

Information Paper 5

Original: English

**SPC Division of Fisheries, Aquaculture
and Marine Ecosystems (FAME)**

Draft work plan 2015–2016



DIRECTOR'S OFFICE OBJECTIVES AND OUTPUTS

Objective 1. To develop and sustain effective relationships between the Division and its stakeholders.

Results	2015–2016 planned activities
<p>1.1. Programme plans and activities that respond to the needs and priorities of members</p>	<ol style="list-style-type: none"> 1. Evaluate fisheries related development and management challenges and trends impacting members in areas and respond to the evolving needs and priorities of the SPC membership. 2. FAME annual work plan focuses and targets key activity areas at the national, sub-regional and regional levels. 3. Maintain strong links with member governments and territories, in particular fisheries ministers, permanent secretaries and/or director generals of fisheries ministries / departments of fisheries. 4. Facilitate Institutional strengthening appraisals for national fisheries institutions outlining gaps and opportunities for intervention. 5. In-country visit to geographically disadvantaged small PICTs to appraise needs and priorities and impacts of FAME services. 6. Monitor the implementation of the FAME programmes and projects in consultation with member country relating to important evolving needs and priorities and donor partner requirements consistent with the SPC procedures. 7. Monitor and ensure that the implementation of the FAME division's strategic plan supports the SPC's corporate plan objectives and contribute to collective decisions at the executive level aimed at enhancing service delivery at the member country level. 8. Respond to <i>ad hoc</i> member country priority requests.
<p>1.2. Effective working relationships maintained with SPC Divisions, other sub-regional, regional agencies, and donor partners</p>	<ol style="list-style-type: none"> 1. Proactive participation in broad multi-sectoral and cross-cutting initiatives, particularly in the areas of climate change, food security, gender and non-communicable diseases. 2. Maintain strong and good working relationships within FAME division sections and with other SPC divisions. 3. Strength liaison with regional (FFA, SPREP, USP, WCPFC, PIFS), sub-regional agencies (MSG, TVM, PNA), and regional NGOs on fisheries issues of importance and of common interest to PICTs. 4. Maintain strong links with development partners, members of the Council of Regional Organisations in the Pacific (CROP) and other stakeholders. 5. Develop and pursue divisional, multi-sectoral and multi-agency funding proposals to support the achievement of the FAME's objectives and broader SPC goals. 6. Strong liaison with development partners to secure sustainable funding of work programme. 7. Respond to <i>ad hoc</i> meetings and requests for information that are aimed at enhancing and strengthening stakeholder relationships.



Objective 2. To communicate and promote informed policy decisions and public awareness of marine resource issues and climate change in Pacific Island Countries and Territories (PICTs).

Results	2015–2016 planned activities
<p>2.1. Policy makers and the general public are better informed of fisheries resource issues, climate change impacts, the importance of fisheries and the need for management action</p>	<ol style="list-style-type: none"> 1. Materials to introduce fisheries into school curriculum developed/adapted to specific country needs. 2. Awareness materials or policy-related documents and briefs for PICTs to promote growth, sustainable management and development. 3. Production of awareness materials or policy-related documents. 4. Update / improvement of FAME and CFP websites.
<p>2.2. Stakeholders in PICTs are fully informed of the results of SPC activities, and shared experience and knowledge across the region</p>	<ol style="list-style-type: none"> 1. FAME corporate documents and sector oriented policy briefs are laid out, printed and distributed. 2. Publication of SPC's Special Interest Group Information Bulletins and Fisheries Newsletter, related to important marine resource issues. 3. Production and distribution of updated version of SPC Fisheries Address Book. 4. Regular communication of FAME's achievements and activity results.

COASTAL FISHERIES PROGRAMME OBJECTIVES AND OUTPUTS

Objective 1. To assist governments and administrations in the development of scientifically informed and socially achievable coastal fisheries management policies and systems in a changing environment.

Results	2015–2016 planned activities
<p>1.1. Assessment of the status of national coastal living marine resource, impacts on resources and habitat (local and climate change related), and the impact of existing management systems on resources, in order to inform management</p>	<ol style="list-style-type: none"> 1. Aquarium trade baseline assessments and monitoring reports / management arrangements including capacity development and attachment training in Noumea completed. 2. Finalise reports on the aquarium trade work against objectives for inclusion in the final report to the donor. 3. Finalise reports on the post larval capture and culture assessment work in French Polynesia. 4. Aquarium trade awareness / education / information materials developed and distributed. 5. Coastal fisheries creel and market survey manual printed and distributed along with the species identification cards for around 300 finfish species. 6. Undertake market and/or creel survey training in at least 4 PICTs. 7. Provide advice on sampling protocols to quantify impacts of fishing on resources and assist with data analysis. 8. Biological sampling work including genetics, reproduction, age and capacity development in part through attachment training to SPC for 10 species at least 4 PICTs. 9. Develop a species specific user guide for finfish biological sampling. 10. Undertake a workshop for 6 countries on otolith assessment and reading for aging fish, possibly in collaboration with IRD. 11. Finfish UVC survey assessment training completed in at least 2 PICTs. 12. In water invertebrate resources field assessment, capacity development (including attachments), data entry, analysis and reporting undertaken in at least 3 countries. 13. Coastal fisheries awareness / educational / information materials produced and distributed. 14. The production and publishing of at least 2 peer reviewed scientific papers. 15. SPC is represented at sub-regional, regional or international coastal fisheries science and/or management workshops or meetings. 16. If time and funding permits, conduct follow-up surveys (resource assessment, creel surveys and biological sampling, photo coral quadrats etc.) and exchange temperature loggers at the 5 climate change pilot sites. 17. Undertake <i>ad hoc</i> requests as requested.
<p>1.2. An appropriate mix of community-based approaches and national management arrangements developed in partnership with stakeholders, incorporating ecosystem-based principles, impacts of climate change, review of coastal fisheries legislation</p>	<ol style="list-style-type: none"> 1. Assistance and advice provided in national policy development, regulation / legislation reviews / management arrangement in at least 8 PICTs. 2. Assistance in establishing / strengthening community-based ecosystem approach to fisheries management / ridge to reef / whole of island approaches in at least 8 PICTs. 3. Develop and strengthen effective partnerships with national / regional / international CBRM practitioners. 4. Adaptation activities including capacity development identified and implemented in collaboration with other CFP sections in at least 4 PICTs. 5. Advice provided for institutional strengthening studies in at least 2 PICTs.

Results	2015–2016 planned activities
<p>1.2. (cont.)</p>	<ol style="list-style-type: none"> 6. Arrange and hold a regional workshop on the future of coastal/inshore fisheries management. 7. CFP/FAME is represented and input provided at sub-regional, regional or international meetings / workshops relating to coastal fisheries management. 8. Adaptation activities including capacity development identified and implemented in Kadavu, Fiji. 9. Undertake spat collection trials for clams in Tokelau including the purchase of any materials needed. 10. Write up the final report for the work in Kadavu, Fiji and Tokelau and provide this to the donor. 11. SPC represented at sub-regional, regional and international climate change and/or MPA workshops or meetings. 12. Undertake <i>ad hoc</i> requests as requested.
<p>1.3. Standard data management systems are developed in support of coastal fisheries and aquaculture monitoring and management</p>	<ol style="list-style-type: none"> 1. Develop and maintain a data base for aquaculture inventory and production. 2. Develop and maintain a database for FAD deployments and monitoring. 3. Develop and maintain a biological sampling database. 4. Develop and maintain a database on national regulations and management arrangements. 5. Upgrade and maintain RFID. 6. Upgrade the database for market and creel survey data and add any new modules as needed. 7. Upgrade the database for socioeconomic surveys and add any new modules as needed. 8. Develop solutions for using mobile devices (phones, tablets, etc.) for data collection with supporting databases. 9. Undertake database needs assessments in at least 4 PICTs and provide assistance and training as required. 10. Develop online database for coastal fisheries exports and provide training in its use. 11. Provide training on database development, the use of databases, including GIS applications for at least 3 PICTs. 12. Undertake Ad Hoc requests as requested.

Objective 2. To provide a regional framework for sustainable aquaculture, in the areas of planning, research, development and trade, for Pacific Island governments, communities, private enterprises and other stakeholders.

Results	2015–2016 planned activities
<p>2.1. Regional and national capacity for strategic policy, planning and administration is improved to establish clear priorities and enable the aquaculture sector to meet current and future needs, with the guidance of the Regional Aquaculture Plan</p>	<ol style="list-style-type: none"> 1. New / updated National Aquaculture Plan developed for 4 countries. 2. Programme mission on needs assessment undertaken in 4 PICTs. 3. Provided technical support for legislative advice on aquaculture and aquatic biosecurity. 4. Improved regional / sub-regional framework for aquaculture and aquatic biosecurity: <ul style="list-style-type: none"> - regional framework for aquaculture statistics developed and implemented; - regional framework for aquatic biosecurity developed and implemented. 5. Developed policy briefs on aquaculture emerging issues. 6. Developed factsheets on regional aquaculture commodities. 7. Assistance provided on institutional strengthening in countries. 8. Aquaculture portal updated with relevant materials and information on aquaculture and aquatic biosecurity. 9. Presentation and report from SPC at international aquaculture conferences / workshops. 10. Developed project proposals for new funding opportunities. 11. Undertake Ad Hoc requests as requested.
<p>2.2. Skills and knowledge base in PICTs is increased, so as to maximise the return on investments in aquaculture through innovative, profitable and sustainable approaches</p>	<ol style="list-style-type: none"> 1. Outcomes of SPC independent studies, conference and workshop proceedings are published. 2. Support to ACIAR Project to improve community based aquaculture in 4 PICTs in tilapia, freshwater prawns and sea cucumber (sandfish). 3. Support to ACIAR funded milkfish culture project in Solomon Islands. [Project wrap up and evaluation in 2015]. 4. Support to hatchery and ponds trials of the Eastern strain of <i>Macrobrachium spinipes</i> native to PNG (ACIAR and IACT projects): <ul style="list-style-type: none"> - workshop to deliver project results to investors and stakeholders; - strengthen capacity of UPNG and NFA to run prawn hatchery. 5. Market assistance provided for aquaculture products: <ul style="list-style-type: none"> - feasibility of mud-crab for exports from PICTs to NZ market (IACT) and development of risk standards; - undertake market surveys. 6. Feasibility of aquaponics undertaken in 2 PICTs. <ul style="list-style-type: none"> - On-going maintenance and operation of Aquaponic Facility in Suva (IACT and AusAID); - Economic assessment of aquaponics in RMI. 7. Strengthen national capacity in Pearl business training skills in 3 PICTs. 8. Strengthen national capacity on seaweed farming in 4 PICTs. 9. Strengthen national capacity on fish feed formulation. 10. Provided technical assistance on hatchery facilities in 6 PICTs. 11. Provided technical assistance on capture based aquaculture in 2 PICTs. 12. Provided technical assistance on stock enhancement through aquaculture intervention in 2 PICTs. 13. Strengthen national capacity on scallop and lobster culture in 2 PICTs. 14. Strengthen national capacity in aquaculture extension services in 1 PICT. 15. Improve farming strategies for tilapia fish production in 5 PICTs.

Results	2015–2016 planned activities
<p>2.2. (cont.)</p>	<ol style="list-style-type: none"> 16. Provided sub-regional training opportunities to improve capacity in: <ul style="list-style-type: none"> - Sea cucumber sandfish hatchery and nursery training; - Pond site selection and construction (with Uni of NSW); - Gender in aquaculture (with SPC HRD); - Aquaculture Extension training. 17. Improve production and efficiency through support for demonstration sites for farmer networks and clusters established in 5 PICTs. 18. Assistance provided to 4 Aquaculture Enterprises on product quality and standards e.g. seaweed, sponges. 19. Economic valuation of aquaculture commodities. 20. Evaluation of impacts of aquaculture trainings provided. 21. Maintain a watching brief on freshwater fisheries and opportunities for culture based fisheries. 22. Produce aquaculture training modules for 2 PICTs. 23. Provide supervision to postgraduate students. 24. Undertake <i>ad hoc</i> requests as requested.
<p>2.3. Science-based approaches to manage aquatic biosecurity risks are supported</p>	<ol style="list-style-type: none"> 1. Assessment of viral pathogens tests in prawns in PICTs. 2. Undertake 4 risk analyses for aquatic species / strain importation. 3. Provide technical support for OIE reporting in countries: national / sub-regional / regional. 4. Support implementation of sub-regional / regional biosecurity framework. 5. Technical support provided to 4 countries to strengthen equipment and infrastructure in aquatic biosecurity. 6. On-going advice to PICTs on aquatic species introduction and quarantine requirements. 7. Undertake <i>ad hoc</i> requests as requested.

Objective 3. To develop sustainable nearshore fisheries in PICTs to provide food security, livelihoods, economic growth and climate change adaptation.

Results	2015–2016 planned activities
<p>3.1. Subsistence, artisanal, sport and commercial fishing activities occur within the sustainable production level of the available fisheries resources</p>	<ol style="list-style-type: none"> 1. National technical and training assistance provided to strengthen FAD programmes in at least 5 PICTs (Solomon Islands, PNG, Chuuk-FSM in 2015). 2. Regional workshop in collaboration with WorldFish and ACIAR on lessons learned and nearshore FAD designs held in 2016, with a technical manual on nearshore FAD designs produced. 3. 2015 and 2016 practical safety, fishing and financial management course for Fisheries Officers conducted to improve fishing vessel operations and small boat safety practices. 4. National training in vessel operations and safety at sea completed to enhance fishing vessel operations and safety at sea practices in at least 2 PICTs (Tuvalu in 2015, Solomon Islands in 2016). 5. National Fisheries diversification projects implemented to transfer fishing effort from reef fish to more resilient marine resources in at least 3 PICTs (squid exploratory fishing, Tahiti, 2015; <i>bagan</i> project, Kiribati, 2015/16). 6. Assistance provided to develop or strengthen national sport fishing tourism to improve livelihoods through introduction of non-destructive fishing operations in at least 4 PICTs (assistance to PNG and New Caledonia continued in 2015). 7. Fisheries education project to introduce fisheries in school curricula in at least 2 PICTs (Vanuatu in 2015). 8. Development of new resource materials as required, including a technical manual on new nearshore FAD designs by 2016. 9. Collaboration with FAO on the implementation of the Voluntary Guidelines for Small Scale Fisheries (SSF). 10. Collaboration with FAO and SPC’s Geoscience Division on the rolling out of FAO’s training on DRM and emergency response in the fisheries sector. 11. Experimental nearshore FAD fishing project in Samoa to verify fish species and abundance both for resources management and small scale commercial fisheries rejuvenation objectives (DevFish*). 12. Management training on business diversification for sustainable small scale/artisanal enterprises in 2 PICTs (DevFish). 13. Support to 2 SMEs (provincial associations) to implement PNG’s strategy on the utilisation of industrial fish wastes (DevFish). 14. Facilitate and complete the work on industrial training internship for food technologist students in PNG (DevFish). 15. Sea safety awareness workshop in Niue (DevFish). 16. Complete the work on regional crewing standards review on fishing vessels (DevFish). 17. Undertake ad hoc requests as requested.
<p>3.2. Economic viability of fisheries investments is improved through analysis, evaluation and capacity development in financial skills</p>	<ol style="list-style-type: none"> 1. National economic assessment of fisheries, aquaculture or climate change adaptation projects/ businesses in at least 3 PICTs. 2. National FAD data collection systems established in at least 2 PICTs. 3. Economic and market assessment of Tonga deep-water line fishery, ongoing project support. 4. Regional training in financial management, economics, project management and governance conducted at NMIT (2015 and 2016).

Results	2015–2016 planned activities
<p>3.2. (cont.)</p>	<ol style="list-style-type: none"> 5. Training courses in financial management, economics, project management and governance conducted in at least 4 PICTs. 6. National economic tourist surveys are established in at least 2 PICTs (Niue and Palau) through collaboration with SPC Statistics Section. 7. Publication of resource materials on fisheries economics as required. 8. Undertake <i>ad hoc</i> requests as requested.
<p>3.3. Optimum benefits from the resource are obtained through improved fish handling and value-adding</p>	<ol style="list-style-type: none"> 1. Fish waste utilisation promoted and facilitated in the region to improve livelihoods and the environment. 2. National fish waste utilisation projects supported to improve livelihoods and the environment in at least 2 PICTs (French Polynesia in 2015?). 3. National training in fish handling and safety for export markets completed in at least 2 PICTs (fish handling training in Kiribati in 2015; sensory evaluation training in PNG in March 2015). 4. Technical assistance and advice provided to National Competent Authorities / Fisheries Administrations in at least 4 PICTs. 5. Technical assistance and advice provided to at least 4 fisheries private sector enterprises. 6. Regional Fish Inspectors Training provided to PICTs. 7. Regional thermal Process training for fish canning operations in May 2015. 8. National training courses conducted on seafood safety, quality, and value adding to meet requirements of export destinations in at least 2 PICTs. 9. Post-graduate diploma program on fisheries post-harvest introduced in 2016 at PNG University of Technology. 10. Technical advice in seafood safety and quality provided as requested. 11. Undertake <i>ad hoc</i> requests as requested.

OCEANIC FISHERIES PROGRAMME OBJECTIVES AND OUTPUTS

Objective 1. To provide high-quality scientific information and advice for regional and national fisheries management authorities on the status of, and fishery impacts on, stocks targeted or otherwise impacted by regional oceanic fisheries.

Results	2015–2016 planned activities
<p>1.1. Regional oceanic fisheries management policy and decision-making by WCPFC are informed by the best science-based stock assessment and advice</p>	<p>Regional stock assessments</p> <ol style="list-style-type: none"> 1. Conduct stock assessments for South Pacific albacore tuna and bigeye tuna in Pacific-wide context in 2015 and other assessments to be confirmed for 2016. 2. Provide advice on the likely impacts of recent and predicted future fishing levels on western Pacific stocks of bigeye, yellowfin, and skipjack tunas, including the potential performance of WCPFC conservation and management measures in 2015 and 2016. 3. Assess the possible impact of tropical skipjack catches on the abundance of skipjack at higher latitudes in 2015. 4. Provide advice on the likely status and recent trends in key shark species (as defined by WCPFC) in 2015 with other shark work to be confirmed for 2016. 5. Develop a research plan for WCPFC key shark species in 2015. 6. Provide advice on the likely impact of potential measures to mitigate fishery impacts on shark species of particular concern in 2015. 7. Produce the annual Tuna Fisheries Assessment Report in 2015 and 2016. <p>Management objectives and harvest strategies</p> <ol style="list-style-type: none"> 8. Convene a technical workshop on the scientific component of the framework for the evaluation of management strategies in 2015. 9. Develop simple harvest control rules for South Pacific albacore tuna. 10. Update economic information for the southern longline fishery in 2015 to inform further development of economic-based reference points for South Pacific albacore tuna in 2016. <p>Stock assessment research and development</p> <ol style="list-style-type: none"> 11. Construct and distribute software packages that allow others to undertake and present results using the regional stock assessments in 2015 and 2016. 12. Conduct analyses of operational longline catch per unit effort (CPUE), data in support of regional tuna stock assessments in 2015. 13. Develop alternative models to describe the fishing dynamics of purse seine vessels for the evaluation of management options in 2015. 14. Continue development, testing and documentation on the MULTIFAN-CL stock assessment software, with updated software and documentation posted on www.multifan-cl.org in 2015 and 2016.
<p>1.2. FFA and sub-regional oceanic fisheries management initiatives are supported by the best science-based stock assessments and advice</p>	<p>FFA support</p> <ol style="list-style-type: none"> 1. Provide scientific support to the bioeconomic evaluation of management options in 2015 and 2016. 2. Provide scientific support to the evaluation of potential management options in 2015 and 2016. 3. Provide scientific support to US Tuna Treaty consultations and negotiations in 2015 and 2016, as required. 4. Communicate the information on management-related scientific work conducted for FFA in 2015 and 2016.

Results

2015–2016 planned activities

1.2. (cont.)

PNA support

5. Provide scientific information to support the implementation of the purse seine and longline vessel days schemes (some of the work will occur at a national level under Result 1.3) in 2015 and 2016.
6. Evaluation of the impact of increasing vessel efficiency on management systems (effort creep) in 2015.
7. Continued development of robust Harvest Control Rules for the skipjack purse seine fishery — including bioeconomic considerations in 2015.
8. Provide scientific information and analyses to support the MSC certification in 2015 and 2016.
9. Bioeconomic analyses of optimal effort levels for purse seine and longline fisheries with an emphasis on improving returns through more efficient fishing operators in 2015.

Sub-Committee for South Pacific Tuna and Billfish, Te Vaka Moana, and the Melanesian Spearhead Group

10. Provide scientific information to support of the implementation of the Tokelau agreement (some of the work will occur at a national level under Result 1.3.) in 2015 and 2016.
11. Summarise recent trends in the southern longline fishery including all species of economic value in 2015 and 2016.
12. Further develop potential economic-based reference points for south Pacific albacore, including the development of harvest controls rules in 2015 and 2016.
13. Provide scientific information on potential impacts of tropical tuna catches on the abundance of tropical tuna species from higher latitudes (range contraction) in 2015.

1.3. National tuna oceanic fisheries policy and decision-making by SPC MEMBERS are informed by the best science-based stock assessments and advice

National webpages

1. Update and enhance secure national web pages containing information of fishery trends and stock status information in 2015 and 2016.

Issue Specific National Reports (ISNRs)

2. Analyses of the impacts of FAD closures and related measures, including bioeconomic considerations, for the Federated States of Micronesia, Kiribati, Nauru, Marshall Island, Papua New Guinea, Solomon Islands, Tuvalu, Tokelau, and the Cook Islands in 2015 and 2016.
3. Characterisation of longline fisheries including key species, recent trends, seasonal and oceanographic drivers, and economic considerations. To be undertaken for at least eight members in 2015.
4. At least two series of ISNRs to be undertaken in 2016.

Support for National Tuna Management planning

5. Bioeconomic analysis of the longline fisheries in New Caledonia and French Polynesia in 2015.
 6. Provide technical support to national tuna management planning in at least four member countries (including support for the MSC processes if required) in 2015 and 2016.
 7. Respond to ad hoc requests for scientific information and analyses in support of national tuna management planning in 2015 and 2016.
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Results

2015–2016 planned activities

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| <p>1.4. Enhanced capacity of SPC MEMBERS to interpret stock assessment information and advice</p> | <ol style="list-style-type: none">1. Complete attachments of fishery officers for at least two countries in conjunction with ISNRs (see above) in 2015 and 2016.2. Conduct a Stock Assessment training Workshop (SAW) to improve the understanding and utilization of regional stock assessment results and related analyses in 2015 and 2016.3. Support of member participation at regional meetings, including contributing to briefing material and talking points (primarily led by FFA) in 2015 and 2016. |
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Objective 2. To provide high-quality fishery monitoring services, analysis services and capacity development to support the management of oceanic fisheries by regional, sub-regional and national fisheries management authorities.

Results	2015–2016 planned activities
<p>2.1. WCPFC is provided with efficient and cost-effective fishery monitoring and analytical services to support regional oceanic fisheries</p>	<p><i>Purse-seine species and size composition</i></p> <ol style="list-style-type: none"> 1. Maintain the <i>s_master</i> purse-seine catch and effort database system. 2. Provide estimates of purse-seine catch composition by species and size, based on observer grab samples corrected for selectivity bias and spill samples. 3. Prepare purse-seine data for and conduct analyses in support of WCPFC-related work of other OFP sections, as requested. 4. Analyse the Madang observer data and port samples collected in 2014 (pending provision of required data by the PNG National Fisheries Authority). <p><i>Non-target species</i></p> <ol style="list-style-type: none"> 5. Maintain the <i>nt_master</i> non-target species catch and effort database system. 6. Update estimates of annual catches of key shark species in the WCPFC Statistical Area based on observer data. 7. Estimate annual catches of other non-target species in the WCPFC Statistical Area based on observer data. 8. Prepare non-target species data for and conduct analyses in support of WCPFC-related work of other OFP sections, as requested. <p><i>Technical support to the WCPFC Secretariat</i></p> <ol style="list-style-type: none"> 9. Provide advice on fishery monitoring issues to WCPFC, as requested.
<p>2.2. Enhanced national oceanic fishery monitoring by SPC MEMBERS to meet national and international obligations</p>	<p><i>Regional and national support for tuna fishery monitoring</i></p> <ol style="list-style-type: none"> 1. Develop and update MOUs with members for the provision of technical support and funding of sampling programmes and related positions. 2. Develop resource materials for tuna fishery monitoring, including an artisanal fishery monitoring guide and presentation materials for countries and other stakeholders to run artisanal tuna workshops. 3. Provide callipers and data collection forms to members, as requested and, where appropriate, with reimbursement. 4. Document the status of tuna fishery monitoring systems within member countries and territories. 5. Support the development of TUFMAN Artisanal Fisheries Database (TUFART). 6. Develop procedures for reviewing data collection systems as part of auditing of national tuna fishery monitoring. 7. Conduct a review of the needs and requirements for a standardised Small-Scale Vessel Registration System (pending Japan Trust Fund funding). <p><i>Regional and national support for PIRFO programmes</i></p> <ol style="list-style-type: none"> 8. Conduct an inter-sessional meeting of the SPC-FFA Tuna Fishery Data Collection Committee (DCC) and/or liaise via email to address matters that may arise prior to DCC-11 in 2016. 9. Provide technical advice in support of Pacific Island Regional Observer (PIRFO) programmes, as required. 10. Further develop the PIRFO standards for observers, debriefers, trainers, assessors and frontline managers.

Results

2015–2016 planned activities

2.2. (cont.)

Regional and national support for PIRFO programmes

11. Develop other regional standards for PIRFO programmes, including e-reporting and e-monitoring, in collaboration with other regional agencies.
12. Further develop the Longline and Purse Seine Observer Guides, and other training materials, such as species identification cards for sharks (pending Japan Trust Fund funding).
13. Implement a re-design of the PIRFO website.
14. Support the implementation of spill sampling by purse-seine observers in PIRFO programmes, as requested.

National support for port sampling programmes

15. Review longline port sampling programmes and resolve any data quality issues that may be identified.
16. Advise members regarding the termination of port sampling of purse-seine transshipments, where such programmes still exist.

2.3. Enhanced capacity of SPC MEMBERS in fisheries monitoring, data management and data use

Capacity building for tuna fishery monitoring

1. Provide technical support for tuna fishery monitoring through in-country visits to FSM, Nauru, Tonga, Tuvalu, and other members, as requested.
2. Visit other members to assess the requirements for capacity building for fishery monitoring.
3. Assist with the regional Tuna Data Workshop and conduct other workshops as the need arises and funding permits, such as gender-related training and the training of WCPFC-funded port coordinators
4. Host fishery monitoring training attachments, as requested.

Capacity building for PIRFO programmes

5. Conduct an Introduction to Frontline Management Workshop.
 6. Organise the Regional Observer Coordinators Workshop (ROCW-15 and ROCW-16).
 7. Coordinate the training of observers, debriefers, trainers, assessors and frontline managers, based on the training schedule to be established at ROCW, with increased usage of newly-certified observer trainers and debriefers, and including gender-related training (with input from the SPC Human Development Programme).
 8. Conduct an Observer Trainers Workshop.
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Objective 3. To provide high-quality data management services and capacity development to support the management of oceanic fisheries by regional, sub-regional and national fisheries management authorities.

Results

2015–2016 planned activities

3.1. WCPFC is provided with efficient and cost-effective data management services to support regional oceanic fisheries

Compile and manage WCPFC databases

1. Compile, quality check and manage the WCPFC databases (Annual catch estimates, Aggregated catch and effort data, Catch and effort by EEZ, Operational (logsheet) data, Aggregate Size composition data).
2. Document the methodology used to generate catch and effort estimates in the aggregated and EEZ databases.
3. Conduct a study to determine the potential for purse seine cannery receipt data for the work of the WCPFC.

Routine papers for WCPFC meetings

4. Scientific data provided to the Commission.
5. Annual catch estimates for the WCPFC Area.
6. Overview of WCPFC tuna fisheries including economic conditions.
7. Recent changes in scientific data provided for stock assessments.
8. Status of Regional Observer Programme (ROP) Data Management.

Data dissemination

9. Produce and publish on the commission's website the Tuna Fishery Yearbook (2014) and (2015), containing annual catch estimates by gear type, flag and species.
10. Maintain relevant web pages on the WCPFC website, e.g. data provision tables, ROP data provisions.
11. Disseminate data to members and others according to the WCPFC rules and procedures.
12. Prepare and publish public domain data on the WCPFC website.

Regional Observer Programme Data Management

13. Entry, quality control and management of the WCPFC ROP data, including development of data loaders for non-standard data and ongoing support of WCPFC Secretariat and Fiji data entry teams.
14. Provide advice on ROP data management issues, including WCPFC Scientific Committee and Technical and Compliance Committee papers, as required.
15. Provide various *ad hoc* ROP data summaries, as required.

Technical support to the WCPFC Secretariat

16. Provide advice on data-related procedures of the commission, e.g. rules and procedures for the protection, access to and dissemination of non-public domain data and information compiled by the commission; and "scientific data to be provided to the commission".
17. Prepare data summaries for the evaluation of conservation and management measures (CMMs).
18. Prepare catch data summaries to determine WCPFC member budget contributions.
19. Provide monthly updates of tuna fishery database systems.
20. Make available and provide training to Secretariat staff in using online web reporting tools for WCPFC catch/effort logbook and observer data.
21. Establish policy and resource requirements for potential data management capacity development in non-SPC, WCPFC member countries (e.g. China).

Results

2015–2016 planned activities

3.1. (cont.)

Technical support to the Western Pacific East Asia Oceanic Fisheries Management Project (WPEA-OFMP)

22. Convene national annual catch estimates and data review workshops in Indonesia, Philippines and Vietnam, as required.
23. Update latest data management software and provide training in Indonesia, Philippines and Vietnam.
24. Review databases and conduct data collection and management system audits in Indonesia, Vietnam and Philippines.
25. Import WPEA-OFMP data into WCPFC databases for use in 2015 and 2016 stock assessments.

3.2. The oceanic fisheries management initiatives of FFA and other sub-regional fisheries organisations are supported by efficient and cost-effective data management services

Provision and receipt of data and database systems

1. Provide access on the OFP web site to download the latest Catch and Effort System (CES) data system incorporating logsheet data, catch by EEZ and public domain data to the FFA Secretariat, PNA Office and the Te Vaka Moana (TVM) Secretariat.
2. Continue work to improve estimates in the EEZ database, including monthly time stratification, stratification by set type for purse seine, inclusion of longline effort; improve estimates of raising factors using VMS-Logsheet reconciliation data.
3. Provide training on OFP database products (CES and online web reporting tools) to staff of FFA, PNA Office, and TVM office, as required.
4. Provide support for the Tuna Observer Database System (TUBS) used to enter US Treaty observer data at FFA. Receive and import US Treaty observer data from FFA.
5. Receive and entry FSM Arrangement observer data on behalf of PNA Office.
6. Receive, enter and import US Treaty and FSM Arrangement logsheet data.
7. Receive and import iFIMS eLOGBOOK and eOBSERVER data.
8. Receive and import PNA iFIMS FAD tracking data.
9. Receive and import VMS data.
10. Receive and import FFA vessel register data.
11. Receive and import regional licensing data.
12. Receive and import Observer Programme management (OPM) observer trip data.
13. Review data exchange protocols for SPC/FFA Colloquium (e.g. the inclusion of OPM data to SPC).
14. Establish formal data sharing and exchange protocols with the PNA office and their member countries, particularly with the advent of E-Reporting and E-Monitoring.

Provision of reports and data summaries

15. Provide routine papers for US Treaty Annual Consultation.
16. Provide data summaries and reports for the PNA purse seine vessel days scheme.
17. Provide data summaries and reports for the PNA longline vessel days scheme.
18. Provide data summaries and reports for TVM initiatives.
19. Provide data summaries for FFA and PNAO in advance of WCPFC sessions, as required.

Results

2015–2016 planned activities

3.2. (cont.)

Joint database initiatives

20. Liaise with FFA in regards to the development and implementation of national IMS systems.
21. Establish reference table standards between SPC and FFA.
22. Liaise with FFA to conduct an audit of the observer data they enter.
23. Provide advice related to the PNA Fisheries Management Information System (FMIS) initiative, as required.

Contribute to regional MCS work to detect Illegal, Unregulated or Unreported (IUU) fishing

24. Conduct analyses to detect patterns in IUU fishing, as directed.
25. Contribute to study to quantify the level of IUU fishing in the region.

3.3. Enhanced national oceanic fishery data management by SPC MEMBER COUNTRIES to meet national requirements and international obligations

Data processing services

1. Manage, register, enter and verify data provided by SPC members:
 - a. Logsheet data;
 - b. Port Sampling data;
 - c. Observer data.
2. Import data provided by SPC members in electronic form:
 - a. Logsheet data;
 - b. Port Sampling data;
 - c. Observer data.
3. Provide technical support for data scanning in SPC member countries.
4. Progress the migration of legacy Visual PoxPro database systems into systems using MS SQL SERVER databases.

E-Reporting and E-Monitoring initiatives

5. Automatic upload of purse seine e-reporting data (logbook and observer) from the iFIMS system and SPC's e-reporting initiatives into national and regional databases.
6. Continue trials of purse seine eTUNALOG and on-board data entry of purse-seine observer data (FSM and RMI), as required.
7. Development and trials (leading to implementation) of the LONGLINE eTUNALOG in the domestic longline fisheries of at least three members (including automatic upload into national TUFMAN and a reporting system for the fishing company).
8. Development of a tablet app for trials in longline observer data collection in the domestic longline fisheries of at least two members.
9. Support for the integration of e-reporting data (logbooks and unloadings) into TUFMAN under the proposed Cook Islands Quota management System.
10. Establishment and support of National E-Reporting Officers in at least four member country offices (2015).
11. Standardised data fields (with validation information) to be made available to member countries using third-party e-reporting / e-monitoring service providers.
12. Develop a policy for the extent OFP becomes involved in e-reporting and e-monitoring development and OFP relationship with member countries and third-party ER and EM services providers.
13. Develop a plan to ensure OFP have long-term resources to support e-reporting and e-monitoring.
14. Progress and final Reports to the International Seafood Sustainability Foundation (ISSF) on the e-reporting and e-monitoring project.

Results

2015–2016 planned activities

3.3. (cont.)

Provision of database systems

15. Trial the new TUFMAN-2 system in two member countries (provisionally Cook Islands and RMI) during 2015.
16. At least EIGHT countries using the new TUFMAN-2 by the end of 2016.
17. TUFMAN-2 fully integrated into national Information Management Systems (with FFA collaboration) by the end of 2016.
18. Continue ongoing development of the TUFMAN-2 system.
19. Continue development, support and maintenance of other data systems used by member countries, including:
 - a. The new CES reporting tool;
 - b. Online TUFMAN reporting tool;
 - c. Online TUBS (observer) reporting tool;
 - d. Online eRECAP (logbook coverage) reporting tool;
 - e. TUFMAN Artisanal Fisheries Database (TUF-ART), including new reports to estimate catch and effort.
20. National installations of TUBS (observer database system) in Cook Islands, Vanuatu, Kiribati, Samoa, French Polynesia, with training and ongoing support (2015/2016). Ongoing support to existing installations (Tonga, Fiji, PNG).
21. Maintenance of the Master Observer Trip list, incorporating national observer trip placement information.
22. Establishment of MASTER REFERENCE TABLES via the CLOUD facilitates the standardisation of vessel, port and other reference data throughout the region.
23. Develop, maintain and disseminate an in-country hardware/software minimum standards document.

Improving data quality and coverage

24. Develop standard procedures and systems to identify data quality control problems/gaps and follow up with countries regarding submission of missing data (TUFMAN-2 and TUBS data).
25. Conduct in-country and remote national TUFMAN-2 data audits (initially, FSM and RMI).
26. Conduct in-country and remote national OBSERVER data audits (Fiji, PNG, Tonga and others with TUBS installations).
27. Continue to enhance OFP DATA ENTRY Helpdesk to identify and rectify problems.

Online data Summaries

28. Enhance the SPC/OFP in-country web pages and provide training to national fisheries officers in accessing these web pages.

3.4. Enhanced capacity of SPC MEMBER COUNTRIES in oceanic fishery data management and data use

Capacity development

1. Conduct the Ninth and Tenth Annual Tuna Data Workshops (April 2015 and April 2016).
2. Conduct the Regional TUFMAN-2 Workshop (2016).
3. In collaboration with OFP Fisheries Monitoring Section, conduct national tuna data workshops in two member countries.
4. In collaboration with OFP Fisheries Monitoring Section, conduct national artisanal fisheries data workshops in two member countries.

Results

2015–2016 planned activities

3.4. (cont.)

Capacity development

5. Train national tuna fishery data management staff in the use of national database systems during in-country visits.
 - a. TUFMAN-2 — Cook Islands and RMI during 2015; six other countries during 2016;
 - b. TUBs — Cook Islands, Vanuatu, Kiribati, Samoa, French Polynesia during 2015/2016.
6. Develop training resources for TUFMAN-2 and TUF-ART.
7. Host training attachments in data management principals and database systems for fisheries officers from four countries.
8. Continue to expand the OFP HELP DESK to provide technical support to member countries.
9. Structured training courses and resource material related to data management have been developed and are available to members via the OFP web site.
10. Update the PIRFO Observer web site to provide more information to manage national observer programmes.
11. Assist members improve their fisheries IT infrastructure, including:
 - a. Provision of new scanners where required;
 - b. Provision of new network servers where required.

WCPFC Reporting obligations

12. Develop training materials to enhance the capacity of member countries to produce data summaries to satisfy their WCPFC Reporting obligations.
 13. Assist countries prepare Part 1 National Reports for WCPFC SC.
 14. Provision of ad hoc national support through provision of data summaries and advice during WCPFC meetings.
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Objective 4. To improve understanding of pelagic ecosystems in the western and central Pacific Ocean.

Results	2015–2016 planned activities
<p>4.1. Enhanced data on the biological characteristics of oceanic species and their environment are available to support stock assessment and ecosystem-based fisheries management</p>	<p><i>Tuna tagging</i></p> <ol style="list-style-type: none"> 1. At least one tuna tagging campaign in the central Pacific for the provision of data for stock assessment. 2. Continued development and application of methods to improve tag return data quality. 3. Tag recovery support including on catcher vessel, transshipment, unloading and cannery locations, tag seeding and related analyses. 4. Continued development and maintenance of web accessible tagging databases and information. 5. Analyses arising from the Pacific Tuna Tagging programme (PTTP) published in science peer reviewed literature. <ol style="list-style-type: none"> a. Yellowfin and bigeye vertical movement; b. Potential FAD effects; c. Yellowfin, bigeye and skipjack horizontal movement; d. Artisanal FAD interactions. 6. Tagging data incorporated into Pacific wide bigeye stock assessments, including Inter-American Tropical Tuna Commission (IATTC) data and other tropical tuna stock assessments as requested. <p><i>Life history and trophic dynamics</i></p> <ol style="list-style-type: none"> 7. Ongoing maintenance and development of the Regional Biological Sampling Tissue Bank for life history and trophic analyses to support stock and ecosystem assessment, marine spatial planning, biodiversity and climate change monitoring. <ol style="list-style-type: none"> a. 4th Nectalis cruise implemented to monitor south Pacific ecosystem structure; b. Preliminary planning for ecosystem monitoring cruises for 2017–2020; c. Maintain and develop BioDaSys. 8. Analyses of otoliths for estimating population dynamics and life history parameters. <ol style="list-style-type: none"> a. Bigeye growth for use in Pacific wide bigeye stock assessment. b. Bigeye and yellowfin growth, maturity ogives and reproductive potential for use in WCPO stock assessments and ecosystem models. c. Spatial variation in age, growth and reproductive biology of <i>Etelis carbunculus</i>, <i>E. coruscans</i>, <i>E. marshii</i>, <i>Pristipomoides filamentosus</i> and <i>Paracaesio kusakarii</i> to identify stock structure and parameters to develop indicators for applying management procedures. 9. Apply chemistry and molecular techniques to discriminate stock, trophic and ecosystem dynamics. <ol style="list-style-type: none"> a. Stock discrimination/management units for deepwater snapper based on chemistry, molecular and otolith shape analyses. b. Analyses of isotopes and amino acids to estimate ISOscapes of the Pacific to assess ecosystem and tuna stock structures.
<p>4.2. Appropriate ecosystem models and analyses are available to inform ecosystem-based fisheries management</p>	<ol style="list-style-type: none"> 1. Continued development of the Spatial Ecosystem and Population Dynamics Model (SEAPODYM) to understand tuna — climate dynamics: <ol style="list-style-type: none"> a. yellowfin model exploration; b. examination of influence of environmental variability on purse seine fishery management.



Results	2015–2016 planned activities
<p>4.2. (cont.)</p>	<ol style="list-style-type: none"> 2. Information on current and emerging issues in ecosystem based fisheries management — development of indicators and management procedures for <i>Etelis coruscans</i>, <i>E. carbunculus</i> and <i>E. marshii</i> for application by Tonga, Vanuatu, Samoa, New Caledonia and Papua New Guinea. 3. Application of Ecopath with EcoSim to simulate trophic changes associated with different tuna harvest scenarios. 4. Conduct a peer review of warmpool ecopath model. 5. Analyses to link skipjack, yellowfin and bigeye movement with diet and fish condition.
<p>4.3. Improved knowledge of the impacts of climate change on oceanic ecosystems to inform adaptation</p>	<ol style="list-style-type: none"> 1. Analyses on the impact of climate change on tuna resources and pelagic ecosystem: <ul style="list-style-type: none"> - First yellowfin tuna climate change simulation. 2. Analyses on the impacts of ocean acidification on tuna larval survival and growth completed: <ul style="list-style-type: none"> - Vulnerability analyses of pelagic species.
<p>4.4. Regional oceanic fisheries policy and decision-making by WCPFC is informed by science-based information and advice on ecosystem issues</p>	<ol style="list-style-type: none"> 1. Provide technical and scientific support for the Ecosystem and Bycatch theme of WCPFC: <ol style="list-style-type: none"> a. bycatch Monitoring Information System (BMIS) development and maintenance; b. bycatch mitigation analyses for sharks and turtles using available observer data.
<p>4.5. FFA's ecosystem-based fisheries management initiatives are supported by the best scientific information and advice</p>	<ol style="list-style-type: none"> 1. Support for FFA Ecosystem Approach to Fisheries Management (EAFM) initiatives and regional plans of action provided on request.
<p>4.6. Ecosystem-based management of oceanic fisheries by SPC members is supported by the best scientific information and advice</p>	<ol style="list-style-type: none"> 1. SEAPODYM profiles of optimal catch and tuna residency for Papua New Guinea and Solomon Islands. 2. Update of National SEAPODYM climate profiles including the addition of yellowfin profiles. 3. Maintain and develop web-based databases (TagDager, BioDaSys, SEAPODYM) for SPC member access. 4. Conduct training and capacity building in ecosystem monitoring and analysis. <ol style="list-style-type: none"> a. Continue supervision of national post graduate students. b. Provide SEAPODYM training as requested to National counterparts. c. Provide annual SEAPODYM training at stock assessment workshops. 5. Web-based outreach and communication of results: <ol style="list-style-type: none"> a. deepwater snapper biology fact sheets; b. deepwater Snapper Management fact sheets; c. purse-seine bycatch characterisations.