites (CLS) in moving this work forward. SEAPODYM integrates a variety of fisheries, biological and environmental data at a fine spatial scale, and it can be used to assess questions such as the efficacy of spatial management measures and the impact of environmental variation such as ENSO and climate change.
 - **Monitoring the impacts of tuna fisheries on bycatch** and the pelagic ecosystem more broadly. FEMA conducts analyses of observer data to produce estimates of important bycatch species, including species of special interest such as marine turtles and sea birds, and are reported periodically as regional- and national-level analyses. This information is increasingly important for the certification of fisheries by bodies such as the Marine Stewardship Council.
 - **The application of new technology** to monitoring of fisheries. FEMA provides assistance to members in the development and implementation of video-based electronic monitoring tools for monitoring catch and effort by longliners, as well as rolling out electronic reporting tools, such as the longline e-log *OnBoard*, port sampling app *OnShore* and the *Tails* app for collecting small-scale fisheries data, all developed by the OFP Data Management Section.
27. In addition to the continuation of the above, possible key new directions for FEMA include:
- **Investigating stock structure of tuna**, which represents a major ongoing area of uncertainty in stock assessment and management. Evidence is beginning to emerge that tuna stock structure may be significantly more complex than the hitherto assumed single, panmictic stocks across the western and central Pacific. Hypotheses such as spawning fidelity to natal areas need to be evaluated using the resources of the Tissue Bank enhanced by additional sampling where required and modern techniques of genetic analysis and interpretation.
 - **Investigating wahoo and mahi mahi ecology**, as key species of importance to nearshore fisheries and critical to the success of the nearshore anchored FAD fisheries in the coming decades. Currently, there is limited information on their biology and ecology in the Western and Central Pacific. Age and growth, migratory patterns, and how these species may be impacted by climate change are key questions. This work would need to occur across OFP and CFP.
 - **Investigating the impact of methyl mercury and micro/nano-plastic** contamination of tuna and other fish stocks, including the health implications for Pacific Island human populations. There is a long-held concern in some quarters that high levels of fish consumption may carry risks of methyl mercury poisoning. However, there is also evidence that such risks vary according to fish species, size/age and area. There may also be mitigating factors and positive health benefits from elements/compounds such as selenium and omega-3 fatty acids that are

also found in these fish. Micro and nano-plastic contamination of fish and the oceans generally is emerging as a new and serious threat for fisheries and human health. There is a need to better document the risks posed by these contaminants against the health benefits of a high-seafood diet, particularly given the high fish consumption levels in many Pacific islands, as well as policies aimed at increasing access to tuna and other pelagic species to enhance food security.

- **Building a new regional specimen bank and associated laboratory facility**, necessary to support existing science programmes and critical to developing new directions in tuna trophic ecology, methyl mercury, micro/nano-plastics and building the region's capacity in marine ecosystem science generally. Importantly, the facility would combine coastal and oceanic science and provide significant new opportunities for member fisheries scientists to enhance their capacity and skills through direct participation.

Data Management

28. The priority ongoing work being conducted by the DM section includes:

- **Enhancements and support for TUFMAN 2 and DORADO**, which enable member countries to manage/report on their integrated tuna fishery data. With the recent inclusion of observer data, these systems now integrate all major tuna-fishery data types and future work will focus on how to enhance capacity so that member countries have more control on processing, managing, reporting and analysing their data, through these systems. SPC will continue its focus on using the *Slack* helpdesk to provide live support to members, noting that this system now has over 270 users, who have exchanged more than 300,000 messages since inception in 2016, and the volume of messages has doubled over the course of 2018.
- **Enhancing E-Reporting (ER) tools** developed by SPC in response to member country requests. The Data Management section has developed several E-reporting tools in response to member country requests: the longline e-log *OnBoard* and the *TAILS* app for collecting small-scale fisheries data are now well-established systems and implemented in several member countries. The port sampling app *OnShore* is currently being trialled and presents considerable potential for the future of port monitoring. All E-Reporting systems developed by SPC are fully integrated into the *TUFMAN 2* and *DORADO* systems.
- **Data Management support to the WCPFC**, which also covers the direct support to member countries in satisfying their WCPFC reporting obligations, but also building capacity (through mechanisms such as the Regional Tuna Data Workshop) to enhance the ability of member countries to respond directly to WCPFC reporting obligations without SPC assistance.
- **Acquisition of E-Reporting and E-Monitoring data from third-party systems**, covers situations where member countries choose to adopt ER and EM systems developed and maintained by third-party technical service providers. SPC continues to work with member countries and their service providers, providing advice on data quality control and other standards so that the data flow seamlessly into regional systems (e.g. the member country's *TUFMAN 2* database instance).
- **Data standards for regional tuna fisheries** continue to be enhanced and now extend beyond the requirements for science to include the requirements for Monitoring, Control and Surveillance (MCS), Economics and E-Monitoring process standards. SPC continues to have a

key role in coordinating meetings that review and update documentation on regional data standards (with other regional and sub-regional organisations, and member countries).

29. In addition to the continuation of the above, possible key new directions for DM include:
- **Support for new management systems required by member countries**, for example, Catch Documentation Systems (CDS) and Catch Management Systems (CMS). Most data already collected and managed through the *TUFMAN 2* and other national/regional systems, are fundamental input into proposed regional and national CDS and CMS systems. SPC will have a key role in the provision of technical advice and support to the sub-regional agencies (e.g. FFA and PNA) overseeing these initiatives and to the individual members in the near future.
 - **New E-Reporting (ER) tools** developed by SPC in response to member country requests. For example, SPC is currently in the latter stages of developing an ER system to acquire longline observer data at sea, in response to requests from several member countries. This longline observer ER tool (called *OLLO*) will complement the other ER tools developed by SPC and feed observer data seamlessly into the *TUFMAN 2*, which will then be immediately accessible from the *DORADO* system. SPC remains attentive to future requests from member countries for new ER tools.
 - **Dashboard and mobile-app reporting including alerts**, is an area with considerable potential for tuna fishery data in the future. For example, senior managers could potentially have an app that, with one or two screen touches, show graphs of year-to-date, cumulative monthly catches within their EEZ, or for their national fleet. These graphs could also include estimates of catches using VMS data (covering logsheets not yet available) and projections to the end of the year, based on past patterns of catches for those latter months. Alerts are features of business intelligent systems (the ‘push’ philosophy, rather than the ‘pull’ philosophy of reporting systems) and there is significant scope to introduce this concept into the systems supported by SPC, for example, alerts to highlight particular data gaps and alerts when approaching certain catch levels.
 - **Independent validation of at-sea longline transshipments** has been identified as a major data gap and SPC will have a key role in the provision of technical advice in establishing an adequate, independent data collection system for at-sea longline transshipments, in collaboration with other sub-regional and regional agencies and interested members.

Stock Assessment & Modelling

30. The priority ongoing work being conducted by the SAM section includes:
- **Regional stock assessments of tuna, billfish and sharks** to inform scientific advice on current stock sustainability and fishery health within the western and central Pacific Ocean. These assessments will continue to provide the basis of analyses examining the potential effectiveness of candidate regional management approaches to achieve fishery objectives of profitability and sustainability. The results also feed into the Future of Fisheries Report Card for offshore fisheries.
 - **Harvest strategy work** for key tuna stocks and fisheries. Following adoption of the harvest strategy approach by WCPFC members, the SAM section is developing the modelling and simulation framework to undertake this work. They will be working with members to identify

candidate harvest strategies, including harvest control rules, that best meet their objectives for the fishery in the face of uncertainties in our knowledge and information.

- **National-level advice** based upon scientific analyses to address specific national requests and issues. These activities include the development of new ‘Issue-Specific National Reports’ to address emerging issues of national importance, and on-going bio-economic evaluations of national fisheries undertaken in partnership with FFA. The analyses are supported by the frequently updated secure online national webpage for each member. Remaining responsive to national requests remains a critical component of the SAM section’s activities.

31. In addition to the continuation of the above, possible key new directions for SAM include:

- **FAD tracking and acoustics** to support stock assessments and increase our understanding of this fishing approach. The increasing number of FADs being deployed in the WCPO has raised concerns for tuna stocks, as well as vulnerable species and ecosystems. The growing information available on FAD deployments and drifting through the PNA FAD tracking programme allows analyses to understand the potential impacts of this fishing gear. The expanding use of acoustic buoys on FADs provides a new source of information, and the SAM section will work with key partners to examine the potential to use these data to address current data gaps and provide new sources of information to support stock assessments.
- **Novel use of Purse Seine CPUE data** to inform stock assessments. Pole and line fishery data, used to inform the assessment of skipjack abundance trends, is declining in both quantity and spatial scale. While data from purse seine fisheries are more abundant, they are not commonly used to inform tuna assessments in this way due to the schooling nature of the fish caught by this gear, and the rapid technological developments in the fleet (potential ‘effort creep’) which are difficult to correct for. However, the SAM section is starting a specific body of work to try to address these issues and develop an alternative source of information from the purse seine fishery. This will also consider the development of the FAD fishery and its technology (see above).
- **Cutting-edge analyses for developing model inputs.** In addition to continuing development of the MULTIFAN-CL assessment software used by SPC to perform regional stock assessments, research will also concentrate on approaches to improving inputs into those assessments. A key area will be the evaluation of the ‘geo-statistical’ approach to catch rate (CPUE) standardisation. While SPC has used this technique over the last two years and presented the results to WCPFC Scientific Committee, further analysis will formally evaluate its performance against previously used approaches to ensure the best available inputs are used to underpin scientific advice.

Capacity building

32. Capacity building is a key focal area of the FAME Division that cuts across our entire work programme. It is delivered in several ways – as a by-product of our day-to-day interactions with members in the conduct of our work, through regular, focused workshops in a particular subject area (e.g. the Tuna Data Workshop) and through short-term attachments at SPC headquarters to receive intensive training in a particular area of our work.

33. A relatively new capacity building modality is the Pacific Island Fisheries Professional (formerly known as 'Junior Professional') programme. PIFPs are one-year SPC staff positions that are competitively recruited through regular SPC recruitment procedures. The posts are available only to Pacific island nationals who are working in fisheries in their home countries. A condition of the appointment is that PIFPs must be given leave-without-pay by their employer, usually a Government fisheries office, for the duration of their one-year appointment at SPC, and be guaranteed a job on their return to their home country.
34. At SPC, PIFPs work in one or more sections within FAME, and are expected to make a hands-on contribution to the work of the section as well as developing skills that will be of long-term benefit to them and their employer when they return to work as a fisheries professional in their home country.
35. The PIFP programme was pioneered by CFP several years ago, and expanded to the OFP in 2017-2018 with the employment of three PIFPs, all of whom have now returned to their home countries (RMI, Samoa and Vanuatu). Following a review of the programme by FAME's MEL Unit, it was decided to continue the PIFP programme as the centrepiece of the Division's capacity building effort. As a result, two new PIFPs (from PNG and Solomon Islands) have been employed in the CFP and one (from Tonga) currently in the OFP, with plans to recruit two more in OFP before the end of the year. We are hopeful that FAME will be able to continue to host up to five PIFPs per year over the next few years.