

Review of the Forum Leaders' Decision to Increase Economic Returns from Fisheries

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1 Executive Summary

In 2010, the influential *Future of Pacific Islands Fisheries* report was published and submitted to Leaders. It set out three alternative visions for Pacific fisheries by 2035: best-case and worst-case scenarios, plus a 'most likely scenario', which the authors labelled 'missed opportunities'. This characterisation has had a profound influence on the last decade of fisheries development.

Five years on, a consultative review process was undertaken to take stock of work that had followed the report. Given long-standing regional aspirations that the fisheries sector would offer the Pacific a classic road to industrial development, through jobs, factories and trade, and the stubborn difficulties that Pacific islands have faced in convincing foreign investors that the high costs of distance and remoteness can be overcome, the 'missed opportunities' narrative held great appeal. But this was not the only story. Over the same period, the PNAO had established itself as a politically astute force that was able to guide its members to take on an array of powerful interests and prevail, catapulting purse seine VDS revenue from USD 141 million in 2010 to USD 345 million in 2015.¹

It is a striking feature of the *Future of Fisheries* report that the phrase 'political economy' does not appear. The political dimension of Pacific fisheries is reduced to 'political will' (three mentions) and 'political commitment' (three mentions) – and ideally 'high-level political support'. Political challenges are a question of wanting success badly enough. But the reality is that Pacific fisheries operate in an intensely political environment, and the region's achievements in the last decade have stemmed from astute political understanding and careful political strategy, by officials, ministers and leaders, and by governments and regional agencies alike. Instead of 'missed opportunities', progress in Pacific fisheries by 2015 could have been described as 'mixed success, and mixed luck'. There were great successes, and there were also important setbacks that were not due to a lack of 'political will', but powerful economic and political forces that stand to benefit from the mismanagement and underdevelopment of Pacific fisheries, forces which remain enormously challenging to manage.

The aim of the review process in 2015 was to establish a new plan of action for the next five years and beyond, but the process failed to bring stakeholders together around a coherent plan of action. In the event, three proposals were put forward to Leaders in 2015: two contradictory plans from different regional agencies, and one very specific proposal from an individual Forum member. Leaders were placed in a difficult position, and although they endorsed a high-level 'Regional Roadmap for Sustainable Pacific Fisheries' (the Roadmap), they also established a Fisheries Taskforce to make sense of this contradictory advice and bring regional agencies together to agree a coherent plan for Leaders to consider in 2016. This they did, and the Taskforce developed an 'Economic Returns Work Programme' (ERWP), which in effect focused exclusively on tuna (whereas the Roadmap had given equal weight to coastal fisheries). This was endorsed by Leaders in 2016.

The Taskforce worked intensively in early 2016 and provided a much more detailed account of what actions were needed than was included in the Roadmap. They realised that a large proportion of the actions that were needed were firmly within the remit of national governments, and the ERWP reflects this. Unfortunately, governments were not represented on the Taskforce. Although the ERWP was endorsed by Leaders, and passed to ministries to implement, their lack of involvement in its preparation meant that there was no guarantee that these parts of the ERWP reflected national priorities, or took into account implementation challenges that would already have been familiar to officials working on these issues. When coupled with a Byzantine labyrinth of goals, components, actions and opportunities, the ERWP was by no means straightforward to implement at the national level.

¹ FFA data from 2020 Report Card.

At the regional level, Taskforce members reflected their existing operational plans in the ERWP, but found no significant new opportunities for the different agencies to collaborate, and appeared not to make clear new commitments to act. One striking exception was the commission of a 'political mapping report' that provided political economy assessments of important distant water fishing nations and donors that have interests in Pacific fisheries. The report is astute and useful at all levels, and contrasts with the more mechanistic approach taken in the ERWP, which laid out plans in areas such as investment facilitation and business environment reform that downplayed the political economy hurdles that governments face in these areas. Overall, the ERWP proposed that for regional organisations, business would continue as usual, according to existing agency-level plans.

This points to the more fundamental problem that both the Roadmap and ERWP started with the desire for a region-wide planning arrangement, rather than a discovered need for region-wide collaboration to achieve a tangible objective – which contrasts sharply with the success of the PNA, or FFA's success in developing and implementing regional labour standards on board tuna vessels. The mismatch between the desire for region-level planning in the ERWP and the established practice of national governments implementing national policies and plans, and regional and subregional agencies continuing to pursue their mandates according to their pre-existing planning cycles, was never resolved. Some might conclude that the imposition of a top-down regional planning framework to solve an ill-defined problem was doomed to failure from its conception.

Since 2015, there have been important developments, although very few that can easily be attributed to either the Roadmap, the Taskforce or the ERWP. The purse seine VDS remains the headline source of economic returns for those PICs that have a stake in it. Its revenue has continued to grow at an impressive rate, although more could have been done to consolidate the strength of the PNA alliance. Important opportunities for individual Parties to increase their revenue remain unexplored or in process. In longlining, lessons from the purse seine have been stubbornly difficult to replicate, not least due to fundamental features of the fishery, in which vessels find it much easier to fish in the high seas alone, weakening coastal states' leverage. However, political economy challenges are not absent, and the failure to agree constraining catch limits in the Tokelau Arrangement was a political rather than technical misstep, undermined by both non-PIC interests and unchecked PIC aspirations.

Although this review has very limited coverage at the national level, one policy innovation in Papua New Guinea deserves special mention. In contrast to the ERWP's focus on attracting investment, PNG has found that the most difficult barrier to achieving broader economic returns has been in translating investment agreements on paper, and even processing facilities built, into the number of jobs that had been promised. By revoking discounted access in favour of an ex post rebate to onshore processors, the PNG government has focused on placing inescapable responsibility on foreign investors to deliver. Other Pacific islands, many of whom share the disappointment of watching access discounts fail to materialise into the benefits they had been promised, will be interested to see whether this move yields the desired results, and if so, how the lesson might be applied in other Pacific contexts.

Despite the lack of impact that the Roadmap and ERWP has had on the region's fisheries agenda, regional agencies have continued to explore a range of options to increase economic returns from fisheries. As the Taskforce found, many of the clearest opportunities require national governments to lead. For Parties to the Nauru Agreement, revenue could still be boosted in a wide variety of ways, but the governments that are forging ahead are those that are able to marshal the full capacity of government, by tightly integrating economic ministries and senior political figures into the strategic management of one of the most valuable public assets in the government's care. Risk, in particular, is a critical element of clear thinking about VDS revenue, and has too often been left to gut instinct.

For countries with substantial domestic longline fisheries, the immediate existential crisis is the coronavirus pandemic, which threatens to set back fisheries development by decades if a cross-government response is not able to work closely with firms to ensure their survival. Inaction may mean a substantially more foreign-dominated fishery in the near future. Subsequent strategy will

depend partly on what is left, but there are certainly opportunities for governments to make their investment climate more conducive for firms while the regional conundrum of establishing effective catch or effort limits plays out for longline fisheries. There are also opportunities for regional agencies to support this.

At the regional level, Report Cards have been published since 2015 to report on progress against the Roadmap and, to some extent, the ERWP. There is wide recognition that data collection and analysis is crucial, but also scepticism that the Roadmap chose the *right* information, and even some concerns that certain targets made prominent by this reporting process have led governments towards counterproductive policies. Information management is complicated by the commercial sensitivity of much of the most important analysis, and the need to protect strategic information within a close and trusted circle. Regional agencies have produced world class analysis in the last ten years, but the challenge of institutionalising this process to make it less fragile to turnover of individual advisors remains to be addressed. Within the PNA, there has always been a commendable attempt to ensure that every Party is made better off by every action, but now that it has created a collective asset worth billions of dollars, there is an ever greater need to recognise that strengthening the collective is the best way to ensure that what has been gained will not be lost, and the value of marginal gains to one Party at the expense of another pale into insignificance when compared to every Party's shared interest in the secure future of the asset.

1.1 Priority Recommendations

1.1.1 Regional agencies

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| A. Establish a regional tuna business intelligence unit, which would report directly to Fisheries Ministers, Economics Ministers, and Leaders on the most important trends, changes and possibilities in the regional tuna industries (to replace the Tuna Report Card process) |
| B. Establish a fisheries sector enterprise survey |
| C. Place a capable regional tuna industry association on a secure financial footing |
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1.1.2 Governments that want broader economic returns

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| D. Urgently protect domestic firms, especially genuinely domestically based longliners, from the effects of Covid |
| E. For countries that have or want domestic longlining fleets or onshore processing, commit to a long-term programme of investment climate improvement for the fisheries sector that focuses on locally binding constraints |
| F. For countries that want to create profitable employment in unloading, transshipping and sorting, creation of a national competent authority is the key prerequisite, although a wider strategy is need |
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1.1.3 Parties to the Nauru Agreement

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| G. Establish an annual reporting mechanism to Economic Ministers on economic parameters of the purse seine fishery as a public asset |
| H. Continue to raise the price of days sold through the VDS, by making them more valuable to buyers |
| I. Develop a clearer understanding of risk related to the VDS asset and revenue stream |
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1.2 Were greater economic returns achieved?

1.2.1 Greater economic returns were achieved...

Between 2015 and 2019, the aggregate economic returns that Pacific islands have earned from their fisheries have increased. This increase is dominated by an increase in the annual revenue collected by PNA members from the purse seine VDS, which increased by a little over USD 100 million during this period (24%). This was accompanied by a similar rate of increase in overall fisheries sector employment, with an estimated 5,365 jobs created (a 28% increase). Other changes, such as the reduction in access fee revenue for longlining, were at least an order of magnitude smaller.²

It is important to stress that the gains in purse seine VDS revenue have accrued only to PNA members, and that employment growth has been highly uneven, with most gains accruing to one PNA member. For non-PNA members, the Review found no evidence that greater economic returns were achieved.

² FFA and SPC, 2020, p3.

1.2.2 ...but growth in economic returns was lower than prior to the Leaders' decision...

The rate of increase in economic returns from 2015 was significantly less than the rate of increase during the immediately preceding years, in both absolute and relative terms. The purse seine VDS had been increasing its revenue by 26% per year until 2015, which fell to an annual average of 7.4% in the years since the Leaders' decision. Similarly, employment growth, which had averaged 10% per year prior to 2015, fell to 5.2% per year from 2015 to 2018.³

1.2.3 ...and there is minimal evidence that returns were affected by the Leaders' decision

The Review identified almost no impact of the 2015 Forum Leaders' decision, or the Roadmap or Economic Returns Work Programme, on the level of subsequent economic returns achieved by Pacific islands. The Review was not able to quantify any impact. The Review was not able to conclude whether any impact that there may have been was positive or negative. Although there may have been highly indirect increases due to analytical work completed as a consequence of the Leaders' decision,⁴ it is also plausible that Roadmap reporting encouraged some Pacific islands to forego revenue in order to encourage foreign vessels to adopt their flag, which is likely to have had a negative effect on their aggregate economic returns.

³ FFA and SPC, 2020, p4. Comparison of average annual growth in the 3-year average of total employment between 2011–15 and 2015–18.

⁴ Primarily Pelto and Reschke, 2017.

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Acronyms

ACP	Africa, Caribbean and Pacific
ATQ	Autonomous tariff quota
BMO	Business membership organisation
C188	ILO Work in Fishing Convention, 2007 (No. 188)
CEO	Chief executive officer
CFP	Coastal fisheries programme
CLS	Core labour standards
CMS	Compliance monitoring system or catch management system
CROP	Council of Regional Organisations of the Pacific
DFID	(UK) Department for International Development
DWF	Distant water fishing or fleet
DWFN	Distant water fishing nation
EEZ	Exclusive economic zone
EPA	Economic Partnership Agreement (with the EU or UK)
ERWP	Economic Returns Work Programme
EU	European Union
FAD	Fish aggregation device
FAME	Fisheries, Aquaculture and Marine Ecosystems Division (of SPC)
FEMM	Forum Economic Ministers Meeting
FFA	Forum Fisheries Agency
FFC	Forum Fisheries Committee
FFCMIN	Forum Fisheries Committee at Ministerial level
FIC	Forum Island Country
FSA	Fisheries subsidies agreement
FSM	Federated States of Micronesia
FSMA	Federated States of Micronesia Arrangement
GDP	Gross domestic product
GVC	Global value chain
HS	High seas
IAWG	Inter-Agency Working Group
ILO	International Labour Organisation
IUU	Illegal, unreported and unregulated fishing
LL	Longline
LL VDS	(PNA) Longline Vessel Days Scheme
MCF	Marginal cost of public funds
MDAs	Ministries, departments and/or agencies
MSC	Marine Stewardship Council
MTCs	Minimum terms and conditions
NCD	Non-communicable disease
NGO	Non-governmental organisation
NZ	New Zealand
OFP	Oceanic Fisheries Programme
OPEC	Organisation of Petroleum Exporting Countries
OTEC	Organisation of Tuna Exporting Countries
PAE	Party allocated (or allowable) effort
PI	Pacific island
PIC	Pacific island country
PICT	Pacific island country or territory
PIF	Pacific Islands Forum
PIFS	Pacific Islands Forum Secretariat
PITIA	Pacific Islands Tuna Industry Association
PNA	Parties to the Nauru Agreement
PNAO	Parties to the Nauru Agreement Office
PNG	Papua New Guinea
POC	Pacific Operating Committee

PPD	Public–private dialogue
PS	Purse seine
QMS	Quota management system
RECAS	Regional Competent Authorities Support
RLLS	(FFA) Regional Longline Strategy ⁵
RMI	Republic of the Marshall Islands
RSE	Recognised Seasonal Employer (New Zealand employment scheme)
SA8000	Social Accountability Certification
SIDS	Small Island Developing State
SPC	Secretariat of the Pacific Community
SPS	Sanitary and phytosanitary
SSCR	Specialist Subcommittee on Regionalism
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
STCW-F	International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel
SWP	Seasonal Worker Programme (Australia)
TAE	Total allowable effort
TBT	Technical barriers to trade
TOR	Terms of reference
TPF	Trade policy framework
TRP	Target reference point
UK	United Kingdom of Great Britain and Northern Ireland
ULT	Ultra-low temperature
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
US	United States of America
USA	United States of America
USD	United States dollar
VAT	Value added tax
VDS	Vessel Days Scheme
WCPFC	Western and Central Pacific Fisheries Commission
WCPFC-CA	Western and Central Pacific Fisheries Commission Convention Area
WCPO	Western and Central Pacific Ocean
WTO	World Trade Organization

⁵ FFA, 2019.

2 Introduction

This report is an official, independent review of the Regional Roadmap for Sustainable Fisheries ('the Roadmap') agreed by Pacific Islands Forum Leaders in 2015, the Fisheries Taskforce (2016–2019) and the Economic Returns Work Programme (ERWP) that it developed to supersede the Roadmap, itself endorsed by Forum Leaders in 2016.

The five-year review was commissioned by a specially-configured Inter-Agency Working Group (IAWG) consisting of FFA, PIFS, PNAO and SPC, which produced the terms of reference (TOR)⁶ and reviewed the study methodology prepared by the consultants. This report reviews exclusively inter-agency work on the Roadmap and Taskforce in relation to tuna fisheries.

After a short note on the methodology used, the report responds to the TOR in three main parts:⁷

- Sections 3, 4 and 5 describe and reflect upon, respectively, the three regional institutional processes – the Roadmap, Taskforce and ERWP – all of which are overlapping and thus there is some repetition.
- Section 6 draws from this account and steps back to appraise the overarching challenges, failures and risks observed in the three institutional processes.
- Section 7 provides several recommendations for thinking about the future of sustainable economic returns to PICs from tuna fisheries in terms of overarching goals, strategies to move towards these goals at national and (sub)regional levels, and a series of concrete actions proposed for implementation at national and (sub)regional levels.

It is the authors' view that the most important part of this review is sections 6 and 7. The account of the three institutional processes is largely a historical summary, where sections 6 and 7 contain forward-thinking suggestions and recommendations based on some lessons learned.

2.1 Methodology

The methodological aim of the review was to establish patterns and processes in the available data, rather than try to force them into a preconceived view of the issues. The following tools were used so as to address the terms of reference in the interests of PICs, regardless of prior interpretations of the subject, including those of the authors.⁸ In addition to desk-study of a range of academic and policy literature, the research design for the review employed three main methods:

Critical review of documentation: especially official and 'grey' literature such as consultancy reports. This focussed on documents of direct relevance to the review such as those that fed into the Roadmap, Taskforce and ERWP as well as outputs (e.g. meeting minutes/reports, consultancies and the Report Cards); as well as reports and briefs that examined economic aspects of the fisheries. We also undertook a systematic analysis of Pacnews to identify trends as reported in regional media.

Review of economic statistics and key catch and effort data on WCPO tuna fisheries. This provided a description of quantitative trends and helped to better understand the strengths and weaknesses of indicators used in the Roadmap and ERWP.

Semi-structured interviews: We spoke to 20 people on video-call, including a small number of repeat interviews, typically lasting 1 to 1.5 hours. We focussed principally on people with direct involvement in the institutional processes under review to collect data on individual and institutional perspectives

⁶ Available in Annex 1.2 below.

⁷ A more detailed outline of how the report responds to each item in the TOR is available in Annex 1.1.

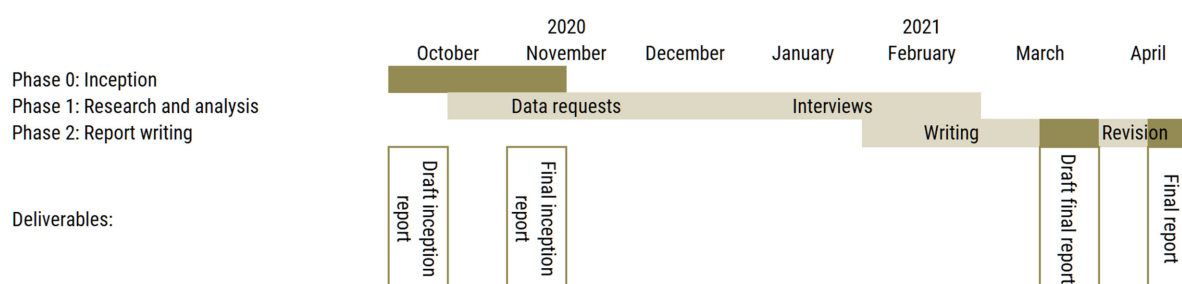
⁸ This was especially important in the case of one of the authors (Campling), and by way of a declaration of interests, as he has had a long association with the FFA Fisheries Development Division (since 2005) and (alongside Hetherington) with PIFS, especially via its Geneva office (since 2018).

and snowball for additional sources of data, and secondarily with industry for context. We were both present for all interviews and full transcripts were drafted for repeat analysis and comparison. Our approach to interviews observed methodological and ethical best practice, including full anonymity of interviewees to protect people's identities as some of the discussions covered sensitive issues. To facilitate comparison between interviews we used a set of standard question sheets for each 'type' of interviewee (e.g. those directly involved in the Roadmap, in the Taskforce, national fisheries officials, industry). However, the interview format was sufficiently flexible to ensure that we were able to adapt to the specifics of each interview; similarly, new questions were framed over time in order to address and corroborate new findings. We sent interview requests to 50 people, targeting current and former officials at FFA, PIFS and PNAO – who were the most responsive; national fisheries officials; consultants involved in regional processes; and industry.

We would like to thank everyone that we spoke to for their generosity, insights and candour. It is striking that national officials were the least responsive to our requests for interview. We think that this is for two reasons: they are already overloaded with the huge work volumes produced by – what one interviewee called – 'the tuna train', and that the processes under investigation in this review were of secondary concern at the national scale, especially in the context of Covid.

The phases of review are illustrated in Figure 1.

Figure 1: Gantt chart of phases of the review



2.2 Terminology

This document uses a number of short forms consistently for simplicity

- The '**Taskforce**' refers to the 'joint taskforce of FFA, PNA and the Forum Secretariat', and later SPC, to 'lead the development of a programme to increase the sustainable economic returns to fisheries' established by Forum Leaders in 2015.⁹
- The '**Roadmap**' refers to the *Regional Roadmap for Sustainable Pacific Fisheries* endorsed by Forum Leaders in 2015.¹⁰
- The '**ERWP**' refers to the 'Economic Returns Work Programme' endorsed by Forum Leaders in 2016. This was referred to as the 'programme to increase the sustainable economic returns of fisheries' when requested by Forum Leaders in 2015, and the report itself was titled 'Programme to increase the Sustainable Economic Returns from Fisheries'.
- The '**Report Cards**' refer to those published jointly by FFA and SPC each year between 2015 and 2020, to report on targets established by the Roadmap (i.e. FFA-SPC, 2015, 2016, 2017, 2018, 2019 and 2020).
- '**Parties**' refers to Parties to the Nauru Agreement, plus Tokelau.
- '**Future Fisheries**' refers to the *Future of Pacific Island Fisheries* (Gillett and Cartright, 2010).

⁹ Pacific Islands Forum, 2015, p.3, paragraph 8.

¹⁰ Pacific Islands Forum, 2015, p.3, paragraph 8.

Where short forms are used to refer to legal instruments, their full titles can be found in section 8.1.

Although the distinction between regional (meaning, approximately, the Forum membership) and sub-regional (meaning a subset of the region, often the purse seine VDS countries) is often made, when 'regional organisations' is used without distinction it should be read to include sub-regional organisations.

3 The Regional Roadmap for Sustainable Fisheries

3.1 Why did Forum Leaders establish a Roadmap?

A starting block for the 2015 Roadmap was the 2010 *Future of Pacific Islands Fisheries* report (henceforth *Future Fisheries*), which examined offshore, coastal, aquaculture and freshwater fisheries.¹¹ We revisit elements of this report's coverage of offshore tuna fisheries because it informed some significant aspects of the Roadmap. At its core, *Future Fisheries* describes future challenges, threats and opportunities, maps possible scenarios, and sets out a roadmap to achieve the best case – 'securing the future'. This is counterposed with the most-likely scenario of 'missed opportunities' and the worst case scenario – 'collapse'.¹² Recognising the heterogeneity of the PICs and that one size may not fit all, *Future Fisheries* concludes with an 'Implementation Roadmap' to achieve the best case scenario for offshore fisheries, including:¹³

- Regional cooperation.
- The pivotal role of foreign investment for those PICs wishing to build capital-intensive domestic industries, and in turn, the need to build investor confidence. This envisaged a role for international financial institutions (e.g. the World Bank Group) and PIFS on the trade and investment side.
- The necessity for 'big picture' strategic direction from within the region and 'immense proactive effort' in pushing initiatives forward and their coordination by governments and development partners.¹⁴
- A cadre of 'unusually skilled and dedicated people to lead the process' with knowledge of fisheries, the tuna industry, business and local contexts.
- National 'fishery agency involvement' in new areas (e.g. commercial and economic analysis) and regional fisheries agencies being poised to deal with 'a much wider range of disciplines and subjects than is currently addressed', involving a 'very large amount of work, delivered consistently over time'.
- A whole-of-government approach as 'progress depends on national policies across all sectors'.

Future Fisheries identifies a series of measures by which 'benefits' could be measured, i.e. via contributions to GDP, exports, direct government revenue, employment and food security. Each of these would become Roadmap indicators.

The PNA VDS was nascent when *Future Fisheries* was drafted, but the report did correctly identify the VDS as a 'major change' that 'will substantially increase the economic power and value arising from access to fishing resources'.¹⁵ The report also noted the emergence of sub-regional institutional arrangements based on common interests (e.g. the PNA) because of 'the view that there is a need for more dynamic action on a range of issues, and that the Forum Fisheries Committee and the full FFA membership is unable to agree or react at the speed necessary, or in the best interests of sub-groups'.¹⁶ The PNA VDS does not appear explicitly in the most likely scenario of the report's

¹¹ Gillett and Cartwright 2010.

¹² Gillett and Cartwright 2010, pp.19–20.

¹³ All quotes are from Gillett and Cartwright 2010, pp.23–5.

¹⁴ Importantly, the PNA and PNAO were largely created without significant donor support. Nonetheless, the question of which development partners is a thorny question of political economy. As noted in section 6.1.8, one of the achievements of the Taskforce was to commission a study precisely on that (i.e. Peltó and Reschke 2017).

¹⁵ Gillett and Cartwright 2010, p.22.

¹⁶ Gillett and Cartwright 2010, p.28.

‘Implementation Roadmap’. This is important, because the outlook of ‘missed opportunities’ was the driving narrative of the Roadmap.

Feeding in to the development of the Roadmap was a consultative process to review *Future Fisheries*, launched by FFCMIN in 2014, and which reported back to FFCMIN in May 2015.¹⁷ This included meetings in Auckland in March and Nadi in May 2015. A number of ‘challenge papers’ were drafted by senior FFA staff. These were not available for this review, but a series of submissions to FFC Officials in 2015 were provided which seem to suggest the rough scope of their content. The goals put forward in the *Future Fisheries* review were very similar to those incorporated into the Roadmap, except that they contained a fifth goal to ‘gain control of the tuna longline fisheries in the region’.¹⁸ This appears to have been removed from the proposal put to FFC ministers.¹⁹

It is striking that the PNAO was not incorporated formally into the Roadmap consultations. Explanations for this include the path dependency of animosities generated between FFA and PNAO as a result of the latter’s going it alone, a related clash among executive personnel at the time, and that the PNAO did not take up opportunities to engage in the process.

These specifics are now history and are not a concern of this review. Whatever the explanation, the lack of proper cooperation had three implications for the Roadmap:

1. PNAO as the most successful existing mechanism for increasing economic returns was not embedded in the design, despite already being a proven ‘best case’ scenario by 2015.
2. Lessons were not learned from the PNA VDS, especially the importance of the political glue around collective power and shared decision-making; and nor from the PNAO, most obviously its commercial focus and institutional agility.
3. The Regional approach to fisheries development became muddled as a result of a parallel proposal to the Roadmap made by the PNAO in a submission to the Specialist Subcommittee on Regionalism (SSCR) under the 2014 Framework for Pacific Regionalism.²⁰ The submission ‘Restructuring the Tuna Fisheries Industry in the Pacific Islands through transfer of Rights’ described a five-part programme:
 - a. Entrench zone-based rights in the hands of Pacific islands nationals.
 - b. Phase out foreign-flagged purse seine fishing vessels and replace them with fishing vessels flagged to Pacific islands.
 - c. Negotiate contract tuna processing arrangements, and develop necessary institutional and administrative arrangements to facilitate this.
 - d. Maintain the value of PIC EEZs by ensuring that hard limits are applied to high seas areas through the WCPFC.
 - e. Broaden PIC involvement in tuna marketing and retailing.

The SSCR considered the PNAO submission, and did not deliberate on the Roadmap because it was ‘not formally submitted to the Sub-Committee for consideration’. The SSCR did recommend that the PNAO proposal be presented as a ‘critical issue for PICs that warranted Leaders’ attention’,²¹ which ultimately would result in it feeding into the ERWP and undermining the Roadmap (see sections 4.1.2 and 5.1).

The stakes in this inter-agency tussle were heightened and tensions spilled over because the Roadmap was intended for endorsement by Leaders. The rationale for bringing the Roadmap to Leaders was sound: as noted in a briefing note to Leaders on the Roadmap, FFA’s Director General

¹⁷ FFA, 2015b.

¹⁸ FFA, 2015b, p.4.

¹⁹ FFA, 2015c, p.3.

²⁰ PNAO, 2015.

²¹ SSCR, 2015.

stressed that ‘successful implementation will require the active cooperation of other government sectors as well as wider stakeholders, and given the regional and international nature of the fishery and the trade-offs and collective commitments that governments would need to consider and agree’.²² While the Roadmap promoted a whole-of-government approach at the *national* scale, thereby recommending the taking of fisheries development away from the traditional focus of fisheries agencies, it did not do so at the regional scale with FFA and SPC receiving special mention as the implementing agencies.

Failings in regional fisheries cooperation in the lead-up to Leaders’ endorsement of the Roadmap, as well as the recognition of a ‘whole-of-government’ approach, have implications for our recommendations in section 7 on the need to enhance the monitoring of the (sub)regional industry (e.g. via a new tuna intelligence unit and/or PNAO Advisory Group and annual reports to PNA economic ministers). Inter-institutional rivalries are normal and a degree of creative tension is probably even desirable, but rivalries should never weaken the Pacific’s most important strength and basis of increasing economic returns, i.e. collective action and control over access to the purse seine fishery.

Before moving to the Roadmap goals, strategies and indicators in the next two subsections, it is useful to set out the Roadmap’s underlying assertions. The **underlying problem statement in the Roadmap** is that the region is ‘following a pathway of missed opportunities’ while ‘[l]arger and more developed countries are taking our fish to create their profits, exports and jobs’.²³ The Roadmap sets out six assertions that underpin this assessment, including:

1. Bigeye tuna populations are overfished
2. The regional longline fisheries are ‘barely economic’
3. Despite effort controls, purse seine fishery catch volumes continue to grow ‘driving down the value of the catch’
4. High seas fishing is ‘virtually uncontrolled’
5. Two-thirds of tuna is caught by ‘foreign fishing boats’
6. Almost 90% of tuna is taken out of the region for processing

It is important to this review to briefly **appraise these six assertions** because they shape the unfolding of the Roadmap and the subsequent Taskforce and Programme.

1. Bigeye tuna populations were subsequently re-assessed by SPC in 2017 and deemed healthy; that is, bigeye tuna stocks in the WCPO are not overfished and overfishing is not occurring.²⁴
2. Regional longline fisheries consist of frozen sashimi, frozen albacore for canning and fresh sashimi. There are longstanding problems with the underlying economics of these fisheries, exogenous and endogenous to the Pacific Islands region. Globally, there are very high levels of competition for Japan’s declining market for tuna sashimi (both in volume and real prices), including tuna ranching; and high levels of subsidisation by DWFNs which have contributed to overcapacity in longline fleets, especially freezer vessels.²⁵ Within the region, there has been a lack of control of longline fishing, including the ongoing exemption from the ban on transshipment at sea for freezer longliners; and the historical (over-) allocation of licenses by some PICs to distant-water longliners which contributed to undermining genuine locally-owned operators.

²² FFA DG (undated), p.1. The briefing note elaborated: ‘full implementation of the Roadmap requires action outside of national and regional fisheries agencies, in areas such as investment facilitation and labour mobility and direct respective Ministers to work together on such issues’.

²³ FFA-SPC 2015, p.1.

²⁴ FFA-SPC 2017, p.2.

²⁵ Campling, Lewis and McCoy, 2017.

3. Total purse seine catch (all tuna species) in the WCPFC Statistical Area had *peaked* in 2014,²⁶ the latest year for which data were available to feed into the Roadmap. Total purse seine catch dropped to roughly the 2010 level in 2015 and was the rough equivalent of the 2012 and 2013 levels in 2016 to 2018, before hitting a new record peak in 2019. As such, tuna catches in the WCPO *stopped* continuing to increase after the Roadmap was published. However, the Roadmap's assumption that there is an inverse relationship between the size of catch and the total 'value' of the catch was directly contrary to the evidence available at the time (assuming that 'value' is intended to be a measure of revenue rather than price). Kirchner *et al.* (2014) – which included authors from FFA, SPC and the PNAO – summarised five estimates of price elasticity of demand published between 1998 and 2010, and added a sixth, all of which predicted that an increase in catch volume would lead to an *increase* in revenue.²⁷ It is therefore unclear on what basis this assumption was made.²⁸
4. While 'uncontrolled' high seas fishing is a major problem in longlining, it was at the time arguably far less of a concern in the region's purse seine fishery because of the PS VDS which had successfully closed off significant portions of high sea areas to DWFs if they wished to access the EEZs of PNA members. In this regard, the PNA countries had, by 2014, very successfully brought portions of the HS into effective coastal state control by virtue of the leverage of the VDS, contrary to established norms in UNCLOS. Although this began to change in 2015 with the rise in SIDS-flagged purse seiner catch in the high seas (see Figure 9 and discussion in 6.3.3 below).
5. Underlying the concern that in 2014, two-thirds of tuna was caught by 'foreign fishing boats' is the assumption that 'local' boats are an 'important opportunity for economic development'. There are some important qualifiers to this assumption which we will examine in 3.2 on the Roadmap Goals.
6. That almost 90% of tuna is taken out of the region for processing is a long-standing and well-known problem to do with relative cost structures. It is not specific to canned tuna and applies to numerous countries engaged in the production of primary commodities. In fact, tuna processing is one of very few success stories of industrial upgrading throughout the entire range of primary commodities produced in members of the ACP Group. A necessary but not sufficient condition of this has been the very high EU trade preference in accessing lucrative European markets, currently utilised by PNG and Solomon Islands under the Interim EPA. Given the vast amount of work that has gone into analysing the endogenous and exogenous conditions that have historically limited the development of PIC-based tuna processing, a more analytical diagnosis of the problem would have been useful.

Overall then, the assumptions underpinning the Roadmap were overly pessimistic on tuna catches (1) and (3), and they did not take proper account of the vast improvements in PNA revenue from catches (3) nor its enhanced governance of HS areas (4). The assumptions on the regional longline fishery (2) were sound but diagnoses of the scope for PIC control – especially as a parallel to the success of the purse seine VDS – did not fully recognise the exogenous and endogenous limitations. Some of these problematic assumptions were picked up by the Taskforce and augmented in the ERWP (see sections 4 and 5).

Overall, turning back to the problem statement that motivates the Roadmap we find a synthesis of the *Future Fisheries* 'pathway of missed opportunities' for economic development in the region with the

²⁶ WCPFC 2020, Table 88.

²⁷ See p.16, table 7. This is true of all tuna species and gear types, where studies make a distinction. The Review did not encounter any later evidence that contradicted these findings.

²⁸ There is an alternative theoretical interpretation of this statement, that it suggests that increases in catch lead to such a large reduction in biomass and therefore catch per unit effort, that this effect dominates and leads to reduced revenue. The Review did not find any evidence that this was the intention, or a realistic concern.

familiar political rhetoric of foreign interests ‘taking our fish to create their profits, exports and jobs’. The view that PICs had ‘missed opportunities’ was a clear misdiagnosis given that the PS VDS had singlehandedly trebled access revenue between 2010 and 2014 in the most successful commercial act of South–South fisheries cooperation in the world. Instead, it reads as a path-dependent conclusion tied to the last two assumptions (5) on ‘local’ versus ‘foreign’ boats and (6) the long-standing problem of limited domestic processing of WCPO-caught tuna, both of which are discussed in detail through this review.

3.2 What are the Roadmap Goals?

Having outlined some of the processes that led to Leaders’ endorsement of the Roadmap, and the underlying assumptions underpinning it, and tracing some of these to the *Future Fisheries* report, we now describe the Roadmap goals and the strategies. The Roadmap sets out 4 Goals for the region’s tuna fisheries and 6 Strategies to achieve those Goals. Each Goal contains within it one or more indicators (see section 5.3).

Goal 1: Sustainability of WCPO tuna fisheries

Goal 2: Value of the tuna economy to PICs

Goal 3: Employment of Pacific Islanders in the tuna industry

Goal 4: Food security through greater domestic consumption of tuna in PICs

The Goals are not equal in importance. Goal 1 underpins all others in terms of both the fundamental need for the sustainability of WCPO tuna populations and for enhanced control of fisheries by PICs. Goal 2 is the most directly important to this review of Increased Economic Returns and is the most complex because it is multifaceted. Goal 3 might be seen as a subset of Goal 2 given that local employment in and around the tuna industry will generate value in the form of wages and taxes on income and consumption, add value to tuna raw material in various tuna supply chains, and create indirect and induced employment through economic activity. Despite this relationship we treat Goals 2 and 3 separately because this is what Leaders intended *and* because there are significant tensions between the two, as elaborate below in section 3.3. Goal 4 is the only goal that does not have an obvious corollary in the Strategies (see Figure 2).

The Strategies are cross-cutting and in all cases have implications for achieving at least one target from multiple Goals (e.g. if successful, Strategy 4 would contribute to meeting Goals 2 and 3). Table 3-1 details the strategies, the assumptions and principles underpinning them, stated processes, outcomes and even sub-targets (in addition to the indicators attached to the Goals, see 3.3). However, the Roadmap does not precisely specify the ways in which Goals and Strategies are intended to relate and so Figure 2 sets out some assumptions on the relationships here.

The drafting of the Roadmap appears not to have had implementation in mind. For example, the Goals each have one or more indicators, and the Strategies often also have sub-indicators or ‘targets’ (summarised in Table 3-2). Further, there is no recognition of the tensions between Goals.

Figure 2: Roadmap goals and strategies

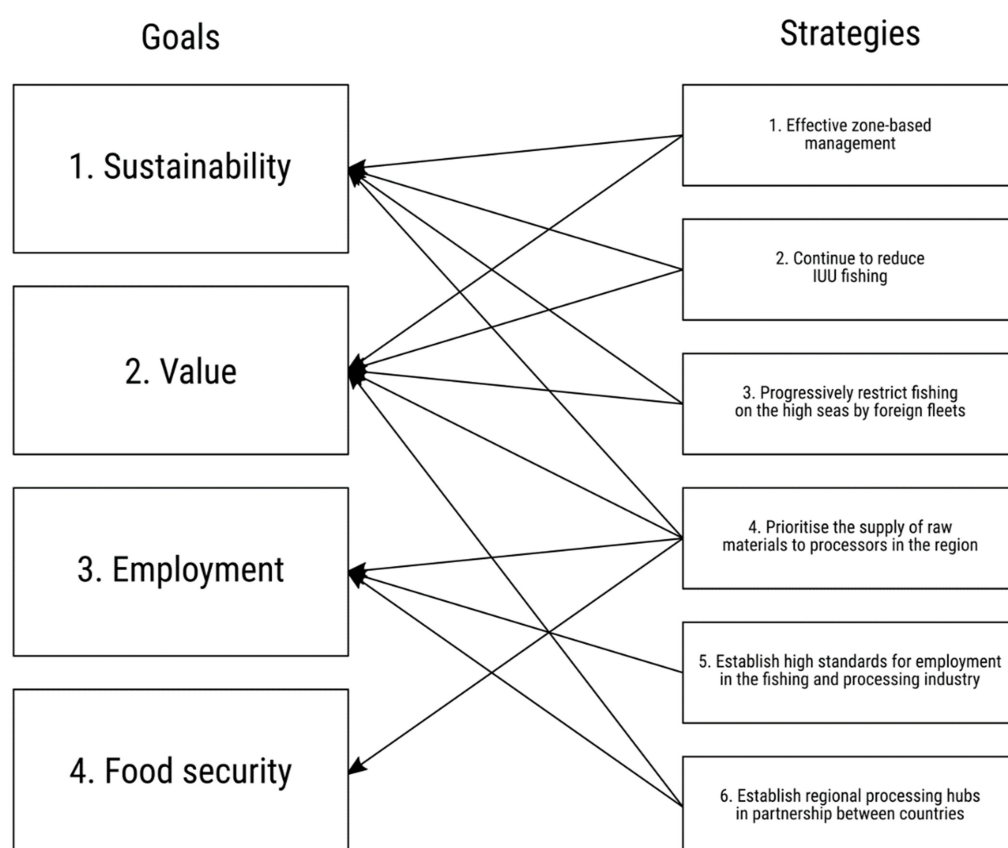


Table 3-1: Strategies to achieve the goals and the consultants' assumptions of the relationship

Roadmap Strategy (assumptions and sub-targets/indicators)	Assumed relationship to Goals
1: Effective Zone-based Management (a) Principle: long-term PIC commitment to zone-based management of tuna (b) Process: assert national rights on a cooperative basis within binding limits (c) Sub-target: By 2025, replace current effort controls with catch-based, quota systems	Primarily relates to Goal 1, but underpins Goal 2 as effective zonal control of fisheries is essential to increase access fees (see Table 3-1, Indicator 2(c)) Sub-target 1(c) may be in tension with Goal 3 depending on its configuration (e.g. private ownership of catch quota may reduce PIC ability to leverage boat owners to create onshore employment)
2: Continue to reduce IUU fishing (a) Principle: long-term PIC commitment to cooperate to combat IUU fishing, which has negative effects on fisheries management and socio-economic benefits (b) Process/Outcome: increase investment in satellite and electronic surveillance, at-sea boarding and inspections, aerial surveillance and	Primarily relates to Goals 1 and 2 on sustainability and economic returns, as stated in Strategy 2(a). It also contributes directly to Goal 3 via increased employment of observers and fisheries management staff. Strategy 2 may also have implications for Goal 4 through the potential availability of more tuna

port controls (c) Process/Outcome: cooperate through the Niue Treaty Subsidiary Agreement	for local food security, although this is not a stated intention in any relevant documentation. Process 2(b) does not include any indicator of what 'increase investment' looks like (i.e. there is no baseline and no target)
3: Progressively restrict fishing on the high seas by foreign fleets (a) Principle: HS fishing does not generate benefits for PICs (b) Process/Outcome: use vessel licensing, WCPFC and other international processes to 'level the playing field' (c) Process/Outcome: work with NGOs in principal markets to encourage sourcing from national zones	It is assumed that Strategy 3 refers mainly to tuna longlining given that the PNA VDS had (at the same) brought purse seine fisheries largely in-zone. Yet, if the intended focus <i>is</i> on longline, it is unclear which NGOs are intended as the main market would be Japan. The meaning of 'levelling the playing field' is not explained and there is no baseline, nor target. This strategy relates primarily to Goal 1 of enhancing PIC fisheries management by bringing fishing in-zone, and Goal 2 in terms of capturing revenue from access fees and, potentially, other economic returns. However, to generate economic returns in addition to access fees in longlining would require parallel measures such as the removal of the exemption on the ban on at-sea transshipment. May also have implications for Goal 3 on employment via an increase in on-board observers and/or for onshore activity (e.g. goods and services and transshipment/landings), and Goal 4 where discards and bycatch are landed.
4: Prioritise the supply of raw materials to processors in the region (a) Principle: current WCPO tuna fisheries reduce potential economic returns to PICs because relative cost structures result in tuna processing taking place in Asia (b) Assumption: PICs have the capacity to undertake more transshipment or processing (c) Sub-target: 'move to' mandatory offloading of 'part of' the catch by 'access vessels' (d) Sub-target: Increase transshipment fees in a harmonised way across relevant PICs	Primarily relates to Goal 3 as it would generate employment, and Goal 2 as it would result in greater local value added through goods & services to boats through transshipment, revenue through economic activity and transshipment fees, and/or local value added via processing. Has implications for Goal 1 as mandatory offloading could enhance PIC MCS capabilities. Has strong positive implications for Goal 4 with increased local availability of discards and bycatch. Terminology unclear, e.g. do 'access vessels' include DWFN flags <i>and</i> PIC flags? Sub-targets 4 (c) and (d) do not include baselines, nor target

5: Establish high standards for employment in the fishing and processing industry (a) Principle: tuna-related development should not be at the expense of PIC employees (b) Sub-target: uniform minimum labour standards to avoid a regional 'race to the bottom' in working conditions (c) Process/Outcome: emphasise training	Most obviously relates to Goal 3 and provides a qualitative dimension to the quantitative indicator. Also relates to Goal 2 as social upgrading in tuna-related employment (better jobs, better conditions, upskilling) will have direct benefits through wages and local spending and indirect through reduced drain on social provisioning (e.g. health care). 'Minimum standards' are not indicated (e.g. ILO Core Labour Standards (CLS) or CLS+, which includes occupational health and safety and minimum wage)
6: Establish regional processing hubs in partnership between countries (a) Sub-target: developing a 'processing hub' involving two or more PICs	Relates to Goal 2 and 3 through greater value added and employment in the region by using tuna raw material that is normally exported unprocessed. See section 6.3.5 below

3.3 How is Roadmap progress measured?

The following reviews the indicators used in the Roadmap, but because the ERWP quickly replaced some of these, the reporting process is not elaborated on here but in section 5.3 below. A total of 10 indicators were specified in the Roadmap to measure achievements against the 4 Goals. This is complicated by the existence of sub-targets alongside the Strategies as detailed in Table 3-1 above. We focus here on the Roadmap Indicators as detailed in Table 3-2. One initiative of the Roadmap was to propose an annual Tuna Fishery Report Card to be presented to the FFC annual meeting which would track developments against the 4 Goals using available indicators. In some cases sources of data to feed into indicators were not available (e.g. tuna for domestic PIC consumption) and these became a key challenge for FFA as the lead agency responsible for producing the Tuna Fishery Report Cards.

The indicators for Goal 1 are appropriate to the task (Table 3-2) and the Report Cards make effective use of a 'Majuro' plot to show the relative status of the four main tuna stocks. This is complemented by short textual discussions of each species. What it does not do is to provide any indication of the trade-offs between gear types and target species/by-catch. This means that important regulatory and commercial questions such as interactions between purse seine and longline gear are side-stepped. Further, there is no clear indicator for IUU, i.e. to trace how it might more or less 'undermine' fisheries management.

Table 3-2: Roadmap indicators

Roadmap Goal	Indicators
1. Sustainability	(a) By 2018, agree Target Reference Points (TRPs) for Albacore, Bigeye, Skipjack and Yellowfin (b) By 2025, all four stocks will be moving toward TRPs (c) End overfishing of Bigeye

	(d) Reduce incidence of by-catch (e) Management will not be 'undermined by' IUU
2. Value	(a) By 2024, regional tuna catch will be double in monetary value compared to 2014 (b) Increase in value of catch (a) will be achieved without volume increases by (i) reducing 'oversupply' and (ii) target higher value products and markets (c) Increase access fees for 'foreign vessels'
3. Employment	(a) By 2024, 18,000 new jobs will exist in the PIC tuna industry (b) Harmonise labour standards
4. Food Security	(a) By 2024, increase supply of tuna for domestic PIC consumption by 40,000 mt

Goal 2 indicators are each problematic, in different ways. There are also conceptual difficulties with the notion of 'Value', which we summarise in Table 3-3. Indicator 2(a) on the doubling of the value of the catch in 10 years and (b) without an increase in volume is not justified. The indicator is not based upon prior price movements (e.g. for canning grade tuna), nor does it incorporate an understanding of the complex articulation of principal market demands, industry dynamics and the world's other major tuna fisheries. Instead it is assumed that 2(b)(i) 'oversupply' characterises the global tuna market and that it is within the power of PICs to influence this through their control of >50% of canning grade tuna fisheries. The mechanisms by which this will be achieved are not specified and the indicator is not realistic, thereby setting the Roadmap up to fail.²⁹

Similarly, the ways in which PICs could 2(b)(ii) 'target higher value products and markets' is not indicated. As it is, PIC exports already target the world's largest market for whole canning grade tuna (Thailand), principal markets for canned tuna and loins (the EU and the USA) and the most important and high value and volume sashimi market (Japan). It may be that the thinking here was to do with domestic value added (e.g. onshore processing), in which case this would have been a more appropriate indicator. It may also be that the architects of the Roadmap were thinking of possible price premiums through MSC certification and if so, it may have been strategic to make direct reference to the PNA MSC certification for the fishery in December 2011.

There is another question here – to which we return in a discussion of ERWP indicators in section 5 – and that is to do with whether or not 'higher value products and markets' equate to economic returns to PICs. There is no recognition of, for example, import leakage or what measures might be used to ascertain genuine economic returns to PICs. For example, a PIC-flagged longliner may tranship at sea to the world's highest value market with very little to show in PIC economies beyond the access revenue. Conversely, a PIC may generate direct local skilled employment by tapping into a new market for high value processed sashimi cuts.

The final Goal 2 indicator to (c) increase access fees for 'foreign vessels'. This raises a complex question about the nationality of capital and the ability of PICs to meaningfully account for and trace

²⁹ Further, albeit with the benefit of hindsight, catch levels declined in 2015 – the year that the Roadmap was published (not because of any impact of the Roadmap) – underscoring the embedded assertion in the Roadmap that catch volumes would continue to grow (see section 3.1).

beneficial ownership in an industry where reflagged is commonplace. The first Tuna Report Card in 2015 side-stepped this problem by focussing instead on ‘value of access fees to FFA EEZs’ which is a solid indicator of direct revenue to PIC governments.

Goal 3 is indicated by total direct employment and is usefully disaggregated by segment: processing, local crew, offshore crew, observers and public sector. These are useful data points as they allow for differentiation and indicate where the region is moving. There are three problems with the indicators though. First, the quantitative target is a doubling of tuna-related employment by 2025, but while there is baseline data (i.e. 18,000 jobs in 2013), there is no analysis of the trend to that point and thus it is unclear how a ‘doubling’ was arrived at as a realistic target.

Second, the vast majority of jobs are in processing in Melanesia – as noted by the 2015 Report Card – but it is not stated whether these are full-time equivalent posts. This is important as the number of workers on the books may be overinflated due to absenteeism or low plant utilisation, for example. Third, even though Strategy 5 emphasises the *quality* of employment, this is entirely side-stepped in the indicator and Report Cards. This is important because very low wages and/or poor working conditions may result in other costs (e.g. health, household cohesion), contribute to high staff turnover and/or absenteeism and/or limited labour supply, and thus may undermine the competitiveness of domestic processing or crewing.

Goal 4’s indicator suffers from a basic but major flaw: there was a complete lack of baseline data on consumption, price and artisanal catch, despite that the Roadmap sought to increase supply of tuna to the domestic market for PIC consumption by 40,000 mt by 2024. But from what level? How had this changed over time? This Goal was based a ‘study led by [SPC]’ that concluded this would be needed for human health due to rising populations, depletion of coastal fish habitats and stocks, and to combat the rise of NCDs that has resulted from ‘low-quality imported foods’.³⁰ During the review of progress on *Future Fisheries*, there was some discussion as to how this would be achieved, though this was not referenced in the Roadmap itself. Noting that the private sector would not independently achieve this objective, a number of government actions were proposed: ‘Increasing access of small scale fishers to tuna, such as through increased use of inshore FADs; Policy reform to encourage/require industrial vessels to land a component of their catch; Market infrastructure to deal with landed fish; Processing investment to increase protein recovery rates; and Cooperation to increase trade in regionally processed tuna.’³¹ However, these strategies were not translated into the Roadmap.

Despite that the Roadmap was rapidly superseded by the ERWP (section 4), it did leave a lasting mechanism in the form of the Report Cards. Yet only the very first Report Card focussed on the Roadmap indicators. The subsequent Report Cards introduced ERWP indicators and were further augmented as a result of other factors (see section 5.3).

Table 3-3: Conceptual Aspects of the Roadmap Goals

Roadmap Goal	Conceptual Questions
1. Sustainability	The least problematic of the Goals, the logic of ensuring sustainability of tuna populations underpins all current and especially future economic returns to PICs.

³⁰ FFA, 2015a, p.1.

³¹ FFA, 2015a, p.5.

2. Value	The most complex and loaded concept. Value has multiple meanings, some of which are present in the report cards, and they do not necessarily correlate to genuine <i>economic returns</i> to PICs. Contrast for example (a) ‘catch value in FFA EEZs’, which is not a direct function of PIC actions but of world tuna <i>prices</i>, with (b) ‘value of access fees to FFA EEZs’ which is a direct source of <i>revenue</i> to PIC governments. Catch ‘value’ (prices) is an absolute measure and price formation is a composite of fuel and other operating costs, and complex industry and market dynamics – all of which change, and may have no immediate benefit to PICs if they do not own the fish (which PIC firms rarely do). Although if tuna price <i>were</i> to have doubled between 2014 and 2024, PICs may have gained from growing access fees. Access fees are a relative measure based on PIC negotiating leverage stemming from control over the fishery, and are an indicator of <i>net benefits</i>, regardless of shifts in fuel costs, etc. This is a measure of <i>rent</i>. Value has other meanings used in the Pacific context such as the valuation of intangible assets such as brands (e.g. brand equity value); measures of ‘value added’ in GDP (see section 5.3); in the relationship between profit and rent; and the much broader question of values (i.e. socio-cultural priorities and preferences).
3. Employment	This goal is clearly rooted in net benefits to PICs as direct employment overwhelmingly tends to be of Pacific Islanders and is likely to sustain economic returns, i.e. through wages and taxes on wages and consumption, and the generation of other economic activity through indirect and induced employment.
4. Food Security	Significant failing: lack of baseline data on consumption, price and artisanal catch. It is also useful to be clear about the conceptual understanding of <i>food security</i>, which can range from ‘adequate ... basic foodstuffs to sustain a steady expansion of food consumption’ to the more nuanced notion of permanent ‘physical and economic access to sufficient, safe and nutritious food to meet [peoples] dietary needs and food preferences for an active and healthy life’.³² This can include local to global systems and UN definitions tend to be market-oriented. This contrasts with the notion of <i>food sovereignty</i> which seeks to move the control of food systems away from the industrial-corporate and world market realm to local community control. A third approach is the <i>right to food</i> which treats access to food as a human right, as set out in the 1948 Universal Declaration of Human Rights. The right to food is enshrined in many national constitutions and in some cases national fisheries legislation is ‘conducive to the implementation of the right to food’ and has been used in legal actions by domestic fisheries interests, such as in South Africa. It is recognised that fisheries contribute to food security directly, by

³² FAO 2003, section 2.2.

	providing fish for people, and indirectly, by generating income from the fisheries sector.³³ In the context of the rise and prevalence of non-communicable diseases (NCDs) in some PICs, these conceptual questions are increasingly urgent.
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3.4 Reflections on the Roadmap

Overall, the Roadmap's four Goals read as uncritically aspirational. Importantly, the process of designing the Roadmap did include consultation between FFA and national fisheries agencies, seemingly mostly at ministerial level. But the process did not seem to systematically consider constraints to action nor their risks. To put this differently, much of the thinking overstates the agency of PICs in global supply chains in tuna and their associated power in the broader geopolitical economy. As we shall see, this continues into aspects of the ERWP.

Overstated government agency is embedded in the *Future Fisheries* most-likely scenario of 'missed opportunities', which was reproduced in the Roadmap. The scenario itself overstates PIC agency because of the fact that a great deal of the issues are outside of direct PIC control. To illustrate the point, an alternative set of scenarios might be: good luck, middling luck and bad luck.

The main area where PICs *do* have meaningful control of the global tuna industry is over access to marine resources in EEZs — and what this enables PICs to leverage (e.g. the narrowing of access to high seas). And it is precisely here that things went better than *Future Fisheries* predicted in 2010 and that the Roadmap acknowledged in 2015. For example, a 2011 analysis anticipated that the PNA could generate a 5-fold increase in current returns as a result of the PS VDS from \$75mn/annum to \$400mn/annum, which is precisely what it did.³⁴

Operationally, the Roadmap did not set out clear pathways to achieve the Goals. As illustrated in Figure 2, multiple strategies fed into different Goals, which is understandable given the interconnections among the Goals, but as detailed in Table 3-2, the strategies included sub-targets, which were not formally measured.

Roadmap Goals changed as a result of Fisheries Taskforce interventions, including in areas identified by us in 3.1 as being based on problematic assumptions. Nonetheless, a number of questions may be asked of the overall function of the Roadmap. Was the Roadmap intended as:

- (a) a policy intervention involving distinct, new measures;
- (b) a prioritisation and ongoing scrutiny/oversight of existing initiatives; and/or
- (c) as a means of clarifying mandates and areas of cooperation, and/or
- (d) an (implicit) gap analysis of current action on fisheries (embedded within the assertions underpinning it) and/or
- (e) a framework to set out what countries should be doing and then leave them to it?

This review has not been able to gather clear evidence on which of one of these — or combination thereof — best typifies the intentions underpinning the Roadmap. Box 3-A suggests some possible ways in which inter-agency coordination could operate, and we will refer to this again when discussing the Taskforce and ERWP.

Box 3-A: Possible functions of an inter-agency planning and coordination mechanism

There are a number of quite different ways in which an inter-agency plan, or coordination mechanism,

³³ UDHR 1948, Art. 25.1; Skonhoft et al. 2009; UN General Assembly 2012

³⁴ Toroa Strategy 2011, p.25–6

can operate. These are relevant not just to the Roadmap, but also to the Taskforce and Programme. An explicit understanding of these options can help to explain situations in which different participants have different expectations, and also how the outcomes of a plan or mechanism relate to the way it is set up, and which of these modes of operation it follows, both in intent and in fact.

A plan and/or coordination mechanism can operate as:

- A. A set of policy interventions, that involves distinct, new actions, to be taken by agencies within the group and that are additional to actions that would be taken in the absence of the plan. The plan could include any stage of this process, from brainstorming, to objective selection and prioritisation, design, planning, execution, monitoring and evaluation.
- B. A mechanism to prioritise or scrutinise a set of existing initiatives, perhaps also including monitoring or evaluation functions.
- C. A means for a group of agencies with closely related or overlapping mandates to identify areas in which their pre-existing plans interact, mutually reinforce or counteract those of other agencies, and resolve issues through collaboration, mandate adjustment, etc.
- D. A gap analysis, in which agencies share information about their current actions and intentions and collectively identify areas where action is needed but absent from current plans, to help each member agency identify future priorities for individual or coordinated action.
- E. Any of the foregoing mechanisms can also apply to actions that are not within the power of any member agencies and could only be undertaken by organisations outside of the group, with or without support from group members. In this context, this applies most obviously to actions that can only be implemented or led by national governments.

4 The Fisheries Taskforce

4.1 Who is the Fisheries Taskforce?

4.1.1 Who are the member agencies and what are their remits?

Forum Leaders originally envisaged the Taskforce to be composed of representatives of FFA, PNAO and PIFS. In its first meeting, the Taskforce decided that SPC should also be a member, and SPC participated on an equal basis from the first meeting onwards. Leaders endorsed the inclusion of SPC the following year.

The **Parties to the Nauru Agreement Office** (PNAO) was established in 2010 as a dedicated office to take over implementation of the Nauru Agreement (1982) from FFA. Its focus is on the sustainable management of the purse seine fishery controlled by the eight parties to the Nauru Agreement through the Vessel Day Scheme, which accounts for approximately half of the global supply of skipjack. The PNAO is based in Majuro. It is broadly agreed that, more than any other organisation in the Pacific, the PNAO's purpose is to maximise the economic returns from the tuna fishery. The PNAO does not receive core funding from donors, and derives its income from the purse seine VDS.

The **Pacific Islands Forum** (PIF) is the region's 'premier political and economic policy organisation', established in 1971 as the South Pacific Forum. Its membership covers 18 independent states and self-governing territories. Regional policies and initiatives agreed by the PIF are coordinated by the PIFS and implemented through the Council of Regional Organisations of the Pacific (CROP).

This review was underway when five Micronesian countries signalled an intention to withdraw their membership of PIF. Each nation will undertake this process with respect to its own legal and procedural requirements, but given the formal withdrawal process takes one year, there is a window of diplomatic opportunity for withdrawal to be avoided. There is no indication yet that the Micronesian states will also withdraw from CROP agencies under the PIF umbrella, including FFA and SPC, both of which play an integral role in management of the region's tuna fisheries. This review has sought to take these dynamics into account to the extent feasible in the formulation of recommendations.

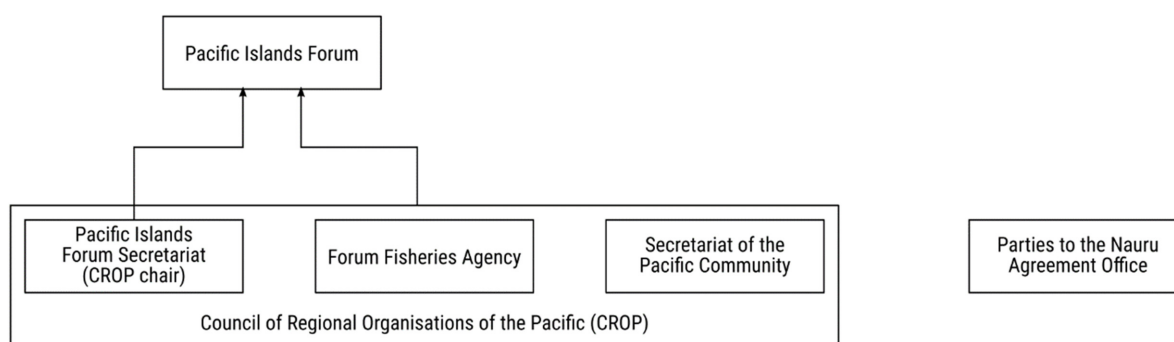
The **Pacific Islands Forum Secretariat** (PIFS) is the permanent chair of the CROP. It does not have a distinct membership from the Forum. It works in a wide range of areas, including sustainable development, economic and trade growth, governance, security, as well as fisheries, ocean management and conservation. PIFS is based in Suva.

The **Forum Fisheries Agency** (FFA) aims to maximise 'social and economic benefits through the sustainable use of our offshore fisheries', and is made up of 17 countries and territories. FFA's activities focus on fisheries management, fisheries operations and fisheries development. Its fisheries development work includes the collection, compilation and reporting on a range of economic time series, request-based cost-benefit analysis of investment proposals, and reporting on tuna trade, industry and market dynamics. FFA is a member of the CROP and is based in Honiara. It does not report directly to Leaders. The only fisheries agency with the remit to report directly to FIC Leaders is the Executive Director of the WCPFC Secretariat.

The **Pacific Community** (with its secretariat, SPC) is the 'principal intergovernmental organisation in the Pacific region'. It was established in 1947 and is composed of 26 country and territory members, of which 22 are considered island members. Its technical competence covers not only fisheries but public health, geoscience, climate change, conservation, human rights and education. Its Division of Fisheries, Aquaculture and Marine Ecosystems (FAME) comprises two programmes, the Oceanic Fisheries Programme (OFP) and the Coastal Fisheries Programme (CFP). FAME's objectives place greater emphasis on sustainable management, with goals such as economic development secondary.

SPC is a member of the CROP. SPC is based in Nouméa, but has offices in Suva, Honiara, Port Vila and Pohnpei.

Figure 3: Formal relationship between different Taskforce members



There is some crossover of the remits of the agencies in terms of increasing economic returns. For example:

- On investment, PIFS works on cross-sectoral investment strategies such as the Trade and Investment Policy Framework (TPF, noted in Table 5-1 below); and FFA has traditionally undertaken cost-benefit analysis of investment proposals and introduced an investment facilitation unit [in 2016]
- On market access, PIFS works on regional trade agreements and the WTO, and trade promotion; and FFA works on fisheries-related aspects of PIC trade negotiations, implementation and market access.

Aside from the Taskforce and subsequent IAWG – both demanded by Leaders – the only other significant fisheries-specific collaboration of PIFS with FFA, PNAO and SPC is on fisheries subsidies negotiations at the WTO – a function that has been collegial and constructive, but largely reactive (i.e. with a focus on defensive rather than offensive interests, see section 7.3.2.9).

Despite the possible opportunities generated by bringing together the comparative institutional advantages of the IAWG, there is no other formal mechanism to facilitate inter-agency cooperation on increasing economic returns, nor is there any known attempt to counter duplication of work or to work through potential tensions between different agencies on a specific policy area (e.g. investment and trade). This meant that when the Taskforce met for the first time, it was the first known formal interaction among the four agencies on fisheries development, despite the fact that some individuals sitting on the Taskforce had long-standing collegial relations.

4.1.2 What was the purpose of the Taskforce and how did it relate to the Roadmap?

In 2015 Forum Leaders explicitly directed the Fisheries Taskforce (herein ‘Taskforce’) to develop a ‘programme to increase the sustainable economic returns of fisheries’, rather than implement the Roadmap. As noted, Leaders received two proposals: the Roadmap from FFC produced by FFA and a programme from SSCR produced by PNAO, described as ‘a concept to increase economic returns from fisheries’.³⁵

At the same time, they explicitly directed the Taskforce to examine a quota management system – a sub-target of Roadmap Strategy 1 (see Table 3-1). It was understood that any change to the PS VDS would have to be implemented by the PNAO. However, the PNAO had not had meaningful input into the development of the Roadmap, including its intention that ‘catch-based (quota) systems will

³⁵ FFCMIN Chair, 2015.

replace effort controls' by 2024. Two non-exclusive possibilities may have underpinned this decision by Leaders:

- Leaders understood that the Roadmap needed PNAO action and needed to give them the chance to revise the Roadmap;
- Leaders understood that the Roadmap was high level and needed elaboration into a plan with actions allocated to agencies.

We elaborate on these further below. One thing that it has not been possible for this Review to get a clear picture on is whether the Taskforce was a CROP taskforce. The fact that it was created by Forum Leaders may imply that it was. It included a non-CROP agency (PNAO), but this is explicitly provided for in the 2018 CROP Charter, so may have been normal practice at the time.³⁶ It was ultimately disbanded by CROP (see below).

The terms of reference were agreed by the Taskforce during their first meeting in January 2016 based on a draft provided by PIFS. These indicate that the objectives of the Taskforce were to:

- I. Improve understanding of challenges and opportunities in the region by undertaking or commissioning research and analysis;*
- II. Develop measures to increase sustainable economic returns of fisheries;*
- III. Identify resources to support implementation of these measures;*
- IV. Allocate responsibility for implementation of these measures;*
- V. Build support for the region's efforts to increase sustainable economic returns of fisheries; and*
- VI. Strengthen coordination and collaboration between fisheries stakeholders.*³⁷

These objectives suggest that the Fisheries Taskforce was intended to agree on and design new, additional measures (objective II). However, they do not clearly state that the Taskforce would have an ongoing role in implementing or coordinating implementation of these measures. They can be read that way, but they can also be read to imply that measures would be allocated to Taskforce members (and perhaps non-members), with any ongoing coordination or collaboration that might be needed being established by the Taskforce to continue outside of the Taskforce process (objectives IV and VI).

The Roadmap included a clear ambition to shift management of tuna fisheries to 'catch-based (quota) systems' within ten years, which would prominently include the PS VDS administered by the PNAO. One of the reasons explicitly given by Leaders for establishing a Taskforce was to explore this proposal. However, the PNAO had not been meaningfully involved in the preparation of the Roadmap. One reason for the formation of the Taskforce and its tasking with creation of an ERWP may have been to establish a planning process in which the PNAO could participate, which could therefore generate an actionable work plan that would include elements to be implemented by the PNAO (see Figure 3).

Beyond the proposed shift to a catch-based approach, it is clear that the PS VDS underpinned other important ambitions of the Roadmap, most notably increases in revenue through higher value catch. But because the PNA VDS and PNAO were not embedded in the Roadmap, the ERWP would provide for that. By the same logic, the ERWP provided an opportunity for the PNAO to shape agreed actions that they would be in a unique position to implement.

The Roadmap does include some isolated tangible actions. However, it has already been observed that more broadly, it does not include the detailed translation of goals, strategies and indicators into

³⁶ CROP, 2018, paragraph 20 (b), p.5.

³⁷ Fisheries Taskforce, 2016c.

assigned actions that might be necessary to make the Roadmap readily implementable without further interpretation or planning. It has been speculated that the Taskforce was seen as a necessary additional planning step to agree ways to turn some of the more abstract ambitions of the Roadmap into implementable actions, assigned to agencies or governments.

4.2 What did the Taskforce do?

In addition to the Taskforce's formal TOR, a central but implicit activity of the Taskforce was to rethink the Roadmap goals from the perspective of the PNAO, including those aspects that it and its members were able and willing to deliver. A second, and related, implicit activity was to reconcile the Roadmap with the PNAO submission to the SSCR. These appeared to have been a major focus of the first two meetings.

The Taskforce met four times during the first half of 2016, during which time it developed the ERWP, which was endorsed by Leaders in September 2016. In April 2016, the New Zealand Government hosted a ministerial study tour focusing on NZ's quota management system (QMS), in which the Taskforce participated. Notably, the ERWP included a recommendation that 'there is no need to change the management of the purse seine VDS in the foreseeable future', which was endorsed by Leaders. Two further meetings were convened in 2017, and one in April 2018 to review the TOR of the Taskforce.

By all accounts, the main proponents in Taskforce meetings were representatives from FFA and the PNAO. This is not surprising given that the direct remit of each organisation is to support PIC economic development based on industrial tuna fisheries. FFA was open to changes in the Roadmap noting that it is a 'living document', but given the formal processes the document had been through, revisions were subject to the FFA Executive and the FFCMIN. The PNAO's role appears to have been primarily to guide the ERWP away from the terrain of the sub-regional PS VDS, and to find constructive ways to restructure the indicators and five-year targets to create a report for Leaders.

PIFS played multiple roles in the Taskforce meetings, although the relatively frequent turnover of staff seems to have diminished its role over time. PIFS sought to mollify the FFA-PNAO friction, fed-in PIFS' existing fisheries development-related activities, sought to develop the trade-related and business-environment dimensions of the ERWP, acted as meeting facilitator, and coordinated a Taskforce consultancy. SPC provided expertise on fisheries data and science.

Given some of the difficulties experienced by the Taskforce, it is notable that in 2017 it commissioned a bold and forward-looking consultancy *Tuna political mapping report*.³⁸ PIFS took procedural leadership of this report on behalf of the Taskforce, which was submitted to Leaders the same year. This is considered a success (section 6.1.8).

4.3 What happened to the Taskforce?

In November 2018, the CROP Heads and Governing Council Chairs Meeting decided to discontinue the Taskforce. This decision was endorsed by a Special Regional Fisheries Ministers Meeting and then by Leaders in August 2019.

4.4 Reflections on the Taskforce

The Taskforce successfully completed the tasks set for it by Leaders. An ERWP was provided to and endorsed by Leaders, and the Taskforce provided a clear recommendation against adopting a quota management system, which was also accepted by Leaders. Beyond the TOR, the Taskforce can also

³⁸ Pelto and Reschke, 2017.

be typified as a success in terms of overcoming the mistrust between FFA and the PNAO. Senior (sub)regional officials built relationships and worked together.

Beyond these clear deliverables, there are reasons to believe that the Taskforce lacked either clarity or agreement about what its role would be. The Taskforce did commission one study (Pelto & Reschke, 2017) which was submitted to Leaders in 2017, which would clearly fit under objective I listed in the terms of reference (see 4.1.2). However, the terms of reference adopted by the Taskforce also suggested that the Taskforce intended to develop new measures that would improve economic returns to fisheries, to agree which agency or agencies would be responsible for implementing them, identify sources of funding, and perhaps have a role in longer-term implementation or coordination activities. In contrast, the timeline of Taskforce activity (as shown in Figure 4) was not conducive to any role in ongoing implementation or coordination, and given the initial focus on developing an ERWP and answering Leaders' question about the desirability of a QMS, there may not have been sufficient time allocated even for the shorter term task of designing and allocating meaningful activities. It was also not possible to identify any formal, longer term inter-agency collaboration mechanisms that would clearly fulfil objective VI of the terms of reference.

The design and implementation of the ERWP contained a number of tensions, which can be grouped by regional and national scales. On a regional scale, it is striking that the agencies used the Taskforce format to brief one another on activities they were working on. Plainly, regularised information-sharing and collaboration between agencies on fisheries related issues is a serious deficiency in the current regional architecture. Related, in the absence of any medium to long-term institutional embedding of a cooperative remit, the ERWP suffered from a lack of ownership. The two main (sub)regional fisheries-development agencies did not introduce new programmes to implement the ERWP. Instead the ERWP produced by the Taskforce consisted of components that were already underway regionally. The tight clustering of Taskforce meetings and outputs at the outset of the ERWP process with only limited substantial follow-up (Figure 4) is an indication of the lack of new programmes.

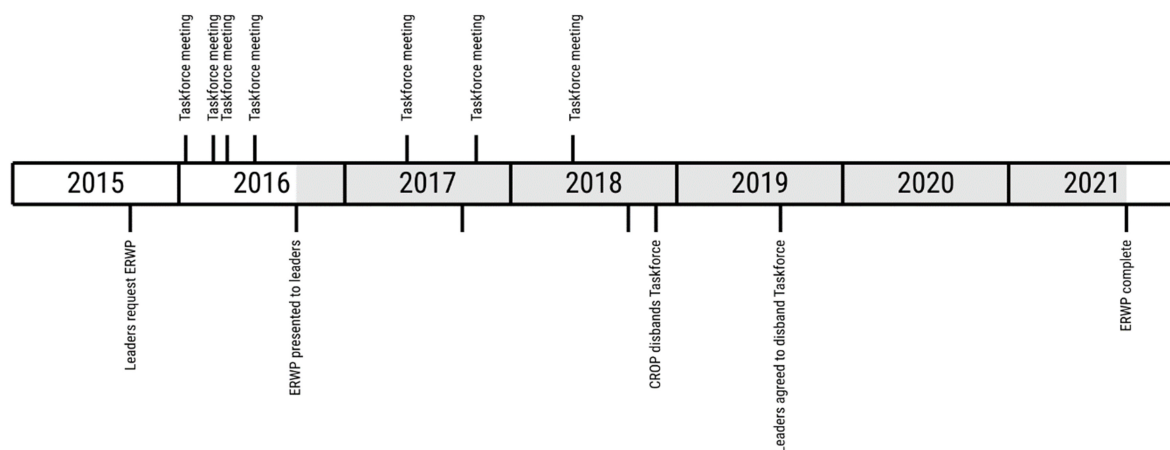
Part of the problem at the regional scale may have been a lack of clarity or consensus on the status of the Taskforce and, ultimately, what it was intended to achieve. As noted earlier, it is assumed it was intended as a CROP Taskforce, but that the inclusion of a non-CROP agency (the PNAO) introduced some ambiguity here. According to the CROP Charter 2018, each CROP taskforce will have a 'time-bound terms of reference' (see 4.1.2) and 'disband after it achieves its objectives and submits its report and recommendations to the CROP'.³⁹ Whether the Taskforce was a CROP taskforce or not, there was disagreement about whether the Taskforce would be a permanent interagency mechanism or a single-purpose vehicle to achieve a specific objective. One view was that the Taskforce was a mechanism to design distinct, new measures, clarify which agencies would be responsible for implementing them and coordinate between agencies during implementation. Another view was that the Taskforce had three tasks: to assemble a programme containing measures that would increase economic returns, establish a reporting process, and review catch-based management – so that when those tasks were completed, the Taskforce should disband.

On the national scale, there was a contradiction between the membership of the Taskforce (only regional agencies) and a Work Programme that predominantly set tasks for national governments. Through Leaders' endorsement, both the Roadmap and ERWP had the formal authority to commit governments to action, but their involvement in the process was not really sufficient for this to be realistic purely as a result of the Roadmap and ERWP documents.⁴⁰ Some activities discussed by the Taskforce may have been taken forward by individual PICs, but tracing this was beyond the scope of this review.

³⁹ CROP, 2018, p.5.

⁴⁰ Fisheries ministers were consulted during the formation of the Roadmap, but not the ERWP. Although this consultant was relatively ad hoc and high level.

Figure 4: The timeline of Taskforce meetings (the span of the ERWP is shaded)



It is worth noting that a small number of prospective activities appear to have been discussed by meetings of the Taskforce, which were subsequently pursued individually by Taskforce members, including a study on bunkering services. It appears that the Taskforce did not formally decide upon this approach, or assign these tasks. It is not clear whether this approach was taken due to the short-lived duration of the Taskforce or for other reasons.

5 The Economic Returns Work Programme

5.1 Why was the ERWP established?

The ERWP was proposed by the Taskforce as a direct result of the 2015 Leaders' meeting in Port Moresby which made the decision in the context of the Framework for Pacific Regionalism within which fisheries was identified as one of five regional priorities. The PNAO submission to the Specialist Subcommittee on Regionalism (SSCR) appears to have shaped directly the Leaders' establishment of a Taskforce (section 3.1), and we can speculate that this process was intended to supersede the Roadmap. Certainly, this review was not able to find any evidence of a definitive reason that Leaders decided to establish the ERWP in addition to the Roadmap. It is possible to speculate about a number of contributing factors based on interview evidence, and these are summarised in section 4.1.2. At its core, the ERWP can be seen as follows:

1. A necessary additional step to agree ways to turn some of the more abstract ambitions of the Roadmap into readily implementable actions, assigned to agencies and/or governments;
2. A political move to overcome the counterproductive tensions between the FFA, PIFS and PNAO as evidenced in (a) the PNAOs absence from the Roadmap, (b) the PNAO submitting a counter-proposal to Leaders via the SSCR, and (c) PIFS exclusion from both processes despite holding regional competency for overall trade and investment..
3. A functional move to incorporate both PNAO, which was essential to Roadmap Goals 1 and 2, but that did not agree with some of the Roadmap's assumptions, and PIFS, which has a remit of fisheries-related work, especially to do with trade, market access and investment; and
4. A diplomatic move to side-step the FFC and Leaders' commitment in the Roadmap to implement a catch-based (quota) system and thereby replacing PS VDS effort controls, by allocating the Taskforce the remit to investigate this.

It is notable that the Roadmap covered a ten-year period, while the ERWP focused exclusively on the next five years. It is possible that Leaders intended the ERWP to provide a tighter reporting cycle, including an earlier review of progress, than had been envisaged under the Roadmap.

5.2 How did the ERWP seek to increase the Sustainable Economic Returns of Fisheries?

The ERWP contains four main components, each of which features (i) a long term objective or goal; (ii) a synoptic outline of the current status of the issue area (with more or less concrete analysis); (iii) a 5 year objective; (iv) a list of opportunities; (v) a list of possible contributions of the opportunities to 'sustainable economic returns'; (vi) a discussion of existing and potential 'activities' at regional and national scales; and (vii) a table listing national and/or regional actions along a five-year timeline.

A brief general comparison of the ERWP with the Roadmap is instructive to identify overarching changes in framing and approach before moving to the changes in content. On the more positive: the ERWP involved all relevant (sub)regional agencies, which contributed to better institutional buy-in. It also contributed to better gap analysis. This underpinned the ERWP setting out a more specific and, as a whole, more reasonable set of components in terms of identifying where work was needed. Unlike the Roadmap, the ERWP's discussion of Activities around each component assigns actions to regional agencies that might be necessary to make the ERWP implementable. It also provides a more clearly articulated set of actions to achieve these components, including for national governments. An overall definition of 'sustainable economic returns' is provided – 'to encompass direct revenue, contributions to GDP and employment'; which while broad, is less loose than Roadmap Goal 2 on Value (see Table 3-3 above). Each of the four ERWP components is also elaborated with a number of points setting out component-specific 'sustainable economic returns'.

On the more negative: there was seemingly less government consultation or national buy-in into the ERWP compared to the Roadmap, which had drawn from a relatively ad hoc, but very senior (ministerial) consultation process (we have no record of these) and a sequence of Challenge Papers (the Review has not seen these and does not know how widely they were distributed for consultation). Instead, the 'sustainable economic returns' listed in the components are packed with often contestable assumptions and/or abstractions, which need further working through on a national level. Connected, there are long lists of opportunities under each component, but no explicit elaboration of costs or risks (see section 6.3 on risk). Moreover, the ERWP reproduced two problems in the Roadmap (a) the provision of a multiplicity of overlapping criteria of success, including five-year goals, lists of sub-targets under 'opportunities', sub-targets under activities, and a sequence of action (see Table 5-1); and (b) a general lack of specification of responsibilities allocated to specific agencies.

On the neutral: no new mechanism was proposed to monitor the ERWP and it is assumed by this Review that the Tuna Report Cards were intended to continue this function, albeit with augmented indicators.

5.2.1 Regionally led initiatives

Table 5-1 reproduces the goals, activities and actions detailed in the ERWP. It also includes the other activities and actions that are included under the 'opportunities' rubric of the ERWP. A couple of overarching elements are worth noting:

- A single five-year goal is identified in each case but there are a considerable number of activities and actions in addition to the goal, some of which may be considered necessary steps to achieve the goal, but others may be seen as broadly additional.
- It is assumed that the Actions tables, which each include a Gantt-type chart of timeframes over 5 years, are the monitoring mechanism to track progress. However, indicators are not recommended for most actions, which introduces limits to the ability to measure the ERWP over its five-year life span
- The last column of Actions does not always include all of the activities noted through the rubrics of each component (e.g. component 2 Actions do not list any regional activities for monitoring).
- At the regional scale, responsibilities for specific actions are not allocated against specific agencies
- At the national scale, guidance is not provided on which agency or agencies might cooperatively achieve an action.

Table 5-1: Goals, activities and indicators of the ERWP components (Fisheries Taskforce 2016a)

Component	5 Year goal	Sub-targets under 'Opportunities'	Activities	Responsibility	'Actions'
(1) Reform management of tropical and southern longline fisheries	Binding catch/effort limits	Build on and strengthen Tokelau Arrangement and LL VDS through (i) zone based limits allocated to PICs, (ii) hard limits to high seas through WCPFC, (iii) improved LL management and monitoring, (iv) national implementation of Tokelau Arrangement and LL VDS by (1) raising awareness, (2) enabling policy and legislative changes, and (3) monitoring implementation	Regional support Component largely reproduces existing initiatives, i.e. TKA and LL VDS	Regional agency or agencies, unspecified	<i>National/sub-regional</i> 1.1 Political commitment to collective zone-based management 1.2 Develop institutional capacity 1.3 Adopt binding instruments (for TKA and/or LL VDS) 1.4 Design and implement CMS 1.5 Adjust catch/effort to improve economic conditions 1.6 Apply catch/effort limits to HS
(2) Increase value of employment and ensure labour standards	Create 9,000 jobs	Increase employment of Pacific islanders as (i) officers and (ii) crew on FFA vessels and as (iii) crew on DWF vessels; each tied to licencing/access. (iv) Expand labour mobility arrangements to (1) crew and (2) seafood processing. (v) Develop onshore processing tied to access (vi) Increase capabilities of government personnel in fisheries-related areas.	<i>Regional</i> (i) workshops on labour standards (ii) Engage in ILO Convention 188 and/or SA8000 (iii) Standardisation of systems under STCW and STCW-F (iv) Improve STCW and STCW-F certifications <i>National</i> (v) cooperation of like-minded countries to leverage crew employment (vi) develop higher skilled training programmes	Regional agency or agencies, unspecified, with stakeholders National level Donors	<i>National</i> 2.1 Develop employment strategies and incentives 2.2 Pooling to leverage (improved employment) from licensing 2.3 Training needs assessment 2.4 Basic training 2.5 Increased skills 2.6 Institutional strengthening 2.7 Resource mobilisation

			(vii) Upskill female processing workers (viii) forward looking studies of capabilities of fisheries agencies, identifying training needs		
(3) Facilitating Investment and Trade	Support investment in PIC tuna industry and improve market access for >5 PICs to increase tuna export values by 25%	(i) Provide request based assistance for investment policies (ii) continue Trade and Investment Policy Framework (TPF) or national equivalent process (iii) Explore improved market access to major markets and facilitate access to new markets, including non-tariff measures (iv) Smaller PICs to align with Regional Competent Authorities Support (RECAS)	(i) Joint regional response to national requests for investment-related work (ii) Use PIFS' Pacific Islands Trade & Investment network (iii) Develop advice on policy mixes for investment incentives	Builds on the work of FFA and other Taskforce agencies PIFS to continue TPF work Multilateral agencies to support national trade and investment reviews	<i>National</i> 3.1 Identification of the appropriate mix of instruments that provide incentives for onshore investment/encourage investment proposals 3.2 Implementation of TPF elements relating to business/investment environments. 3.3. Implementation of TPF elements relating to promoting fisheries investment.
(4) Value chain participation	Increase share catch value in PIC waters by PIC fleets by 25% Increase catch volume processed onshore or in offshore joint ventures by 50%	(i) National feasibility studies and analyses of costs and benefits to identify appropriate <i>mix</i> of domestic development and foreign access revenue (ii) Phase out and replace foreign flagged boats (iii) Engage with sustainability marketing (iv) Engage in onshore processing through (1) prioritising local landing, (2) regional processing hubs, (3) build partnerships with brandowners and processors to retain PIC ownership interests in catch through the value chain	None specified	National commitments building on (sub) regional initiatives	<i>National/sub-regional</i> 4.1 Commitment to collective regional and sub-regional management 4.2 Develop/implement strategies to develop inshore processing 4.3 Developing and putting in place marketing and retail platforms

5.2.2 Nationally led initiatives

The scope of this review does not cover implementation of ERWP activities at a national level. Nonetheless, an important element of the ERWP is the extent to which it mapped out actions for governments to take. Of 19 explicitly defined actions under the ERWP's four components, 15 (79%) appear to be assigned to national governments to undertake.

Regional agencies were not formally assigned to support governments with implementation on a per-task basis, or to follow up. No national governments were directly represented in the Taskforce, and there does not appear to have been a formal or coordinated process through which national governments' priorities or consent were incorporated, prior to sign-off of the final ERWP. There are a couple of *prima facie* concerns with this approach:

1. Without involvement in the design phase, there is a risk that national governments feel a lack of investment in the ERWP, which may have reduced governments' commitment to implement the specified actions after the ERWP was endorsed by Leaders. National governments that already had national fisheries, trade or investment policies or plans in place may have found themselves committed to implementing two sets of plans that had been developed independently of one another, and are not necessarily complementary.
2. Without dialogue with governments about implementation, there may be a lack of appreciation of constraints involved, or a lack of planning as to how regional agencies can most effectively support national governments to overcome those constraints. For instance, the ERWP does not assign regional agencies to backstop individual government actions.

5.3 How is ERWP progress measured?

The Taskforce envisioned that the Tuna Report Cards set up to monitor the Roadmap would report on the ERWP. To that end, the Taskforce specified new, additional indicators for inclusion in the Tuna Report Cards that were designed to be aligned with the ERWP.⁴¹

The 2016 Tuna Report Card introduced new indicators as identified by the Taskforce. This was especially prevalent in Goal 2 on Value and Goal 3 on Employment, where a new sub-goal on Trade and Investment was introduced.

The Roadmap Goal 2 target of doubling the value of the region's catch by 2024 was overhauled completely. The 2016 Report Card recognised it as 'probably not realistic' and the 2017 Report Card also correctly pointed out that the target 'does not reflect the returns' to PICs.⁴² It was replaced in 2016 by the target to increase the total share of the value of all tuna catch by FFA fleets in FFA waters by 25% over five years (i.e. by 2020).⁴³ By the 2017 Report Card, the specific target of 47% of catch value by FFA fleets by 2020 was set, which was exceeded in 2018.⁴⁴ The stated rationale of the FFA flagging target is to (i) increase returns and (ii) strengthen coastal state control.⁴⁵ No indicator was provided for either claim and it appears to be assumed that FFA flagging will automatically do both. This is an unstable assumption for two reasons:

⁴¹ Fisheries Taskforce, 2016a, p.16-17

⁴² FFA/SPC 2016, p.3; FFA/SPC 2017, p.3

⁴³ The Report Cards make the reasonable assumptions that (a) this meant an increase of 25% of the initial share rather than of the total catch, i.e. an increase from the starting value of 38% to 47%, not to 63%; and (b) that 'PIC fleets' would be interpreted to mean FFA 'flagged and chartered vessels' in the WCPFC-CA and FFA waters.

⁴⁴ FFA/SPC 2017, p.3; FFA/SPC 2019, p.3

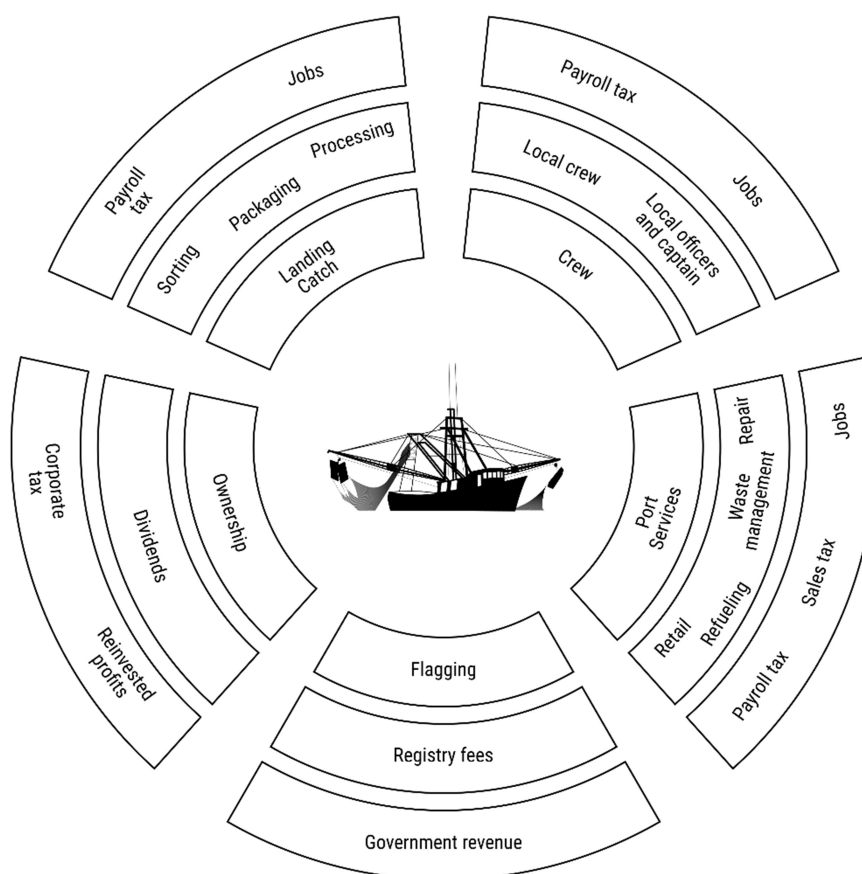
⁴⁵ FFA/SPC 2016, p.3

- For a DWF operator to switch to an FFA flag is not cost neutral and operators often leverage discounted access payments (e.g. reduced prices on PS vessel days). This can result in the FFA flagging indicator eroding gains from the access fee indicator both directly through discounts and indirectly through the competitive fringe (see sections 6.3.3, 7.2.2.1 and 7.3.2.7).
- Many seasoned observers believe that foreign-flagged purse seiners can be controlled just as easily as FFA flagged ones. One argument for strengthened 'control' is that an increased proportion of FFA flagged vessels will give PICs greater influence in WCPFC decision making. If that was the objective of the revised indicator for Goal 2, then a measure of FFA and/or PNA performance in the WCPFC would have been more appropriate.

The ERWP provides a number of appropriate indicators and measures for the goal of 'Control', but it assumes that a 25% increase in proportion of FFA fleet catch value is an appropriate five-year target for this goal. If it is the case that FFA flagging has an important qualitative dimension (i.e. socio-economic returns), then the quantitative indicator is misleading. The FFC is presented with data that shows a 'success story' because a target is met, but it may instead represent revenue lost with anything from major to only partial gains under the rubric of 'control'.⁴⁶ The point can be further illustrated through another weakness in reporting on the 'FFA flagging' indicator. The indicator aggregates longline and purse seine, but given that industrial freezer sashimi longliners generally tranship at sea, which generates minimal economic returns to PICs, the aggregated indicator masks important economic differences between gear types. A more adequate indicator of the 'FFA fleet' would disaggregate purse seiners, freezer sashimi longliners, and other longliners (i.e. fresh and albacore, which tend to land/tranship locally). An even better indicator would incorporate some measures of the various ways in which an FFA flagged vessel can generate genuine economic returns (see Figure 5).

⁴⁶ ERWP 2016, p.17.

Figure 5: Dimensions of a vessel's domestic contribution to the economy, of which flagging is one



The 2016 Tuna Report Card also adjusted the Economic Returns indicators. Access fee revenue remained but now with a five-year goal of a 25% increase and a new indicator was added using the contribution to GDP of domestic and locally-based fleets in all waters, also over 5 years.⁴⁷ As already noted in section 3.3, access revenue is an excellent indicator of economic returns – it is a matter of individual government choice on how it is spent (see discussion in 7.2.1.1). However, as just noted, there is an unacknowledged tension and potential trade-off between gains made in this indicator and gains made in FFA flagging.

'Value added' as measured by the primary activity of fishing to GDP is a less reliable indicator of economic returns. As is well known, GDP is a notoriously weak indicator of development – share of Gross National Income *may* be preferable, but both have inherent weaknesses because the recording of economic activity in national accounts does not measure the *quality* of investment and real (net) economic returns. For example, a 'locally-based' fleet can be anything from an entirely extractive, brass plate company engaging in transfer mispricing to a genuinely embedded firm, employing nationals, buying local goods and services, paying taxes and landing fish for processing. Put differently, the GDP indicator measures output and prices, but this may not constitute local 'value added' if no domestic activity is taking place. As the 2019 Report Card points out, primary fisheries contribution to GDP has grown as a direct result of the growth of the FFA fleet.⁴⁸ In this way, one indicator interacts directly with another to paint two successes, but they may together represent a net economic *loss* if the 'locally-based' fleets are receiving discounted access fees and are otherwise not

⁴⁷ FFA/SPC 2016, p.3

⁴⁸ FFA/SPC 2019, p.3

engaging in the domestic economy. This contrasts with the value added data on coastal catch (reported in the Coastal Fishery Report cards⁴⁹) because these boats tend to be locally owned and generate domestic economic activity, as well as providing high quality food.

The new sub-goal on Trade and Investment is recorded in the Tuna Report Cards from 2016 onwards under Goal 3. The Taskforce proposed the use of export value to measure progress and set a five-year target of a 25% increase. Given the weaknesses of the PIC export data, the Report Card astutely used import data from the EU, Japan and the USA, which is the best available data. Although export data might be useful as a very general indicator, it obscures thinking about economic returns to PICs, including:

- Upwards shifts in tuna prices may make exports *appear* more valuable but price rises may simply reflect rising fuel costs with no additional local economic returns.
- An increase in the Bangkok price and price of imports into major markets for canning-grade tuna does not equate directly to gains to PICs. Intermediaries including trading companies may capture most or all of this value.
- The data aggregates all tuna product types and thus treats raw material and value added as the same. This risks overinflating the picture, and again, provides no indication of actual returns.
- If raw material import data is recorded by flag, FFA boats may not represent any meaningful return to PICs because the boat could be transshipping at sea for 'high value' longline or in port direct to a reefer for purse seine and sent immediately out of the region, with minimal local gains.

Thus when the Tuna Report Card 2019 notes that the target of 25% increase in export values was reached in 2017 it correctly stresses that this is an outcome largely of undulations in tuna prices.⁵⁰

Baseline work was undertaken to start to fill out Goal 4 on food security. This was reported in the 2016 Report Card as a static per capita consumption of canned tuna in the three canning countries: Fiji, Solomon Islands, and Papua New Guinea. By 2019, the Report Card was able to summarise research undertaken on the landings of locally-based fleets which were estimated at 29,000 tonnes in 2016, and an additional 17,500 tonnes of tuna was caught by artisanal fleets, which combined with the raw material equivalent of the prior data on canned tuna consumption (22,000 tonnes), produced a 'baseline' of 68,500 tonnes.⁵¹ In this way, the analysis of food security arrived at a baseline four years after the Roadmap was endorsed.

5.4 Reflections on the ERWP

As a whole the approach of the ERWP was ad hoc. The Taskforce did not recommend many new activities nor did it do much at a regional level. Instead it consolidated existing regional initiatives and repackaged them as the ERWP. It followed the structure of the Roadmap and was shaped by the guidance from Leaders who wanted to sharpen a five-year deliverable. The Taskforce did not open a debate on the relationship between Roadmap Goals/ERWP components and the possible trade-offs between them. This was reflected in the path-dependency of the Tuna Report Cards – while some new indicators were included they continued to encounter the problem of being ineffective at capturing the political economy of the industry, which might have been enhanced with fuller textual discussion of the tensions within and between the indicators and the trade-offs they involve.

Aside from improving working relations among the Taskforce, which was important given the context (section 3.1), there are only a few isolated cases where the ERWP did *new* work. Aside from

⁴⁹ SPC 2018, p.4

⁵⁰ FFA/SPC 2019, p.4

⁵¹ FFA/SPC 2016, p.4; FFA/SPC 2019, p.4

commissioning an important and useful consultancy — *Tuna political mapping report* — whose dissemination was stunted for political reasons, no new knowledge was generated under the ERWP. Indeed, the *Tuna political mapping report* was a striking output because it undertook a sharp analysis of the political economy of the fishery and is considered to be a success of the Taskforce (section 6.1.8), which is in contrast to the ERWP document which skirts over these real-world complexities. Instead, the ERWP represented an institutional division of labour among the existing (sub)regional agencies who largely incorporated activities and work programmes that were already underway (section 5.2.1).

The ERWP was highly ambitious in envisaging coordinated action from a wide range of entities, but without formal consultation with these stakeholders during the ERWP design. In addition to the regional agencies that participated in the Taskforce, it also specified actions from national governments — and not just from national fisheries ministries, but from ministries of finance, commerce and trade, collaboration with the private sector through effective public–private dialogue, and perhaps the support and political guidance of the offices of leaders or cabinet.

While the lack of input into the ERWP by these ministries and agencies has been problematic, the difficulties involved run much deeper than a lack of consultation. Cross-government coordination is a major challenge, and not just for the fisheries sector or for the Pacific, but in all sectors and in a wide range of developing (and developed) countries. Inadequate coordination cannot be resolved by fiat. Specific strategies and actions are needed to make incremental improvements in the ways that organisations work together, whether they be regional agencies, national MDAs, or the private sector. In fact, it is surprising given the private ownership of the regional tuna industry that the private sector did not appear to be consulted at any point to troubleshoot the ERWP (see 7.3.2.1, 7.3.2.2 and 7.3.2.3 for recommendations on how the PICs might avoid falling into this trap in the future).

In relation to food security in particular, which was a weakness of the Roadmap due to its lack of baseline, strategy or actions, the ERWP added surprisingly little. Food security is mentioned once when deferring consideration of coastal fisheries until ‘a later stage of the Programme’,⁵² once when quoting the goals of the Roadmap, and once more when noting that reform of the management of the longline fishery (ERWP component 1) would provide (unspecified) benefits for food security.

⁵² ERWP, p.2.

6 What happened, and how did the Roadmap, Taskforce and Programme contribute to it?

6.1 Achievements

6.1.1 Effort-based limits

Perhaps the simplest and most easily attributable success of the Taskforce was to provide a decisive and evidence-based response to Leaders' questions as to whether the PS VDS should transition to catch-based controls. The Taskforce gave appropriate credence to theoretical, implementation and political-economy dimensions of the question, and managed an open, collective decision-making process that ensured that a variety of national and regional stakeholders were able to reach an amicable consensus. It was noteworthy that, during the review, no interviewee suggested either that the wrong decision had been made, or that the question was in any sense unresolved. This provided the PS VDS with certainty, and eliminated one possible source of disunity among parties.

6.1.2 Increasing catch value in the PS VDS

It is difficult to overstate the relative significance of the continued growth of access revenue within the overall economic returns from Pacific tuna fisheries. The extreme level of revenue growth – 26% from 2010 to 2015 – has slowed but remained significant at 7.4%, while the dominance of the purse seine VDS among all licence and access revenue (now over 97%) has been further consolidated.⁵³ The Roadmap set a somewhat ill-defined target of doubling the 'the region's tuna catch' between 2014 and 2024. Nonetheless, if 'the region's tuna catch' is assumed to mean licence and access fee revenue, then the region's PS VDS revenue is on track to achieve this, requiring a little less than 6% average annual growth from the 3-year average in 2018 to do so. An average annual growth of 7% would result in the doubling of aggregate access revenue across all tuna fisheries.⁵⁴ However, revenues extracted by the PNA are already estimated at 27% of total sales, the highest in any known world fishery,⁵⁵ so it appears inevitable that this rate of growth cannot be sustained indefinitely, but it remains to be seen at what point growth will fall further.

It is important to be clear that this has not been achieved by doubling the value (nor the volume) of tuna caught in the region. The value of tuna caught in FFA EEZs has fluctuated but shown no clear overall trend since 2010 (see Figure 6). The additional value has been extracted from other parts of the value chain, reducing profitability in those areas. The most likely areas to have lost out in this process are harvesting and processing. One view is that there is not enough scarcity of fishing days to tighten supply and drive up prices for processors (i.e. fish price is driven by its availability, not the price of access), with the result that vessel owners are the principal losers as the VDS eats into their super profits.

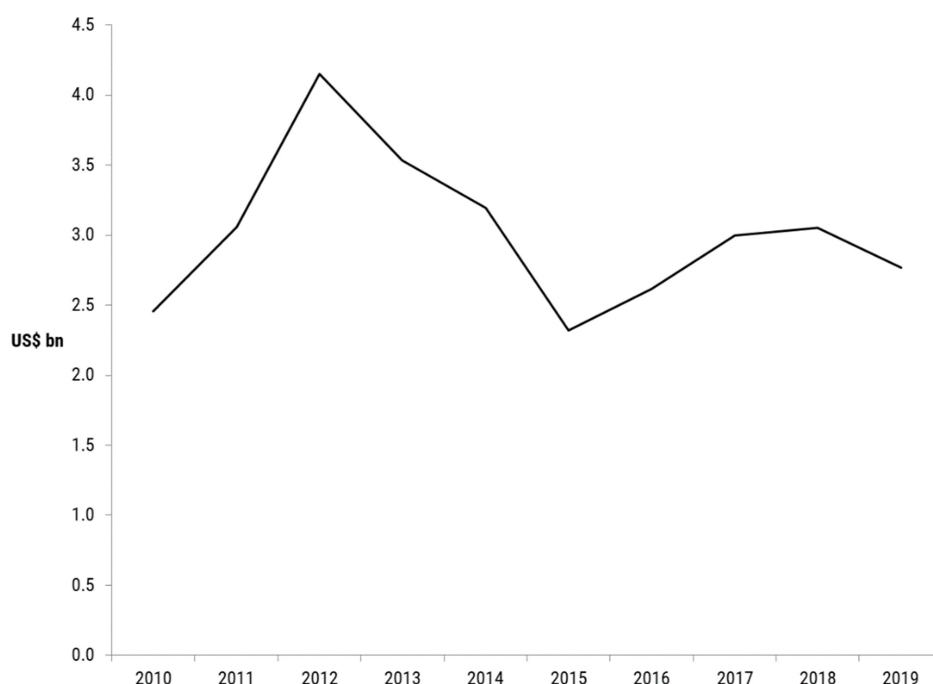
The review found no evidence that actions introduced through the Roadmap or ERWP have affected VDS revenue.

⁵³ FFA and SPC, 2020, p3. Comparison of average annual growth in 3-year average revenue between 2010–15 and 2015–18.

⁵⁴ Authors' calculations based on FFA Report Card data, 2020.

⁵⁵ Banks, 2021, PA 26 WP.2, paragraph 9.

Figure 6: Value of tuna catch in FFA EEZs (Source: FFA)



6.1.3 Reform of the management of the longline fishery

A vast amount of regional work has gone into the reform of the southern and tropical longline fisheries to try to improve their management in the interests of PIC control and the optimisation of net returns. This was set out as a long-term objective of ERWP component 1, and the five-year goal was to have binding arrangements in place for catch or effort constraints in both fisheries. In this context, it is important to stress that seeking to secure rights in the longline fisheries is a fundamental step that has been actively pursued both regionally (led by FFA) and sub-regionally (by the PNA) over the last five years, both in the following two longline access arrangements and at the WCPFC. For example, at the Fifteenth Regular Session of the Western and Central Pacific Commission (WCPFC15), FFA members' hard work paid off when an interim target reference point for albacore was agreed – thereby achieving one of the Roadmap's sustainability goals. However, this TRP is interim and will be reviewed every three years. It was not recorded as a conservation and management measure (CMM) but was instead reflected in the WCPFC15 Summary Report and the WCPFC Harvest Strategy on its website.⁵⁶ The fraught and incremental nature of this progress was a direct result of China and Taiwan's long-standing opposition to a TRP for South Pacific Albacore.⁵⁷

Therefore, limits to PIC reform of longline management cannot be framed as a 'missed opportunity'. Instead, relationships and outcome must be understood in the context of geopolitics at the WCPFC and beyond, and the political economy of associated business interests in the fishery. Unlike purse seine fisheries, much of the politics of managing distant water longline fisheries are outside of PIC control, even when acting collectively at the WCPFC. As is noted in the recommendation in section 7.2.2.5, the combination of geopolitics at the WCPFC, tuna population movements outside of FFA EEZs, and the economics of the distant water longline fisheries make these fisheries unlikely to be a source of significantly *increased* economic returns to PICs in the medium term.

⁵⁶ WCPFC15 set the interim TRP for South Pacific albacore at '56% of spawning stock biomass in the absence of fishing with the objective of achieving an 8% increase in catch per unit of effort for the southern longline fishery as compared to 2013 levels' (WCPFC, 2021, §4.3, paragraph 29).

⁵⁷ Campling, Havice, and McCoy 2018, pp.2–4.

In 2014, nine PICTs, plus Australia and New Zealand, agreed to the Tokelau Arrangement (TKA): a voluntary in-zone-based management arrangement for the southern albacore longline fishery, for vessels fishing within their EEZs as either a target species or as bycatch. The Catch Management Agreement (CMA) at the heart of the TKA provides for the setting of an overall TAC and the allocation of that TAC amongst parties.

However, the TKA has stumbled because ‘the sum of the TKA interim catch limits are too high and that the starting TAC should be lower’.⁵⁸ New Zealand in particular pushed for highly aspirational catch quotas, as did many PICs, which pushed a pivotal member of the TKA to withdraw and the Arrangement has since been ‘on hold’. This is an example the Roadmap and ERWP glossing over important political dynamics external to the PICs and outside of their control, and reinforces the need for realistic political mapping (section 6.1.8).

The PNA Longline Vessel Day Scheme (LL VDS) came into effect in 2014, under the Palau Arrangement. The LL VDS is a management scheme covering the tropical longline fishery, targeting bigeye and yellowfin. The LL VDS establishes a total allowable effort level (TAE) for fishing in all parties’ waters, which is then allocated amongst the parties as party allowable effort (PAE). Following a trial period of several years, the LL VDS was formally implemented on 1st January 2017. It has experienced considerable resistance from most East Asian distant water fleets, who have sought to concentrate fishing on the high seas. There is also some risk that, like the TKA, aspirational calculations embedded in the LL VDS total allowable effort level (TAE) undermine any claims to a basis in science.⁵⁹ Despite resistance from the distant water longline fleet, a large control-related component of the rationale for the creation of the LL VDS was that investment in locally-based longlining was being deterred by the lack of secure rights for PNA members with flag-based limits in place, and attacks on the SIDS exemption from longline bigeye limits both in-zone and on the high seas. With the development of the LL VDS, that impediment was removed, some investments have been made, and there appears to be less risk to the future fishing rights of PNA members.

It would, however, be a stretch to claim that the mixed achievements of these two initiatives were a direct outcome of the ERWP as each had been in the works for some time even before the Roadmap. FFA has since been developing a Regional Longline Strategy, which is arguably a continuation of its work on the TKA and in continuity with ERWP component 1.

6.1.4 Reporting and data collection

One of the most visible consequences of the Roadmap for interviewees are the Report Cards prepared by FFA and SPC each year, containing data relating to Roadmap goals for the benefit of Leaders.⁶⁰ The visibility of this output seems to have increased the perceived importance of related data collection in FFA. In the process of developing these cards, additional routine data collection has been established by FFA through independent national enumerators, who collect data from the government and private sector, which is likely to have been a direct consequence of the Roadmap.

Outside of the specific Roadmap and ERWP reporting, it is worth reiterating the consensus that important elements of Pacific information collection and use, particularly SPC’s stock assessment and scientific advice, and the PNA’s real-time reporting system (FIMS), are truly world class. The review did not find any evidence that important opportunities had been missed for further improvement in these areas.

⁵⁸ Campling, Lewis and McCoy 2017, p.46.

⁵⁹ Campling, Lewis and McCoy, 2017.

⁶⁰ FFA and SPC, various. Separate report cards are prepared on tuna and coastal fisheries each year. The coastal report card is outside the scope of this review.

6.1.5 Employment and investment climate reform

Employment in the tuna sector grew by 5,365 jobs from 2015 to 2019, an increase of 28%, from the launch of the Roadmap in 2015 to 2019.⁶¹ Despite that, the Roadmap goal of an increase in employment of 18,000 over 10 years, or the Taskforce target of an increase of 9,000 over 5 years, are not likely to be achieved. As noted in the 2020 Tuna Record Card, this 28% increase is an achievement, much of which has been driven by PNG.

There has been a very substantial development in Papua New Guinea since 2015 that cuts across a number of Roadmap and ERWP goals, including employment, value chain participation and investment facilitation (or, rather, translating interest in investment into broader economic returns). In the early 2000s, PNG signed 'state agreements' with various investors. Each involves numerous commitments on both sides, but the key features have typically been that the investor receives a number of long-term fishing licences at reduced cost, while the investor commits to construct a processing facility and process a specified quantity of fish in PNG. There have been long-standing difficulties with this arrangement, in particular that foreign investors have continued to benefit from discounted access, but have failed to substantially fulfil their commitments to process fish domestically, and in some cases have not even constructed the necessary facilities.

However, this is not an unusual issue faced by PNG. The review encountered numerous examples of similar dynamics between foreign investors and PICs offering discounted access. Nor is the challenge uncommon outside of the region and sector: there is considerable uncertainty as to whether governments winning foreign investment by providing investment incentives are actually better off.⁶² One useful starting point in reflecting about employment and investment climate is dynamic comparative advantage (see Box 6-A).

The innovation by the government of PNG was to introduce a rebate scheme, through which processors are compensated with a subsidy for each tonne of fish processed domestically, which has replaced concessions in the harvest sector. The way that the rebate functions is not, in theory, dramatically different from the previous exchange of discounted access for minimum processing volumes.⁶³ However, the process takes much better account of the political economy. Processors receive a cash payment after demonstrating that fish has *already* been processed. This has made enforcement straightforward, where it had previously been prohibitively difficult.⁶⁴

The cost of the incomplete enforcement of state agreements has been substantial. Until the rebate was introduced, PNG may have been foregoing as much as USD 100 million each year in access revenue, but there was a shortfall of approximately 15,000 jobs that had been promised by state agreements but not actually created.

The rebate has largely eliminated this loss. While the rebate remains a significant expenditure, the government is better able to confirm that the jobs that it is paying for have indeed been created.

There are a number of important observations and lessons that can be drawn from this experience that may be of use to other PIC governments and to regional agencies. The first is to note that the challenge that PNG successfully solved was not mentioned in the Roadmap or ERWP. Despite the scale of the losses, the focus of these regional plans remained on creating an attractive investment

⁶¹ From 18,873 jobs in 2015 to 24,238 in 2019, which are FFA data supplied to the Review, which updates the estimate of an increase of 4,600 jobs in FFA-SPC (2020, p.1).

⁶² Thomas, 2007; Blomström and Kokko, 2003.

⁶³ There is a modest theoretical benefit in that the rebate decouples harvesting and processing. Under the previous state agreements, an investor would need both a harvesting and processing operation in order to cross-subsidise. The rebate offers the opportunity for a processing-only operation to buy PNG-caught fish through an arms-length sale and still offset the high domestic cost base. In the longer term, this may be more conducive to domestic investment.

⁶⁴ Perhaps more surprisingly, the PNG government has already successfully reduced the rebate, once it had assessed that firms' temporary transitional costs in establishing production had been paid.

environment and encouraging investors,⁶⁵ or strengthening offloading rules,⁶⁶ with no concern for the subsequent challenge of ensuring that foreign investment delivers the benefits that it promises, or that rules are enforced.

It seems that governments offering discounted access in return for wider economic benefits, and the regional agencies that advise and support them, would benefit from thinking more about how to make discounts *effectively contingent* on the benefits that they are promised. Transparency is an important step – while PNG’s policy response has been successful, this response may have come sooner if the government (and others) had had clearer information earlier on about the losses it was incurring.

Box 6-A: Static and dynamic comparative advantage

The theory of comparative advantage states that countries should focus on the economic activity which has the lowest opportunity cost, meaning that it is best suited to the resources available. One criticism of this theory is that it recommends that some countries focus on ‘dead-end’ sectors, where there is little prospect of productivity increasing over time, so wages and economic output are likely to be stagnant far into the future. The theory of dynamic comparative advantage addresses this criticism by recognising that each country’s comparative advantage changes over time, and can potentially be changed by the deliberate intervention of government. It offers the prospect that a country can choose its own long-term comparative advantage.

There is good reason to be cautious about using the theory of dynamic comparative advantage in policy-making. It can be very difficult to assess whether it is possible for a certain country to develop a comparative advantage in a certain activity. At best, the theory of dynamic comparative advantage can enable a country to specialise in industries where productivity growth is high, jobs continue to be created, and wages rise. But there is a risk that this theory can be used to justify spending large amounts of public money to subsidise activities to which a country is poorly suited and can never become internationally competitive. Worse still, once a factory is built and jobs have been created, a government may find it politically impossible to withdraw a subsidy, regardless of the cost to the taxpayer, and even if it has no viable plan for making the industry self-sufficient.

Within the fisheries sector, there are a number of activities in which many Pacific countries have, or could easily establish, a comparative advantage. Many of these take advantage of the high cost of transportation. Activities such as packing, freezing and the use of ULT can reduce the cost of transportation (and cannot physically be done elsewhere), making them profitable even in countries with high general business costs. Other activities, such as sorting, can significantly increase the value of the product – but likewise add more value when done before tuna is transported out of the region, since they enable different products to be shipped to different markets, increasing the aggregate price of the catch. Although these are likely candidates, the situation of countries varies and specific analysis would always be needed on a project-by-project basis. These types of onshore handling are likely to require a national competent authority in order to access the most lucrative markets.

Papua New Guinea, Solomon Islands and Fiji have supported the creation of onshore processing facilities, implicitly intending that government subsidies will enable these industries to develop a comparative advantage over time, despite particular challenges of the business environment. This is a more uncertain path, and in most cases has proved more difficult than expected. It is also important to be aware of the role of current tariff preferences into major markets that have historically provided a significant advantage to these industries. In the long term, there is no possibility that these preferences will be increased, and a high likelihood that they will continue to gradually (or, possibly, suddenly) be eroded or eliminated.⁶⁷

⁶⁵ The ERWP (component 3, p12) advocates this approach.

⁶⁶ Both the ERWP (component 2, p10) and Roadmap (p2) advocate this approach. The ERWP views ‘the development of onshore processing as a condition of access to the resource’ as an ‘opportunity’. The Roadmap proposes ‘mandatory offloading of part of the catch of access vessels’. These are both fairly good descriptions of the strategy that was failing in PNG at the time the Roadmap and ERWP was written.

⁶⁷ Preference erosion is an ongoing concern. Among the most significant recent moves in this direction have been: the Philippines achieving GSP+ status with the European Union, permitting its producers to export to the EU duty and quota free; Vietnam’s FTA with the EU, providing liberalised market access on an annual quota of canned tuna; increases in the EU’s

6.1.6 Labour standards

PICs have led the world in introducing region-wide labour standards both at WCPFC and at FFA. While this work was ongoing prior to the Roadmap and ERWP, the improvement of labour standards for crew on boats in the WCPO can be chalked up as a success.

In 2018, an FFA member proposal for a resolution on labour standards was adopted by WCPFC15, the first tuna RFMO ever to adopt measures focused on working conditions (Resolution 2018-01). While non-binding, the Resolution sets a platform for minimum standards for crew to ensure fair working conditions on fishing vessels flagged to WCPFC CCMs and operating within the WCPF Convention Area.⁶⁸ It emphasises the role of states in developing national legislation around working conditions and ensuring that such regulations are enforced. A proposal is currently being circulated to make the crew MTC binding. Overall, the resolution echoes the priorities laid out in the ILO Work in Fishing Convention (No 188), which was an Activity of ERWP Component 2 (see Table 5-1)

In 2019, Pacific Island countries adopted Minimum Terms and Conditions (MTC) on labour conditions for crews working on both foreign and domestic-flagged fishing vessels licensed to fish in FFA members' waters, effective 1 January 2020. Vessels that fail to meet FFA's crewing MTC will not be deemed in 'good standing' on the FFA Vessel Register, and as such, cannot be licensed to fish in FFA member waters. Once countries put their legislation in place the MTC is binding – three PICs have done this, with another two close. Covid is introducing delays to national implementing legislation in some countries due to the concern that new labour standards will introduce cost and risk at an already commercially very difficult time. The FFA crewing MTC is also underpinned by the ILO C188.

It is not known if there was progress in regional work on the standardisation of systems under STCW and STCW-F or the improvement of STCW and STCW-F certifications.

6.1.7 Trade policy frameworks

The ERWP notes that PIFS' work to establish Trade and Investment Policy Frameworks (TPFs) in PICs was already largely complete. These were often accompanied by the establishment of a national trade committee to improve cross-government working and, in some cases, public-private dialogue on trade-related issues. Where these have been successfully regularised, they may provide a starting point for more fisheries-specific cross-government work and PPD at the national level, that would also provide a route for fisheries sector priorities to feed in to national trade and investment climate policy, for instance by establishing a fisheries subcommittee with this framework.

6.1.8 Political mapping

Pelto and Reschke (2017), the main piece of work commissioned by the Taskforce, provides a high-quality snapshot of the various political economy interests of key external partners in the Pacific tuna fishery. It includes a series of 'report cards', which assess state partners in various roles: DWFN, WCPFC member, donor, market state, investor, and as a flag state ensuring the compliance of its fleet. Donors have rediscovered the power of political economy analysis in recent decades and it is experiencing a resurgence across a wide range of aid programming, but it remains remarkably rare to find political economy analysis in which donors are the subject.

The review found that this study was highly regarded by the region, and it exemplified a core component of the regular briefing that leaders need in order to understand how economic interests in

autonomous tariff quotas (ATQs) for tuna loins for canning at the behest of EU-based canning firms; and the drop in the UK MFN tariff in January 2021 from 24 to 20% as a by-product of Brexit, making non-preference receiving exporters like Thailand more competitive in the UK market.

⁶⁸ Havice et al 2019, pp.60–61.

fisheries feed in to the wider diplomatic relationships that they bear ultimate responsibility for managing. There was broad agreement that it would be very helpful if this type of analysis could be provided to ministers and leaders on an ongoing (or at least periodic) basis. It would be advantageous to share this information with ministries of foreign affairs, though this may be better handled by governments' internal processes.

6.2 Challenges and failures

6.2.1 Additionality and contribution

It is clear that research on a possible shift to catch-based controls, political mapping, and the publication of annual report cards can be attributed to the 2015 Leaders' decision, the Roadmap and ERWP, and the Taskforce. However, there is very little evidence that any of these factors influenced the other achievements on improved economic returns that are listed in the previous section.

6.2.2 Lack of precision in key planning concepts

Certain prominent concepts within the Roadmap did not have a clear or obvious definition. The Roadmap's second goal, 'value', was implicitly defined in the following way:

*The region's tuna catch in 2024 will be worth double what it is in 2014. This will be achieved by increasing value rather than volume, by eliminating oversupply and targeting higher value products and markets.*⁶⁹

It was clearly difficult for the Taskforce to unpick what this meant. The ERWP breaks this goal out into three indicators:

- Value of foreign access fees to FFA EEZs
- Value of fishing to GDP
- Processing value in FFA members (ERWP)⁷⁰

The concept of value is at the heart of the regional effort to maximise economic returns, and the confusion over what it means also appears to be integral to a considerable amount of policy-making at national and regional level. The lack of a clear articulation of what value meant was a missed opportunity.

A second concept that proved difficult to pin down was 'control'. It is well understood that clear and defensible property rights over each fishery is the starting point for secure economic returns, but there is some disagreement about what other forms of control have a positive impact on economic returns. The ERWP put forward five indicators:

1. Legally binding limits in EEZs (focusing on the longline fishery)
2. Compatible measures on adjacent high seas
3. Proportion of value of catch by FFA members' fleets in national waters
4. Volume of catch processed onshore or through joint ventures
5. Proportion of total catch in national waters [i.e. EEZs]

There are four distinct ideas here: control of the downstream value chain (4), control over high seas fishing (2 and 5), the specific type of formal control of vessels that comes from a PIC flag (3), and in-zone effort controls in the longline fishery (1), which attempts to emulate the prior success in the purse seine. Issues associated with the downstream value chain are covered in Box 6-C. Valid and

⁶⁹ Roadmap, p2.

⁷⁰ Although the 2020 Report Card states that the third ERWP indicator was the proportion of catch value taken by FFA island member fleets (p3). This target also appears to have been omitted in the summary of the ERWP provided to Leaders.

ongoing concerns with high seas fishing are discussed in section 6.3.3. However, the shift of foreign-owned vessels to PIC flags has been particularly prominent within Roadmap reporting, and also within a number of parties' national policies.

From a purely economic perspective, the review found wide acceptance that reflagging has a minimal impact on economic returns from fisheries. A second finding was that flagging a vessel does not provide the coastal state with any meaningful additional control over that vessel, beyond that which can be achieved through the process of licensing the vessel to fish under the VDS. It is acknowledged that the size of a distant water fishing nation's fleet has historically determined the amount of influence that that nation's delegation has within the WCPFC. One view within the region is that if the majority of vessels were flagged by PNA members, then it would give the bloc the power to secure objectives such as further reducing or eliminating high seas fishing, or setting target reference points for all major species as envisaged by the Roadmap.

This is an important strategic question, which deserves further discussion. However, the review was not able to establish a connection between individual PNA members' decisions to incentivise reflagging and this strategic objective. There is a widely held concern that countries may be offering discounted access in exchange for reflagging under the assumption that reflagging alone is a reliable strategy to obtain greater economic returns from their fisheries. More troublingly, it is possible that governments may have been encouraged to do so by the prominence given to this measure within regional reporting on the Roadmap, and the use of reflagging as a (perhaps quite weak) proxy for 'control'. PNA members may be foregoing vessel day revenue in exchange for a meagre economic return. There is also a risk to PNA solidarity whenever a party offers vessel days at below the agreed benchmark where this is not based on a meaningful contribution to domestic development.

6.2.3 Food security

As noted in section 3.2, the Roadmap set an ambitious goal for an increase of supply of tuna to the domestic market, but did not mention any strategy or mechanism for achieving this. The ERWP did not expand further, except to say that improved longline management might somehow contribute (although this appears not to have been a part of the thinking behind the goal).

The 2020 Report Card focuses on evidence of the amount of tuna entering the local market in 2016 – closer to establishing a baseline than progress during implementation of the Roadmap. It estimates that in 2016, 29,000 mt of tuna from locally-based fleets 'entered local markets', in addition to 17,500 mt of tuna and tuna-like species caught by artisanal fleets and the equivalent of 22,000 mt of whole tuna in the form of canned tuna. It concludes that a study will be undertaken 'to investigate potential ways in which tuna fisheries and associated industries can increase their contribution to food security'.⁷¹ The 2017 and 2018 Report Cards noted ongoing national efforts to increase artisanal tuna catch by deploying anchored FADs, or encouraging vessels to land part of their catch, though it is unclear whether these had begun or increased during the Roadmap period.⁷² The 2015 Report Card notes the need to 'substantially [enhance]' data collection in order to meet the Roadmap target.⁷³

6.2.4 Business environment for domestic longline industry

Considerable work has been done to increase PIC control of longline management (see section 6.1.3), but the simple yet crucial point that the business environment is ignored means that domestic

⁷¹ FFA and SPC, 2020, p.5. Similar information was provided in 2019

⁷² FFA and SPC, 2017, p4; 2018, p.4.

⁷³ FFA and SPC, 2015, p4.

longline development is made less likely, both for genuine domestic firms (e.g. where local crew are not available) and for distant water fleets who may be seeking to domesticate.

One particular issue to look at is the tangible costs of adopting a Pacific flag. Analysis often brushes over what actual changes occur when this happens. Some PICs (we think PNG, Tonga at least) have stringent labour requirements on flagged vessels – i.e. in order to flag locally, a company needs to hire more local labour than is either (a) economic or (b) feasible. Tonga also has higher skills requirements than most flags, which makes compliant vessels uncompetitive. There is a contradiction here: a strategy to increase local flagging should incorporate elements that reduce costs of doing so and streamline the process. At the least, national and/or regional agencies could be gathering meaningful business environment data and monitoring (see recommendation 7.3.2.1).

6.2.5 Unimplemented plans at the national and regional level

Throughout *Future Fisheries*, the Roadmap and the ERWP is the assumption that national and regional fisheries agencies can be transformed to do multiple roles. This will hopefully be possible in the long-term, but in the immediate horizon, the model of the PNAO is instructive. It consists of a small cadre of highly motivated people, working on a set of specific tasks, feeding into real decision-making by governments on actions that are designed to directly increase economic returns. Building from this successful model, we make some recommendations to ensure the reproduction of the skills and knowledge of the PNAO cadre, but on a regional basis (Tuna Business Intelligence Unit, section 7.3.2.2) and to embed a layer of additional commercial guidance to the PNA (PNA Advisory Board, section 7.3.2.8).

Despite huge regional successes in implementing labour standards at sea, there has been little progress onshore. The *quantity* of jobs in processing is a major focus and indicator of success of both the Roadmap and ERWP, and monitored in the Report Cards, their *quality* is not. Instead, labour standards in the onshore sector are largely absent from the ERWP and are not covered in the Report Cards. Training needs, basic training, upskilling and institutional strengthening are all actions left to national implementation (see Table 5-1). This review was unable to identify any work examining onshore labour standards as a result of the ERWP. The explanation given is that this is a matter of national sovereignty and thus outside of the remit of regional agencies.

The ERWP contains multiple other goals, activities and actions and other activities and actions that are included under ‘opportunities’. Some were assigned to national governments to do but it is not clear that they were done. Others would have required regional action but there is no evidence that they were done. It may have been that, upon reflection, the Taskforce considered that some plans were secondary and could be put on hold, or that circumstances had changed and they were no longer necessary or relevant. There is, however, no known reporting or recognition of this. Given that we were unable to trace any evidence of outcomes, we simply list a selection of these unimplemented ERWP plans here:

- Adjust catch/effort to levels that progressively improve economic conditions for the fishery’ (p.9)
- Limits applied to high seas catch/effort (p.9)
- Expanding current labour mobility arrangements to include fishing crew and, where appropriate, seafood processing (p.10)
- Training programmes to promote Pacific Island employment in more skilled positions (p.11)
- Establishment of a joint regional agency response to country request for assistance relating to investment (p.13)
- Identification of the appropriate mix of instruments that provided incentives for onshore investment/encourage investment proposals (p.13)

- Reshape some access arrangements in the direction of partnerships with brandowners and processors that will see PICs retain ownership interest in catches made in the waters through the catching and processing chain (p.14)
- Develop and put in place marketing and retail platforms (p.15)

6.3 Risks

Box 6-B: Risk aversion

When examining a wide variety of risks to the future economic returns from fisheries, it is useful to have a basic conceptual framework to refer to.⁷⁴

It is helpful for an organisation to have a conscious understanding of its own risk appetite that is clearly understood by all employees who are involved in risk-related decision-making. The aim is to have a consciously chosen and consistently applied attitude to risk.

All organisations prefer lower risks to higher risks. But organisations also prefer high returns to low returns. They differ in how they trade off these two objectives, and therefore how strongly they prefer low risks. Some organisations are willing to accept higher risks if these are associated with higher returns (and some are even created for this purpose). This creates an opportunity to gain from trade: there are ways for risk-averse organisations to pay to transfer risk to others, while different organisations are able to increase their expected economic returns by taking on risk that they see as acceptable. An insurance contract is a common example of this transaction.

Another way for an organisation to approach this problem is to define or describe its risk tolerance and appetite:

- **Risk Appetite:** the level of risk with which an organisation aims to operate.
- **Risk Tolerance:** the level of risk with which an organisation is willing to operate.⁷⁵

Where a risk is too high for an organisation's risk tolerance, it makes sense to pay others or forego revenue in order to avoid the risk or pass it on to others. On the other hand, the same organisation may be willing to take on a risk that is within its risk appetite in order to increase its expected returns.

For Pacific islands, it is also important to understand correlated risks. It is often clear that certain risks are likely to occur together, because they have a common cause. Less often, risks have the opposite relationship: a loss in one area makes gains in another more likely. At the same time, not all risks – even those that are above an organisation's risk tolerance – can be offloaded or reduced. Pacific island countries may find that they are over-exposed to risks in major sectors like fisheries and tourism. This is a common observation: Pacific islands need to diversify because they are over-exposed to risks in a small number of sectors. Where unmanageable risks are known to exist, countries should be particularly cautious about choosing to take on additional risks that are correlated with those that are already unmanageable.

Observations from the review

There is a strikingly varying implicit attitude to risk within the Roadmap, ERWP, and various other planning and strategy documents relating to future economic returns from Pacific fisheries. This suggests that a more explicit discussion of risk may help to enrich the regional strategy debate.

At one end of the scale, national-level operational decision-making relating to the VDS appears to be highly risk averse. One example is the reluctance of parties to guarantee even partial refunds for unused vessel days. It is widely accepted that fishing companies would pay a premium to reduce the risk of unused days. In other words, parties expect that if they guaranteed a full or partial refund for unused days, they would receive more revenue in an average year (even without creating a system to re-sell those days) because refundable days are more valuable to private sector operators.⁷⁶ This is

⁷⁴ This box draws heavily on UK Government guidance, including Ripley (2020a, 2020b) and HM Treasury (2006).

⁷⁵ Ripley, 2020a, p4.

⁷⁶ For instance, in one report for the PNAO, this level of risk appetite is taken for granted as a point on which a firm consensus exists: 'the risk of using/not using a FAD right best sits with harvesters (not the Parties) [in] just... the same way that the risk of using/not using a Day best sits with harvesters.' (MRAG, 2018b, p20.)

broadly consistent with revealed risk attitudes in relation to other aspects of innovation in day sales. Parties appear willing to forego significant expected revenues in order to reduce uncertainty to a very low level.⁷⁷ In occasional cases, parties appeared to prefer a high-risk status quo to the possibility that another party might benefit from de-risking their revenue stream.⁷⁸

This contrasts sharply with an open or eager attitude to increasing exposure to high risk ventures, whose risks are correlated with existing high areas of exposure. This is most obviously seen in parties' involvement in joint venture arrangements, such as those relating to processing.⁷⁹ A major reason that the private sector is cautious about investing is that the risks are higher than investors' risk tolerance, coupled with minimal prospects of very high returns. Part of the strategy of a joint venture from the perspective of the private firm is to transfer much of the risk of failure to the government partner, so that the risk to the investor is reduced to a level that makes the expectation of modest returns acceptable.

Neither of these levels of risk appetite is 'right' or 'wrong'. It is up to each government to determine its own risk appetite. However, it is generally considered beneficial for a government to adopt a *consistent* approach to risk across different investments. It does not make sense for a government to simultaneously give up revenue to offload risk in one area, while it is voluntarily taking on comparable or higher risks in another area at the same time. Generally speaking, this is one of the core functions of a ministry of finance: to lead cross-government thinking on risk appetite and try to ensure that risk choices are consistent across government. There are impressive examples of some parties exploring risk options through a cross-government process. In other PICs, and in some regional agencies, a more explicit discussion of risk appetite and tolerance may be helpful in determining which strategies for increasing economic returns are a good fit for countries' risk appetite.

6.3.1 Risk management benefits of foreign access

Commercial tuna stocks in the Pacific are in a healthier state than any other tuna fishery in the world. The possible loss of that status is obviously one of the major headline risks to sustainable economic returns from fisheries in the region, and could easily become more serious if a WTO fisheries subsidies agreement is finalised. Given how many historical examples there are of countries with very good scientific understanding of stocks have allowed levels of fishing that have led not just to damage but to collapse, it is worth reflecting briefly on common political economy causes of overfishing.

The Pacific tuna purse seine fishery is fairly unusual in that the resource owners (the PNA) do not rely on a large proportion of the fishing that is occurring to maintain a harvesting and processing sector that employs a large number of people. There is a great deal of historical evidence to suggest that when governments that control fishing effort do face pressure from a large harvesting or processing sector, and the workers that they employ, they find it very difficult to make sound fisheries management decisions that create unemployment, even when they understand scientific advice that this will lead to much greater future economic harm. It is notable how often bad decisions have been

⁷⁷ This is not to say that parties are able to eliminate risk from VDS revenues. It is notable that parties are trading off revenue to reduce risk even while being forced to accept substantial variation in revenue from uncertainty beyond their control (e.g. global fuel prices, global aggregate supply).

⁷⁸ It appears that some parties have raised concerns about permitting trading of vessel days between companies for the reason that it might be possible to profit through speculation, which they object to even if it makes them better off (through a higher sale price) or reduces their risk. Parties are often understandably reluctant to hold days late into the year due to the risk that they might not be able to sell them before the deadline. However, it appears that some parties would prefer a deadweight loss to the possibility that an intermediary with a higher risk appetite might choose to carry that risk in exchange for an expected return.

⁷⁹ It is also important to be aware that there is a significant dimension of risk to government that does not apply to the private sector (other than in exceptional circumstances). This is the risk that a government faces sufficient domestic political pressure that it is unable to allow an unprofitable operation to fail, and instead has to occur long-term operating losses, which could be far in excess of its original investment. This risk is typically not assessed, nor is any mitigation strategy adopted, when the decision is made to establish an investment.

made by governments for whom the fisheries sector is a very small part of the economy – certainly much less important than it is for any Pacific island, let alone one with an industrial fleet and substantial onshore processing capacity.

The desire of many Pacific governments to create employment in harvesting and processing is understandable and well understood. The risk of employment dependence becoming significant enough to undermine fisheries management decisions may be a remote, long-term prospect. But it is worth being aware that from a political economy standpoint, PNA members will find it much easier to agree to a reduction in TAE that they know is necessary to the health of tuna populations if they can do this without making a large number of their nationals unemployed. In this sense, a partial foreign fleet presence in each fishery is an important risk management asset, especially if access is sold through an arms-length process that is not embedded in a diplomatic relationship. While Pacific governments are still far away from the point at which this consideration should influence immediate decision-making, it is an important consideration when discussing long-term aspirations.

6.3.2 Risk in the tuna value chain

The aspiration to take control of a broader spectrum of the tuna value chain is a common theme of regional plans and various possible actions that are under consideration. In assessing the likely economic returns from these proposals, it is important to understand the way that risk is distributed through the value chain. This is very closely linked to power and rent.

Box 6-C: Sources of power and rent in value chains

Rents and profits can be maintained within value chains only when a company (or country) has a basis to protect them from competition.

The power to protect rents comes from a fairly limited set of sources. These are the most relevant for the canned tuna value chain:

- A scarce and excludable resource (such as tuna that is recognised to be owned by someone, for which there is high demand).
- A brand that has a high capital value, due to long-term investment in consumer recognition (the power comes from the cost and difficulty of establishing a comparable brand, and the range of ways in which existing brand-owners can successfully disrupt such an effort).
- Loyal retail consumers (the power comes from the inconvenience to a consumer of buying a product like tuna separately from hundreds of other products they buy – any competitor has to offer the same overall retail convenience).
- Being geographically located at an opportune point in the value chain, such that it would be impossible or expensive to perform the same operation in another physical location. Over time, this power has been systematically eroded as the cost of goods transportation has fallen and improvements in technology have enabled more operations to be performed in more places. However, a small number of opportunities remain. Most importantly for tuna, there are operations such as sorting and packing that only add value (or reduce costs) if they are done prior to transport away from harvest grounds. Pacific operators could earn rents in these areas. It may be possible to boost these rents by using resource ownership to prevent similar operations from happening aboard vessels.
- The ability to do something, or do something more efficiently, than (almost) anybody else in the world can do or can learn to do in the medium term. Again, the importance of this element tends to diminish in significance in every value chain as time goes by, but most particularly in value chains where most of the technology used is well established (as is the case in canned tuna). For tuna, this appears to still be important for some harvesting operations, for instance having a world-class fishmaster can provide a harvest operation with predictable medium-term rent. This would have been a source of rent for innovative canning operations in the late 1800s, but this disappeared as the technology required became widely accessible.

It is important to recognise that simple manufacturing operations such as canning do not have any means to protect rent. This is because there are enough firms in enough countries that have the

capability to perform these operations efficiently, so that if economic rents could be earned then existing firms would expand their operations until rents are driven down.

Rents can artificially be inserted into a canning operation, by shifting rent over that is protected by one of the sources of power listed above. For instance, a resource owner can use power derived from the resource to protect a cannery. But there is no reason to believe that this will increase the total amount of rent that this power is able to earn. If the processing operation is globally competitive, then it may be possible to earn the same level of rent that could be earned by the resource alone. If processing is not globally competitive, then it is likely that the rent earned will be less than could be captured without engaging in processing, due to the subsidy needed to make up for uncompetitive costs.

Processing operations can provide wider social and economic benefits: wages, tax receipts, nutrition, learning, and can help to push down costs of doing business in areas like energy and transportation that can have knock-on benefits for other industries. This is distinct from being a source of rent or long-term profit. In other words, it should be seen as a way to trade off revenue in exchange for jobs and other benefits, rather than as a way to capture more rent or profit from the value chain.

The critical point is simply that resource ownership places PICs at a powerful and low-risk point in the tuna value chain.⁸⁰ The two points in the value chain that most commonly feature in regional ambitions to extend control over the value chain – harvesting and processing – are not sources of power, include limited rents and carry high risks. Prior rents in purse seining are now captured by the PS VDS.

The long standing PIC aspiration to own or control boats and to attract onshore processing would risk pushing PICs into the weakest points of the canned tuna supply chain. The generation of employment-creating activities through a contract processing facility such as Soltai is a trade off against PS VDS revenue, which is a political decision based upon social outcomes, but contract processors of loins remain at the lowest rung of the global value chain. Branded processors are the main areas of profitability, aside from major supermarkets in principal markets, and PICs are unlikely to leverage these firms without a major reconfiguration of power relations – which will take a long term strategy and major collective action over the supply of raw material.

In contrast, owning the asset allows for the capture of value from elsewhere in the chain. The literature on global value chains has demonstrated the significance of bottlenecks and the relative market power that they provide (e.g. only 5 firms control the world's main canned brands; and 4 supermarkets controlling around 80% of grocery sales in principal canned tuna import markets in the France, Germany and the UK).⁸¹ Even the World Bank now recognises that mark ups are concentrated by dominant firms such as those controlling branding and/or retail, while suppliers (such as non-branded canned tuna processors in PNG) are squeezed.⁸² The risk of PICs using discounted access to engage in forward integration into processing is that the rent capture from the public asset is lost in the private plant, and unless the plant (or cluster of plants) is large enough to command leverage in the global value chain through huge volumes then it will be a price taker, resulting in net losses to PICs.

In fact, perhaps the largest unrecognised success of the purse seine VDS is that it has managed to extract substantial rent from the harvest sector without taking on the associated risk.

Given the emphasis on 'value' in relation to the position of PICs in the global value chain in canned tuna in the Roadmap (see Table 3-3) and the PNAO proposal to the SSCR to 'control their product from ocean to plate',⁸³ it is worth elaborating on the political economy of branding. A leading brand acts as a barrier to entry to competitors. It is very difficult and expensive to build an entirely new

⁸⁰ Aside from the risk of a breakdown in collective action among the resource owners.

⁸¹ Havice and Campling 2017, 2018.

⁸² World Bank 2020, p.82–90.

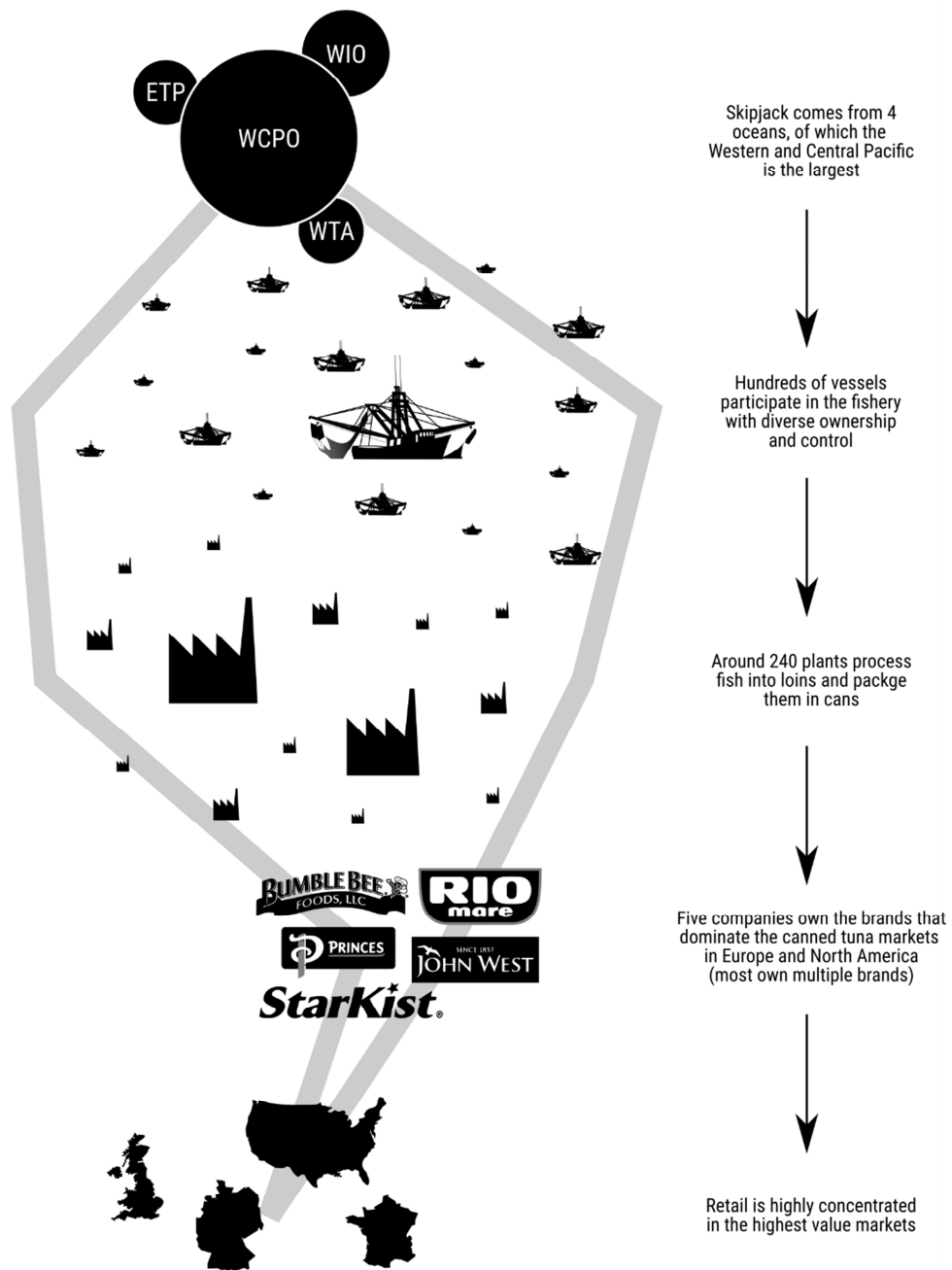
⁸³ ERWP 2016, p.14

brand in an old product market, not least because intangibles are strengthened in their use over time, from generation to generation — i.e. old brands dominate old industries.⁸⁴ As a result, it is cheaper to buy existing brands, which is precisely what has happened in the global canned tuna industry (i.e. non-branded processors, trading companies, and private equity buying historically-established brands). It is because of this that the marketing costs associated with maintaining a brand's value reproduces an *asset* and is a legitimate overhead charge. Further, and as already noted, brand-owning firms' market power allows them to capture rents from other firms in the supply chain — squeezing their profit margins.

These aspects need to be taken into fuller consideration when PICs talk about capturing the entire canned tuna supply chain. The competitive battles among the world's leading branded-firms are brutal. A more realistic approach is to examine building partnerships with retailers and branded-firms, as the PNAO has done with John West (Australia).

⁸⁴ Aaker 1991; Aaker and Joachimsthaler 2000.

Figure 7: Concentration in the canned tuna value chain



6.3.3 Risk in the longline tuna value chain

The Regional Longline Strategy (RLLS) has two goals:

1. *"To enable FFA members to be meaningful participants in the region's longline fisheries through the application of zone-based management approaches; and*
2. *"To improve the economic returns to Pacific Islands' economies from a sustainable regional longline fishery, and to measure and report on progress."*⁸⁵

Our reading of the RLLS is that the two goals are necessarily sequential, not parallel. It is a two-tiered approach, with goal 1 providing the necessary foundation for goal 2. This is reflected in the RLLS

⁸⁵ FFA, 2019.

document, which focuses almost entirely on goal 1. This Review agrees with the logic of this approach given the fundamental need to enhance rights and control over the fishery. Goal 2 is less well developed and there is some concern that without a careful analysis of the political-economy dynamics in the longline industry, the RLLS will fall into the same traps as the Roadmap and ERWP: being difficult to implement, lacking in sufficient national-level consultation for success, and being weak in its political analysis of the challenges.

Fisheries Ministers offered an elaboration of this two-tier approach at FFCMin15 in 2018. They stated that a ‘focus on securing the ownership rights of FFA members and addressing the significant management gaps on the high seas’ is a necessary step to reducing the ‘economic overfishing that is occurring in this region’ (i.e. RLLS goal 1). In relation to RLLS goal 2, FFCMin15 also identified constructive engagement with ‘like-minded DWFNs with the aim of restoring profitability to the [longline] fishery’ as an important step, which could provide the basis for securing increased economic returns ‘to FFA members and others’.⁸⁶ The identification of ‘like-minded DWFNs’ suggests a possible strategic direction, but it is less clear how this would be developed in practice given the intense competition in the southern and tropical longline fisheries, among diverse players with distinct geopolitical interests and commercial drivers.

The following examples provide a snap-shot of some of the complexities involved in the possible practice of building regional alliances with a DWFN or even a major distant water fleet. This can be read alongside Figure 8 on tuna value chains that stem from the WCPO freezer longline industry. The tropical tuna longline fisheries in the WCPO are driven by Japan, accounting for around 80% of global tuna sashimi consumption (about 80% of the sashimi market in Japan is frozen tuna and 20% fresh).⁸⁷ Evidence suggests that Japan’s supermarket and restaurant chains capture the lion’s share of sashimi tuna price mark-ups.

Japan’s significance suggests the possibility of building an alliance with Japan as a DWFN and market state, and potentially also with the (declining) Japanese longline fleet. Yet the Japanese government does not have a singular national interest in the WCPO longline value chain; for example, the interests of Japan’s longline operators do not necessarily align with those of Japan’s sashimi trading companies.

An alternative alliance for PICs might be with key players in the non-traditional *buying* segment of the chain in Japan, where a corporate engagement could potentially be developed with the trading companies or, less likely, directly with big supermarkets or restaurant chains. This would make sense in so far as the bulk of frozen sashimi-grade tuna (70–80%) is sold outside of the ‘traditional’ auction-based market system directly to Japan’s sashimi trading companies (who also process). Tuna sashimi sales are concentrated (around 70%) in four trading companies, led by Toyo Reizo (a subsidiary of Mitsubishi) and Try Sangyou (a subsidiary of Sojitz).⁸⁸ However, Japan’s sashimi-grade trading companies have global sourcing strategies, including with tuna ranches, where some have considerable investments. It may be difficult to expect that Japan’s trading companies would wish to build alliances with PICs when the current structure of the value chain involves literally thousands of operators dispersed across the global ocean in competition with each other – because this keeps prices low to the benefit of traders.

It is also important to note that the DWFNs are not always so easily split. For example, there is considerable interpenetration of investment as well as embedded commercial networks across the distant water fleets. Japan’s trading companies have commercial relations with longliners and ultra-low temperature (ULT) export-oriented factories in China and South Korea. Conversely, the Chinese and South Korean longliners operating in the WCPO are often forward-integrated or have commercial

⁸⁶ FFA, 2018.

⁸⁷ Campling, Lewis and McCoy, 2017.

⁸⁸ Campling, Lewis and McCoy 2017.

ties to domestic ULT processing firms in their home countries, which in turn have strong relations with Japan's trading companies.

Turning to the southern albacore value chain, there are even clearer points of concentration. Geographically, the US is the world's leading consumer of albacore (an estimated 50–60% of global catch). This involves the import of finished product (in canned or pouched form) or precooked loins to be processed by Bumble Bee's cannery in Sante Fe Springs, California, or Chicken of the Sea's in Lyons, Georgia. The Taiwanese trading company, FCF, is a lead firm in the WCPO's albacore value chains, due to its embedded relationship with the Pafco contract loin processing facility, and its ownership of the Bumble Bee brand, historically the United States' largest volume seller of shelf-stable albacore tuna products.

Historically, one relatively successful approach to stabilising the southern albacore longline fishery was through a degree of private sector cooperation in the form of the "Pacific Operating Committee" (POC). Since the mid-1980s, the POC has been a group of Taiwanese-owned longliners that fish in the Pacific Ocean. The POC would establish a (roughly) quarterly WCPO base price for albacore, which reportedly influenced the world price.⁸⁹ The logic behind the POC was to establish a degree of short-term albacore price stabilisation to smooth out the market. In practical terms, the POC and the Pago Pago canneries were able to achieve this because so much of the catch is eventually consumed in one market — the USA.⁹⁰ In contrast, the sheer volume and diversity of sources of supply, and of buyers, precludes price control of skipjack.

In principle, then, there is some potential for building an alliance with Taiwan, given that part of its fleet and FCF trading company have such deep commercial interests in albacore. However, the commercial logic of Bumble Bee is to procure raw material at as low a price as possible so as to maximise profits on retail sales in the USA. This is of course a very different interest to boat owners who want to maximise the landed tuna price. Further, Taiwan's longliners are split between those that tend to focus on albacore and those that focus on tropical tunas, even though boats can and do shift between the two. Thus Taiwan's national commercial interest is fragmented between its freezer longline fleet and its trading company, which in turn many longliner owners are dependent upon — not to mention the well-known commercial conflict between the longline and purse seine sectors, which WCPFC delegates have to balance if their national fleet includes both gear types.

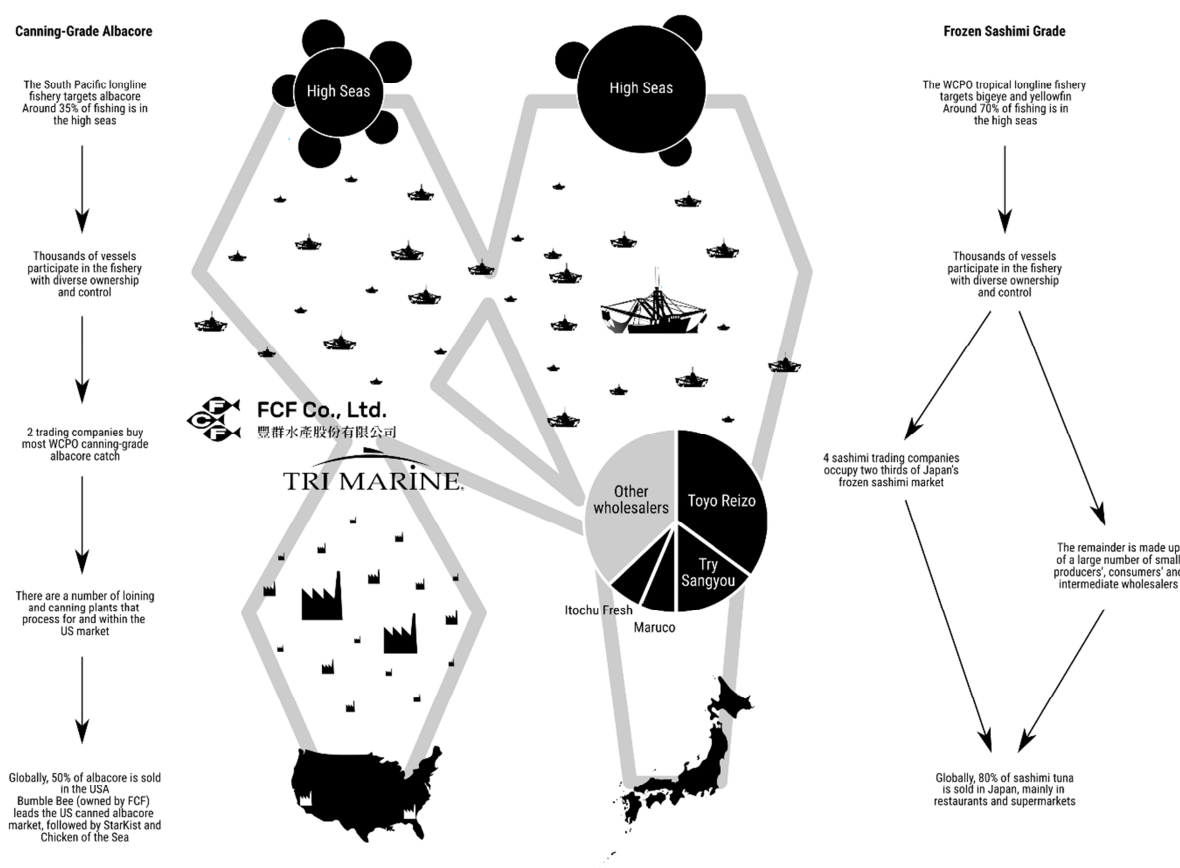
Overall, these examples serve to demonstrate that the identification of 'like-minded DWFNs' is a difficult task and that goal 2 of the RLLS needs further thought, grounded in political economy. For example, what are the axes of mutual interest? Will a DWFN unequivocally share PIC concerns? Even if interests do align, how can PICs ensure that any collaboration is able to endure in the face of the evolution of commercial and geopolitical interests?

For further discussion of strategy in this area, see section 7.2.2.5.

⁸⁹ Campling, Havice and Ram-Bidesi, 2007.

⁹⁰ The POC was reported to have ceased its activities in collective price negotiation by 2010, primarily because of the closure of the Chicken of the Sea plant in the Pago Pago and the downsizing of StarKist's plant (Campling, Lewis and McCoy, 2017). However, the POC did still exist as late as 2016, with the principal stated purpose of acting as a channel of communication with the Taiwan Fisheries Agency for around 50 longliner owners who may have different interests to those other longliner owners in the Taiwan Tuna Association.

Figure 8: Value chains based on the WCPO tuna longline industry



6.3.4 Weakening of collective action on the purse seine VDS

Access revenues under the purse seine VDS are almost entirely reliant on collective action among parties. A breakdown of collective action would lead to catastrophic losses, and there is a very keen appreciation in the region of the dangers associated with any shift that undermines regional solidarity. This is a well understood risk.

Over the review period, the parties have avoided any major misstep that would seriously undermine the PNA's collective power. Nevertheless, certain decisions have either modestly weakened parties' control over the purse seine public asset, or missed opportunities to strengthen it. In addition, there are emerging trends that require parties' attention and consideration of a collective response. Some of these relate to the competitive fringe.⁹¹

A worrying emerging trend is the increasing incidence and value of high seas fishing by SIDS-flagged purse seiners (Figure 9). Until 2013, the value of this catch was stable, between USD 1–1.5 million. By 2019 it had topped USD 50 million, just over 10% of the total revenue derived from the PS VDS.⁹² There are at least three concerns here. First, that parties may be undervaluing this part of the public asset, and receiving less than market value for it. Second, that high seas fishing may be less efficient than in-zone fishing, so that market value for high-seas access may be less than would be paid for the same level of attrition of fish stocks due to in-zone fishing. But most worryingly, if the distribution of these fishing opportunities is not governed by inter-party negotiation within the PNA framework, then there is a risk that some parties are benefiting from a share of a collective resource to the detriment

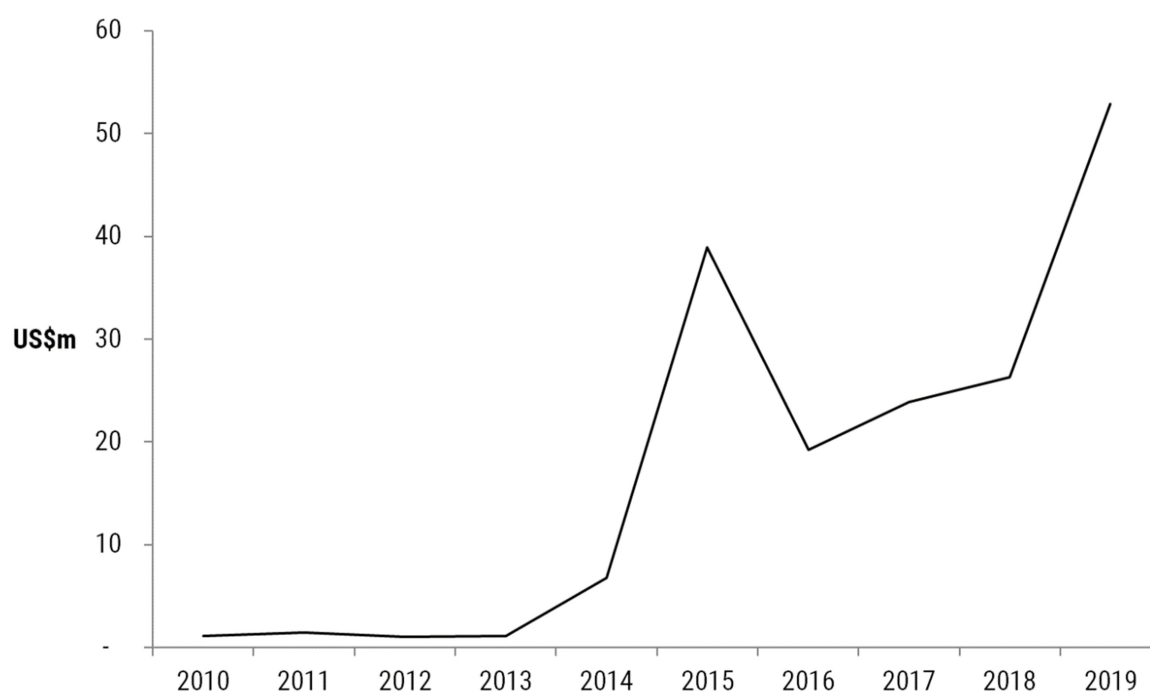
⁹¹ PNA 2017.

⁹² In 2020, high seas fishing by SIDS-flagged purse seiners reduced somewhat from its 2019 peak, but data on PS VDS revenue in 2020 is not yet available to estimate its value.

of other parties, and that this trend will undermine collective action unless urgently brought within the negotiated PNA framework. It may be that the PNA are relaxed about this and see it as brinkmanship with the DWFNs in the WCPFC, but if this is the strategy the associated risks may need to be properly acknowledged internally.

Conversely, although a range of initiatives are well understood to have a high chance of increasing average revenues – multi-zone access, multi-year access, improvements in auction design, resale options – there has been little tangible progress in moving towards these. This is of concern not merely because parties may be losing out on increased revenue, but also because the process of discovering ways to increase mutual benefits through information, collaboration and tighter integration would act in itself to strengthen solidarity.

Figure 9: Estimated catch of SIDS-flagged purse seiners in the high seas, valued according to average access payments for an equivalent in-zone catch⁹³



6.3.5 Regional processing hub strategy

The sixth Roadmap strategy is to:

Establish regional processing hubs in partnership between countries

The diversity of opportunities for processing and the need for economies of scale will be addressed by developing ‘processing hubs’ in two or three countries that can receive the fish from other FFA waters and provide benefits through employment and local ownership.⁹⁴

Regional processing was already heavily concentrated in Fiji, PNG and Solomon Islands by 2015. Over the review period, there has been a modest shift away from the consolidation or development of hubs. No significant new onshore processing developments have taken place over the review period. Although there has been no new construction over the review period, there is some momentum

⁹³ Authors’ calculations, based on the volumetric catch by SIDS-flagged vessels in the HS, multiplied by the ratio of PS VDS access revenue to total in-zone catch by all vessels. Source: FFA data.

⁹⁴ p2. The ERWP also mentions the opportunity to establish ‘regional processing hubs in partnership between countries’ (component 4, p.14).

behind a possible processing facility in Malaita, Solomon Islands – about 400km from the country's existing factory in Noro, Western Province.

There are strong economic incentives for governments to establish national processing or manufacturing hubs. Primarily, for plants to be competitive, they require infrastructure that only achieves economies of scale when serving a number of facilities (electricity generation or transmission, water and wastewater, roads, wharves, as well as infrastructure serving the workforce: schools, hospitals, public transportation, urban housing and security). However, the social and development incentives are often the opposite: to provide employment to underemployed rural populations, and to distribute economic development opportunities inclusively and fairly. The pattern of existing processing in facilities in the Pacific suggests that social and development objectives tend to outweigh purely economic considerations. This is aligned with the policy preference to forego part of the access revenue available from tuna resources in order to create jobs.

While the prospect of regional processing hubs being introduced appears unlikely, the review did draw attention to a number of risks associated with this strategy that recommend additional caution. Collective action within the PNA is founded on self-interest, and its success largely rests on ensuring that every member is significantly better off inside than outside not just the arrangement as a whole, but any extension or innovation within it. The concept of a regional hub rests on cooperation between multiple countries, each of which receives a net benefit. Without a globally competitive processing industry, or a processing plant in a country with labour shortages, it is unclear how this could be established.

The first risk is that one PNA ends up in a situation where it is reliant on fish caught in other parties' zones in order to provide the raw material necessary to maintain jobs and keep its plants operating at an efficient level. Any arrangement through which a processing plant is supplied with fish at below the effective market price from another party should be seen as a potential threat to regional solidarity. Given the timeframe over which processing investments are planned, it is also important to consider possible future trends, at least in the price of round tuna, fuel, tariff preferences, and short- and long-term movements of tuna populations.

Component 2 also identifies the opportunity to expand 'current labour mobility arrangements to include... where appropriate, seafood processing (at sea and on shore)'.⁹⁵ The risks here are significantly more complex. Social risks are context-specific and would need to be well understood. The Recognised Seasonal Employer (New Zealand) and Seasonal Worker Programme (Australia) schemes have complicated the prospect, because any regional scheme would offer significantly less favourable wages and working conditions. However, the risk to regional solidarity would be the prospect of the policy choices of one PIC potentially causing the unemployment and repatriation of a significant number of another PIC's nationals.

⁹⁵ ERWP 2016, p.10.

7 The future of sustainable economic returns from tuna fisheries

This section aims to provide a high-level overview of the de facto plan for achieving sustainable economic returns as it exists in the region: the goals, strategies and actions that regional and national practitioners are implementing or see as attractive and viable options for the near future.

At each of these levels, this section aims to provide a critical assessment based on the evidence available, and to draw out a set of prioritised recommendations as to where increased economic returns can most realistically be achieved by regional agencies and governments in future.

7.1 Goals

The Roadmap set out four goals for the region's tuna fisheries. A clear set of solution-neutral objectives can help to refocus attention on high-level objectives rather than pet projects, establish a framework for comparing options, and build consensus around a shared understanding of purpose.

Where goals differ in importance, being clear about their hierarchy can guide prioritisation of strategies and actions.

The goals chosen in the Roadmap received broad support during the review. However, as described in section 3, it does appear that a lack of clarity in their articulation hampered their translation into strategies, priorities and action. Further, neither the Roadmap nor the ERWP suggested any prioritisation of objectives. This made conflicts between different goals difficult to articulate and resolve.

The highest priority should be the protection and extension of the public asset of the Pacific tuna fishery. This encompasses the Roadmap's concept of 'value' and 'sustainability', but provides much more clarity as to what is meant and how any strategy contributes to or detracts from it. This perspective also provides a set of advanced analytical tools. The public asset should be the pre-eminent goal because all other goals are in some way dependent on it, and the more the value of the public asset can be built, the greater the resource that is available to achieve them.

It is also important to bring more attention to the issue of risk when discussing strategy. Viewing the fishery as an asset opens up a powerful analytical toolbox that can bring new sophistication and nuance to conversations about risk. 'Protection' of the public asset means identifying and reducing or eliminating any substantial threat to the future value of the asset.

The second priority should be to achieve broader economic returns for those PICs who decide that they are desirable. This is closely related to the Roadmap goal of 'employment', as this is a critical objective for certain PICs. However, there are several elements to consider:

- Revenue from fisheries access can deliver economic returns – including jobs – within the fisheries sector, within an unrelated sector, or through sector-neutral or multi-sector investment. Put directly, using access revenue from tuna fisheries to subsidise job creation does not necessarily mean that those jobs should be in the tuna industry. *Maximising* economic returns and managing economic risk requires a broader strategic approach and more explicitly cross-government perspective.
- There is an important distinction between activities that:
 - add value and can only be performed in the Pacific, such as unloading, sorting and transshipping, where both jobs and profits can be feasibly obtained, and
 - cannot be performed at a globally competitive cost due to the Pacific's well understood cost disadvantages, but which can be maintained through permanent subsidy. For instance, the perception that PICs could create profitable unbranded processing operations in the absence of significant tariff preferences is unhelpful for clear strategic

thinking. Employment generation is perfectly legitimate, but clarity about the costs, benefits and risks involved is a prerequisite of good decision-making.

Food security is an important objective for every country, and given the uniquely serious challenges presented by NCDs in the Pacific, it is rightly a high priority for PIC governments. However, it is questionable whether all PICs should adopt food security as a goal for their tuna fisheries. Tuna fisheries offer strategic options to achieve healthier populations, but presupposing that they will always offer the best means to achieve this is contrary to the concept of a solution-neutral policy goal. Even within the fisheries space, there are alternative strategies, such as policies that incentivise or mandate the landing of more bycatch, or simply exploiting comparative advantage by importing other shelf-stable fish products. Also, given the heterogeneity between (and within) PICs, it is not necessarily appropriate for a uniform strategy to be adopted on a regional basis.

7.2 Strategies

7.2.1 National and nationally-led

7.2.1.1 Fiscal management of the purse seine fishery as a public asset

The primary goal identified in section 7.1 is the protection and extension of the public asset of the purse seine tuna fishery. This requires strategies at the national and subregional level. Within national government, many PICs need a number of institutional adjustments to respond to the success of the PS VDS, and the corresponding elevation of the tuna fishery to become one of the largest, if not the largest, asset held and managed by government.

The size of the asset creates the need for more sophisticated economic analysis:

- of options to maximise the value of the asset
- of significant and emerging risks to the future value of the asset, and strategies to mitigate them (which will be explored further in the next section)
- of a balanced, evidence-driven approach to the use of fisheries revenue inside and outside of the fisheries sector.

While it is up to each government to decide how to develop or deploy this capacity, the most obvious approach would be to progressively increase the involvement of the economic analysis function of ministries of finance and national planning, or their equivalents. This should provide clarity on the distinction between pursuing realistic opportunities to establish or foster profitable activities, and where the government is choosing to trade off access revenue (or other subsidies) in exchange for jobs and other objectives.

It is important for governments (and even central banks) to understand the important distinctions between revenue from the VDS and general tax income, as there are two reasons to value VDS revenue more highly than numerically equivalent tax receipts. First, VDS revenue is effectively earned in foreign exchange, regardless of how it is paid to Parties – each dollar received improves the country's balance of payments position, and the size of these flows are highly significant for monitoring and management of exchange rates. Second, most taxation incurs a deadweight loss, as it discourages whatever activity it taxes.⁹⁶ This is quantified as the 'marginal cost of public funds' (MCF), which is the ratio of tax receipts to the costs of extracting them.⁹⁷ An MCF of 1 means that each dollar taken in tax revenue costs the wider economy exactly one dollar. But distortions introduced by taxation, and the transaction costs involved, mean that the MCF in developing countries

⁹⁶ There are various exceptions, such as taxes on activities with negative externalities (e.g. fuel tax), but they usually represent a minority of overall tax receipts.

⁹⁷ See, for instance, Dahlby, 2008.

is more likely to be around 1.2 – for every dollar of tax collected, the economy pays \$1.20.⁹⁸ The quantity of VDS revenue therefore understates the damage that would be done to the domestic economy if it were to be replaced by tax, and an increase in VDS revenue may be able to create additional deadweight gains if it replaces existing tax collection. It might be challenging for ministries of fisheries to do justice to these aspects of VDS revenue analysis.

The value of the asset also justifies the need for a sophisticated understanding of the international political economy of the fishery and a joined-up approach to using diplomatic channels to actively manage opportunities and threats. This is an area where there is evidence that PICs are already performing well, with support from regional and subregional agencies – including the Taskforce.⁹⁹ This is a clear point in which leaders and ministers of foreign affairs need high-level involvement in relevant strategy formation and execution.

7.2.1.2 Build risk in to management of the fishery

The process of deriving a revenue stream from the purse seine fishery through the sale of vessel days remains highly government-driven (rather than centralised at a subregional level). There are a variety of well understood adjustments that governments could make to the product or process of sale that may increase revenue. All of these are linked with risk, firstly through the inherent risk of trying a new approach whose results cannot be fully predicted, and often also through the inherent trade-off between price and risk. In some cases there are opportunities to increase expected revenue by reducing the risks to both governments *and* the private sector – this is the essence of longer-term contracts, for example.

The review suggests that many governments have not reflected seriously on their risk appetite and tolerance, and considered how these can be embedded into their national policy for vessel day sale. In many cases governments appear to have the opportunity to significantly increase their revenue by taking on manageable risk, while simultaneously reducing the overall variability in their revenue.

7.2.1.3 Develop a Covid resilience plan

This review has not had a sufficient focus at the national level to set out what governments need to do in response to the coronavirus pandemic. However, it is clear that a significant number of longlining firms in some PICs face an existential threat, and government inaction could result in a substantially different domestic sector in three years' time. The possible large-scale bankruptcy of genuinely domestic longlining firms, and the likely subsequent reallocation of their fishing opportunities to foreign firms could well set back some governments' fisheries development objectives by decades.

The task of fisheries ministries is straightforward. Their role should be to be in close consultation with domestically based sections of the private sector, to build an understanding of current threats to the sector and what options are available to mitigate damage. Where useful, the ministry of fisheries should lead advocacy for these options within government, most particularly with the ministry of finance to ensure that the sector is well represented in the government's overall Covid resilience planning.

In many cases the problem is very simple: Covid is preventing vessels and processors from making their usual level of income, and firms that cannot service loans will need to sell assets or file for bankruptcy. The basic strategies available to government include negotiating payment deferral between firms and banks (which is likely to involve some form of subsidy from governments or

⁹⁸ E.g. Auriol and Warlters, 2012. It is possible for the MCF to be lower than 1 if the tax partially corrects an existing distortion.

⁹⁹ The Taskforce commissioned Pelto and Reschke, 2017.

donors), and making emergency changes to fisheries regulation that enable firms to earn enough through asset sale to survive (for instance by improving the transferability of fishing licences¹⁰⁰).

Regional agencies can provide support by raising funding or connecting governments with donors interested in preserving the domestic private sector, and providing technical guidance on how governments should select and target genuinely domestic firms, to ensure that administrative and financial resources protect broad economic returns rather than foreign investors.

In both the purse seine and longline fisheries, the risk of crew infection is an important operational risk and there are very good reasons to prioritise crew members in vaccination programmes.

7.2.2 Subregional and regional

7.2.2.1 Continue to consolidate control of the purse seine fishery

At the subregional level, protection and extension of the public asset translates into continuing to consolidate control of the purse seine fishery, both in-zone through the PNAO and in the high seas through the WCPFC. This strategy is a natural extension of work that has been ongoing in the region for decades. Many of the individual options and actions are very well understood.

7.2.2.2 Continuously improve the use of information

Regional and subregional organisations have long played an important role in the collection, analysis, dissemination and protection of information relating to tuna fisheries. Headline gains in economic returns in the last decade were only possible because of data collection and analysis that quantified rents in the harvest sector that could be captured through access pricing. The Roadmap explicitly tasked FFA and SPC with additional reporting requirements through the Report Cards – and envisaged reporting in additional areas that has proved impractical or has not been achieved. In a few cases (see section 6.2.2), this reporting may have led governments to pursue policies that have weakened the economic returns they have earned from fisheries. Effective collective and individual action will continue to rely on good choices being made about what data to collect, what analysis should be conducted and by whom, how it should be published, shared or protected, and what should be presented to decision-makers at all levels from operational officials to leaders.¹⁰¹

7.2.2.3 Build a realistic analysis of the tuna value chain into regional action

None of the value chains for tuna are simple or homogenous, or distribute power and rent equally through all links. Some of the details are explored in Box 6-C and Figure 7. Another way of looking at the analysis that led to the large access fee gains in the PS VDS is that it (a) identified rent in the value chain, (b) identified how power derived from resource ownership could be brought to bear to capture it (c) without establishing any new activities in which the Pacific faces large cost disadvantages. A nuanced understanding of the value chain is a critical part of predicting which PIC actions will increase economic returns to fisheries.

There has been some discussion of experimenting with a ‘contract harvesting’ model, in which a PIC would pay a harvesting firm to catch and land fish, which would remain the property of a domestic firm. There is an appealing analogy to the process by which a farmer pays a company a fixed fee to harvest a field of wheat, which remains the property of the farmer. However, there are significant

¹⁰⁰ There may be a need to link security of fishing rights to stringent measures of domestic contribution, or to make this an emergency (temporary) measure to avoid the possibility of foreign rights owners capturing long term rents. The basic challenge is that fishing vessels may not have a positive market value if the buyer has no certainty over whether the licence associated with the vessel can be obtained by the vessel buyer, which means that domestic firms cannot sell vessels in order to survive.

¹⁰¹ As noted in section 6.1.4, scientific advice provided by SPC and real-time information collected and disseminated via FIMS are already highly effective.

differences between the two scenarios, and it is also informative to consider the opportunity costs involved. The most productive harvesting firms make more than USD 25,000 per vessel per day in profit in the Pacific purse seine fishery. Regardless of the profitability of the particular vessel, its owner would still seek to make a similar level of profit to be persuaded to work on a contract basis, unless the Pacific eliminated the opportunity to fish under arrangements similar to those that exist at present (including in other oceans). If a PIC compensated a vessel at the same rate of profit that the vessel could earn independently, then it would of course give up on its objective of capturing some of the profit of the harvest sector. There are alternative ways of structuring contracts with vessels, but they are beset with a fundamental principal–agent problem: the productivity of vessels is highly variable, dependent on both effort and luck, effort is not easily measurable, and in order to create the strongest incentive for a vessel to work productively, it must keep the full marginal product of its effort. If the vessel does not keep the full marginal product of its effort (for instance, if it is working for a flat fee), then it has a diminished incentive to harvest productively, which creates a deadweight loss. Contractual minimum harvest rates are difficult to set, because the yield of a day's fishing is much less predictable than the yield of a ready-to-harvest field of wheat. Almost any contractual structure would also expose the PIC to a very much higher level of risk than it appears Parties are happy to accept at present.

Box 6-C and Figure 7 attempt to illustrate the main sources of rent and power in the canned tuna value chain: in ownership of the resource, ownership of the brand, and in retailing. The Pacific is unlikely to have the same success in leveraging its resource rights at the expense of brands or retailers that it has had in stripping profits from harvesters and, potentially, processors. Whereas the relationship between the Pacific and harvesters or processors could be loosely characterised as “zero sum”, the relationship with brands and retailers is different. A collaborative relationship can potentially create additional value for consumers, based on the perception of food safety and quality, environmental sustainability, and ethical treatment of workers. Historically, they have received less attention in development planning partly due to the simple fact of their distance at the far end of the value chain. However, the Pacific project has been an important step for the region in learning more about the structure and participants within branding and retail, and lessons learnt may point to future opportunities for brands or retailers to work with PICs as resource owners and standard-setters to develop a product that consumers perceive to be of a premium environmental and ethical standard. Part of this experience has been building traceability systems that give brands, retailers and consumers confidence that claims about the source and attributes of tuna are verifiable. This experience has improved the PNA's readiness to seize further opportunities that might emerge. This review does not recommend specific actions in this area, but it remains an important opportunity and the Pacific should continue to invest in its understanding and relationships in this area.

7.2.2.4 Support national-level dialogue between the public and private sectors

The review confirmed that a wide variety of collaborative relationships between organisations could be improved, at all levels. Weaknesses in communication and collaboration between ministries in individual PIC governments are mirrored by similar challenges between government and the private sector, between governments and regional or subregional organisations, and between the various regional and subregional organisations working on fisheries and related issues. To some interviewees, the work of the Taskforce, which included regional agencies briefing one another on activities they were working on, brought into stark relief the absence of more regularised information-sharing and collaboration between agencies. While regional agencies view their own relationship with their member countries as a critical priority, another common theme within the review was a sense that the private sector is outside of this process, disconnected from national or regional planning, and their priority needs are often poorly understood.

Donors have taken a much greater interest in public–private dialogue (PPD) in the last two decades, and as a result, a number of important lessons are emerging about how conditions can be established

that make PPD more likely, productive and sustainable. Unfortunately, many of the challenges involved are considerable, and suggest that neither traditional donor interventions, or even well designed policy and action from government are likely to be effective. However, long-term, regional backstopping support can provide a more conducive environment for resource-constrained national business membership organisations (BMOs) to seize opportunities as they arise.

7.2.2.5 Focus on WCPFC control of distant water longlining and do not offer concessions or support to foreign firms

Considerable energy and political capital is being spent on trying to bring distant water freezer longline fleets under PIC control, and this was recognised as an implicit Roadmap strategy and an explicit component of the ERWP. As discussed in 6.1.36.1.3, regional work on longlining was taking place regardless of the ERWP at FFA for the Tokelau Arrangement on southern albacore and among the PNA for the longline VDS on tropical tuna. In 2020, FFCMin17 agreed an action plan developed by FFA for the implementation of the Regional Longline Strategy which aims to progress a zone-based management approach within the WCPFC, with catch and/or effort limits established within FFA members' EEZs, as well as binding limits set on the high seas.¹⁰² The Review agrees that the defining and securing of rights in this way is of critical importance to the management of tuna populations, and a prerequisite for *long-term* improvements in economic returns from the distant water longline fisheries.

There is however a question mark over the relative merits of expending further regional time and effort in the medium-term on seeking to *improve* economic returns from the distant water longline fisheries. This is because these fisheries are widely recognised as low profit, with limited potential to capture greater rents, and that PICs have less actual and potential control compared to the PS VDS. The success of the PS VDS model is largely linked to the fact that the majority of purse seine fishing effort (around 90%) occurs in PNA waters. In contrast, in the case of the tropical longline fishery the majority of effort (approximately 60–70%) occurs in the high seas, not in PNA EEZs. In the southern longline fishery about 30 to 40% of effort has been in the high seas in recent years.¹⁰³ This means that PICs are likely to always have much less leverage in the longline fishery, but that the fundamentals are more conducive to coastal state control in the southern than in the tropical fishery.

As is well known, the tropical longline fishery has important interactions with the purse seine sector in relation to bigeye tuna. From the perspective of the PNA, there is a risk that longlining is taking larger bigeye, reducing recruitment and spawning potential, and may result in overfishing, which would undermine the sustainability claims of purse seining in PIC waters, with negative reputational and commercial consequences. Further, economic returns from tropical longlining are negligible (in the absence of a major shift in relations with DWFNs), except for genuinely local firms (e.g. in Fiji, Samoa and Tonga). The Review did not undertake analysis of national policy initiatives in domestic longlining but it does recommend that national Covid recovery plans take full account of domestic longlining firms (see 7.2.1.3).

The FFA Regional Longline Strategy is ambitious and its focus on improvements in PIC management control should be the priority, while genuine economic returns from the tropical fishery in particular are likely to be a long game, in which various commercial and geopolitical challenges will have to be managed. As a result, PICs should adopt a policy of benign neglect in terms of offering incentives to distant water longline fleets – by *not* offering discounted access, fiscal support, or other concessions. Globally, there are no known examples of meaningful domestication of the East Asian longline fleets, and the high seas predominance and low rents in this fishery go some considerable way to explaining why.

¹⁰² FFA 2020; Campling, Havice and McCoy 2020

¹⁰³ Campling, Lewis and McCoy 2017, p.47.

7.3 Actions

7.3.1 National and nationally led

7.3.1.1 Raising value of days sold by making them more valuable to vessels

A number of pieces of research commissioned by the PNAO have explored different options available to individual Parties that should enable them to increase the value of days sold. As discussed in section 6.3.3, this kind of experimentation carries some risks, but some innovations would be likely to reduce the variability of VDS income in future, and much of the risk lies in experimentation and learning.

Most approaches increase the value of a vessel day to the buyer, often by providing more flexible terms to the vessel, which helps it to manage its own risks. A group of PNA members have had notable success selling multi-zone days through a subregional pool, although the premium vessels would be willing to pay is expected to be higher if larger zones were included. The basic strategies available are:

- Improved auction design, that captures more of each buyer's surplus, or encourages more buyers to follow or participate in more auctions by reducing transaction costs.¹⁰⁴
- Provide more geographical flexibility, through multi-zone days (or, for SIDS-flagged vessels, the option to fish on the high seas).
- Provide greater long-term certainty, by simultaneously selling multi-year contracts (i.e. a vessel signs a contract to buy a fixed number of days each year from the same Party for three or five years). This enables longer term planning for vessels, which reduces risk and uncertainty. It also increases price stability for *Parties* because it provides partial protection from short-term conditions that drive down vessel day prices as some days continue to be sold at a pre-agreed price.
- Provide flexibility that reduces the cost to a vessel of an unused day. This is a significant financial risk and vessels would probably pay more for days than is currently received by Parties. There are various ways to reduce the risk (full refund, partial refund, allow onward trading, allow onward trading if an additional fee is paid to the Party, provide a refund that is conditional on the Party being able to re-sell the day, roll the day over to the following year for a flat fee, etc.). Most could be implemented unilaterally by one Party.
- Provide flexibility that allows transfer within a company, between different vessels (with adjustments where necessary and feasible for vessel characteristics).¹⁰⁵
- Improve existing systems for sale between parties, so that days can be shifted to zones where fishing is temporarily more productive. At present, this appears to largely rely on a network of individual contacts.¹⁰⁶

At the subregional level, support in implementing experimental arrangements and facilitating lesson learning would be valuable, but any of these initiatives would need to be led by individual Parties, and will require political leadership to accept the risks involved.

7.3.1.2 Establishing competent authority coverage and the new activity that this enables

Box 6-A identifies a number of simple processing options that the Pacific is uniquely geographically placed to perform. The option is available for an individual PIC that wants to create secure and profitable employment and has or is able to provide the necessary business environment conditions

¹⁰⁴ Peña-Torres (2017) focuses entirely on this subject. Arnason (2014, p.35) covers it briefly.

¹⁰⁵ Aqorau *et al.* (2020) focuses primarily on transferability. Arnason (2014, p.34) notes some concerns with this.

¹⁰⁶ Arnason, 2014, pp.33–34.

to explore this further. Cold storage is a critical infrastructure component for many of these operations.

However, one of the major hurdles to establishing a viable onshore sorting, transshipping or freezing operation is the creation of a competent authority that is able to perform official controls throughout the production chain.¹⁰⁷ To avoid limiting market access, the competent authority would need to be recognised by the EU, which is a significant hurdle, though one that has been cleared by PICs before (for instance in Solomon Islands).

It has been suggested (including in the ERWP) that a regional competent authority may be a possibility, although it is unclear exactly how this would work. As it is, the established view is that a regional competent authority was thoroughly investigated through the 2010s and, following this, relevant PICs decided not to proceed with one; for example, some PICs have been concerned that a regional competent authority would lead to an unacceptable loss of sovereignty. The level of oversight required means that even under a regional arrangement, substantial national state capability would need to be built to maintain controls to EU standards. This option would therefore require high-level political leadership at the national level, and is only worth considering as part of a coordinated subsector strategy.

7.3.1.3 Shifting the tuna market into the region

The review noted a perception that the concentration of tuna trading in centres such as Bangkok (linked to a limited number of highly capitalised trading companies) creates a degree of market power at this point in the value chain, and may confer some ability to manipulate the price paid to vessels for round tuna. It has been suggested that physically shifting some level of trading activity into a Pacific trading hub could partially undermine this power and perhaps raise average ex-vessel prices. The review was not able to identify any significant research on the subject.

There are certainly substantial costs and risks involved. The competitiveness of centres like Bangkok relies on high-volume shipping and cargo handling facilities, and a very large quantity of cold storage, which itself relies on reliable, low-cost energy, and competitive access to finance to maintain inventories. Large volume cold storage is high risk both operationally (e.g. electricity outages, SPS compliance) and financially (e.g. engaging in possible supply limitation strategies to leverage price). There would be high state capability requirements, going beyond competent authority regulation of all facilities to providing adequate traceability guarantees. Associated with this, the growing legal framework preventing trade in fish linked to IUU into areas like the EU, US and Japan present a number of high-level risks, as do the ever-expanding requirements of private standards demanded by major buyers, including brands and supermarkets.

A feasibility study would be a useful next step if any PIC has a strong interest in this objective.

7.3.2 Subregional and regional

7.3.2.1 Enterprise survey

The ERWP rightly identifies the importance of a conducive investment climate in laying the groundwork for the private sector to make investment that will result in broader economic returns from the sector. The review has collected limited evidence on progress in this area, because investment climate reform is very much a national process, with limited opportunities for regional agencies to contribute.

¹⁰⁷ This includes guaranteeing hygiene and public health requirements, covering the structure of vessels, landing sites, processing establishments, and operational processes, freezing and storage; close monitoring of production areas to exclude contamination with marine biotoxins; and all vessels, processing plants and stores must be inspected. The EU conducts audits of competent authorities (European Commission, undated).

One area where regional agencies can help is by identifying priority business environment constraints, which allows governments to make an informed decision whether to devote resources to resolving them. This is particularly useful where dialogue between government and the private sector is weak, which does appear to be a challenge based on the limited evidence collected during this review.

The World Bank uses two distinct approaches to identify weaknesses in the business environment at the national level. The first is to ask firms about their experience of business environment constraints (known as 'enterprise surveys'¹⁰⁸). The second is to study a large number of formal rules in the economy, judge them according to the World Bank's view of international best practice, and compile a score for each economy, made up of thematic sub-scores (known as ease of doing business scores¹⁰⁹). The latter approach have captured the attention of many policy-makers (and donors) in recent decades because the World Bank publish a ranking of countries, which enables governments to claim that reforms have improved their business environment to the point that it is 'better' than their neighbours. However, some donors have reflected on some of the weaknesses of the ease of doing business approach.

[A] large number of [DFID] advisers believe that the [doing business] indicators are being overused in country-level programmes – and that this is having a negative effect.¹¹⁰

The numerical estimate provided by doing business

does not summarise even modestly well the experience of firms as reported by the Enterprise Surveys... [T]he average times reported de facto in the Enterprise Surveys are much, much less than [those] reported by Doing Business... [T]here is almost zero correlation across countries between the... Doing Business [score] and the Enterprise Survey responses of firms... if anything, reductions in Doing Business times are associated with higher reported actual times in the Enterprise Surveys.¹¹¹

However, the bigger problem is that

[doing business] indicators do not reveal which constraints are locally binding, and therefore most important to the private sector. Binding constraints tend to be the hardest to address, because there are usually stubborn political economy reasons that they have not already been resolved.¹¹²

In other words, using Doing Business indicators as a guide to reform can easily lead a government or donor to work on solving the wrong problems, and then congratulate themselves for being successful when they have actually made things worse.

The challenge is even more acute for SIDS, because limits on administrative capacity limit the number of reform activities that can be attempted at any one time. It is even more important to identify reforms that will make the biggest tangible difference to actually existing firms, to ensure that government effort is not wasted.

Regional agencies are well placed to perform enterprise surveys. It can be difficult, especially initially, for governments to perform this function, simply because of the incentive not to make use of new evidence that the government is not performing well in some areas. Enterprise surveys are a transparency exercise, and so an outside organisation (that nevertheless understands the country) is well placed to meet the expectations of both government and the private sector (and also to side-step any inter-ministerial conflict within governments, should one ministry be responsible for publishing implicit criticism of another). However, because of the inherent sensitivity of the exercise,

¹⁰⁸ <https://www.enterprisesurveys.org/>

¹⁰⁹ <https://www.doingbusiness.org/>

¹¹⁰ Hetherington, 2017, p.34.

¹¹¹ Hallward-Driemeier and Pritchett, 2015, p.123. Emphasis in the original.

¹¹² Hetherington, 2017, p.34.

governments should be free to opt in or out, rather than establishing a regional commitment. Political leadership is needed.

There are a number of other design principles that would help to maximise the value of a regional fisheries enterprise survey:

- It should focus on nationally binding constraints and priorities. Comparability between countries is less important than reflecting the current concerns of the industry.
- Headline data should be published, including in a form that enables follow-on research by third parties, without revealing personally identifiable or commercially sensitive information.
- The implementing agency should have a robust media strategy. An important part of the value of an enterprise survey is to set the scene for more productive public-private dialogue and more informed media coverage. The implementing agency should invest time explaining the results to local media, and should stagger the release of data (i.e. one country at a time) to enable a temporary focus at the national level.
- Depending on the country, it would be useful to include context on the domestic contribution of firms, or to categorise responses so that it is possible to distinguish between the concerns of companies that can credibly claim that their interests are aligned with broader economic returns, and those that would prefer to minimise their in-country footprint. There is no harm in understanding the views of foreign operators, and resolving inefficiencies in the business environment can increase the value of access, but critical appraisal is obviously needed in relation to calls for investment incentives, tax breaks, etc.
- It should be conducted every 2–4 years, depending in part on the size of the economy. Many of the issues that are covered are not fast-changing and there is a need to give the government a realistic time to respond before re-measuring. A substantive enterprise survey places a time burden on firms and they will become resistant if it is repeated too often or appears not to have led to any tangible response from government.

While the survey should be structured to permit firms to put forward their own concerns, likely topics include: utility provision (price, availability and reliability of energy and water); infrastructure needs/gaps and pricing (cold storage, roads, wharves); labour/crew requirements and skill availability (e.g. requirements to hire nationals, skills requirements, availability of skills, adequacy of domestic training available, training funding mechanisms, access to regional training opportunities, certification, visa and work permit requirements and quality of government services and facilitation in this area); regulatory requirements associated with use of a domestic flag; government support for export documentation requirements; bilateral representation of industry concerns relating to SPS and TBTs; general regulatory responsiveness and efficiency (e.g. licensing, administration of fuel duty exemptions or VAT refunds); access to finance and collateralisation of assets; and foreign currency restrictions/access to foreign exchange and foreign-denominated accounts.

A fisheries sector enterprise survey could be conducted by an intelligence unit as envisaged in section 7.3.2.2. In the absence of such a unit, FFA appears well placed to lead. Input from a national industry association (or a regional industry association, see 7.3.2.3) would be helpful in guiding the design of the survey.

Recommendation: Request a regional agency to conduct a fisheries sector enterprise survey of PICs who opt in to the process, on a regular basis.

7.3.2.2 Tuna business intelligence unit

PICs have benefited enormously from a cadre of Pacific islanders and foreign experts who have worked to enhance economic returns from the region's tuna fisheries. Officials and consultants across the region have, in effect, dedicated their lives to advancing PIC fisheries interests. However, this review has identified that much of this cadre is close to retirement and while a new generation is in place and rising, it is not immediately apparent that the same types of expertise are yet embedded.

Particular areas of note include deep commercial knowledge of the tuna industry and its international political economy (including in the WCPFC), the ways in which fisheries management shape commercial strategies, the technical economic and financial tools necessary to analyse the business-side, expertise on fisheries trade rules and their politics, and public and private market access issues and how they shape business dynamics.

On the institutional side, pockets of expertise are currently spread across FFA, PIFS and PNAO, as well as a network of specialist consultants that the region draws upon on a regular basis. While recognising the need for separation due to different members and remits, these pockets of expertise are currently spread out both geographically and institutionally in ways that are not always conducive to regular cooperative action. There are moments when (sub)regional agencies come together (e.g. the Taskforce and IAWG) and there are occasional briefings (e.g. the PNAO to PIFS), but these are ad hoc and can be fractured (as we saw with the Taskforce).

Recommendation: We are proposing that the IAWG considers establishing a **Tuna Business Intelligence Unit**. This is not a new idea and in some ways it reproduces existing institutional remits, e.g. the commercial management at PNAO, the Fisheries Development Division at FFA and fisheries-related work at PIFS.

Institutional dimensions: It would report to an equivalent of the IAWG (i.e. consisting of senior officials of FFA, SPC, PIFS and the PNAO) and day-to-day administrative processes (e.g. human resource management, salaries, etc.) could be located at any one of the IAWG agencies. This institutional arrangement would help to bring fisheries out of its silo and be recognised as a sector requiring whole-of-government policy analysis and action. However, due to informational sensitivities the Unit would operate independently on a daily basis. It would not be based within FFA because the Unit's data would need to be firewalled and, as is correct and to be expected, FFA transparently reports to all of its members, including Australia and New Zealand. The governance arrangements of the Unit will be important, especially given the likelihood that it may be offering different advice to different PICs given diverse national contexts. The Unit would report quarterly to the IAWG on activities, justifying its use of resources, but would withhold confidential details of advice where appropriate.

The region should capitalise on the experience of the pandemic and **the Unit should be virtual**, i.e. its employees will work remotely. This will help to keep costs down and to enhance the attractiveness of employment of appropriately experienced and qualified staff. The Unit would meet up regularly at various (sub)regional meetings and would take advantage of those events to have in-person team meetings.

The work undertaken by the Unit would reduce the current need for external consultancy (e.g. as currently commissioned by the FFA Fisheries Development Division). It may also be funded by allocations from the current budgets of the FFA Fisheries Development and oceans-related budget from PIFS.

Composition: It could consist of three people – a team leader and two applied economists (or equivalent), with the team leader being an already-established individual of the Pacific tuna cadre, perhaps close to retirement. This would be necessary for the phase of reproducing formal expertise and tacit knowledge within the Unit, as well as providing it with a high profile in the regional industry sector. Being based on a remote-working environment, the Unit will have the flexibility of bringing in part-time advisors or mentors (e.g. for one day a week) to guide the Unit both in general and on specific issues, especially during the set-up phase of the first two years. After being established for two years, the Unit could also work with the best and the brightest from University of the South Pacific via a competitive but paid internship at the postgraduate level.

Scope of work: The Tuna Business Intelligence Unit would compile existing information currently held by IAWG agencies (excluding commercial-in-confidence PNAO data) and its initial work will be to operationalise the data that already exists for two or more objectives:

- Based on an operational understanding of the WCPO industry, examine and appraise current and future ways to increase economic returns to PICs.
- Provide evidence-based understanding of critical risks, constraints and challenges facing individual PICs, sub-region groups or the region as a whole.

Specific tasks: The following are indicative tasks that the Unit could undertake on a rolling basis:

- Provide high-level, evidence-based analytical reports to FFC, FEMM and Leaders.
- The Unit's annual reporting to Leaders should replace the Tuna Report Cards (i.e. the team of experts within the Unit will inform Leaders of the most important trends, changes and possibilities in the regional tuna industries in deeper analytical terms and qualitative depth than a static report card).
- 'Translation' of the vast amount of relevant grey literature circulating in the region for consumption by regional agencies, national fisheries and economics officials, the regional association for tuna and other industry stakeholders (e.g. national associations), and even passing information back through regional agencies where internal information sharing could be improved.
- Undertake the regional enterprise survey of firms in the fisheries sector (see 7.3.2.1).
- Maintain an up-to-date political economy map of the type commissioned by the Taskforce.¹¹³
- Assess the domestic contribution of vessels and other fisheries operations (existing or proposed) to assist PICs to analyse the value for money of access concessions.
- Provide quantitative risk analysis of different options for sale of vessel days (e.g. auction mechanisms, flexibilities, etc.).
- Provide on-demand support to economic ministries in developing more sophisticated economic appraisal methodologies for fisheries proposals and policies.
- Act as regional monitor of domestic market prices for analysis of food security, this may include non-tuna species.
- Attend selected regional meetings and receive trip reports from other regional agencies to keep abreast.

Risks and mitigation strategies: Aside from the obvious budgetary constraint (although the Unit may be a possible cost saving via reduced external consultancy and streamlining in FFA and PIFS), a number of risks and constraints will be faced in the establishment of the unit:

- The Unit will need a robust procedure for selecting priority work areas and resource allocation, particularly if it receives many requests from PICs for support.
- The Unit may draw scarce talent away from national agencies and/or sufficient talent may not be available.
- Implementation will be difficult given the entrenched remits of the current regional agencies and the general constraints to forward-looking cooperation beyond reactive mode.
- Connected to the last point, the Unit's institutional location would likely be a major negotiation and there is a risk of unproductive trade-offs and 'turf wars'. The recommendation for the Unit to operate remotely will in part mitigate this risk.
- The outcome in practice may be fall short of the objective (e.g. due to weaknesses in available staff) and would require a full IAWG review after three years of operation.

Reporting to Leaders may produce a scramble or conflict over what these headlines might be, potentially politicising the Unit. An alternative is that the PNAO continue performing this function well (or better) and place enhanced emphasis on the training and mentorship of future PNAO commercial and strategic leaders.

¹¹³ Pelto and Reschke, 2017.

Recommendation: The Unit's reporting to Fisheries Ministers, Economics Ministers and Leaders should replace the Report Card process, which has various limitations (as described in section 3.3), and generally does not provide actionable information.

7.3.2.3 Regional industry association for tuna

As discussed in section 7.2.2.4, public–private dialogue is an important driver of effective investment climate reform, and national-level BMOs are a crucial component of a structured, focused PPD process that can effectively build consensus. A regional association is not a practical substitute for this, but given the challenges of establishing industry associations at the national level (especially in smaller PICs) and many ongoing challenges to the sustainable functioning of BMOs throughout the developing world (especially relating to financing¹¹⁴), a regional association can play an important support and backstopping role.

Historically, the Pacific Islands Tuna Industry Association (PITIA), based in Suva, was the primary regional industry association for the sector. It was incorporated in FSM in 2005, although its executive officer has sat in different PICs at different times. It appears to have ceased activity in June 2019.¹¹⁵

We would recommend that a reconstituted regional industry association should have the following features:

- It should build relationships directly with companies as well as national associations (and not be limited to work only through national associations). This recognises national associations' prerogative to have partial or selective coverage, without this feeding through to the regional level. It also recognises the inherent fragility of very small national agencies in some PICs, and the regional association's backstopping role.
- Ideally, it should have a formal regional status that would enable it to observe appropriate regional meetings (and receive outside funding to do so), with a clear expectation that it would report directly to companies on important aspects.
- It should refrain from adopting cross-industry positions on individual issues. The differences in the interests of different industry sectors in many cases are too large, and an attempt to form a consensus would inhibit the association from representing minority viewpoints.
- Report to a board drawn from CEOs and national industry associations.
- Ideally, be part-funded by large regional companies. However, limited but secure funding from at least one regional organisation would be needed, and multiple secure sources of funding would help to maintain its independence. Donors are less well placed to provide consistent funding.¹¹⁶
- A main function would be to provide support functions that help national associations by:
 - reducing their running costs, e.g. by providing support with digital services,
 - increasing the value that national associations provide to their members, increasing their willingness to pay for membership, e.g. by packaging useful industry intelligence or news on regional initiatives,
 - support the formation or part-time function of very small associations in smaller PICs (or representing smaller firms or the informal sector), recognising the fragility of these and that this may be required more than once, and
 - act as a very basic national industry association in PICs where there is none.

¹¹⁴ The challenges of financial sustainability for BMOs are detailed in Hetherington, 2016, pp.17–23.

¹¹⁵ See <http://www.pacificfictuna.org>

¹¹⁶ As an early DFID report bluntly put it, 'Donor and PPD time horizons don't match.' (Bannock, 2005, p.37, paragraph 115.) Relying on a single donor for funding tends to be insecure and can make a BMO over-responsive to the donor's agenda. "[T]here are all too many instances of private sector associations growing rich on donor funding while losing touch with their membership." (Bannock, *ibid*, p.36, paragraph 114.) This could be a particular concern if the donor is also a DWFN with an interest in Pacific fisheries.

Recommendation: PITIA, or a newly established regional industry association, should be placed on a secure financial footing, reporting to a board comprising national industry associations and large domestically embedded firms. This is urgent due to the important role that this association has in advocating for industry during the coronavirus pandemic.

7.3.2.4 Continue to implement the Regional Longline Strategy

Goal 1 of the Regional Longline Strategy (RLLS) remains a reasonable articulation of the challenges and actions needed. It correctly focuses on the need to enhance rights and control over the fishery and identifies reasonable high-level strategies for doing so inside and outside the WCPFC. Goal 1 would benefit from careful and explicit political mapping of possible pathways for building alliances at the WCPFC.

However, goal 2 of the RLLS, to improve economic returns, requires the development of strategies that:

- differentiate between the longline fisheries:
 - first, on a sub-regional basis (as is already done vis-à-vis the LL VDS and TKA), and
 - second, recognises national similarities and differences and potential for cooperation (e.g. like-minded countries and similarly disposed contexts) and conflict (i.e. developing regional approaches that do not include mechanisms for managing difference risks setting regionalism up to fail),
- are driven by a better understanding of the dominant firms in the value chains,
- are part of a business intelligence strategy to understand dynamic comparative advantage, in order to gain insights into market structure and opportunities,
- identify where longline industries in the WCPO 'touch down' with PIC national contexts, and to learn from prior successes and failures in terms of increasing economic returns, and
- incorporate political mapping¹¹⁷ to understand the feasibility of possible alliances among distant-water fleets and DWFNs.

7.3.2.5 Negotiating catch-based limits in the southern longline fishery would require leadership from New Zealand

As discussed in section 6.1.3, New Zealand's opposition to the adoption of effective limits on its own fleet in the Tokelau Arrangement appears to have been an important (and perhaps decisive) factor in (a) the failure to agree a meaningful total allowable catch, (b) the withdrawal of a key PIC, and ultimately (c) the failure to bring the Arrangement into effect. The Review was not able to identify any reason to believe that a renegotiation of limits to the southern longline fishery (whether effort- or catch-based) would be any more effective in future, as long as New Zealand maintains the same position. However, the fact that the majority of effort is currently expended in-zone suggests that collective action is worth pursuing if there is ever reason to believe the political constraints can be navigated.

If New Zealand were to make this fishery a sustainability and development priority, and signal its intention to accept fishing limits that are in keeping with a sufficiently limiting total catch to restore some degree of rent, then PICs should seize the opportunity to open a new set of negotiations, whether on a catch or effort basis. Obviously, every PICT (and New Zealand) stands to gain more (in terms of economic returns) by collectively agreeing constraining limits than by achieving a generous limit within a framework that fails to constrain fishing overall.

¹¹⁷ Similar to Pelto and Reschke, 2017.

7.3.2.6 Discounted days shouldn't count towards PAE

The PS VDS is entirely reliant on scarcity for its value. If industry wanted to buy fewer days than PNA members made available for sale then the clearing price of a vessel day would be very low. Demand for days varies from year to year, whereas the TAE within the PNA is not adjusted for commercial reasons. When demand is high, it is easier for all countries to sell all of their days and obtain a higher price. In years when demand is particularly low, there is downward pressure on vessel days.

Instead of reducing the total days available, the PNA agrees a 'benchmark price' as a mechanism for trying to reduce price competition among PNA members and protect total revenue collected. If the benchmark price were strictly enforced, then very low demand would lead to some days in less productive zones remaining unsold in years with very weak demand.

However, the benchmark price is complicated by the FSM Arrangement, which allows 'domestic' vessels to purchase days at below the benchmark price, and (optionally) to fish in a different party's zone for an additional payment of at least USD 4,000. There are two concerns with this:

1. In years of low demand, any individual party that is unlikely to sell all of their days would benefit from lowering prices below the benchmark and undercutting other parties. The FSMA, in addition to providing a route to support genuine domestication, also provides a mechanism for parties to discount days below the benchmark, even if a vessel provides no meaningful domestic contribution.
2. The negotiation of each party's allowable effort (PAE) normally takes into account the amount of fishing in each zone – a party that has more in-zone fishing is able to negotiate a larger PAE (which means more revenue in future years). This provides an additional incentive for one party to break ranks and sell days at a discount – because this in-zone fishing will translate into a larger share of the asset in future.

Aside from this structure of incentives, there is also straightforward logic in the idea that a day sold at a heavy discount does not suggest that the zone contains a particular concentration of fish, which would justify an increase in that party's PAE.

It appears, therefore, that the PNA would benefit from adopting the principle that days sold below the benchmark price should not count towards future PAE, unless a domestic contribution that is comparable to the scale of the discount can be demonstrated.

7.3.2.7 Eliminate 'free' SIDS-flagged fishing in the high seas

The review highlighted that the exemption that permits unlimited SIDS-flagged fishing on the high seas was a hard-won achievement and has subsequently required a vigorous defence. It also appears that some parties are now packaging high-seas access with in-zone days as a way to encourage distant water vessels to switch to PIC flags.

As late as 2013, SIDS-flagged high seas fishing was of little commercial significance, accounting for less than 0.5% of the value of the in-zone fishery. However, as discussed in section 6.3.3, that situation has changed abruptly, and Figure 9 illustrates that by 2019 a reasonable valuation suggests that parties are giving away around 10% of the value of the fishery through this route. More worryingly, there is no clear mechanism that would prevent this leakage from continuing to grow at a comparable rate.

At some point, the consequences of this extraction will be felt, either in the health of stocks or in a need for the PNA to reduce its TAE, and therefore the revenue that each party receives. If this growth continues uncontrolled, the adjustment to TAE may need to be significant.

Whether parties (or non-parties) are offering vessels fishing opportunities in the high seas with or without compensation, they are effectively selling or gifting part of a collectively owned public asset, without collective oversight.

There is no good reason for SIDS to forego their right within the WCPFC to offer their vessels opportunities to fish on the high seas. On the contrary, it would strengthen their ability to defend this right if they could demonstrate that effective measures are in place to control SIDS-flagged high seas fishing. The right will only become more difficult to defend if there are signs of exponential growth in SIDS-flagged high seas fishing with no plan in place to deploy effective controls. The upward trend is also high risk in terms of its reputational effect and may be picked up by NGOs or major buyers.

The review did not identify significant high seas fishing by vessels flagged to non-PNA SIDS, but the PNAO should remain alive to this possibility. It is likely to be much easier to agree collectively to restrict or control this practice before any state finds a way to derive significant revenue from it.

Recommendation: A vessel day offered for fishing in the high seas by a SIDS-flagged vessel should count towards the flag state's PAE and be monitored through existing PNA systems. Parties should be free to sell days that can be used either in their own zone or in any permitted high seas location (obviously excepting closed areas).

7.3.2.8 Advisory board for the PNAO

The PNAO has benefitted from high quality commercial advice in recent years. However, the review identified concerns that this expertise is not 'baked in' to the institutional structure and has relied more on individuals that the PNAO has been fortunate to be able to contract. A closely related concern is familiar to many Pacific organisations and governments, that continuity of institutional capacity is very difficult to maintain in small institutions, and advisor turnover can have profound consequences.

An advisory board is one means of pre-empting the associated challenges. This would aim to strengthen the institutional expertise available to provide commercial advice to the PNAO, and at the same time provide a route for experienced advisors to continue to play an advisory role after leaving a more time-intensive role. The advisory board would provide high-level commercial advice and have none of the statutory powers of a non-executive board (as control of the PNAO should remain directly with parties).

Selection of board members would be an obvious challenge. Direct control of the PNAO is in the hands of politicians, with advice from government officials, and the advisory board would aim to provide commercial advice that is entirely distinct from this skillset, so members should not be drawn from the civil service or politics. Expertise in finance, accountancy, economics and fisheries science could be beneficial. Industry experience would certainly be useful, but there are obvious dangers of recruiting from the purse seine industry. Experience from PICs' domestic longline industry might be more feasible.

The board should not receive any remuneration beyond expenses, to ensure that remuneration is not the principal motivation for individuals to participate.

The board would report annually on the asset, discounts, risks and opportunities. If practical, it would be useful for the chair of the board to report directly to PNA leaders, fisheries and economics ministers, and to address them at meetings.

Recommendation: The PNA should consider whether an advisory board, with a remit to provide commercial advice (and no statutory power) should be established.

7.3.2.9 WTO negotiations

The World Trade Organisation has hosted the negotiation of a possible fisheries subsidies agreement (FSA) in Geneva for two decades. The agreement would apply directly only to WTO members, of which there are only two among the PNA members (PNG and Solomon Islands). Over time, momentum in the negotiations has waxed and waned.

The review found an understandable perspective that this negotiation is of little interest to the region: that it is unlikely to complete and would not directly affect most PNA members even if it did.

This view appears misguided. Conclusion of an agreement is uncertain, but a conclusion in 2021 is a real possibility due to a confluence of factors.¹¹⁸ The effects of an FSA that did introduce effective limitations on subsidies granted to distant water vessels could have a substantial impact for all PNA members, whether they directly have to comply with its rules or not. There are significant commercial opportunities and risks involved, and at least in the short term this negotiation merits more of the PNAO's attention.

If an FSA is concluded, this opens the possibility that fisheries activities within the PNA will come under regular scrutiny through a range of processes in Geneva. The PNA may find that it has a major commercial stake in a dispute between two other WTO members relating to fishing in PNA waters. For instance, the health of fish stocks or total level of effort in PNA waters could determine whether large subsidies given to distant water vessels are legal.

Recommendation: The PNAO should consider directly following negotiations more closely, at least until the end of 2021. If agreement is reached, it may be necessary to devote resources to implementation which might require a more formal relationship with PIFS-Geneva.

7.3.2.10 Annual reporting to economic ministers

Parties to the Nauru Agreement differ in the extent to which ministries of finance are involved in maximising revenue obtained from the PS VDS, and appraising economic options for the use of that money. This is understandable, as the significance of PS VDS revenue has increased dramatically within a short timeframe, and the speed of adjustment of institutional arrangements varies. In several countries, there is a need for the level of economic analysis and scrutiny of both revenue and expenditure from the PS VDS to catch up with the scale of receipts, which would normally require more analysis from the ministry of finance and oversight by the relevant minister.

Reporting to ministers of fisheries and finance is distinct. While ministers of fisheries need to understand a wide range of biological, management and enforcement parameters of a fishery, an economic minister would look at a fishery more narrowly as an asset and revenue stream. This will enable the economic ministry's analytical capability to be brought to bear to maximise revenue, and manage risk in accordance with the government's overall risk appetite and tolerance (see Box 6-C for background on risk).

It may be appropriate for economic ministers from the Parties to receive an annual brief focusing on key economic parameters such as the following:

- A current financial valuation of the entire PS asset, and each national share of that asset.
- A current financial valuation of the PS asset in the absence of any collaborative arrangement for exploitation.
- Current access revenue collected by each country.
- Estimate of revenue foregone due to discounts, including especially those given by way of SIDS flagging and high seas fishing.
- Costed suggestions for strengthening of the PNA system, with estimates of the extent to which each would increase revenue or asset value (for instance, from reduction of the competitive fringe, or improved auction design).
- An assessment of headline risks to asset value and revenue, and options for reducing risk or trading off risk and expected revenue.

¹¹⁸ Sustainable Development Goal 14.6 commits the WTO to conclude an FSA by 2020. This is the first SDG to fall due, giving it greater significance for both the SDGs as a whole and the WTO. The WTO itself is under existential pressure, as its inability to make progress across a broad range of issues has led to the US withdrawing support for its enforcement mechanism in 2020, placing its future in doubt. The FSA is the only prospect it has for delivering a multilateral agreement in the near future. Moreover, the election of Dr Ngozi Okonjo-Iweala of Nigeria as WTO Director General in 2021 – the first woman and first African to hold the role – may increase the incentives for African members and developing members more generally to push for tangible outcomes.

There would be significant similarity in these calculations across Parties, and it would make sense for a subregional agency, whether the Tuna Business Intelligence Unit (section 7.3.2.2) or the PNAO, to perform the analysis behind these briefings, with national governments providing data where necessary. The PNAO has historically provided reports to Parties on the economic impact of the competitive fringe, covering some of this data.¹¹⁹

Recommendation: PNA economic ministers should request the Tuna Business Intelligence Unit or PNAO to provide them with an annual briefing covering economic aspects of the PS VDS.

Recommendation: In the longer term, for countries that are interested in creating employment in fisheries and do not already have these systems in place, economic ministries need the capability to appraise job creation programmes and make meaningful comparisons with options in other sectors, or non-sector-specific investments aimed at promoting employment (such as in transport or energy infrastructure). This would need to be led by economics ministries, with support on request from regional agencies.

7.3.2.11 Should PAE be fixed in the longer term?

At present, each party's allowable effort (PAE) – i.e. their allocation of vessel days for the year – is determined on an annual basis through a negotiation between all parties. In contrast, when Tokelau joined the Palau Arrangement in 2012¹²⁰ enabling it to participate in the PS VDS from 2013 onwards, it negotiated a fixed share of PAE, that would not be subject to renegotiation and would only vary in proportion to TAE. A number of recent studies have advocated that all PNA members agree a fixed PAE.¹²¹ Two main reasons for this have been put forward: one technical, and one political.

The main technical reason to fix PAEs is that the annual negotiation process, which takes into account the number of days actually fished in each EEZ, creates an incentive for parties to encourage fishing in their own zone. Correspondingly there is a disincentive to enter into arrangements that might result in a party's days being fished elsewhere, which is a natural consequence of pooling arrangements or inter-party trading. Both of these can potentially increase the value of days to vessels (including by increasing the fundamental efficiency of the fishery) and so any incentive to maximise own-zone fishing suggests that parties are foregoing revenue.¹²²

The main political reason for fixing PAEs is that the negotiation process itself is a 'predictable source of conflict and division' among parties.¹²³ The risk that brinksmanship could lead to a failed negotiation is credible and should be taken seriously.

Given the overarching importance of PNA solidarity, we see the political dimension as paramount. However, we disagree that the elimination of annual negotiations would get rid of a predictable source of conflict and division. Parties naturally want to earn the largest share of what is now a substantial revenue stream, and there are different ways to approach allocation that favour different parties.¹²⁴ This is the source of conflict. The annual negotiation of PAEs is one way to manage that conflict, and to ensure that dissatisfaction among parties regarding their share can be revisited formally and promptly. A fair outcome is not necessarily sufficient if the process by which it has been reached is not perceived by parties to be satisfactory.

¹¹⁹ Most recently in 2017.

¹²⁰ WCPFC, 2013, p3.

¹²¹ Most prominently Duncan et al., 2019, and Arnason, 2014, pp.4, 25–26.

¹²² Arnason, 2014, *ibid*.

¹²³ Duncan et al., 2019.

¹²⁴ In particular, PAEs can be allocated either on the basis of the location of historical fishing effort or scientific assessment of the location of biomass. However, since both are constantly shifting, the period over which either is measured also gives rise to different outcomes. Biomass is expected to continue to shift, in the short term due to El Niño cycles, and in the longer term due to climate change.

Any change to the current process for allocating PAEs should give due regard to the importance of process and be sufficiently grounded in the cultural practice of parties. It should also take into consideration the risks associated with fixed PAEs. If PAEs are fixed, this is likely to lead to increased pooling and inter-party trading, which in turn could lead to a substantial shift in fishing effort towards more productive zones. This might well be accompanied by El Niño and climatic shifts. Might there be a risk that parties who host more fishing effort than is reflected in their PAE end up resenting the settlement? What risks might then arise?

7.3.2.12 'OTEC'

A powerful framing concept in the development of the Roadmap is often referred to as 'OTEC', the Organisation of Tuna Exporting Countries – an analogy to OPEC, the global oil producers' cartel. The principle is that as around half of global skipjack supply originates in the WCPO, that a concerted move to reduce supply might have such a pronounced impact on global tuna prices that losses due to reduced sales volume (though access fees) would be more than offset through ex-vessel price gains.

The review did not encounter any useful written analysis of the feasibility of this strategy.

On the one hand, there are obvious challenges with the mechanics of restricting supply.¹²⁵ The strategy also relies on the assumption that the long-term price elasticity of demand of relevant tuna species is well below one,¹²⁶ otherwise the revenue loss due to reduced production volumes (which would all be borne by the Pacific¹²⁷) would fail to be offset by the increase in revenue due to rising prices (which would be shared by all tuna fisheries). A number of studies have estimated elasticity for different species and gear types and all estimates have been well above one – generally ranging from two to around ten.¹²⁸ This suggests that reducing the quantity of fish harvested would also reduce the overall market value of the entire ex-vessel catch, because price gains would be more than offset by quantity losses.

However, to the extent that they can be easily assessed, medium-term global trends appear likely to have a similar effect. Continued increases in population and average global wealth, coupled with disruptions in other food systems due to climate change is likely to continue to increase global demand for tuna. At the same time, the poor health of bigeye and yellowfin tuna stocks in the Atlantic and Indian Oceans are likely to lead either to restrictions in effort or further depletion of stocks, either of which will reduce the global supply of tuna (perhaps accelerated by a WTO fisheries subsidies agreement). Moreover, the actions required to gain greater control of tuna supply from the WCPO, such as further strengthening coastal states' rights and reducing the competitive fringe, are strategies that are already central to regional thinking for other reasons.

7.3.2.13 Food security

As discussed in section 7.1, ministries of fisheries are not the primary author of food security strategy within government, and national fisheries policy should be subordinate to national food security policy on this point. There are also reasons to be cautious about setting out a uniform regional strategy, given the heterogeneity between and within PICs in terms of historical food sources and trends.

¹²⁵ For instance, it might be expected to lead to orchestrated political and economic attacks on the PNA from a wide variety of economic and state actors, it may be challenged on legal grounds, Parties may need to withstand a substantial short-term loss of revenue with perhaps reduced borrowing options, the PNA lacks a 'swing producer' which has arguably been an important feature of OPEC's success, and a failed attempt might risk the permanent destruction of the PNA.

¹²⁶ Inelastic demand (below one) means that consumers are not sensitive to changes in price, so a reduction in the quantity available will have to lead to a large increase in market price to persuade consumers to adjust the amount they buy to match the amount available.

¹²⁷ Unless the cartel extended to tuna fisheries beyond the Pacific, which would introduce much larger political and logistical challenges.

¹²⁸ Five authors' estimates are summarised in Kirchner et al (2014, table 7 on p.16), who add their own. Note that this table lists the *inverse* of price elasticity of demand, i.e. a low number in the table indicates high elasticity.

Progress has been made during the review period in establishing baseline data on domestic consumption of tuna. Although the Coastal Report Cards were not within the scope of this Review, it is notable that they too report on food security, including the supply of food for domestic consumption, using household income and expenditure surveys, which arguably give a clearer picture of the relationship between fish consumption and food security from a household's perspective.¹²⁹ If reporting on food security through the Tuna Report Cards were to be discontinued, then it appears that the Coastal Report Cards would offer a good alternative route.

In terms of improving the contribution of the tuna fisheries to domestic food security, particularly the purse seine, PICs may wish to start by investigating bycatch wastage and consider policies that would encourage its local landing and sale, prior to policies that would directly reduce vessels' revenue by diverting saleable tuna.

7.3.2.14 FADs

FAD usage is a controversial and technical subject, which is complicated by a wide range of economic uncertainties. Most of this debate is well beyond the scope of this review. However, recent work has been done by the PNAO examining the relationship between economic returns and PNA policy on FADs. From the perspective of protecting and maximising economic returns, a few observations are important.

Firstly, there will be a large economic impact on the future PNA revenue if the status of bigeye deteriorates to the point at which a conservation response is required to keep bigeye above the limit reference point (or any target reference point that might be adopted in future). Policies such as that adopted on refunds for unused vessel days suggest that Parties are generally highly averse to revenue risk (see section 6.3), which suggests that they should take a cautious approach to this risk. Increasing the proportion of FAD fishing across the PS fishery will increase fishing pressure on bigeye stocks. Parties should remain cautious about the extent of increases in FAD use. Parties should continue to actively monitor this and be prepared to implement protective policy to ensure that growth in FAD usage is monitored and effectively limited. A PNA FAD Tracking and Registration Implementing Arrangement has been agreed, which will establish a FAD Buoy Register, require all FADs in PNA waters to be added to it, and prohibit fishing on unregistered FADs.¹³⁰

Second, it is worth noting the existing price premium for non-FAD-caught tuna. Current trends suggest this is more likely to increase than decrease in the medium term. While this premium may directly prompt vessels to shift to greater free-school fishing, there may also be possibilities for larger price premiums in future based on extending the strength of FAD-free credentials – such as tuna caught in an entirely FAD-free fishery. These possible trends mean that the capability to reduce FAD fishing in future puts the PNA in a stronger position to protect or extend their economic returns in future. This is in line with the original Roadmap aspiration to increase the value, rather than the quantity, of tuna caught in PIC waters.

Third, as noted in recent PNAO research, taking greater direct control of FADs would expose the PNA to considerable economic and reputational (as well as legal and environmental) risks and should be avoided.¹³¹

¹²⁹ E.g. SPC, 2019 p.4; 2020 p.4.

¹³⁰ PNA, 2020.

¹³¹ MRAG, 2018b, p.27.

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8.1 Relevant legal instruments

Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest

The Nauru Agreements has four **implementing arrangements**:

- An arrangement implementing the Nauru Agreement setting forth minimum terms and conditions of access to the fisheries zones of the parties
- A second arrangement implementing the Nauru Agreement setting forth additional terms and conditions of access to the fisheries zones of the parties (prohibiting transshipment at sea, setting requirements for reporting and logs, and electronic position data)
- A third arrangement implementing the Nauru Agreement setting forth additional terms and conditions of access to the fisheries zones of the parties
- A fourth arrangement implementing the Nauru Agreement relating to fish aggregating device (FAD) tracking and FAD buoy registration

Palau Arrangement for the Management of the Western Pacific Fishery (as amended in October 2016)

Tokelau Arrangement for the Management of the South Pacific Albacore Fishery (October 2014)

1 Annex: Terms of reference

1.1 Cross reference between the scope of work and report

	Scope of work	Where this is addressed
i.	Prepare an inception report outlining how the work will be carried out to meet the specified objective, and the timeline for the deliverables. This will have to be approved by an inter-agency working group (IAWG) comprising of PIFS, FFA, SPC and PNAO, who has oversight of the review.	Separate inception report, submitted to the IAWG in November 2020.
ii.	A thorough review of the Tuna Fishery Report Cards, FFA's economic indicators reports, the FFC Ministerial reports, the Fisheries Taskforce reports, and all other reporting provided to the Forum Leaders by the Forum Fisheries Agency (FFA) which report the progress against the tuna fisheries elements of the Fisheries Roadmap. The review should identify key areas and activities of progress at national, sub-regional and regional levels. The review will provide a comprehensive evidence-based analysis against baseline data, international comparative performance and should take into account the economic performance of the various sectors (catch, processing, marketing, distribution) and types of fishing gears used (purse seine, longline, pole and line). It must identify both direct and indirect benefits including employment, infrastructure and other broader contributions to domestic economies;	Chapters 3, 4 and 5.
iii.	Assess the outcomes of the Fisheries Taskforce work program that the Leaders endorsed in 2016, noting the links between the work program and the Fisheries Roadmap;	Chapters 4 and 5.
iv.	Identify successes, failures, challenges and risks related to achieving increased sustainable economic returns from fisheries since the 2015 Leaders decision. The review should take into consideration the recent impacts of the current COVID-19 pandemic and include brief comment on the long-term implications of climate change on the future sustainable economic returns from offshore fisheries.	Chapter 6.
v.	Identify specific areas in the Fisheries Roadmap, that relate to increasing sustainable economic returns, that may no longer be appropriate and need to be reconsidered.	Chapters 6 and especially 7.
vi.	Review any work in progress on increased sustainable economic returns on fisheries in relation to the decisions of the Forum Trade and Economic Ministers;	Chapter 7.
vii.	Consult and engage key stakeholders including the FFA, SPC, PNAO and the Forum Island Countries (FICs) Members in undertaking the Review. This engagement is important to access key data that will inform this review. The Forum Secretariat will assist in the production of any data confidentiality agreement that may be required for the purpose of this review only;	Engagement is reflected throughout. Specific reporting on engagement has been avoided to preserve confidentiality. In total, 20 people were interviewed, representing regional agencies, governments and the private

		sector.
viii.	Identify key constraints including critical issues affecting trade and investment in the fisheries sector and assess the business environment to identify opportunities in the Pacific for increased economic returns from fisheries; whether it be at national, sub-regional or regional levels;	Incorporated into chapter 7.
ix.	The selected Candidate will be required to present the final report to the Senior Managements of the PIFS, FFA, SPC and PNAO.	
x.	Develop, in consultation with the IAWG and key stakeholders, a report on the Independent Review. The final draft report will be submitted to the Special Sub-Committee on Regionalism (SSCR), the Forum Officials Committee (FOC), and the Forum Fisheries Committee (FFC) Officials and Ministers meetings for their comments before the report is finalized. The final report is planned to be presented to the Pacific Island Forum Leaders for consideration.	

1.2 Terms of reference

1.2.1 Background:

At the 2015 Pacific Islands Forum Leaders meeting in PNG:

Leaders reaffirmed the central importance of increasing economic returns and ensuring the sustainable management of fisheries. Leaders further reaffirmed strengthening maritime surveillance and enforcement, noting the multi-dimensional nature of these issues.

Leaders acknowledged the current effort-based management system (VDS) that has brought significant economic return to Parties to the Nauru Agreement (PNA). Leaders endorsed the Regional Roadmap for Sustainable Pacific Fisheries and directed that increases in economic return be achieved within five years. Leaders agreed that a joint taskforce of FFA, PNA and the Forum Secretariat would lead the development of a programme to increase the sustainable economic returns of fisheries, including examining a quota management system, and report back to Leaders in 2016. Leaders also welcomed New Zealand's offer for ministers and officials to visit New Zealand to study New Zealand's quota system.

Leaders tasked Fisheries, Economic and Foreign Ministers to undertake a joint comprehensive evaluation of the regional monitoring, control and surveillance, and compliance regime and report back to Leaders in 2016. Leaders noted that the evaluation should reflect the importance of sharing technology and information. Leaders expressed their appreciation to Australia and New Zealand for their assistance on surveillance.

To implement these decisions, the Forum Leaders in their meeting in 2016, endorsed the Fisheries Taskforce's Economic Returns Work Program which was built on the Regional Roadmap for Sustainable Pacific Fisheries (herein referred to as the 'Fisheries Roadmap'). The progress on the Roadmap has been provided through report cards that provide reporting against the indicators used by the Fisheries Roadmap. These report cards have been submitted to be reviewed by Leaders each year. The year 2020 is marked as the fifth year where Leaders had directed that increase in economic return be achieved by.

In their meeting in 2015, the Forum Trade Ministers noted their role in implementing the Leaders' decisions related to increased economic returns from fisheries activity in the region. The issue of increased economic returns on fisheries was also presented to the Forum Economic Ministers in their meeting in April 2017 for their attention and relevant action.

Pacific Islands Forum Secretariat (PIFS) is now seeking a suitably qualified independent consultant to undertake a thorough review of the progress made since the 2015 Forum Leaders direction for fisheries to achieve increased economic returns in five years. It is envisaged that the outcome of the review would be presented to the Pacific Island Forum Leaders.

1.2.2 Objectives of the Consultancy:

The objective of the consultancy is to undertake an independent review of the progress made on the Pacific Island Forum Leaders 2015 decision on increased sustainable economic returns from fisheries to be achieved in five years within the context of the Fisheries Roadmap.

1.2.3 Scope of work

The review would include undertaking of the following tasks:

- i. Prepare an inception report outlining how the work will be carried out to meet the specified objective, and the timeline for the deliverables. This will have to be approved by an inter-agency working group (IAWG) comprising of PIFS, FFA, SPC and PNAO, who has oversight of the review.
- ii. A thorough review of the Tuna Fishery Report Cards, FFA's economic indicators reports, the FFC Ministerial reports, the Fisheries Taskforce reports, and all other reporting provided to the Forum Leaders by the Forum Fisheries Agency (FFA) which report the progress against the tuna fisheries elements of the Fisheries Roadmap. The review should identify key areas and activities of progress at national, sub-regional and regional levels. The review will provide a comprehensive evidence-based analysis against baseline data, international comparative performance and should take into account the economic performance of the various sectors (catch, processing, marketing, distribution) and types of fishing gears used (purse seine, longline, pole and line). It must identify both direct and indirect benefits including employment, infrastructure and other broader contributions to domestic economies;
- iii. Assess the outcomes of the Fisheries Taskforce work program that the Leaders endorsed in 2016, noting the links between the work program and the Fisheries Roadmap;
- iv. Identify successes, failures, challenges and risks related to achieving increased sustainable economic returns from fisheries since the 2015 Leaders decision. The review should take into consideration the recent impacts of the current COVID-19 pandemic and include brief comment on the long-term implications of climate change on the future sustainable economic returns from offshore fisheries.
- v. Identify specific areas in the Fisheries Roadmap, that relate to increasing sustainable economic returns, that may no longer be appropriate and need to be reconsidered.
- vi. Review any work in progress on increased sustainable economic returns on fisheries in relation to the decisions of the Forum Trade and Economic Ministers;
- vii. Consult and engage key stakeholders including the FFA, SPC, PNAO and the Forum Island Countries (FICs) Members in undertaking the Review. This engagement is important to access key data that will inform this review. The Forum Secretariat will assist in the production of any data confidentiality agreement that may be required for the purpose of this review only;
- viii. Identify key constraints including critical issues affecting trade and investment in the fisheries sector and assess the business environment to identify opportunities in the Pacific for increased economic returns from fisheries; whether it be at national, sub-regional or regional levels;
- ix. The selected Candidate will be required to present the final report to the Senior Managements of the PIFS, FFA, SPC and PNAO.
- x. Develop, in consultation with the IAWG and key stakeholders, a report on the Independent Review. The final draft report will be submitted to the Special Sub-Committee on Regionalism (SSCR), the Forum Officials Committee (FOC), and the Forum Fisheries Committee (FFC) Officials and

Ministers meetings for their comments before the report is finalized. The final report is planned to be presented to the Pacific Island Forum Leaders for consideration.

Note that any information provided as part of this project should remain confidential.