



# 5<sup>th</sup> SPC Regional Technical Meeting on Coastal Fisheries and Aquaculture

11–14 October 2022



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Information paper 2

Pacific Island country and territory coastal fisheries and aquaculture priority technical needs, issues, challenges, and actions

FAME

## Pacific Island country and territory coastal fisheries and aquaculture priority technical needs, issues, challenges, and actions

### Summary

Prior to each Regional Technical Meeting on Coastal Fisheries and Aquaculture, SPC member Pacific Island countries and territories are sent a brief questionnaire on current national coastal fisheries and aquaculture issues, challenges and priority needs, and actions taken since the previous RTMCF4. For the 5th Regional Technical Meeting on Coastal Fisheries and Aquaculture (RTMCF5), due to the time and format constraints of a hybrid meeting, SPC has compiled the responses received from members in the table below and will present a summary during RTMCF5.

### Coastal Fisheries

Pacific Island country or territory	Coastal fisheries priorities	Coastal fisheries issues or challenges	Actions taken since RTMCF4 (12-15 October)
	Provide a <i>very brief</i> description of your two highest coastal fisheries priority technical needs	Briefly outline 2–3 of your main technical issues or challenges in coastal fisheries over the last year	Briefly outline 2–3 follow-up actions that your agency has taken related to the <a href="#">RTMCF4 Outcomes and Agreed Action Plan</a> <sup>1</sup> [Numbers refer to Action in the Plan]
American Samoa			
Cook Islands	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>National coastal fisheries survey - Random stratified survey of coastal fisheries. The survey design will need to be island specific; this will require a workshop to design the appropriate survey for each island</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Develop best practice harvest guidelines and education material for communities for each island by the end of financial year, through a public awareness</li> </ul>	<ul style="list-style-type: none"> <li>Lack of qualified technical staff to assist and accomplish inshore programs such as marine surveys, pearl research, etc on time, during this period of covid outbreaks</li> <li>Some key training for MMR staff has not been carried out, due to travel restrictions from each island as well as high staff turn-over especially as trainers</li> </ul>	<ul style="list-style-type: none"> <li>Currently have a drone program to assist our algae survey in the Muri Lagoon (<b>Action 16</b>)</li> <li>Hi- FAD Project and FAD Training, which includes, site survey, riggings, planning and deployments – maintenance – September 2021 (<b>Action 42</b>)</li> <li>Awareness tools for fisheries data collection in the Cook Islands have been finalised in late Feb – March 2022 (<b>Action 7</b>)</li> </ul>

<sup>1</sup> [https://www.spc.int/DigitalLibrary/Doc/FAME/Meetings/RTMCF/4/RTMCF4\\_Outcomes\\_Actions\\_Report\\_EN.pdf](https://www.spc.int/DigitalLibrary/Doc/FAME/Meetings/RTMCF/4/RTMCF4_Outcomes_Actions_Report_EN.pdf)



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	<p>program. This work should initially use regional fisheries information where it exists, but should be updated with Cook Island specific information over time</p>		
<p><b>Fiji</b></p>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• Coastal Fisheries management, policy, legislation and planning:                             <ul style="list-style-type: none"> <li>○ Compilation and Finalization of the Commodity Management Plans (&amp; Drafts):                                     <ul style="list-style-type: none"> <li>▪ Sea Cucumber</li> <li>▪ Giant Clam</li> <li>▪ Grouper</li> </ul> </li> <li>Niche Commodities:                                     <ul style="list-style-type: none"> <li>▪ Sea Grapes</li> <li>▪ Sea Urchin</li> <li>▪ Coconut Crabs</li> </ul> </li> </ul> </li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>• Coastal Fisheries Management guidelines on:                             <ul style="list-style-type: none"> <li>○ Harvest within sustainable limits in the area of fishing through licensing &amp; permitting, inventory surveys and incorporation of data sets.</li> <li>○ Harvest Protocol for harvest and trade of niche commodities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Limited funding and manpower to support the National Stock Assessment of Commodities</li> <li>• Limited market research on high valued commodities being traded to overseas markets</li> <li>• Lack of expertise and capacity building needs on establishing species harvest to market protocols</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Action 17 (a):</b> Fiji Fisheries is now implementing the data collection methods in using e-tools via the IKASAVEA apps for Landing and Market surveys. Fiji Fisheries is also working in close collaboration with SPC FAME on resource assessment/RFID application and review of the socio-economic database (formerly using the SEMCOs database). SPC has conducted a series of online and face-face training on the use of the apps including practical sessions and updates of the web application. There will be future training sessions for strengthening other data collection methods such as socio-economic, creel and UVC/Biological surveys.</li> <li>• <b>Recommendation 21(a):</b> Fiji Fisheries officials have attended and participated in Certificate IV training offered at USP with the support of SPC through the PEUMP project. Nominated officials in 2021-2022 are currently doing e-learning on Cohort I- Certificate IV in Fisheries Enforcement and Coastal Fisheries and Aquaculture</li> </ul>

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			<ul style="list-style-type: none"> <li>• <b>Recommendation 21(b):</b> Fiji Fisheries have started initial discussions with SPC Coastal Fisheries and Aquaculture MCS Advisors, Ian Freeman &amp; Mark Nicholson on the data sharing portal for MCS&amp;E. Fiji Fisheries have also received 10 MCS kits from SPC’s Coastal and Aquaculture MCS Advisors on 24/8/22 and the equipment are to assist in MCS activities in coastal waters. Fiji Fisheries welcomes the initiative by SPC and will support the data sharing portal for intelligence sharing and cross-border examination of gaps &amp; improvement in operations and legislative framework.</li> </ul>
Guam	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• Conservation of marine resources via increased capacity for enforcement to deter poaching</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>• Efficient storm-water revetment systems to prevent nutrification and pollution in Tumon Bay Marine Preserve</li> </ul>	<ul style="list-style-type: none"> <li>• Poaching, habitat destruction</li> <li>• Stormwater runoff, microplastics, invasive species</li> </ul>	
Kiribati	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• MCS <ul style="list-style-type: none"> <li>○ Non-compliance by commercial fishers: Most commercial fishers refuse to comply with the fisheries regulations particularly those residing in the capital</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• No simple monitoring tool for communities to assess status of MPAs or conduct baseline surveys</li> <li>• Lack of capacity of fisheries staff in integrating gender in current fisheries activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Community MPAs demarcated</li> <li>• Ongoing work on the legal drafting of CBFM plans (<b>13. e</b>)</li> <li>• Discussed plans to implement MCS&amp;E e-reporting and tracking system for coastal fisheries (<b>20. a</b>)</li> </ul>

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	<ul style="list-style-type: none"> <li>○ Prioritisation of fisheries criminal cases: All fisheries criminal cases are currently treated as ‘low priority’ by the court of law or magistrate resulting in delayed prosecution</li> <li>○ Need simple monitoring tool guide for communities in undertaking monitoring of their MPAs and fisheries management initiatives.</li> <li>○ Understanding community enforcement at the regional level</li> <li>○ Application of artisanal fishing boats monitoring System to enhance enforcement through ease of identification of landing sites by boat operators</li> <li>● Training                         <ul style="list-style-type: none"> <li>○ Capacities needed on awareness skills</li> <li>○ Scientific studies to be conducted on nutritional value of some marine species like sea hare egg mass and to be promoted to pregnant women and children</li> <li>○ Women in Fisheries training manual to empower women</li> <li>○ Curriculum specialized technical support needed</li> <li>○ Seaweed recipes to diversify livelihood opportunities</li> <li>○ PIMRIS library refresher training</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Lack of relevant tools to speed up/enhance the monitoring of coastal fishing activities e.g. tracking system/devices, mobile devices, patrol boats etc</li> <li>● Limited knowledge and capacity of Authorised Officers (Enforcement officers)</li> <li>● Lack of a proper database to store and process MCS data</li> </ul>	

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	<ul style="list-style-type: none"> <li>○ ICT support in development of artisanal fishing boat tracking system</li> <li>● Extension <ul style="list-style-type: none"> <li>○ Staff management training</li> <li>○ Development of an application that extension can use to record qualitative information. App that can run on tablets in remote areas.</li> <li>○ Need to move from paper based to tablet based data collection</li> </ul> </li> <li>● Sustainable <ul style="list-style-type: none"> <li>○ Inadequate Capacity to carry out the Feasibility study to explore the diamond back squid fishery</li> </ul> </li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>● Gender and social inclusion: Although current approaches use sex disaggregation in meetings and encouraging participation of all groups within a community, especially women and youth, there still further work needed to better integrate and implement more meaningfully. This may also be due to the lack of capacity of fisheries staff to be gender aware in all aspects of fisheries activities</li> </ul>		
<b>Marshall Islands</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>● Technical support, training and advice to increase alternative livelihoods activities (i.e. community FADs, value</li> </ul>	<ul style="list-style-type: none"> <li>● Transportation due to COVID-19 challenges</li> <li>● Limited staff available/staff turnover due to COVID-19 challenges</li> </ul>	<ul style="list-style-type: none"> <li>● Nomination of Majuro Atoll Local Government enforcement officer from the MALGOV Marine Unit to the Coastal</li> </ul>

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	adding, etc.) to secure income generating options and ensure food/nutritional safety <b>Second highest:</b> <ul style="list-style-type: none"> <li>• Technical training for staff on Coastal MCS&amp;E and review of current processes and regulations</li> </ul>		Fisheries and Aquaculture MCS Officer Training Course ( <b>20.a</b> ) <ul style="list-style-type: none"> <li>• Reorganized the Coastal Management Advisory Council (CMAC). The restructuring includes having heads of member organizations in the main CMAC and the introduction of technical groups - marine, terrestrial, socioeconomics, traditional knowledge &amp; communications groups (<b>35.d</b>)</li> </ul>
<b>Micronesia</b>			
<b>Nauru</b>			
<b>Niue</b>			
<b>Northern Mariana Islands</b>			
<b>Nouvelle-Calédonie</b>	<b>Highest:</b> <ul style="list-style-type: none"> <li>• Développement d’une stratégie pour la filière pêche côtière à l’échelle du pays (schéma directeur des pêches côtière) et des provinces</li> <li>• Revue des nouvelles technologies permettant de limiter la consommation en carburant des navires</li> </ul> <b>Second highest:</b> <ul style="list-style-type: none"> <li>• Méthodes et procédés pour favoriser la participation des pêcheurs</li> </ul>	<ul style="list-style-type: none"> <li>• Améliorer les connaissances et acquisition de données sur la ressource</li> <li>• Caractérisation et évaluation des prélèvements de la pêche non professionnelle (plaisance et de subsistance)</li> <li>• Améliorer les techniques de réduction de consommation de carburants à rendement constant</li> <li>• Garantir la bonne conservation et la traçabilité des PDM</li> </ul>	<ul style="list-style-type: none"> <li>• Développement de l’observatoire des pêches côtière (méta infocentre, échantillonnage et collecte de données biologiques – taille et maturité sexuelle)</li> <li>• Travaux en cours de rédaction d’un schéma directeur de la pêche côtière en NC</li> <li>• Poursuite étude sur les prélèvements de la pêche non-professionnelle</li> <li>• Financement d’un ETP technicien sécurité (1 an) pour accompagner les</li> </ul>

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	<p>professionnels dans la collecte de données biologiques (ex. fourniture de matériel tel qu’une tablette, délivrer des avantages tels que des bonus sur les taux d’aide en cas de création d’entreprise ou encore à inclure dans les contrats de prescriptions techniques en contreparties d’une subvention)</p> <ul style="list-style-type: none"> <li>• Développer et aider les pêcheurs dans la collecte de données par le biais du digital et des nouvelles technologies</li> <li>• Accompagnement et formation des professionnels sur les questions de sécurité</li> <li>• Traitement et analyse des données de façon opérationnelle (aide à la décision, indicateurs de suivi, vulgarisation)</li> <li>• Accompagnement/formation à la création d’une filière : prélèvement, transformation, commercialisation</li> <li>• Sensibilisation des pêcheurs non professionnels à la préservation de la ressource</li> <li>• Etude sur la préservation de la ressource dans les réserves coutumières et définition d’un mode de gouvernance adapté</li> </ul>	<ul style="list-style-type: none"> <li>• Mettre en conformité les professionnels face à la réglementation relative à la sécurité des navires (formation, plans des navires, identification/acquisition du matériel agréé)</li> </ul>	<p>pêcheurs de la province nord dans leur mise en conformité</p>
<b>Palau</b>			



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Papua New Guinea	Provide a <i>very brief</i> description of your two highest coastal fisheries priority technical needs	<i>Briefly</i> outline 2–3 of your main technical issues or challenges in coastal fisheries over the last year	<i>Briefly</i> outline 2–3 follow-up actions that your agency has taken related to the <a href="#">RTMCF4 Outcomes and Agreed Action Plan<sup>1</sup></a> [Numbers refer to Action in the Plan]
Pitcairn			
Polynésie Française	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Echanges sur les techniques d’ancrage de DCP et sur les techniques de pêche côtière dans le Pacifique, et évaluation des conditions de faisabilité de développement, d’utilisation durable et sécuritaire de DCP côtiers de proximité</li> </ul> <p><b>Second Highest:</b></p> <ul style="list-style-type: none"> <li>Acquisition de données sur les stocks, la biologie et l’exploitation durable des espèces à forte valeur commerciale (holothuries, langoustes, napoléons, mérus...)</li> </ul>	<ul style="list-style-type: none"> <li>La réglementation relative à la pêche côtière, la pêche lagonaire, et l’aquariophilie est obsolète et inappropriée</li> <li>Le manque de données statistiques relatives aux pêches côtières et lagonaires</li> <li>La valorisation de certaines espèces côtières (ex : bonite) et récifo-lagunaires (ex : poulpe) pour l’amélioration des revenus et la diminution de pression de pêche</li> </ul>	<ul style="list-style-type: none"> <li>Ancrage de 40 DCP de proximité à moins de 2 nautiques des côtes sur les 5 archipels</li> <li>Atelier sur les Zones de Pêche Réglementée (ZPR-Rahui) pour mise en réseau des comités de gestion locaux des ZPR-Rahui</li> <li>Lancement de 3 nouvelles ZPR-Rahui, et 2 nouveaux sites en demande d’assistance technique</li> <li>Lancement de travaux pour l’élaboration de la politique sectorielle de la pêche côtière et de celle de la pêche lagonaire</li> </ul>
Samoa	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Enhanced food security, scale-up community based and increased economic growth through sustainable development and management of coastal fisheries <ul style="list-style-type: none"> <li>Review and update coastal fisheries management and development plan to guide implementation of coastal fisheries activities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Lack of coastal fisheries regulations and enforcement (e.g. Sea Cucumber Regulations)</li> <li>Impact of COVID-19 to the implementation of activities</li> </ul>	<ul style="list-style-type: none"> <li>SPC continued to provide remote training and assistance via zoom platforms to introduce IKASAVEA and follow up assistance via emails on implementing the e-data collection programs (<b>Actions: 16a-f, 42a-e</b>)</li> <li>Samoa Fisheries continued implementing resource assessments and monitoring of the coastal fisheries resources at the market outlets and community level (<b>Action: 20a-k</b>)</li> </ul>



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	<ul style="list-style-type: none"> <li>○ Development of alternative restocking programs and explore other viable options</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>● Improved and strengthened capacity to manage coastal fisheries</li> <li>● Strengthen the use of e-data collection and e-monitoring of the coastal fisheries resources (IKASAVEA)</li> <li>● Improve technical, analytical and monitoring skills</li> </ul>		
<p><b>Solomon Islands</b></p>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>● Data collection is one of the priorities for coastal fisheries. There is no data collection system in place for coastal fisheries that would advise fisheries management</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>● Developing NDFs for CITES listed marine species</li> <li>● MCS Training of Trainers – training for Inshore Fisheries Compliance Officers and training materials</li> </ul>	<ul style="list-style-type: none"> <li>● Data collection and storage of coastal fisheries</li> <li>● Compliance of people to coastal fisheries regulations</li> <li>● Information and awareness outreach on resource management to coastal communities</li> <li>● Coastal fisheries compliance and enforcement program needs strengthening</li> </ul>	<ul style="list-style-type: none"> <li>● Sent request to SPC for trialling of the IKASAVEA coastal fisheries data collection system for next year</li> <li>● MFMR will be working on developing an Inshore Fisheries Database for storage of coastal fisheries data</li> <li>● Prepare MCS program and budget for MSSIF New Zealand Aid Program to fund next year</li> <li>● MFMR officers have enrolled and are currently undertaking the SPC Legislative drafting online course in coastal fisheries</li> <li>● CBRM programs for communities are ongoing. Training, awareness, marine resource monitoring and livelihood programs are delivered to communities</li> </ul>
<p><b>Tokelau</b></p>			

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Tonga	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Monitoring of the community-based Special Management Area (SMA) program</li> <li>Development of coastal fisheries policy and management measures</li> <li>Amend Fisheries Acts and Regulations specifically for coastal fisheries and SMA program</li> <li>Expand using of the new e-data system (i.e. CFP and IKASAVEA app) developed by SPC for coastal data collection in creel and market surveys to outer island groups</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Inshore resources assessment i.e. corals, sea cucumber, etc.</li> <li>Inshore survey training as provided in the new e-data system (i.e. CFP and IKASAVEA app) for inshore survey data collection developed by SPC</li> <li>Community trainings on types of fishing practices use around the FADs i.e. mini-longline, trolling etc.</li> </ul>	<ul style="list-style-type: none"> <li>Limited compliance tools in the SMA communities for better enforcement</li> <li>Limited coastal fisheries catch data</li> <li>Limited alternative opportunities to improve SMA communities' livelihoods apart from fishing inside their SMA boundaries</li> <li>Lack of community awareness and outreach programs on coastal fisheries management</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of interested coastal communities as SMA areas throughout Tongan island groups – ongoing</li> <li>Develop Tonga Special Management Areas (SMA) scaling up strategy – ongoing</li> <li>Develop coastal fisheries policy – ongoing</li> <li>Develop FADs fishery policy – ongoing</li> <li>Creel and Market surveys trainings conducted through using the new e-data system developed by SPC i.e. CFP and IKASAVEA app</li> <li>Review current SMA data and information processes (i.e. how the SMA data is collected, stored, reported etc.) to possibly develop a database for the SMA program – ongoing</li> </ul>
Tuvalu	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Creel Data Collection – improved management and verification of creel data to a high standard level</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Improved fisheries management across all the islands through development of</li> </ul>	<ul style="list-style-type: none"> <li>Poor data collection and management processes</li> <li>Poor compliance function to support coastal fisheries management in the outer islands</li> <li>Lack of regional reference-based indicators (e.g. length-based indicators)</li> </ul>	<ul style="list-style-type: none"> <li>We have started developing community fisheries management plans in collaboration with island communities. We have undertaken consultations on all islands and are in the process of drafting the plans. SPC and NZ MPI have provided assistance in this process</li> </ul>

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	management plans and alignment with community by-laws	for key coastal fisheries species, density-based indicators for sea cucumber) to aid fisheries management	<p>by conducting a workshop in February 2022 to equip the team with knowledge, skills and resources to develop management plans</p> <ul style="list-style-type: none"> <li>We are working with SPC and NZ MPI to train some of our staff and community representatives in monitoring, control and enforcement skills. This is the start of a series of training that will enable a better understanding of the purposes of compliance in fisheries management, and equip our people with tools to set appropriate by-laws, education and awareness</li> </ul>
<b>Vanuatu</b>			
<b>Wallis et Futuna</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li><b>Observatoire des pêches:</b> Mettre en place un suivi régulier de l'état des ressources (poissons et invertébrés), former les agents à une méthode de suivi ou planifier des comptages ; Former les agents du service des pêches à l'analyse des données biologiques afin de pouvoir renseigner sur l'état de la ressource, les tailles à maturité sexuelle (modèles LB-SPR, LBB, CMSY)</li> <li>Besoin d'une étude sur la ressource exploitable dans les hauts fonds (Waterwitch, Lallarock, Isabella)</li> </ul>	<ul style="list-style-type: none"> <li>Manque de moyen humain</li> <li>les autorités compétentes sur la mer</li> </ul>	<ul style="list-style-type: none"> <li>Le service de la pêche a pu restituer les premiers résultats de l'Evaluation des ressources exploitées (méthode utilisée: LB-SPR, mesures au débarquement et analyse des gonades afin de déterminer les tailles de maturité sexuelle des principales espèces exploitées à Wallis et Futuna</li> <li>La phase 2 de la campagne «la mer notre source de vie» est lancée avec une partie débat sur les techniques de pêche destructives notamment la chasse sous-marine de nuit: 2 comité de pêche «Komite Lagiaki ote gelu» a été réalisée ces 2 derniers mois avec pour</li> </ul>

Pacific Island country or territory	Coastal fisheries priorities	Coastal fisheries issues or challenges	Actions taken since RTMCF4 (12-15 October)
	Provide a <i>very brief</i> description of your two highest coastal fisheries priority technical needs	<i>Briefly</i> outline 2–3 of your main technical issues or challenges in coastal fisheries over the last year	<i>Briefly</i> outline 2–3 follow-up actions that your agency has taken related to the <a href="#">RTMCF4 Outcomes and Agreed Action Plan<sup>1</sup></a> [Numbers refer to Action in the Plan]
	<ul style="list-style-type: none"> <li>• <b>Collecte de donnée au niveau des commerces et restaurateurs:</b> développer un outil de collecte de données quantitatives et qualitatives des produits de la mer achetés et transformés, le nom du pêcheur, mis à disposition des commerçants et restaurateurs afin qu'ils puissent saisir facilement et rapidement.</li> <li>• <b>Gestion pêche communautaire:</b> l'association FAIVA TAUTAI des pêcheurs, a besoin d'un appui technique et financier sur la mise en place d'une aire marine protégée et sur les actions de sensibilisations à la pêche durable</li> </ul> <p><b>Second Highest:</b></p> <ul style="list-style-type: none"> <li>• Renforcement des capacités du service de la pêche pour la mise en œuvre du programme DCP (partenariat avec la PF et la CPS)</li> <li>• Former les pêcheurs aux techniques de pêche autour des DCP et profondes</li> <li>• Former des leaders d'association (Faiva TAUTAI) à la communication et sensibilisation de la population sur la pêche et gestion durable de nos ressources</li> </ul>		<p>objectifs : discuter de la réglementation et des mesures de sanctions (chefferie, administration, élus politique, services et pêcheurs)</p> <ul style="list-style-type: none"> <li>• La collecte de donnée se poursuit avec l'utilisation de IKASAVEA et la base de donnée Coastal fisheries adaptée aux demandes du service, les bâches ont remplacé la règle et la balance</li> <li>• La mise en place des ateliers du pêcheur dans le but d'apporter un appui aux pêcheurs professionnels (achat de machines à glace, mat sécu, réparation des bateaux à Futuna)</li> </ul>

## Aquaculture

Pacific Island country or territory	Aquaculture priorities	Aquaculture issues or challenges	Actions taken since RTMCF4 (12-15 October)
	Provide a <i>very brief</i> description of your two highest aquaculture priority technical needs	Briefly outline 2-3 of your <b>main technical issues or challenges in aquaculture</b> over the last year	Briefly outline 2-3 <b>follow-up actions</b> that your agency has taken related to the <a href="#">RTMCF4 Outcomes and Agreed Action Plan</a> <sup>1</sup> [Numbers refer to Action in the Plan]
American Samoa			
Cook Islands	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Increase the spat collected for oyster farming. Assessing the best collectors and season for spat settlement and the local environment influencing spat settlement</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Restocking of giant clams, sea cucumbers and pearl oysters to boost spawning of clams in the Aitutaki lagoon, sea urchin recolonisation in Muri lagoon and oysters in Manihiki lagoon</li> </ul>	<ul style="list-style-type: none"> <li>We're still in the recovery stage for pearl production and are getting low levels of oyster spat collection</li> <li>Lack of qualified pearl seeding technicians</li> </ul>	<ul style="list-style-type: none"> <li>Jamie Whitford (SPC FAME) assisting with our AMRC project upgrade (<b>Action 29</b>)</li> </ul>
Fiji	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>National Assessment of Aquaculture in Fiji, in order to identify the needs, priorities and future directions. The outcome will provide the basis of consultation for the development of Fiji's National Aquaculture Strategy</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Collaboration and knowledge transfer from experts in Mariculture, which will provide inputs &amp; guidance on the culture of market demand products and high valued commodities in Fiji. The</li> </ul>	<ul style="list-style-type: none"> <li>Limited guidelines on processes involving mariculture; full-setup of facilities; consistent supply of quality seedlings; Broodstock management</li> <li>Limited scientific expertise on culture of new commodities i.e. teatfish, kingfisher, sea urchin, sea grapes; and drafting the aquaculture framework</li> </ul>	<ul style="list-style-type: none"> <li><b>Recommendation 30(a):</b> Fiji Fisheries has yet to formalize the country's request to SPC FAME for the National aquaculture assessment. Fiji Fisheries has done few consultations with SPC on this need. The expected outcome of the assessment will identify the gaps, challenge and priority needs, which is intended to complement the Aquaculture Strategy. There is a draft Aquaculture Strategy in place, though it will need a review for finalization/adoption. Fiji Fisheries has</li> </ul>

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	targeted commodities are outlined in Fiji Fisheries Operational Plan. Capacity building programs in relation to mariculture and establishing the code of best practice is needed to elevate the full potential of aquaculture in Fiji		outlined this under the organization's operational plan
<b>Guam</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Guidance in available resources for equipment for aquaculture systems suitable for Guam; strategies dealing with typhoons/poaching</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Increased options for aquaculture feeds shipped to Guam</li> </ul>	<ul style="list-style-type: none"> <li>Typhoons, poaching, lack of available quality equipment shippable to Guam</li> <li>Inadequate feed options for different species of fish including marine finfish</li> </ul>	
<b>Kiribati</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Promotion of aquaculture business training and investment opportunities for each key commercial and cultured species in Kiribati</li> <li>TA attachment for spawning and rearing techniques for new species of interest such as Grouper, Mud crab and brine-shrimp</li> <li>Gaps in market access and trade is priority to target cultured species to allow Kiribati to access potential markets including support on benchmark prices of species</li> <li>Biosecurity issues and alert systems on any aquatic diseases</li> </ul>	<ul style="list-style-type: none"> <li>Hatchery low seed production</li> <li>Limited capacity on seaweed post-harvest products to support the income generation</li> <li>Lack of community interest in the seaweed farming program</li> <li>Lack of framework to address import of fisheries which are currently under the Biosecurity Act, hence development work on the aquaculture regulation will strengthen this area</li> </ul>	<ul style="list-style-type: none"> <li>Development of Aquaculture Regulation (submission to Cabinet is yet to be submitted)</li> <li>SPC provide technical assistance towards the biosecurity issue faced in Kiribati (Invertebrate Hatchery)</li> <li>SPC support to provide feeds and equipment requested to support the hatchery spawning activities</li> <li>Ongoing arrangement for importation of sandfish seedlings with SPC team</li> </ul>

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	<ul style="list-style-type: none"> <li>Inadequate skills and capacity on seed production and techniques of aquaculture staff</li> </ul> <p><b>Second Highest:</b></p> <ul style="list-style-type: none"> <li>Development of database for improving data collection record and easy data extraction for reporting purposes</li> <li>Parasite management for hygienic operation of the hatchery</li> </ul>		
<b>Marshall Islands</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Investigate alternative feed options (nursery/hatchery) &amp; capacity training on feed production</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Expand research (CBA) of high value/locally targeted species as potential commodities to address food security &amp; alternative income opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Increased price (shipping) of feeds (COVID)</li> <li>Limited capacity</li> </ul>	<ul style="list-style-type: none"> <li>Initial stage in culturing a locally highly targeted species (Trochus) <b>(29.c)</b></li> <li>Worked with members and affiliates of the Coastal Management Advisory Council to work with communities/atolls that have established Resources Management Plans and to introduce aquaculture activities as their livelihoods programs and accelerate step 7&amp;8 of the Reimaanlok process <b>(35.d)</b></li> </ul>
<b>Micronesia</b>			
<b>Nauru</b>			
<b>Niue</b>			
<b>Northern Mariana Islands</b>			



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Pacific Island country or territory	Provide a <i>very brief</i> description of your two highest aquaculture priority technical needs	Briefly outline 2-3 of your <b>main technical issues or challenges in aquaculture</b> over the last year	Briefly outline 2-3 <b>follow-up actions</b> that your agency has taken related to the <a href="#">RTMCF4 Outcomes and Agreed Action Plan<sup>1</sup></a> [Numbers refer to Action in the Plan]
Nouvelle-Calédonie	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Revue des stratégies de remédiation sur les effets du réchauffement climatique dans la conduite des élevages en bassins (montée du niveau 0, variabilité des milieux d'élevage, et impacts zootechniques en élevage)</li> <li>Exploitation de petite échelle (individuelle ou encore familiale) en mariculture ou algoculture par exemple</li> <li>Publication de guides techniques vulgarisés pour la conduite d'un élevage aquacole artisanal</li> <li>Appui à l'utilisation des nouvelles technologies numérique dans le domaine de l'aquaculture artisanale</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Revue des modèles pisciculture-maraîchage avec utilisation des eaux enrichies d'élevage à des fins d'irrigation aquacole</li> </ul>	<ul style="list-style-type: none"> <li>Développer de nouveaux modèles aquacoles (p. ex. Pisciculture -élevage, aquaculture séquentielle, ostréiculture)</li> <li>Augmenter la résilience des élevages en bassins face aux effets du réchauffement climatique ((montée du niveau 0, variabilité des milieux d'élevage, et impacts zootechniques en élevage)</li> <li>Sourcer les intrants, les alevins et le matériels pour la mise en place et la conduite d'élevages aquacoles</li> <li>Promotion des échanges techniques entre pays de la zone en matière d'aquaculture artisanale (formation des porteurs de projet et des services en charge du développement de l'aquaculture</li> </ul>	
Palau	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Enhancing Palau local sea cucumber (<i>H. scabra</i>, <i>Actinopyga.sp</i>, <i>H.whitmaei</i>) hatchery production SOP establishment</li> <li>Cooperative with agencies overseas to support local sea cucumber commercial farming protocol</li> <li>Increase seed production of giant clam and finfish, need to develop clam farming manual and business plan</li> </ul>	<ul style="list-style-type: none"> <li>Sea cucumber habitat reseeding monitoring system. Ex. Stock assessment of cultured sea cucumber juveniles reseed to habitat</li> <li>Strengthen sea cucumber harvest and export protocols. Ex. Environmental assessment</li> <li>Land tenure, increase cost of operation, lack of interest by young people, zoning,</li> </ul>	<ul style="list-style-type: none"> <li>Established seed production of giant clam , renovate and expand new clam hatchery</li> <li>Establish larviculture protocols of <i>H. scabra</i> with 90% successful rate and delivered 3K juveniles monthly to local communities. First spawning success of <i>Actinopyga sp</i> in BOF and delivered 6K juveniles to communities</li> </ul>

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<b>Pacific Island country or territory</b>	Provide a <i>very brief</i> description of your two highest <b>aquaculture priority technical needs</b>	<i>Briefly</i> outline 2-3 of your <b>main technical issues or challenges in aquaculture</b> over the last year	<i>Briefly</i> outline 2-3 <b>follow-up actions</b> that your agency has taken related to the <a href="#">RTMCF4 Outcomes and Agreed Action Plan<sup>1</sup></a> [Numbers refer to Action in the Plan]
	<p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>• Research in exploring spawning of new local marine species ex. Mangrove clam and collector urchin (<i>T. gratilla</i>)</li> <li>• Strengthen farming, harvest and export protocol of sea cucumber species</li> <li>• Agreement with farmers MOU, certification of product</li> <li>• Partner with donors for funding support</li> <li>• Assistance to purchase fish cage materials</li> </ul>	training , remoteness, and market access	<ul style="list-style-type: none"> <li>• Cultured <i>H. scabra</i> broodstock (F1) spawned and received F2 juveniles</li> <li>• Received result of Small-scale polyculture of <i>H. scabra</i> and <i>Actinopyga.sp</i> in BOF with 90% survival rate and reached marketing size of <i>Actinopyga. sp</i> in 5 month farming trial.</li> </ul> <p>Ref: Lin, T.H., Nan, F.H. 2021. First trials to induce spawning and larviculture of <i>Holothuria scabra</i> in Palau. SPC Bêche-de-mer Information Bulletin 42: 58-64.</p>
<b>Papua New Guinea</b>			
<b>Pitcairn</b>			
<b>Polynésie Française</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• Pacage marin (<i>sea ranching</i>) et problématiques juridique, halieutique, génétique, sanitaire, notamment sur les holothuries à mamelles</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>• Bioremédiation et Aquaculture Multi Trophique Intégrée pour traitement des eaux usées d'élevage de crevettes</li> <li>• Polyculture en lagunes d'eau à salinité variable</li> </ul>	<ul style="list-style-type: none"> <li>• Maîtrise de la survie d'alevins de <i>Platax orbicularis</i> en sortie d'écloserie</li> <li>• Maîtrise du prégrossissement et grossissement de l'huître de roche <i>Saccostrea cucullata</i></li> <li>• Maîtrise de la reproduction et de l'élevage d'holothuries à mamelles <i>H. fuscogilva</i></li> <li>• Maîtrise de la culture de <i>Gracilaria parvispora</i></li> <li>• Maîtrise de la technique de mésocosme sur <i>Siganus argenteus</i></li> </ul>	<ul style="list-style-type: none"> <li>• Elaboration et présentation aux parties prenantes de la politique sectorielle en aquaculture</li> <li>• Développement des projets d'infrastructures de production et de R&amp;D</li> <li>• Lancement ou poursuite de plusieurs projets de diversification aquaole (Holothuries à mamelles, huîtres de roche, macroalgues, mésocosme sur <i>Siganus argenteus</i>, polyculture, aquaponie sur <i>Chanos chanos</i>)</li> </ul>

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Samoa	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• Improved skills and scientific knowledge on new aquaculture commodities                             <ul style="list-style-type: none"> <li>○ Farming and hatchery operations and management</li> <li>○ Promote hands on training opportunities for top priority potential commodities</li> <li>○ Review and update Aquaculture development and management plan</li> </ul> </li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>• Promote seed production for aquaculture and coastal fisheries restocking purposes                             <ul style="list-style-type: none"> <li>○ Source new tilapia broodstock for spawning purposes</li> <li>○ Introduce new farming techniques and methodologies (including tools and equipment)</li> <li>○ Farming procedures of potential commodities feasible for Samoa</li> <li>○ Improved formulated feed production and/or supply</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Lack of capacity in other potential aquaculture commodities suitable to Samoa</li> <li>• Limited resources to perform aquaculture activities (freshwater and mariculture)</li> </ul>	<ul style="list-style-type: none"> <li>• Samoa Fisheries utilised all available platforms to receive technical support for aquaculture activities from relevant agencies including SPC, UNDP, FAO, etc. <b>(Action: 42a-e)</b></li> <li>• Initial negotiations with regional organisations and agencies on reviewing and updating Aquaculture and Coastal Fisheries development and management plans. This will align with the Pacific Regional Aquaculture Strategy (<b>Recommendation 30a, Action 29a-h</b>)</li> </ul>
Solomon Islands	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• Aquaculture Data collection and Storage remain a high priority with all SI aquaculture data are stored in Excel and Access. Establishment of a database or integration to current IFIMS are options we are looking at</li> </ul> <p><b>Second highest:</b></p>	<ul style="list-style-type: none"> <li>• Transportation of seaweed to Honiara</li> <li>• Having proper trained staff on hatchery and quarantine procedures and operations</li> <li>• Material support to sustain seaweed production.</li> <li>• Data Collection and Storage</li> <li>• Delay in Financing processes</li> </ul>	<ul style="list-style-type: none"> <li>• National hatchery and office completed</li> <li>• Solar system to facility completed</li> <li>• Water system to facility at 80% completion</li> <li>• Construction of 10 ponds at 90% completion</li> <li>• Construction of 2/6 staff house been contracted in September 2022</li> </ul>

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	Provide a <i>very brief</i> description of your two highest <b>aquaculture priority technical needs</b>	<i>Briefly</i> outline 2-3 of your <b>main technical issues or challenges in aquaculture</b> over the last year	<i>Briefly</i> outline 2-3 <b>follow-up actions</b> that your agency has taken related to the <u>RTMCF4 Outcomes and Agreed Action Plan<sup>1</sup></u> [Numbers refer to Action in the Plan]
	<ul style="list-style-type: none"> <li>Establishing relevant Policies in palace prior for importation of new Strain of Tilapia (GIFT) and Sea Weed. This includes hatchery and quarantine standard operating procedures, Biosecurity National Emergency Response plan, Aquaculture Bill, Specific Species Development plan, Revise national management and development plan 2018-2023</li> <li>Scaling-up of seaweed production and Value Adding</li> </ul>		<ul style="list-style-type: none"> <li>Tender of 2/6 staff houses to be made in 2022</li> <li>Submission proposal for budget for 2/6 staff house for 2023 SIG development budget made.</li> <li>MOA between the Solomon Islands National University been signed to house the Post Entry quarantine facility at the School of Fisheries</li> <li>List of equipment and materials for Tilapia hatchery, Post-Entry Quarantine and ponds finalised and ready to be procured oversea</li> <li>Cycle of <i>Stichopus horrens</i> been closed</li> <li>Improved method of hatchery with increased survival rate in hatchery</li> <li>Trails on Natural settlers used to support natural recovery of wild sea cucumber</li> <li>Support two communities with fishing project on initiative to Manage their Sea Cucumber Resources</li> <li>Establish new Sea Cucumber office for the hatchery</li> <li>10 deployments of hatchery reared juveniles made to both local sites</li> </ul>
Tokelau			

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Tonga	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>• Capacity building – Advance farming and culture technique of new potential aquaculture commodities in Tonga (e.g. Finfish (Mullet, milkfish &amp; tilapia), shrimp, mud crab &amp; sea cucumber species)                             <ul style="list-style-type: none"> <li>○ Hatchery production</li> <li>○ Wild collection of juveniles</li> <li>○ Culture &amp; farming technique (pond, cage etc)</li> <li>○ Site selection and environmental condition</li> <li>○ Feeds availability</li> </ul> </li> <li>• Transfer of farming technology &amp; skills to community level (SMAs and Aquaculture Areas)</li> <li>• Enhance hatchery run and wild spat collection (<i>Pteria penguin</i>) for pearl farmers and mabe pearl crafting training – added value &amp; marketing</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>• Regional Database for Aquaculture                             <ul style="list-style-type: none"> <li>○ Sharing of information with other countries</li> </ul> </li> <li>• Develop SOP for import &amp; culturing of introduce species and a national hatchery quarantine facility for importation of aquaculture species</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate knowledge and experience on farming of finfish, shrimp, mud crab &amp; sea cucumber species</li> <li>• Maintain contribution made by aquaculture to food security and communities’ livelihood</li> <li>• Data sharing and access to markets and affordable technology, strengthening the base for aquaculture development through data collection</li> <li>• Introduce of new species from overseas for aquaculture</li> </ul>	<ul style="list-style-type: none"> <li>• <b>26 (a)</b> Provide technical support for SMA communities by installing sea cucumber pilot farming and also trial farming of finfish, shrimp &amp; mud crab for livelihood and food security</li> <li>• <b>26 (b)</b> Collection of wild mullet fingerling for cage culture and use available feed for livestock (fish mill, mill mix &amp; grower) as a supplement feed for fish</li> </ul>

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<b>Tuvalu</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Establishment of a mariculture hatchery for giant clam and other species</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Appropriate development of milkfish aquaculture</li> </ul>	<ul style="list-style-type: none"> <li>Limited technical expertise in aquaculture</li> <li>Logistical issues – delays in delivery of equipment and materials</li> </ul>	<ul style="list-style-type: none"> <li>Delays to the mariculture hatchery due to conflicting projects, and difficulty obtaining materials and supplies</li> </ul>
<b>Vanuatu</b>			
<b>Wallis et Futuna</b>	<p><b>Highest:</b></p> <ul style="list-style-type: none"> <li>Besoin d'appui technique et scientifique de la CPS pour développer une petite écloserie low-cost à bénitier + huitres</li> <li>Evaluation du potentiel d'exploitation durable des holothuries, en considérant les opportunités de stimuler la productivité naturelle et les solutions de rétention de la valeur ajoutée</li> </ul> <p><b>Second highest:</b></p> <ul style="list-style-type: none"> <li>Outils de communications sur les avantages et risques à savoir de l'aquaculture; outils expliquant les modèles possible en aquaculture à Wallis et Futuna (selon l'étude faisabilité menée en nov 2021)</li> </ul>	<ul style="list-style-type: none"> <li>Problème du foncier: les terrains qui ont été ciblé appartiennent à des familles</li> <li>Blocage sur l'importation de juveniles par une partie de la population</li> </ul>	<ul style="list-style-type: none"> <li>Etude de faisabilité de aquaculture à Wallis (Nov 2021)</li> </ul>