



**SCIENTIFIC COMMITTEE
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**SCIENTIFIC OUTPUTS FROM THE PACIFIC TUNA TAGGING PROGRAMME, AND ADDRESSING
REQUESTS FROM FAC19**

**WCPFC-SC22-2026-SA-WP04
20 July 2026**

PTTP Steering Committee and SPC-OFP

Executive Summary

Paragraph 54 of the [FAC19 report](#) recommended that *WCPFC22 request the Scientific Services Provider examine options to improve cost efficiency in the tagging programme and to report these options and their scientific implications to SC22, FAC20 and WCPFC23*. FAC19 also recommended that the Scientific Committee *...clearly flag projects that leverage significant co-funding or in-kind contributions* (FAC19 report, Para 55). This paper responds to that request and recommendation.

The Pacific Tuna Tagging Project (PTTP) is the primary source of mark-recapture data for tropical tuna stock assessments in the WCPO and continues to deliver fully against this core objective. WCPFC's annual, average contribution during the previous 4 years of approximately USD 790,000 does not fund the project in isolation. Rather, it underwrites an at-sea sampling platform that mobilises substantial further co-financing, including a contribution from the Republic of Korea made to support this existing programme of work, and analytical and support services subsidised by SPC through both cash and in-kind co-finance. Across the 2022–2025 period, non-WCPFC sources met approximately 63% of the total cost of core activities. Over that period, each dollar contributed by WCPFC therefore leverages a further USD 1.70 of activity directed toward WCPFC scientific priorities. Over the lifetime of the project, cash co-financing alone has leveraged USD 3.30 dollars for each dollar of WCPFC contribution.

An analysis of cost-efficiency options finds that the project's activities are mutually dependent and already co-financed, that charter length is the only scalable cost, and that reductions would degrade delivery while increasing costs to at least eight other WCPFC projects, including requiring a redevelopment of the WCPO skipjack tuna management procedure.

Beyond its core mandate, the project has become a shared regional sampling capability. Because the cruises place specialist staff and equipment at sea on an already-funded basis, a growing number of other WCPFC science projects, from genetics and ageing to ecosystem and bycatch work, access this platform at marginal cost rather than building equivalent capability independently. The scope of these deliverables, and the scheduling of cruises, have both moved substantially beyond what was envisaged when the terms of reference were last revised in 2016. The steering committee accordingly recommends that the terms of reference be revisited to reflect what the project delivers at present, keeping its mandate aligned with current WCPFC science needs. No change to the existing budget is sought.

We invite SC22 to:

- note the technical value of the PTTP in underpinning tuna stock assessments, the management procedure for WCPO skipjack tuna, climate projections and wider WCPFC science work
- respond to FAC's request noting that the PTTP programme represents a planned interconnected body of work that does not offer a menu of activities that can be scaled
- Endorse the updated Terms of Reference for the project to reflect current scientific output of the project and WCPFC science needs
- forward this paper and any desired commentary to FAC20 and WCPFC23

Introduction

The Pacific Tuna Tagging Project (PTTP, WCPFC Project 42) began in 2006, with its main goal to obtain mark-recapture tagging data of skipjack, and secondarily yellowfin, tuna in the WCPO, for direct integration into MULTIFAN-CL stock assessments of these species.

By 2010, the PTTP was also collecting data for bigeye in central Pacific, and the project's goals were established as contributing towards WCPO stock assessments, obtaining rates of movement and mixing, vertical habitat utilisation, and examining the effect of fishing at local scales (WCPFC-SC6-2010/GN-IP-04).

These objectives were most recently revised in 2016 by the PTTP steering committee, which recommended that the tagging schedule be normalised to alternating years of skipjack-focused and bigeye-focused scientific cruises.

Over the course of the project, while continuing to deliver its core mark-recapture obligation, the tagging programme and the research cruises it implements have come to support a substantially wider range of scientific outputs than direct integration into WCPO tuna stock assessments alone. In doing so, the project also leverages considerable finance from non-WCPFC funding sources to provide and augment these outputs.

WCPFC's financial contribution towards the PTTP is reviewed annually at the WCPFC Finance and Administration Committee. At FAC19 in Manila, Philippines in 2025, discussion on the requested Scientific Research budget included scrutiny of Project 42. Paragraph 54 of the [FAC19 report](#) recommended that *WCPFC22 requests the Scientific Services Provider examine options to improve cost efficiency in the tagging programme and to report these options and their scientific implications to SC22, FAC20 and WCPFC23*. FAC19 also recommended that the Scientific Committee ...*clearly flag projects that leverage significant co-funding or in-kind contributions* (FAC19 report, Para 55).

This paper, prepared by the PTTP steering committee for SC22, summarises the work being undertaken through Project 42, breaks down Project expenditure relative to the Commission's contribution, and in particular highlights the co-funding and in-kind contributions it mobilises to facilitate the work of the PTTP.

Reflecting developments in the work plan of Project 42, as highlighted by this exercise, the paper also recommends that the Terms of Reference for Project 42 be reviewed so that its mandate reflects the developments in work since the ToR was last agreed.

The Pacific Tuna Tagging Project

The core work undertaken as part of the PTTP is designing and implementing tagging research cruises, developing and maintaining a tag recovery network through which passes regular tag seeding experiments to ensure well-characterised reporting and quality of data (including training), custody and validation of that data, and elements of data preparation and analyses which feed into stock assessment and other scientific outputs. This is the primary delivery under Project 42's budget

and represents a body of work from which elements cannot be discarded without impacting the effectiveness of the project as a whole. These core activities can be summarised by the following:

Field operations The PTTP operates 4–7 weeks of dedicated tagging per year, chartering a vessel appropriate to the target species, region and fishing mode, and funding technical staff, tags and equipment. In response to assessment needs, we propose a shift in field operations scheduling from strict annual skipjack/bigeye alternation toward more continuous, skipjack-weighted effort, one of the matters addressed in the proposed ToR revision (below).

Recovery network and data A multi-level reward network sustains timely, high-quality reporting of recaptures, supported by stakeholder engagement across canneries, fleets and industry bodies. SPC is the custodian of all release, recapture and meta-data, and separately designs and finances tag-seeding experiments delivered through observer programmes; the resulting reporting-rate estimates strongly influence assessment and management-procedure outputs. SPC also trains observers, coordinators, debriefers and recovery officers across the region to support this work in its entirety.

Analysis Beyond preparing and integrating tagging data for WCPO assessments, SPC undertakes auxiliary analyses of reporting rates, tagging condition effects and mixing; supplies the data that underpin SEAPODYM climate projections through the estimation of environmentally-driven movement; and develops independent estimates of natural mortality, movement, feeding ecology, abundance and fishing pressure.

Secondary work supports a wide range of scientific outputs for other WCPFC projects on the biology of tunas and bycatch species, through collection of soft and hard tissues, development of new protocols prior to being adopted in the region, and the collection of high-quality tissues for genetics, which often require specialist equipment or expertise.

By using each research cruise as a multi-purpose scientific platform, the PTTP enables multiple WCPFC science projects to collect biological samples and undertake other fisheries research during each campaign. This shared approach avoids the need for separate research cruises or vessel charters for individual projects, improving the overall cost-efficiency of the Commission's scientific programme.

The scientific outputs of both this core and secondary work are detailed below.

The average annual costs to undertake core activities (excluding secondary work) during the recent period are broken down into key expenditure areas, alongside the cash and in-kind co-financing obtained by SPC to ensure delivery, in table 1. During this period, each dollar contributed by WCPFC has leveraged a further USD 1.70 of core PTTP activity.

A history of the financial cash contributions to the PTTP is provided in Annex 1 to this paper. Over the lifetime of the project, the proportional funding ratio between WCPFC and cash co-finance is approximately 1:3, meaning that each dollar of WCPFC funds has resulted in an additional US\$3.30 of resourcing.

Table 1. Summary of average expenditure on PTPP core activities during the period 2022-2025. PTPP budget represents the cash contribution to the programme from WCPFC, cash co-financing includes financial contribution from the Republic of Korea, and activities supported through other SPC (non-WCPFC) donors, and in-kind co-finance represents salary and analytical services provided by SPC.

	WCPFC PTPP Budget	Cash Co-finance	In-kind Co-finance
Salary Time*	123000 [†]		506000
Cruise Charters	211000	207000	
Travel and per diems	64000	0	
Tags and Equipment	69000	0	
Tag Recovery and Seeding	9000	207000	
Consultants and tag recovery	118000	0	
Training	0	253000	
Communication	7000	23000	
SPC Management Fees	160000	154000	
Miscellaneous Operating Costs	30,000		
Total	791000	844000	506000
Percentage	37%	39%	24%

* Salary time includes one full-time fisheries scientist and fisheries technician plus proportion of time from senior and principal fisheries scientists, fisheries technicians, and administration staff

† Includes full-time fisheries technician, plus proportional time for tagging data manager and analyst

Scientific Outputs of the PTPP

The principal scientific outputs of the PTPP are varied but fall into three broad categories: critical inputs to routine WCPFC stock indicators, harvest strategies and decision processes, development of emerging methods for independent estimation of key parameters and processes, and peer-reviewed scientific literature contributing new and novel understanding to tuna life history and fisheries. Secondary scientific outputs chiefly stem from the collection of soft and hard tissues that are collected during the research cruises, which support other WCPFC science projects ranging from genetics to ecosystem indicators. Table 2 lists these scientific outputs.

Table 2. Summary of activities undertaken or supported as part of the PTPP during the previous 10-year period, their scientific and data outputs, and the related WCPFC science and projects that require these outputs.

Activity		Output	WCPFC Science
Conventional tagging of tropical tunas		Mark-recapture data for integration into WCPO MULTIFAN-CL stock assessments of skipjack, yellowfin and bigeye tuna	WCPFC stock assessments (Science Services), WCPO skipjack management procedure estimation method (Science Services)
		Mark-recapture data estimation of environmentally-driven movement rates in SEAPODYM	WCPFC stock assessment inputs (Science Services), climate projections of future tuna distributions (Science Services), independent estimation of movement and abundance (Science Services), MSE analyses and MP testing (Science Services)
		Cohort analysis natural mortality estimation	WCPFC stock assessments (Science Services)
		Spatiotemporal tag models for abundance estimators	WCPFC stock assessments (Science Services), independent estimates of abundance from tagging data (P123)
		Horizontal movement patterns	Spatial structure of WCPFC tuna stock assessments (Science Services)
Electronic tagging of tropical tunas		Characterisation of floating object association dynamics	Impact of increased drifting FAD use (Science Services), interpretation and standardisation of CPUE data (Science Services), mitigation of juvenile tuna bycatch
		Characterisation of vertical habitat use	Vertical structure of SEAPODYM models (P62), standardisation of CPUE data (Science Services)
		Quantification of foraging activity	Spatiotemporal variation in growth (P129), validation of SEAPODYM feeding habitat estimates (P62)
		Post-discard mortality rates	Catch data correction for bycatch risk assessment models
Tag seeding experiments		Tag reporting rate estimates by fleet, region and tagging programme	WCPFC stock assessments (Science Services), independent estimates of natural mortality, validation of cannery receipt data (P114), improved tag reporting for wild mark-recapture experiments (Science Services).

Collection of otoliths	Improved growth curves, impacts of climate on growth, migration and connectivity estimates from microchemistry, validation of epigenetic age clocks and morphometric surrogates.	Age-at-length parameters for WCPFC stock assessments (Science Services, P129), independent estimates of movement (Science Services), connectivity and stock structure (Science Services), climate impacts on growth (P121)
Collection of soft tissues	Contribution to Pacific Marine Specimen Bank (P35b)	Reproductive biology parameters (P120), characterisation of pelagic ecosystem and tuna feeding ecology (P62, Scientific Services), ecosystem indicators (P121), impact of marine pollutants, heavy metals and toxicology on WCPO food products
Collection of soft tissue biopsies	High-quality DNA for genomic analysis	Building of epigenetic clocks for epigenetic ageing, high quality samples for genome deep sequencing (P100d, P129)), close-kin mark recapture estimates (P100d)
Collection of blood samples	Data for genetics, heavy metal and blood hormone analyses	Improved tuna reproductive biology (P120), high quality genetic sequencing (P100d), and food safety recommendations
Testing of sample treatments under different protocols	Replicate data on sample degradation	Improved protocols for wide-spread sample collection throughout region (P35b, P100d, P117, P118, P125, P126), close-kin mark recapture protocols (P100d)
Stomach microbiome sampling	Characterisation of tuna microbiome diversity	Ecosystem indicators (P121), climate impacts on tuna ecology and ecosystems (P62, P121)
Fat content measurement of tunas	Time-series of tuna condition metrics	Ecosystem indicators (P121), improved understanding of tuna feeding ecology and habitat (Scientific Services, P62)

Taken together, these activities demonstrate that the PTPP is no longer solely a source of conventional tagging data. In addition to supporting routine stock assessments and harvest strategy development, the PTPP currently provides data, biological samples or analytical support to at least nine active WCPFC science projects, including Projects 35b, 62, 100d, 120, 121, 123, 125, 129.

Underpinning Institutional Investment

The activities above draw on specialist infrastructure that SPC has invested in independently, and for which SPC seeks no WCPFC support to fund, depreciate or maintain. This includes dedicated laboratory facilities, facilitation and access to finance to secure suitable tagging platforms (vessels) into the future, and analytical equipment such as genetic sequencers and microchemistry extraction tools needed to support WCPFC Science. These are at-risk capital investments made by SPC on which the project relies; in effect, they represent a structural form of co-financing in assets that uniquely places WCPFC science on infrastructure it is not required to build or carry, and that would be substantially more costly to source in isolation. They are not included in the budget table above, which is confined to the recurrent costs of delivering the core activities of the PTP.

WCPFC science implications for a reduced or terminated P42 budget

SPC has undertaken initial analyses of the implications for the WCPFC Science programme if the P42 budget was reduced or terminated. We have examined where activities would be compromised and what likely budget implication this would create for those particular activities. WCPFC science areas, aggregated into broad themes, are presented in Table 3, alongside the impact on them from a lack of PTP outputs. These analyses indicate a budget of USD1,300,000/yr would be needed to replace the tagging data with alternate data sources to support harvest strategies, stock assessment and climate change projection. A further USD100,000/yr would be required to support sample loss for the Pacific Marine Specimen Bank and USD250,000 would be required to redevelop the management procedure for skipjack in the absence of tagging data.

The only option considered viable for a reduced budget was to charter fewer days, either within year or with an interannual schedule. The costs associated with tag seeding, developing and maintaining a tag recovery network to ensure good reporting and quality of data (including training), custody and validation of that data, and data preparation and analyses can be considered as fixed costs, as their exclusion essentially renders the other core project outputs useless. Chartering fewer days would result in fewer tags released, which would be expected to degrade the value of the tagging data for WCPFC Science, the degree to which would require extensive simulation testing to quantify its exact impact. Introducing an alternating, yearly schedule, further undermines those fixed costs which are necessary to support the tagging programme, regardless of its scheduling. Maintaining the supporting infrastructure, such as tag recovery networks, tagging technicians and officers, and industry tagging vessels, would become more challenging and less cost-efficient, leading to further degradation of data and decreased leveraged funding due to more sporadic field operations.

Table 3 Summary of WCPFC scientific work areas, and the impact on this science in the absence of the PTPP

Work Area	Science Implication
Harvest Strategy	Due to the reliance on tagging data in the skipjack estimation method, the skipjack management procedure would require redevelopment The monitoring strategies for skipjack, bigeye and yellowfin are reliant on movement, mortality and fishing pressure estimations, drawn from tagging-reliant stock assessment and SEAPODYM models (see below). The incorporation of these estimates would require redevelopment
Stock Assessment	Skipjack assessment would become reliant on past tagging data/parameters to constrain mortalities, recruitment and movement, potentially resulting in non-viable assessments as we move further from this historical period, in particular given anticipated climate change impacts. External estimation of movement, mortality and abundance parameters currently being considered for the next-generation of tuna stock assessment models require regular tagging data. These approaches would no longer be possible. SEAPODYM movement estimation would become more uncertain due to reliance on dated tagging information that are not consistent with the current and emergent climate regimes influencing the fishery. Greater levels uncertainty and inconsistencies in the movement files provided for the skipjack, yellowfin and bigeye assessments, monitoring and management procedures can be expected
Climate Projection	Degradation of habitat gradient and distribution estimation in SEAPODYM resulting in less precise abundance and distribution estimates for skipjack, yellowfin and bigeye tuna.
Pacific Marine Specimen Bank	Biobank of collected samples for life-history analyses to support harvest strategies, stock assessment and climate change impacts are reduced. Development of new ageing methods such as building epigenetic clocks not possible. Monitoring of climate change effects would be degraded.

Options analysis requested by FAC19

SPC has carefully examined the cost structures of P42 to meet FAC19's request for options to improve the efficiency of P42 project delivery. The analysis concludes:

- i) All activity areas (charter, technical manning, preparation and reporting, tag recovery and seeding, data curation, data analyses) of P42 are currently subsidised by co-finance from third parties.
- ii) Co-financing is dependent on WCPFC contributing to P42, which has successfully leveraged co-financing at the scale of 1:1.7 in the recent period, whereas such support is typically closer to parity. A reduction in co-finance for P42 would be expected if the WCPFC P42 budget allocation was reduced. This would result in reduced P42 delivery unless additional member contributions were provided.
- iii) There are no activity areas in P42 that can be reduced or removed that would not impact P42 delivery. All costs except cruise charter length are fixed. A reduction in charter days to less than the current 60 days would be expected to degrade the information derived from tagging data for harvest strategy, stock assessment and climate projection (table 3). A cessation of P42 would require redevelopment of the skipjack harvest strategy management procedure, and affect the monitoring strategies for skipjack, bigeye and yellowfin tuna.
- iv) Cessation or reduced charter for P42 would create increased budget implications for current WCPFC work including P35b, P90, P100c, P100d, P120, P125, P128a, P129, estimated at approximately US\$1.6m annually.

PTTP Mandate and Terms of Reference

The terms of reference last revised in 2016 were framed against WCPFC science priorities of that time, several of which have since been superseded. As the preceding sections show, the project now routinely delivers a substantially broader set of outputs than that mandate envisaged, spanning independent parameter estimation, the development and proving of regional sampling protocols, and the provision of specialist tissues to a range of other WCPFC science projects, while continuing to meet its core mark-recapture obligation in full. The steering committee considers that the terms of reference should be revisited so that the project's formal mandate reflects what it already delivers, and so that its priorities remain aligned with WCPFC's current science needs, including the recent evolution of the cruise schedule. This alignment does not, of itself, alter the scope of work undertaken, and no change to the existing budget schedule is sought. A proposed draft, tabled at the 2026 PTTP Steering Committee, is provided in Annex 2 for SC consideration and endorsement.

Recommendations

We invite SC22 to:

- note the technical value of the PTTP in underpinning tuna stock assessments, the management procedure for WCPO skipjack tuna, climate projections and wider WCPFC science work
- respond to FAC's request noting that the PTTP programme represents an integrated body of scientific work that does not offer a menu of activities that can be scaled
- Endorse the updated Terms of Reference for the project to reflect current scientific output of the project and WCPFC science needs
- forward this paper and any desired commentary to FAC20 and WCPFC23

Annex 1

Cash finance contributions for the Pacific Tuna Tagging Project during the lifetime of the project. Note that this does not include in-kind contributions such as salary, as this information is not available from historical projects and non-SPC partners.

Year	WCPFC	SPC Non-WCPFC Projects*	Republic of Korea*	Papua New Guinea	% Cash Co-finance
2006		300,000			100
2007		500,000			100
2008	10,000	1,500,000			98
2009	10,000	2,500,000	160,000	100,000	99
2010	10,000	2,500,000	160,000		99
2011	10,000	500,000	160,000	300,000	99
2012	10,000	700,000	160,000	300,000	99
2013	10,000	700,000	160,000	300,000	99
2014	10,000	750,000	160,000		99
2015	10,000	750,000	160,000		99
2016	10,000	750,000	160,000		99
2017	250,000	450,000	160,000		71
2018	500,000	1,100,000	160,000		72
2019	645,000	450,000	160,000		49
2020	645,000	380,000	160,000		46
2021	730,000	540,000	160,000		49
2022	730,000	510,000	160,000		48
2023	730,000	800,000	160,000		57
2024	800,000	510,000	160,000		46
2025	875,000	600,000	160,000		46
Lifetime Total	5,995,000	16,790,000	2,720,000	1,000,000	77

* Exact values in USD varied from year to year due to exchange rate conversions, rounded estimates provided here

Annex 2.

Proposed Update to PTTP Terms of Reference

For tabling at the 2026 PTTP Steering Committee for consideration, these terms of reference revise and replace those last endorsed in 2016 and are intended to align the project's formal mandate with the work it currently undertakes. They do not, of themselves, alter the scope of activity or the project budget.

1. Background and purpose

The Pacific Tuna Tagging Project (PTTP) has, since 2006, provided the primary source of large-scale mark-recapture data for tropical tuna in the Western and Central Pacific Ocean (WCPO). Its foundational purpose is generating release and recapture data on skipjack, yellowfin and bigeye tuna for direct integration into WCPO stock assessments and other management advice, and this remains central and undiminished.

Over the project lifetime, the use of these data, biological samples and at-sea scientific capability generated by the project have come to support a substantially wider range of WCPFC scientific work than direct stock assessment inputs alone. These terms of reference recognise both the enduring core purpose of the project alongside its broader, contemporary role.

2. Objectives

The objectives of the PTTP are to:

- a) Design and implement tagging research cruises that generate mark-recapture and electronic tagging data of sufficient quantity and quality for integration into WCPO stock assessments, SEAPODYM ecosystem models, and independent estimation of demographic parameters, for WCPO skipjack, yellowfin and bigeye tuna;
- b) Develop and maintain the regional tag-recovery network, including reward systems, stakeholder engagement, and the training of observers and recovery officers, alongside tag seeding experiments, with the aim of sustaining high and well-characterised tag-reporting rates;
- c) Maintain data collection, custody and entry processes, validation and quality control of all tagging release, recapture and associated data, and prepare these data for assessment and other analytical use;
- d) Support, where possible, the estimation of key population parameters and processes. These include but are not limited to movement, growth, habitat-use, mixing, natural mortality, abundance, effects of fishing, and the interpretation of fisheries data, through both population dynamics-integrated and independent analytical methods;
- e) Operate the tagging cruises as a shared regional sampling platform, collecting soft and hard tissues, developing and testing sampling protocols and methods, and undertaking other at-sea, scientific experiments in support of WCPFC scientific projects and work areas. These activities will be accommodated where they do not compromise core tagging objectives;

f) Contribute to peer-reviewed scientific literature that advances our understanding of tropical tuna biology, ecology and fisheries in the WCPO and wider Pacific Ocean.

3. Scope, scheduling and requirements of PTTP activities

The project will maintain a programme of dedicated tagging cruises, with target species, region, timing and fishing mode determined by management priorities and the advice of the steering committee. Reflecting current scientific needs, the schedule has moved from strict annual alternation between skipjack- and bigeye-focused cruises toward a more continuous tagging effort throughout the year, with a greater emphasis on skipjack. This is anticipated at approximately 60 days of charter-time per year, across 3-4 separate periods of the year, where possible. Yellowfin and bigeye tuna tagging will be undertaken complementarily to these cruises, where possible. The steering committee will keep the cruise schedule under review and adjust it as management and scientific priorities evolve.

Tagging research cruises are anticipated to be undertaken on either the NFD pole&line vessel *Solomon Searcher* or the multipurpose fishing vessel *Gutsy Lady 4*, depending on region, species and fishing mode requirements. The WCPFC Science Manager may require alternate vessels to be used given the availability of these preferred vessels and the specific requirements of the tagging cruise. The type and number of tags required to obtain these data will be determined prior to each cruise, but typically conventional and/or electronic tags from manufacturers Hallprint, Wildlife Computers, Vemco, Lotek or Biologging Solutions are required. The WCPFC Science Manager may add manufacturers to this list of preferred suppliers. The project will, where necessary, support the identification of solutions for ensuring regional capability for implementing tuna tagging experiments and tag-recovery in the longer term.

Maintenance of the tag recovery network will include cash or merchandise rewards, and where necessary require engagement of third-parties such as WCPFC member fisheries authorities, industry associations, and other fisheries service providers to act as agents in this regard. This includes third-party providers who are responsible for the administration of the US Treaty and Parties to the Nauru Agreement Observer Programmes (currently MRAG Asia Pacific Pty Ltd).

4. Secondary scientific outputs and the sampling platform

In recognition of the project's role as an established, specialist at-sea scientific platform, the PTTP will, where practicable and without prejudice to its core tagging objectives a-d, accommodate the collection of biological samples and the development of sampling protocols on behalf of other WCPFC scientific projects and work areas. Requests for such activity will be coordinated by SPC, to ensure compatibility with cruise objectives, cost recovery where appropriate, and the maintenance of data and sample quality standards.

5. Funding and co-financing

The project is supported by an annual contribution from WCPFC, and supplemented by co-financing from other sources, including contributions from cooperating members, objective-aligned projects, and analytical and support services provided by SPC. The project will continue to pursue co-financing

arrangements that extend the scientific value delivered against contributions made by WCPFC. The high-level division of expenditure and co-financing will be included in PTTP steering committee reporting.

6. Governance and review

The PTTP is implemented by SPC on behalf of WCPFC and is overseen by the PTTP Steering Committee, which provides scientific and strategic direction, endorses the cruise plans, and reviews objectives and outputs. The PTTP Steering Committee will meet at least annually, and its report will be provided to the relevant WCPFC Scientific Committee meeting for endorsement. In addition, the mid-term PTTP Planning Advisory Committee will provide updates and the opportunity to comment on planned PTTP activities. The steering committee will review these terms of reference periodically, and not less than every 5 years, to ensure the project's mandate remains aligned with WCPFC's scientific needs.