



**WCPFC
SECOND MANAGEMENT OBJECTIVES WORKSHOP**

Cairns, Australia
28-29 November 2013

**REPORT OF THE SECOND MANAGEMENT OBJECTIVES WORKSHOP
PROPOSED FUTURE WORK PLAN FOR ADVANCING THE DEVELOPMENT OF A MANAGEMENT
FRAMEWORK FOR THE WCPFC**

**WCPFC10-2013-15a
1 December 2013**

THE COMMISSION IS INVITED TO ACCEPT THE REPORT OF THE SECOND MANAGEMENT OBJECTIVES WORKSHOP (MOW2) AND DISCUSS AND AGREE THE WORK PROGRAMME AND BUDGET DEVELOPED BY THE WORKING GROUP CHAIRS IMMEDIATELY FOLLOWING THE WORKSHOP.

Proposed future work-plan for advancing the development of a management framework for the WCPFC

1. Introduction

The Expert Group, in consultation with CCMs, SC, TCC and the Science Service Provider (SSP-SPC) has developed a 'strawman' of candidate management objectives, reference points and indicators (MOW2-IP-01). Two workshops were conducted, MOW1 and MOW2 in Manila and Cairns respectively, immediately before WCPFC9 and WCPFC10.

MOW2 generally agreed that having a non-formal forum for the frank discussion of fundamental management issues was helpful and that continuing the process in the future in some form would be useful. A full report of MOW2 is attached below.

It was noted that while the MOW 1 and 2 had been very helpful to CCMs in gaining an appreciation of key issues and options for a future management framework, there is now a need to consider how the current MOW process could be effective going forward. Options for future work were discussed and the workshop agreed that a proposal be developed and submitted to the Commission that reflected the comments from MOW2.

The Chairs of the working groups (Robin Allen, Ian Cartwright, Matt Hooper and Victor Restrepo) met and developed this proposed way forward immediately after MOW2.

The suggested process is a multi – year exercise; the activities to be undertaken in the first two years are outlined below.

2. Objectives

The development of an effective management framework, consisting of objectives, indicators, limit and target reference points and harvest control rules (HCRs), which will:

- Meet the requirements of the Convention/LOSC
- Increase the emphasis on ensuring stocks are maintained to produce acceptable levels of economic and other benefits
- Streamline negotiation and decision-making
- Provide for transparent trade –offs
- Promote stability sustainability and predictability

3. Feedback from MOW2

The following key overarching issues were identified at MOW2, and will be used to guide the development of a management framework:

- The benefits and costs of different management options will need careful consideration, with attention given to the burden of conservation and, in particular, avoidance of disproportionate burden on SIDS as per Article 30 of the Convention and time-frames for implementation.

- Establishment of rights is important to provide the framework within which the HCRs can be developed and their application assessed by individual CCMs.
- CCM input and direction throughout the process is vital, as is close adherence to that input by those providing advice on the development of the management framework.
- There is a need for prioritisation and focus on key species/fisheries and where action is needed and agreement is likely to be reached. Such an approach should deliver tangible management outputs as early in the process as possible.
- The Commission has a central role in considering options and achieving the agreements and associated trade-offs necessary in the development of stock-wide management frameworks that take into account the rights and interests of all CCMs, and in particular SIDS.
- The testing and development of a fully-operational management framework, including data analyses, targets, indicators, reference points and HCRs for key stocks, is likely to be a lengthy process; this process must not hold up the development and adoption of provisional TRPs and HCRs, timetabled appropriately.
- Where specific TRPs and HCRs are under consideration it would be possible to evaluate their performance using current species-based stock assessments.

4. Process

1. The suggested process to develop the elements of a comprehensive management framework for the Commission will consist of two main components:
 - i. formal elements, which will be driven by CCMs and actioned by SC and TCC with input from the Independent Panel; and
 - ii. informal elements including an annual workshop and inter-sessional consultation with CCMs, technical specialists etc.

Point i) above is where, for example, the specifications and settings of the management framework/strategy evaluations will be supplied to e.g. the science provider that then get reviewed under 5i below. This should ensure focused range of settings to avoid 'mission creep'.

2. Continued use of an independent group (NB with contemporary technical expertise and experience in the development of management frameworks) to:
 - i. put forward proposals as identified by CCMs (including as necessary technical specification of prospective management strategies) for consideration by SC and TCC, in collaboration with the SSP
 - ii. conduct an annual management framework workshop, and
 - iii. monitor and guide the technical aspects of testing and comparison of the elements of the management framework.
3. Identification of economic data needs and application and use of economic data (provider to be identified) relevant to:

- i. informing the development of TRPs and other measures, including evaluation on individual CCMs; and
 - ii. monitoring the results of commission decisions, especially on SIDS
- 4. Inter-sessional scientific evaluation and comparison of candidate management strategies, including candidate objectives, reference points, indicators and harvest control rules (HCRs)
- 5. Annual management framework workshops in 2014 and 2015 to be open to all CCMs. Activities will include:
 - i. consideration of the results of management strategy evaluations which will test various management strategies, reference points and HCRs; and
 - ii. provision of progressive recommendations to the annual meeting of the Commission, including via the SC and TCC, for adoption and further guidance as appropriate.
- 6. A programmed approach is contemplated. The timeframe will be open-ended with activities for two years identified as below. The process will be reviewed at WCPFC12.
- 7. Efficient and effective delivery of the technical analysis through the proposed process requires that there is a stable and capable team with dedicated time available to do this work.

5. Projected outcomes

WCPFC 10 (2013): Decisions on:

- Provisional Skipjack TRP. MOW2 discussed how the issues and the outcomes are summarised below.

That the following be provided to SC10 in 2014 with a view to recommending a TRP and HCR to WCPFC 11:

- **Evaluate skipjack stock status against an interim target reference point of 0.5.**
- **Apply harvest control rules such as those presented in this paper and examine robustness relative to the new assessment**
- **Include performance indicators relating to fish sizes and examine the acceptable magnitude of changes in fishing effort**

The workshop supported this proposal and recommended that an interim/provisional TRP should be set for the skipjack purse seine fishery, and that this should be in place by 2014 at the latest noting that such a proposal must not preclude the parallel development of a management framework and process.

- Agree on process for further development of management framework, consisting of both formal and informal elements (a draft Process is provided above).
- Agree on a process for selecting an Independent Panel

- Agree revised TORs

WCPFC 11 (2014): Decisions on:

- Provisional albacore TRP, subject to progress on zone-based limits
- Full evaluation of candidate HCRs for skipjack based on the new (2014) stock assessment, including implications for yellowfin and bigeye.

WCPFC 12 (2015): Decisions on:

- Candidate HCRs for the three tropical species
- Candidate HCR for SP albacore
- Review process

6. Budget

To cover the above work and comprising the costs of the science provider, other technical assistance including the Independent Panel and two annual workshops (one per year):

US\$350,000 per annum for two years.



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MANAGEMENT OBJECTIVES WORKSHOP**

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Draft Report on the Second Management Objectives Workshop

WCPFC10-2013-15a

Ian Cartwright

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1. Introduction

The first Management Objectives Workshop (MOW1) facilitated by an Expert Group comprising Drs J. Ianelli and Robin Allen and Ian Cartwright, was convened by the Commission secretariat in Manila on 28-29 November 2012. The workshop (<http://www.wcpfc.int/meetings/wcpfc-management-objectives-workshop>) sought to increase the understanding of management objectives, indicators and reference points. A candidate list of management objectives was developed and categorised under by biological, economic, social and ecological objectives.

WCPFC9, in considering the outcomes of the MOW1, agreed to use the same group that provided input into that workshop, assisted by the Commission Secretariat and SPC, to develop a 'Strawman' consisting of a candidate list of management objectives, performance indicators, and target reference points for each major fishery. These were:

- Tropical longline
- Purse seine
- Southern longline
- Pacific bluefin tuna
- North Pacific albacore

The draft 'Strawman' was presented to the Scientific Committee (SC9) the Northern Committee (NC9) and the Technical and Compliance Committee (TCC9), for comment and suggestions. Elements of the 'Strawman' report were reviewed by the second Management Objectives Workshop (MOW2) and additional comments provided. The final 'Strawman' report, including revisions and suggestions, will be presented to the Commission at WCPFC10.

2. The workshop

MOW2 was opened by the WCPFC Executive Director, who emphasised that the workshop is an informal meeting of stakeholders with an interest in WCPO tuna fisheries and did not have formal standing in the Commission.. The workshop was facilitated by Ian Cartwright, supported by Dr Robin Allen and Dr John Hampton (SPC). Dr Jim Ianelli was not present due to unavoidable circumstances.

The workshop had three main elements:

- a series of plenary workshop presentations: the 'Strawman'; examples of the application of target reference points and trade-offs; and options for representing risk, uncertainty and performance indicators;
- break-out sessions, which discussed: candidate objectives, indicators and reference points; WPs 1-4; and possible future options for the further development of a fisheries management framework for the WCPFC; and
- a plenary discussion of the outcomes of the break-out group discussions.

The agenda for the workshop is provided at **Attachment A**. A participant list is provided at **Attachment B** and the presentations of the outcomes from the working groups are **Attachment C**.

3. The ‘Strawman’ Document: A report of the Expert Working Group: Management objectives, performance indicators and reference points

The Facilitator provided a brief overview of the ‘Strawman’ document and requested feedback on the document and more specifically on the tables of objectives, indicators and target reference points (TRPs) for each fishery. Suggestions for amendments were made following the presentation and during the break-out groups, and these are incorporated in the final version of the ‘Strawman’ Report (WCPFC10-2013-15b)

4. Economically profitable domestic fleets in the South Pacific Albacore: Potential objectives and reference points

Dr Graham Pilling (SPC) provided the presentation (MOW2-WP-01). The paper considered a MOW candidate objective – maximizing the economic yields from the southern longline fishery (i.e. Maximum Economic Yield or MEY), and considered an example of how to make this objective operational through candidate TRPs. The potential implications of management options were considered. It was emphasised that the presentation focused on principles using a broad strategic approach rather than the specifics of the costs and assumptions used.

Conclusions drawn in the paper include:

- Analysis based on current catch and effort settings for SPA suggest that there is considerable loss of potential economic value and to achieve MEY reductions of the order of 14-70% of 2010 effort levels could be required, depending on economic conditions.
- Substantial gains in value (and improved catch rates) can be made even with only moderate reductions in fishing effort.
- Vessels with lower costs will have sufficient returns to stay in the fishery long after other ‘average’ vessels with higher costs will exit the fishery due to inadequate returns.
- Resource rent at MEY or %MEY is one potential economic indicator that can help define TRPs (others incl. employment and other onshore economic benefits); all require access to industry/market data.

Key issues from plenary discussions and the break-out groups are provided below:

- Any economic analysis must take account of changes in markets and prices over time; it may be possible to add reactive modelling elements to deal with this requirement in the future
- Innovation and technology will have substantial impacts on efficiency and therefore the selection of reference points.
- Cost structures across fleets of SPA vary greatly and the costs of the American Samoan fishery were lower than those cited in the SPC paper.
- Maximising economic yield for all fleets considered too difficult due to diversity of interests.

- Given that the relationship between economic yield and fishing mortality (fishing effort) is relatively 'flat topped' i.e. economic yield is stable for a range of effort levels on the yield curve around MEY, it was agreed that 'pretty good' economic yield (PGEY) was a useful target.
- While there may be debate about cost structures, it is clear that economic viability in the SPA longline fishery is borderline
- Noted that game fishing has the potential to increase income/benefits for some CCMs, but factoring this into the model is not possible at this stage.
- CPUE should be the primary indicator as a proxy for economic yield secondary indicators could include costs, price, resource rent, and other national level indicators including contribution to GDP
- Relatively small cuts will provide good increases in economic yield, while making further cuts in an attempt to maximise economic yield would be both harder to achieve and provide diminishing gains
- Subsidised fleets means that the starting point of fleets may be different, but all will benefit from a move towards MEY. Further, if a sound fisheries management framework and rights are established are in place then subsidies don't impact on sustainability. Lower cost / subsidised fleets may provide the most efficient "harvesting service" for rights holders, again once rights have been established and allocations agreed.
- While bigeye and yellowfin are a key component (usually seasonally) of Southern longline fishery, there is a need to retain the current management focus on albacore fishery; interactions between fisheries are a key consideration but perhaps a secondary one to be considered later
- The WCPFC Convention requires consideration of economic factors – Art. 5 (a), Art. 10 Paragraph 1(j), . In addition, the special requirements of SIDS and disproportionate burden assessment will require economic analysis Art. 10 3d and Art. 30
- Seek to agree CMM in the Commission (next week) to progress management framework and setting of limits/rights for the southern albacore stock.
- The issue of importance for indicators and reference points for bycatch species was raised and attention drawn to a submission by Birdlife International on the topic. This submission is included as Attachment D

5. Maintaining viable fisheries across the extent of the stock: yellowfin and bigeye longline fisheries

Dr Graham Pilling (SPC) provided the presentation (MOW2-WP-02). The paper explored the use of a biological management objective for tropical fisheries: *maintaining yellowfin and bigeye biomass above levels that provide fishery sustainability throughout their range*. The paper considered how this objective could be made operational through the use of TRPs, where this objective is the only one applied to a fishery. It was emphasised that the example and analysis were provided to promote discussion rather than suggest that a particular management objective and ways of making it operational should be considered.

Conclusions drawn in the paper include:

- Notable reductions are required to achieve the identified catch rate levels by 2018, from around one quarter to achieve the lower CPUE target (2 individuals/1,000 hooks), to over 50% to achieve the slightly higher target biomass level.
- These reductions result in notable predicted increases in catch rates in all fisheries –tropical fisheries in the core yellowfin habitat benefit most, compared to those fisheries in temperate regions. In turn, southern temperate longline fisheries, while also benefiting from reductions, benefit less than other temperate fisheries.
- If catch levels are reduced, fisheries overall are predicted to benefit through increased catch rates over time. Further benefits in vulnerable biomass may be seen with projections extended for longer periods.
- Significant trade-offs that would be faced achieving these example target reference points, include those between the reductions in effort/catch, the timescale for rebuilding, and the potential for lower costs of capture and greater profitability that result.
- If range contraction were occurring - which is not directly incorporated within the projection model - increased benefits for temperate fisheries might be seen. As fish stocks recover, it is expected that range expansion from the tropics will lead to increasing catch rates in more marginal temperate regions.

Key issues from plenary discussions and the break-out groups are provided below:

- Disproportionate burden is taking on different meanings – i) that considered under Art (SIDS etc.) ii) that due to the costs of management action (e.g. impacts on PNA states of catch/effort reductions to address bigeye) and iii) range contraction/falling CPUE in high latitudes due to fishing in the core area.
- The rigorous approach using projections demonstrating trade-offs was acknowledged; if all model inputs are valid and current, then fisheries performance over time can be estimated, but the approach is questionable in terms of developing TRPs.
- While further refinements will help get a more complete picture, the current presentation is helpful in presenting information that many CMMs have been aware of for a while. The decline in yellowfin CPUE is just one example; other species are declining and there is a need for management action now if the aspirations of SIDS with small fleets can be achieved. This may require interim targets in order to prevent the situation from worsening.
- Need for better understanding of latitudinal dynamics and the regional variability in catch and CPUE.
- Objective of maintaining 'acceptable' catch rates throughout the range of a stock may require multiple objectives / indicators e.g. a TRP that results in a high yield in core area while allowing viable CPUE in high latitudes; win-wins are possible, especially with yellowfin
- At the moment tropical LL fishery is not profitable for a lot of sectors and achieving tropical objectives may help support temperate objectives
- Need to account for the reality that some are likely to gain more than others (resource abundance/availability is not homogeneous) and there is likely to be a need for impact-offset

mechanisms. Such mechanisms may include downstream impacts and should be developed and agreed upon by Commission.

- A view that it may be better to rely on avoiding LRPs with a high degree of certainty rather than rushing to identify a TRP with inadequate data.
- Fishery dependent data may not be representative of stock condition and will affect model outputs.
- Note the impact on the severity of management measures to address stock issues is driven by the timeframe to recovery to some target levels – severe cuts necessary to rebuild over five years and perhaps two generations (about 10 years) may be more appropriate for bigeye.
- Targets need to be taken into consideration for entire range of stock, not just where the highest catches are
- Need for different indicators at different latitudes – will help draw out regional biological differences (i.e. whole stock is performing one way, different more locally)
- A LRP with high probability of avoiding it as an HCR – may get around the issue of coming to consensus on specific numeric points, which can be v. contentious and time-consuming.
- Common thread – need a broader regional biomass target to support a variety of management options
- Consider national elements that would get lost in a broader regional objective
- Not clear if there is sufficient understanding of the latitudinal impacts of necessary catch/effort reductions across the range of the stock, or the relative changes to yellowfin and bigeye as management changes are made, particularly at the national level; the term ‘tropical’ tuna species tends to be used with insufficient clarity.
- The issue of who pays/benefits for necessary catch/effort reductions to achieve a certain target and further work is needed to consider differential costs/benefits – consider apply the ‘polluter pays’ principle.
- Assigning stronger LL rights to coastal states (e.g. through longline VDS) may provide better data collection, more robust assessment/decision making and improved management, as is occurring in the PS fishery. Allocation remains a sticking point.

6. Management strategies (objectives, indicators, reference points and harvest control rules): skipjack purse seine fisheries

Dr Shelton Harley (SPC) provided the presentation of (MOW2-WP-03). The paper provided a worked example of how fisheries management actions, relative to limit and target reference points, can be put into practice through a harvest control rule in the purse seine fishery for skipjack. Using the WCPFC adopted limit reference point and an arbitrary target reference point of 50% of the unfished biomass level, the performance of the fishery was examined under two simple HCRs. The HCRs were used to illustrate the concepts of ‘tradeoffs’ and ‘robustness’, which are critical to developing management strategies. The paper illustrated the issues that are likely to be considered in the future management of the fishery including trade-offs between maximising catches and minimising catch variability; what features would be important in harvest control rules for skipjack tuna; how rules for yellowfin and

bigeye tuna which involve major gear interactions may be designed; and how harvest control rules could assist decision making processes in the WCPFC.

Conclusions drawn in the paper include:

- Harvest control rules are a way to help ensure the stock remains near target and away from limit reference points.
- While the performance with respect to the target reference point was similar between the HCRs tested, the performance against the other performance metrics was quite different. HCR 1 (lower effort during good times) produced around 5% lower returns in terms of the value of the catch, but resulted in generally higher catch rates (therefore lower costs) than HCR 2.
- This example illustrates a trade-off between maximising total catch and/or catch value and reducing the variability of catch.
- With lower effort during good times (HCR 1), changes were very few and generally small, but for HCR 2 the effort limit was changed far more frequently. This could cause problems in terms of stability of the fleet and ability to manage the fishery.
- When uncertainty was added to the stock assessment results used to drive the rules, the performance against stock status and catch was only slightly worse than that under the 'tuned' conditions indicating that the rules were relatively robust to this uncertainty.
- If assessments are less certain then changes (which are generally disruptive to industry) are likely to be more frequent and larger. Harvest rules can be designed to avoid such large changes, but this often occurs at the expense of overall catches.
- Neither rule was able to keep the stock around the target level in the presence of effort creep, but the rules did keep the biomass quite close. This was achieved through more frequent changes in effort. A well-designed rule might be able to help address issues such as effort creep.
- The robustness of harvest control rules is important – it can sometimes be better to choose a more conservative rule (generally less catch) that does perform reasonably well and does not allow the fishery to exceed reference points in the long term.

Key issues from plenary discussions and the break-out groups are provided below:

- Where a stock is known to be under pressure, it was considered inappropriate to wait until a management process was perfected before action was taken; an interim TRP could be identified for skipjack whilst a more rigorous management process was developed in parallel.
- HCRs shown to work in other fisheries may be reviewed in relation to the current debate. Noting that other less complex fisheries such as southern bluefin tuna were less of a challenge in that a single species was being managed and relatively few states were involved.
- YFT is a more targeted species than BET, and the YFT fishery is amenable to management through catch based rules; however BET is likely to continue to be managed via technical measures such as limits on FAD sets or FAD closures, pending a better capability to monitor catch in near real time. In each case it is feasible to develop rule-based procedures, e.g. duration of FAD closure dependent on TAE.
- One view was that allocated rights need to be comprehensive in the long term, i.e. allocations of BET and YFT catch across PS, LL and other fisheries, it would then be possible to have economics driven trading among fishery components. For this to happen there would need to be a common

currency, e.g. impact of a given catch on the spawning biomass (so 1 tonne of PS bigeye 'quota' converts to some lesser tonnage of LL bigeye 'quota').

- It was suggested that $50\%SB_0$ could be a reasonable target that reflects both avoidance of the LRP, current and therefore known conditions in the fishery and attitudes of precautionary management amongst the major stakeholders.
- Stability within the purse seine fishery is highly valued.
- Although any given stocks should be managed across its range, it was thought that it was sometimes difficult to apply a HCR throughout. It was further noted that indicators could apply to parts of the range without necessarily being directly linked to the HCR.

7. Supplementary presentation on options for skipjack TRPs and HCRs

Following a request from the floor of the workshop for more specific information on setting a skipjack TRP (MOW2-PPT-06), and in accordance with advice from SC9, SPC-OFP provided a presentation on analysis on TRPs and HCRs for skipjack being undertaken (but not yet complete) for the PNA. In providing the presentation, the following three key issues were raised.

- Using current effort, which appears to be at an appropriate level in terms of fishery performance, the number of fishing days could be set and a corresponding TRP/HCR applied.
- The TRP is based on the last skipjack assessment in 2011, but there would be a new assessment in 2014 and any HCR would be applied to that assessment.
- The SKJ fishery is dynamic and effort creep and innovation could affect the HCR over time. The assessments should endeavour to capture such changes, which is likely mean that it is not appropriate to think of the 2010 nominal level of effort a long term goal.
- Reflecting on options for a TRP in the range of 0.4 – 0.6 it was not considered advisable to have a target lower than the levels that have been experienced (0.6), or a higher target level that requires immediate large reductions in fishing effort (0.4) and therefore a TRP that recognises current fishing conditions and current acceptable fishery performance was appropriate (0.5).

The following proposal was considered by the workshop:

That the following be provided to SC10 in 2014 with a view to recommending a TRP and HCR to WCPFC 11:

- **Evaluate skipjack stock status against an interim target reference point of 0.5.**
- **Apply harvest control rules such as those presented in this paper and examine robustness relative to the new assessment**
- **Include performance indicators relating to fish sizes and examine the acceptable magnitude of changes in fishing effort**

The workshop supported this proposal and recommended that an interim/provisional TRP should be set for the skipjack purse seine fishery, and that this should be in place by 2014 at the latest noting that such a proposal must not preclude the parallel development of a management framework and process.

An observation was made that the process described above appeared to be the reverse of what one would normally expect, that is, current effort seems to be ok, take that as a number of fishing days to fix a target. Identifying a HCR appears redundant, when all that is apparently required is to set the number of fishing days and conduct stock assessments periodically to ensure that the stock is safe.

8. Managing impacts on a key tuna species across gear types; Options for addressing bigeye tuna overfishing

Dr Shelton Harley (SPC) provided the presentation of (MOW2-WP-04). WCPO fisheries are among the most complex of multi-species, multi-gear fisheries in the world due to gear/species interactions. As a result it is generally impossible to manage any one part of the fishery in isolation. It was noted that there is a need to better understand how management measures based on one management objective (end bigeye overfishing) would impact on the achievement of others objectives, including those for other fisheries sectors or species. This paper examines differences in predicted catch, catch value and CPUE under various combinations of associated (FAD) effort and longline bigeye catch reductions that remove bigeye overfishing. The associated effort/bigeye catch reduction combinations used follow the analysis presented in “*SC9-MI-WP-01 [Measures_eval_final] REV2*”. The aim of the analysis is to provide MOW2 with an indication of how such modelling could be used in the future to inform management decision-making. Use of this modelling and analysis would allow the Commission to adequately recognise the trade-offs that exist between fishery sectors/species, and to make better informed decisions. It was again emphasized that the paper and associated analysis was a theoretical exercise and that the data and modelling currently available should not be relied on as the basis for decision-making against the mix of objectives identified at MOW1 and since then.

Conclusions drawn in the paper include:

- A broad diversity of management actions can achieve the same conservation outcome. At the extreme ends, a 53% FAD reduction (akin to an 8 month FAD closure) could be accompanied by a significant (19%) increase in LL catch and still achieve the same bigeye status as a 14% FAD cut (just over 4 months FAD closure) and a 80% reduction in LL catch.
- The value of catch in the longline fishery varies very dramatically according to the scenario, and while in the purse seine fishery the relative changes are not large, the absolute changes are significant.
- The overall value of the catch in each sector is one of the indicators for CCMs to consider and other indicators such as those related to socio economics are also important.
- Understanding of fleet reactionary behaviour in response to changes in management is very limited at this stage. Understanding this and incorporating it in the modelling is a key action necessary in further fisheries management planning.
- Gross value of the fish taken is a relatively uninformative indicator by itself as the value of the LL fishery is “locked” by management and the value of the purse seine fishery is so high that relatively substantial absolute changes appear insignificant in relative terms.
- At the macro level, substantial LL value decline occurs as the magnitude of cuts increases, noting that this does not take into account variations in market price as supply is restricted.
- Considering changes in fisheries value provides a more informative view of the trade-offs in value of the different sectors, and demonstrates quite clearly the concept that there will be

“winners” and “losers” with each decision and provides a basis for determining the magnitude of those gains and losses.

- Similarly, this type of information highlights the need for examining both short term and long-term objectives, and whether there is a need for temporary trade-offs under certain circumstances.
- Examination of CPUE changes under different scenarios is important in deciding on management regimes. This is because many of the candidate objectives already identified relate to concepts such as economic returns, profitability, efficiency and optimum utilisation. This type of indicator provides a useful contrast to earlier indicators such as overall value, in that while under some scenarios the catch and therefore value of LL is diminished, it is accompanied by very strong efficiency increases. This is important as it reduces the magnitude of financial impact.
- There are numerous additional indicators that can be used to assess the relative implications of a given management scenario. These would depend on the type of fishery interactions that are to be dealt with and the specific objectives agreed upon and may include: stochastic projections to determine stability (in catch, value, CPUE etc) within a fishery; estimated bycatch of other species; and the Commission’s progress.

Key issues from plenary discussions and break-out groups are provided below:

- It was noted that there may be a disproportionate burden in relation to the aspiration of the SIDS following changes in the fishery.
- A majority view was expressed that economic and financial assessments should be taken into consideration at the Commission level as indicated by the Convention. An alternate view was that economics information should only be collected and analysed at the country or sub-regional level.
- The degree to which biological considerations supersede economic /financial considerations is dependent on the status of the stock e.g. economic options are limited in the case of rebuilding a very depleted stock
- Analysis of options in MOW2-WP-04 all have same biological outcome for bigeye (elimination of overfishing), but impacts on parameters other than catch value are not clear.
- There is a need to ensure that models and modelling are ‘fit for purpose’. Multifan-CL focuses on species stock assessment and the analysis so far has been very specific (e.g. manage bigeye overfishing); and subject to clear and timely instructions from CMMs, in line with SC/TCC/Commission timetable, analysis should be expanded to include a range of potential indicators: economic, environmental etc.
- Multifan, which has been in development for 17 years and is improving all the time, generates results at a relatively coarse spatial level over six regions, but it is possible for some EEZ-level analysis but to review in detail at a finer scale would need additional work and a more sophisticated model. SEAPODYM which is more fine-scale, but in a very early stage of development, may be of use for generating additional insights.
- The impact of catches upon prices is an important consideration in developing economic projections

- WCPFC should determine what economic data it needs and how to access it. Currently, the Commission does not have detailed economic data, which may be held at a sub-regional or country level.
- In considering the economic aspects of the fisheries, it's important to review the value chain, not merely catch values. There should be consideration of the role of the market as well as operating costs of fisheries.
- Economics are dynamic, and projections are typically valid for one or two year, whereas conservation issues tend to be more long-term.
- The term 'Disproportionate burden' (in relation to SIDS) should to be quantified, Paper WCPFC10-2013-DP33, "PNA: Paper to support PNA and Tokelau proposal for avoiding disproportionate burden in the tropical tuna CMM", was cited as a useful reference on this issue.
- There is a potential for interactions with artisanal fisheries in mixed spp fisheries e.g. tropical purse seine was recognised.
- The example of spatial change in fisheries was cited, the Hawaii longline fleet fished more in the eastern Pacific this year, and there should be a way to develop an indicator that reflects these changes.
- The US ecosystem-based management process under the MSA was cited as good practise, where a number of additional relevant considerations are factored into the final measure, for example fishery management plans must consider impacts on small business
- While there is no fixed mechanism/protocol, the WCPFC currently makes implicit trade-offs and will continue to do so, noting that individual CMMs or groups of CMMs (e.g. PNA) will continue to take positions in national best interest, and, where appropriate, consider trade-offs during negotiation at the Commission.
- It was suggested that it may be useful to set boundaries on the Commission's decision space, as prescribed by for example the Convention, or codified practices developed over time.
- There are some areas where trade-offs should not apply and 'Red lines' should demark for example LRPs and HCRs.
- There needs to be mechanisms for the Commission to consider trade-off evaluations to determine whether they are acceptable and if not how they can be rearranged. Several options were proposed to develop fora to debate management framework issues outside of regular sessions of the commission, including: ad hoc meetings such as the recent TTM in Tokyo as required, attached to or as part of the existing meetings (SC and TCC), noting that SC already has a management issues theme. Noting that there was a reluctance to include additional meetings into an already busy schedule.
- Timing actions is an issue. Although as given fishery approaches a limit a decision/action is increasingly important [already negotiated in the case of a HCR], but even when the limit is reached, there is still leeway, subject to rules, with regard to the rate of rebuilding.
- As a point of clarification, SC should not comment on "management" issues, but could introduce an economic theme or discuss economics within the existing Management Issues theme.

- It was recognised that individual parties/groups (CCMs, PNA, FFA etc.) may determine actions independent of the commission
- A narrow decision area as suggested above, with quantified trade-offs, makes the process more manageable

The related issue of fishing capacity controls (vessel numbers) was raised. A view was expressed that even if the VDS is effective, there will be insufficient catch available to make the current fleet viable, and so there is a need for capacity management. While the pressure exerted by excess capacity was acknowledged, the majority view was that in the medium to long term, more efficient vessels would replace the less efficient, generate better returns from the fishery and improve benefits to CMMs, and in particular SIDS. That is, the problem of capacity was one that related to fishing states and would be addressed by business decisions at the enterprise level.

9. Representing uncertainty, risk and performance indicators against fishery management objectives and reference points

Mr Wez Norris provided a presentation based on (MOW2-WP-05). The paper explores some alternative approaches for representing performance indicators, reference points, and risk for the purposes of informing management decisions. It is not a critique of the many existing approaches and does not consider the science of monitoring and assessment of performance indicators.

Visual communication tools can directly support fisheries management strategies by:

- Measuring PIs directly against multiple management objectives,
- Informing (and providing rationale for) a management response to the status of a performance indicator,
- Improving understanding of the status of the fishery among managers and stakeholders, and
- Recognise uncertainty and risk.

The options explored in the paper focus on graphical tools that, either wholly or in part, achieve these criteria.

Conclusions drawn in the paper include:

- A management strategy seeks to improve the ability of managers to make timely and proactive decisions for the management of a fishery. Visual tools representing the performance of the stock/fishery under such decisions assist not only managers to understand these scientific outputs and therefore what their objectives mean, but they also allow them to communicate that information to a broad audience including Ministers, industry and the public.
- Where indicators demonstrate that management intervention is required, managers and stakeholders need to have some understanding of future consequences, trade-offs, and uncertainty associated with potential management responses. Visual tools that demonstrate these therefore complement the implementation of a fishery management strategy.
- A single graphical tool is unlikely to meet all of these needs but building target and limit reference points, and some recognition of uncertainty, into commonly used tools (like the Kobe plot) would enhance their ability to support a management strategy approach. Management decision-making would also benefit from more regular use of secondary tools that allow for better presentation of performance over time and future projections.

- The above discussion represents a few options to generate discussion and thinking on communication of reference points and fishery performance, however the use of any one (or more) approaches will have limited value before objectives and PIs have been agreed for the fisheries. It is only at that point that “performance” can truly be monitored and assessed, and the outputs used to inform proactive management responses.
- Harvest control rule approach is the preferred management option, but should be preceded by a clear specification of rights.
- An opinion was offered that it was time to move on from the Kobe plot to more sophisticated communication tools and social indicators should include consideration of SIDS, cultural, social, political and economic. In response it was noted that following the Kobe process and there was an expectation that RRMOs would work with the Kobe II strategy matrix.

10. Development of a future work-plan for advancing the development of a management framework for the WCPFC

Each working group considered the way forward for the MOW process and the development of a management framework for the WCPFC. The following major points were raised, which are reflected in the future work plan in the first part of WCPFC10-2013–15a, which was developed following MOW2:

- The MOW process is seen as very useful, but further work needs to be integrated and proceed through Commission processes and supported properly. A two-day workshop before every Commission meeting may not necessarily be the best way to take this process forward. The process needs to be member-driven, even if it is difficult to get member feedback – these are important issues and need to be fully understood
- The MOW process is seen as a way of involving SIDS and keeping them fully up to speed with the development the management framework (TRP, HCRs etc.); however there is a need to move away from an awareness and education exercise to the development of a product. It was suggested that an initial action would be to develop and refine a general framework, and the NAFO general management framework was cited as useful example.
- The initial TORs for the Management Objectives Workshop process need to be updated in light of the progress made in the first two workshops, and this should be reflected in new TORs and workplan agreed at WCPFC10.
- Future activities in the process should include looking at how MSE can be applied in general and more specifically in the case of an interim provisional TRP for SKJ.
- Development of management rules is part of a longer process, there also needs to be a means to operationalize those rules.
- The current processes (SC, TCC) should be capable of dealing with the development of a management framework. SC has a Management Issues theme and could accommodate discussion of management framework components (HCRs, TRPs etc.), noting that it already deals with LRPs. The option of an additional management forum was discussed, but concern raised that it could place an untenable burden on SIDS. A third option, ad hoc workshops, was also considered.



WCPFC

SECOND MANAGEMENT OBJECTIVES WORKSHOP

Cairns, Australia
28-29 November 2013

AGENDA

**MOW2-WINF-02
14 Nov 2013**

AGENDA ITEM 1 OPENING OF THE WORKSHOP

- 1.1 Introduction to the Workshop
- 1.2 Workshop Arrangements (agree workshop objectives & timetable)

AGENDA ITEM 2 PRESENTATION OF STRAWMAN DOCUMENT “Report of the Expert Working Group: Management objectives, performance indicators and reference points:

AGENDA ITEM 3 PRESENTATIONS

- 3.1 Economically profitable domestic fleets in the South Pacific Albacore: Potential objectives and reference points
- 3.2 Maintaining viable fisheries across the extent of the stock: yellowfin and bigeye longline fisheries
- 3.3 Management strategies (objectives, indicators, reference points and harvest control rules): skipjack purse seine fisheries
- 3.4 Managing impacts on a key tuna species across gear types; Options for addressing bigeye tuna overfishing
- 3.5 Representing stock reference points, risks and uncertainty; Modified Kobe plots and additional communication strategies on stock status

AGENDA ITEM 4 SMALL WORKING GROUP BREAK OUT SESSION

- 4.1 Briefing for small working groups.

AGENDA ITEM 5 WORKING GROUPS PRESENTATION TO PLENARY

- 5.1 **SWG1:** Economically profitable domestic fleets in the South Pacific
Albacore: Potential objectives and reference points
- 5.2 **SWG2:** Maintaining viable fisheries across the extent of the stock:
yellowfin and bigeye longline fisheries
- 5.3 **SWG3:** Management strategies (objectives, indicators, reference
points and harvest control rules): skipjack purse seine fisheries
- 5.4 **SWG4:** Managing impacts on a key tuna species across gear types;
Options for addressing bigeye tuna overfishing

AGENDA ITEM 6 PLENARY DISCUSSION

AGENDA ITEM 7 SUMMARY AND CONCLUSIONS

AGENDA ITEM 8 CLOSE OF WORKSHOP



Western and Central Pacific Fisheries Commission
Management Objective Workshop (MOW2) Cairns
Convention Centre, Cairns Australia
28 – 29 November 2013
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**Western and Central Pacific Fisheries Commission
Management Objective Workshop (MOW2) Cairns
Convention Centre, Cairns Australia
28 – 29 November 2013**

PRESENTATIONS OF OUTPUTS FROM THE FOUR SMALL WORKING GROUPS (SWGs)

SWG1: Economically profitable domestic fleets in the South Pacific Albacore: Potential objectives and reference points

SWG2: Maintaining viable fisheries across the extent of the stock: yellowfin and bigeye longline fisheries

SWG3: Management strategies (objectives, indicators, reference points and harvest control rules): skipjack purse seine fisheries

SWG4: Managing impacts on a key tuna species across gear types; Options for addressing bigeye tuna overfishing

Potential objectives and reference points that consider economic profitability of the South Pacific albacore longline fishery

Small Working Group 1

Overview – what, who, how

- Covering WP-01 on how to operationalise the MOW objective to maximise the economic yields from a fishery, using south Pacific albacore as an example
- Largely coastal States attended, reflecting the priority these states place on albacore as a fishery
- Started with a Q&A session on the WP, talked through the objectives in the table and then looked at the discussion questions

Discussion questions

- What economic indicators are most suitable for the calculation of the Maximum Economic Yield?
- Do we want to maximise economic yield – or just get ‘pretty good’ economic yield?
- How do you consider the differing economic performance of fleets, in particular consideration of SIDs fleet performance when considering MEY-based target reference points?
- The importance of secondary species when determining economic returns and impacts/linkages with other fisheries.
- Should bioeconomic analysis like this form part of the work of the Commission? If yes, how might it be done?

What economic indicators are most suitable for the calculation of the Maximum Economic Yield?

- CPUE is the primary economic indicator
- Others discussed included:
 - Costs
 - Price
 - Resource rents
 - Other national level indicators including contribution to GDP

Do we want to maximise economic yield – or just get ‘pretty good’ economic yield?

- Consensus to aim for “pretty good” economic yield
- Maximising economic yield for all considered too difficult due to diversity of interests and circumstances
- Relatively small cuts will provide good increases in economic yield, while making further cuts in an attempt to maximise economic yield would be both harder to achieve and provide diminishing gains

How do you consider the differing economic performance of fleets, in particular consideration of SIDs fleet performance when considering MEY-based TRPs?

- Subsidised fleets means that the starting point of fleets may be different, but all will benefit from a move towards MEY
- If sound fisheries management framework is in place then subsidies don't impact on sustainability
- Lower cost / subsidised fleets can provide the most efficient “harvesting service” for rights holders once rights have been established and allocations agreed

The importance of secondary species when determining economic returns and impacts/linkages with other fisheries.

- Bigeye and yellowfin are a key component of Southern longline fishery noting that target species will be different at different times of the year
- However, talk about other species risks taking the focus off the albacore fishery
- Interactions between fisheries are a key consideration but perhaps a secondary one to be considered later
- Food security and opportunity for artisanal fleets to switch to targeting mahimahi, wahoo etc

Should bio-economic analysis like this form part of the work of the Commission? If yes, how might it be done?

- Yes. Analysis to determine “pretty good catch rates”
- But... Allocation is critical to enable members to realise economic benefits, make internal trade-offs
- Convention requires consideration of economic factors – Art. 5 (a), Art. 10 Paragraph 1(j), 3(d), Art. 30
- Special requirements of SIDs and disproportionate burden assessment will require economic analysis

Focus for albacore – next steps

- Agree CMM in the Commission (next week) to progress management framework and setting of limits/rights for stock
- Parallel work to analyse and provide options for members to consider for achieving “pretty good economic yield”

MOW going forward

- The MOW process encourages strategic thinking across key stocks and issues and allows for explicit and transparent consideration of trade-offs at Commission level
- Can progress its work in parallel to work to establish limits, allocate rights etc
- No direct role for MOW or Commission in determination of national level objectives.

Maintaining viable fisheries across the extent of the stock: yellowfin and bigeye longline fisheries

**Discussion Summary
Working Group 2**

**Review of candidate objectives:
Biological key points**

- **Objective:** Maintain YFT and BET biomass above levels that allow for sustainable fisheries throughout the range
- Need to understand latitudinal dynamics: Capture regional variability in catch and CPUE
- May require multiple objectives / indicators
 - **Example TRP: F(B) that achieves high yield in core area while allowing viable CPUE in high latitudes**
- A need for interim targets in order to prevent the situation from worsening?

**Review of candidate objectives:
Economic key points**

- Some indicators work both for Social and Economic
- Issues of Scale: Consider both national and regional elements
- **Maximize economic yield** - Rent extraction currently focuses too much on catching and processing fish. Consider broader fishery considerations (i.e., MCS employment, value-added, ports, transshipment etc.) – Criteria and objectives will differ depending on national interests
- **Stability and Predictability**– Role of HCRs?

**Review of candidate objectives:
Social key points**

- **Objective: Affordable protein** – should be *available* protein instead?
 - Article 30(2)b – consideration of artisanal and subsistence needs
 - Need to more strongly consider upstream → downstream effects
- Not currently captured – *social* security as well as *food* security. Empowerment of women

**Review of candidate objectives:
Ecosystem key points**

- **Objective: Minimize catch of non-target species**
- Ambiguity - What is a 'target' species in the WCPO?
- Targets are dynamic
- Need to better account for multi-species , multi-target nature of WCPO tropical fisheries

Discussion Points 1

- **Importance of tropical tuna catch**
- Many fisheries; inter-connected (purse seine, long line, hand line ...) What one does can affect others (balance sovereign rights with the obligation to cooperate)
- **Is a mgt. objective based on fisheries across the range of stocks appropriate?**
- Balance: Broad, stock-wide, objectives and national interests (e.g. MCS, employment, ports)

Discussion Points 2

- **Appropriate performance measures:** High yield in core area and viable CPUE in high latitudes
- **Tradeoffs:** are win-wins possible?
 - Some are likely to gain more than others (resource abundance/availability is not homogeneous)
 - Not just about profitability; consider other benefits

Discussion Points 3

- **What considerations are appropriate for TRP and rebuild?**
- Different fisheries are characterized by different levels of uncertainty (implementation uncertainty)
- Overall level of F needs to be managed (consider all fisheries)
- What should the role of the Commission be when it comes to placing limits on capacity by fishery?
 - A discussion that needs to be had: Comes down to allocation
- Potential usefulness of rights-based approach

Discussion Points 4

- **Impact-offset mechanisms?**
- What is a 'disproportionate burden'?
 - Concept is used but undefined
 - Downstream impacts: Are these burdens?
- Offset mechanisms should be developed and agreed upon by Commission
- Mechanisms implemented before or after CMM is adopted?
- Cost/benefit analysis can help identify potential areas of disproportionate burden
- With rights come responsibilities

Future Discussions

- Having a forum for discussion for fundamental issues is important. Informal process has been helpful (incl. observers)
- Refining objectives is a long term process – Cannot wait 'until everything is in place' to advance
- Actions must be interim, adaptive, and iterative with refinements explicit as part of the process
- Better to have the discussions than to avoid them
- Possible future forum on tradeoffs – with detailed analysis
- Achievement of Year 3 aspirations will depend on WCPFC10

Future Discussions

- WCPFC 10 should
 - Consider interim targets
 - Explicitly ask for workplan to continue

**SWG3: Management strategies
(objectives, indicators, reference
points and harvest control rules):
skipjack purse seine fisheries**

**Discussion Summary
Working Group 3**

Objectives, Indicators and TRPs

Table lists a wide range of objectives which cannot be achieved simultaneously. Many of them will not translate into a TRP or be incorporated into a HCR, but nevertheless would be useful to be measured by indicators for a periodic review of how the Commission is achieving its objectives over long term.

Biological

Initial view-biological objectives more appropriate to LRP-stock viability.

“Sustainability” suggests inclusion of other factors such as economics and ecosystem integrity

While sustainability throughout range may be a key objective, question as to whether this should be linked to a TRP.

Debate regarding wording “throughout their range”
Suggested meaning of objective “provide for fishing sustainability and fishing flexibility”

Biological (cont)

Indicators for this objective as written would need spatial element.

Conclusion that this is a mixed objective – biomass and range. Suggestion remove “throughout their range”.

Understand intention of objective but difficulties with operationalisation for TRP – but it may be a review item.

Economic

In a fully allocated fishery, rights holders should determine economic objectives.

This depends on rights being allocated well initially.

Reconciliation of differing parties’ fishery objectives easier when there are clear rights. Holders of better defined rights are likely to prevail in disputes with other rights holders.

Article 10(j) of the Convention - consistent with the Commission’s role in determining rights allocation.

Suggestion that the management measures could be tested by their potential economic effects on rights holders.

Economic (cont)

Suggested alternative wording
“Enabling economic yields to be maximised”

Conclusion

In an allocated fishery, view was that the Commission should not be concerned with economic objectives. After it allocates rights, the Commission’s role is in the area of biological and ecological objectives. Proviso is that trade-off analysis to other fisheries still needs to occur as part of allocation.

Social

In allocated fisheries, these objectives should be achieved by governments.

Noted Article 10 (3) of the Convention which references social factors.

These objectives and indicators for them should be used in performance reviews but not for TRPs.

Ecosystems – Minimise fishery impact on ecosystem function

Suggestion replace “minimise” with “Avoid remedy or mitigate”

Indicators of necessity complex. E.g. North Pacific example – large suite of indicators which are observed continually for relevant change but are not each individually linked to hard, fast rules.

The important part of this process then becomes a strong advisory role/process.

Objective doesn't lend itself well to a TRP and HRP. It requires careful analysis for input into a management procedure outside of HRP.

Ecosystems – Minimise fishery impact on ecosystem function (cont)

Development of HCRs needs clear TRPs and indicators - difficult in ecosystem context.

Outputs of advisory process (in suite of indicators scenario) should be given due consideration by the Commission, as considerations, if necessary, of amendments to harvest control rule.

Result would be more of imposing a constraint rather than achieving an objective.

Ecosystems – Minimise catch of non-target species

Suggestion replace “minimise” with “Avoid, remedy or mitigate”

Definition of non-target - utilisation of edible by-catch. Species may change from being undesirable bycatch to desirable target species, in which case they should be managed.

For other species, the TRP would be zero or close to and probably lower than LRP.

Noted the Convention refers to minimising by-catch/non-target species but that this has not operationalised by the Commission and perhaps should be.

Discussion points

Trading off objectives – catch vs stability

In a fully allocated and tradable situation, this would be a decision for rights holders

Current analyses suggest that the differences in catch/value are relatively minor for the example HCRs evaluated

Generally in the stakeholder group primarily involved in the PS fishery, stability is highly valued

Discussion points

HCRs – easier decision making?

Potentially yes, particularly if allocation of rights is already done

But need to consider other issues related to e.g. ecosystem

Discussion points

Concerns about yellowfin and bigeye

HCRs will be needed to specify appropriate levels of catch or impacts on stocks

Probably need to consider YFT separately to BET. YFT is a more targeted species and may be able to specify catch-based rules. BET likely to continue to be managed via technical measures such as limits on FAD sets or FAD closures pending a better capability to monitor catch in near real time. In both cases, it should be feasible to develop rule-based procedures, e.g. duration of FAD closure dependent on TAE.

Discussion points

HCRs for YFT and BET given multi-gear characteristics

Allocated rights need to be comprehensive, i.e. need allocations of BET and YFT catch across PS, LL and other fisheries

Could then have economics driven trading among fishery components but needs to be done using a common currency, e.g. impact of a given catch on the spawning biomass (so 1 tonne of PS bigeye 'quota' converts to some lesser tonnage of LL bigeye 'quota').

Discussion points

TRP for skipjack in 2014

The TRP focus should be biological, i.e. setting a target to maintain a low probability of approaching the LRP.

It was suggested that $50\%SB_0$ could be a reasonable target that reflects both avoidance of the LRP, current and therefore known conditions in the fishery and attitudes of precautionary management amongst the major stakeholders.

Should the Commission continue along this path? If so, how?

FUTURE WORK PLAN

Counter factual - adoption of ad-hoc measures

Harvest control rule approach offers better alternative, but should be after proper specification of rights.

Needs to be done in accordance with Article 10(j).

The process has been surprisingly useful, but don't want to wait 4 years to complete. Skipjack could be implemented quickly.

- Process should include exploration of systems, looking for improvements, using MSE.
- LRPs require good headroom, 50% is a good start, the detail HCR need some work,
- If you want management rules you need to have to have discussions on how to implement them, real life rubber hitting the road, reveals true objectives, true aspirations

- When we come to bigeye need to work with IATTC for coordinated management, particularly if purse-seine fishing continues to grow in central Pacific.
- Timetable will be species or fishery dependent- some could be implemented quickly, others need more preparation.
- Work needs to be integrated through Commission processes and supported properly. Not just a 2-day workshop before the Commission meeting.
- TOR for this process agreed to at MOW1. If process changes, will the Commission to make changes to the TOR?

**Managing impacts on a key tuna species across gear types;
Options for addressing bigeye tuna overfishing**

**Discussion Summary
Working Group 4**

The importance of including economic or financial assessments in the evaluation of proposals and options

- Considered self-evident, as reinforced by the Convention, that economics and financial assessments are important.
- A view that the degree to which biological considerations supersede economic /financial considerations is dependent on the status of the stock e.g. rebuilding a very depleted stock.

How current modelling approaches could be enhanced to provide more meaningful assessment of fishery trade-offs

- Analysis of options in WP4 all have same biological outcome for bigeye, but impacts on parameters other than catch value are not clear.
- Need to ensure model and modeling are 'fit for purpose' - Multifan focuses on species stock assessment and the analysis so far has been very specific (end bigeye overfishing).
- Needs clear instructions from CMMs in a timely manner, in line with SC/TCC/Commission timetable
- Analysis need to be extended to include a range of potential indicators: economic, environmental etc

How current modelling approaches could be enhanced to provide more meaningful assessment of fishery trade-offs

- May be opportunities in the future to apply other models e.g. Sepodym
- SPC [Multifan] generates results at a coarse spatial level – possible for some EEZ-level analysis but to review in detail at a finer scale would need additional work/a more sophisticated model

Types of data and indicators that would be needed to better inform Commission decision making

- The Commission does not have detailed economic data– this may be held at a sub-regional or country level.
- WCPFC needs to consider what economic data it needs and how to access it.
- 'Disproportionate burden' (in relation to SIDS) needs to be quantified
- Economics are dynamic, conservation issues are more long-term. Economic projections are valid most for only one or two years

Types of data and indicators that would be needed to better inform Commission decision making

- Potential in mixed spp fisheries e.g. tropical PS for interaction with artisanal fisheries.
- Spatial indicators may be important
- Consider value chain – not just catch values

Mechanisms for the Commission to consider trade-off evaluations to determine whether they are acceptable and if not how they can be rearranged

- While there is no fixed mechanism/protocol, the WCPFC currently makes implicit trade-offs and will continue to do so
- Individual CMMs or groups of CMMs (e.g. PNA) will continue to take positions in national best interest, and, where appropriate, consider trade-offs during negotiation at the Commission.
- WCPFC takes into consideration a wide range of issues, but is bound by the Convention

Mechanisms for the Commission to consider trade-off evaluations to determine whether they are acceptable and if not how they can be rearranged

- Useful to consider boundaries on the decision space – e.g. the Convention, codified practices over time (e.g. disproportionate burden) etc
- ‘Red lines’ should demark areas where trade-offs do not apply e.g LRPs, HCRs
- CMMs and groups of CMMs will continue to enact compatible management measures

Mechanisms for the Commission to consider trade-off evaluations to determine whether they are acceptable and if not how they can be rearranged

Forum for discussion of fisheries management issues – options:

- Additional meeting as per the Tokyo TT meeting
- Use existing Sub-committees - SC has Man. Issues theme, TCC could add element
- As above with ad hoc meetings as required

Balance – burden on delegations vs need for focus on management

SC should not comment on “management” issues, but could introduce an economic theme or discuss economics within the existing Management Issues theme

Additional discussion point: Who decides the trade-off? Is it the Commission or owners of the fishing rights and how is that trade off determined?

- Wary of any process that takes away the ownership of decision making from the CMMs/ SIDS .
- Balance needed in the decision making process – partly based on the convention
- Individual parties/groups (CCMs, PNA, FFA etc.) may determine actions independent of the commission
- A narrow decision area with quantified trade-offs makes the process more manageable

Where to from here?

- MOW is a useful process and should continue; needs to be member-driven, even if it is difficult to get member feedback – these are important issues and need to be fully understood
- The process can be taken up in SC and TCC – but would be a difficult process – nature of these workshops is very useful to improve understanding.
- Need to better prioritise future work.
- Move away from awareness to a producing specific options/suggestions for action
- Could define general framework with associated fisheries management plans – e.g. NAFO
- Possible to move forward in a stepwise manner and introduce interim measure[s] as a start

**BRIEFING NOTE ON SEABIRD BYCATCH AND THE
MANAGEMENT OBJECTIVES PROGRESS**

BirdLife International and ACAP

Seabird bycatch and the management objectives process: briefing note by BirdLife International and ACAP.

25 November 2013

All five tuna RFMOs have now established seabird bycatch conservation and management measures in most areas overlapping with albatross and petrel populations, and are moving to discussing how to monitor the effectiveness of these measures both in terms of compliance and effectiveness of the measures in reducing bycatch.

An ACAP intersessional working group considered this and produced a paper on the preliminary identification of minimum elements to review the effectiveness of seabird bycatch mitigation regulations in tuna RFMOs (see attached). The work of the MOWII overlaps with this process in terms of seeking to establish ecosystem/bycatch indicators for non-target species.

In relation to the objective to minimize bycatch it is important that we have a clear understanding of both the numbers of seabirds of each species that are killed and the nature of interactions (which can inform improved mitigation options). If we are to assess how fisheries mortalities impact on populations – many of which are threatened and highly migratory, comparable information from across RFMOs and domestic fisheries is required. It is recognised that the nature and availability of data currently limits our ability to monitor bycatch rates and impacts, however the establishment of clear objectives and performance measures as part of the MOW process will aid our progress in this direction.

To assist with the development of seabird bycatch objectives we could seek support from the ACAP intersessional working group to consider expanding its terms of reference to specifically consider management objectives, performance measures and target reference points which can then be incorporated into MOW processes. We need to seek expert advice and undertake a wider discussion amongst seabird experts such as at ACAP to be able to provide appropriate advice to RFMOs such as WCPFC who are going through processes such as this MOW. The likely establishment of a CCSBT small technical working group may also assist with this.

Recommendations:

1. That the MOWII support the need to develop appropriate management objectives, performance measures and target reference points for bycatch species including seabirds.
2. That MOWII seek advice through ACAP and BirdLife International and the ACAP intersessional working group and wider expert seabird community to develop appropriate objectives, performance measures and target reference points for seabird bycatch.
3. That ecosystem/ bycatch indicators for non-target species be an agenda item for MOWIII.