WCPFC
MANAGEMENT OBJECTIVES WORKSHOP

Manila, Philippines
28-29 November 2012

REPORT

WCPFC9-2012-14
1 DEC 2012
0830

IAN CARTWRIGHT[1]

[1] MOW Facilitator

WCPFC MANAGEMENT OBJECTIVES WORKSHOP

REPORT

1. Introduction

WCPFC7 in 2010 directed the Secretariat to prepare TORs for the Management Objectives Workshop to be held in 2012. The overall objectives for this workshop were to:

- assist the Commission to understand the purpose and implications of management objectives in terms of biological, economic and social outcomes;
- assist the Commission to understand both the role of appropriate reference points and the process of evaluating potential management measures in the achievement of management objectives; and
- to develop a list of recommended management objectives to guide the management of fisheries by the WCPFC, for presentation to the WCPFC annual and subsidiary body sessions during 2012.

The Director noted that the workshop was an informal meeting of stakeholders with an interest in WCPO tuna fisheries and did not have formal standing in the Commission. He further noted that workshop discussions would not pre-empt any future views or positions as part of WCPFC's future consideration of the issues to be discussed in the workshop.

A panel whose membership included Drs. Jim Ianelli and Robin Allen, FFA and SPC was used to inform the workshop, which was facilitated by Ian Cartwright.

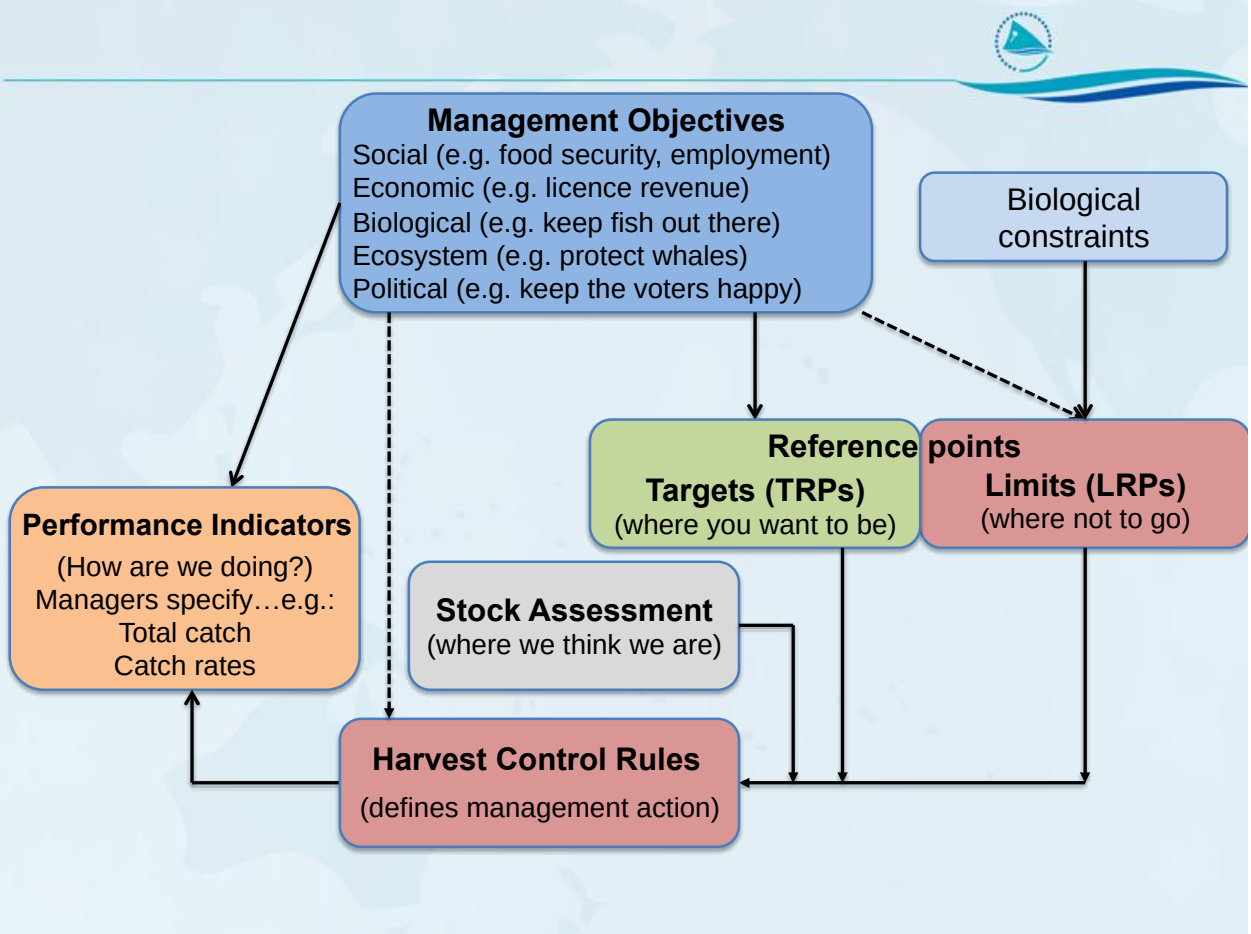
Session 1 Introduction to Management Objectives and Frameworks

The first session on management objectives and frameworks sought to get common understanding of the management framework and its key components including objectives, reference points, performance indicators and harvest control rules. SPC, invited speakers and independent experts provided a range of background talks, which initiated discussions from the floor and panel. During these discussions a number of key issues related to developing and implementing management frameworks were identified. These included:

- **Approaches by other RFMOs.** While there are useful lessons to be learned from other examples, the amount of catch taken from within zones, the differing interests of CCMs, the special needs of SIDs and the multi-species, multi gear nature of the fishery makes the WCPFC unique.
- **Legislative foundations.** UNSFA, the Convention and Annex 2 provide guidance on reference points and HCRs. Some participants questioned the need for rigid application of MSY related quantities as limits (which may affect targets) for all species since sustainability can occur at stock sizes lower than that associated with B_{msy}. In the absence of compromise, UNSFA, the Convention and Annex 2 provide defaults, which should be followed.
- **Short-term focus**. To date the focus has been on addressing stock concerns with respect to approaching limits via ad-hoc measures. Attention must be given to strategic thinking about where the fishery/fisheries should be to optimise benefits; defining objectives and targets will be essential to achieve this. Setting objectives when stocks are overfished is difficult and is best done before this point is reached.

- **Conflicting objectives**: As in most fishery management settings, conflicting objectives exist and a means of agreeing a compromise via trade-offs through the Commission is required. Currently there is agreement that actions are necessary, but agreement on who should bear the burden of restraint is pending. Understanding interest group/CCM priorities is required before meaningful compromises and negotiations can occur.
- **SIDs aspirations.** The fisheries of the WCPO are large, highly diverse, and in many cases comprise the principal or major source of revenue for member countries. Additionally, SIDs have high end development aspirations for their tuna resources and these must be seen as central, not peripheral to management considerations. Some form of compensatory mechanisms may be necessary to avoid disproportionate burden resulting from management action, especially where SIDs are not beneficiaries of such action or did not cause the problem. The use of MSE will enable a mathematical premium to be attached in considering and determining equitable outcomes for SIDS.
- **Role of science, industry and managers**. Managers and stakeholders need to agree objectives and acceptable levels of risk, as well as determine what benefits they are willing to trade off (or not). Industry can assist in developing economic targets and performance indicators. Science provides advice about how current and future fisheries management strategies perform against management objectives and reference points.
- **Achieving compromise.** An essential precursor to compromise is to have stakeholders/managers clearly identify objectives. This will guide the scientists in developing the appropriate MSE or similar tool for fisheries management. One type of product from this work will be decision tables that show alternative management strategies relative to performance indicators. Managers can then agree to weight the performance measures (relative to their objectives) to arrive at the appropriate management strategy for the group, or, initially, a point from which to commence negotiations.
- **MEY vs. MSY.** The classic view of MEY only deals with vessel costs and catch values; there are a range of other costs and benefits that should be considered. Generally, MEY occurs to the left of MSY on the yield curve and may be desirable as a target in principle. However, determining the precise value for MEY is often difficult and proxies may be appropriate.
- **Dealing with risk and uncertainty.** Understanding of fisheries dynamics and is imperfect and stock status estimates are often highly uncertain. Hence, decisions must include this uncertainty to evaluate risk. Regarding acceptable risk levels, it was recognized that this varies greatly among countries. Managers must consider the potentially severe consequences of enacting CMMs that are wrong, especially for SIDs.
- **Time Frames.** CMMs that are designed to recover a stock to a biological target may have economic implications. CMMs that focus on rapid, short term solutions may have a much worse economic impact compared to CMMs extending over longer time frames while both may lead to the same end point. It is important to understand and communicate the potential benefits resulting from current management actions. Early action may be desirable; targets and management frameworks may be more easily achieved before stocks approach an overfished condition.
- **Other issues** raised included: the importance of the management of capacity, ensuring adequate compliance, allocation and rights-based approaches and compatibility of management arrangements between EEZs and the high seas.

The workshop supported the concept of framing management objectives within a holistic management framework along the lines of the diagram below:



Session 2: Management frameworks in practice

Four speakers provided short talks on the practical applications of management frameworks and how they work, in both single and multi-species contexts. Consideration of the challenges associated with translating objectives into effective management frameworks and harvest strategies and the lessons learned that could be applied in the Pacific. These were:

- Developing harvest control rules (HCRs) for PNA.
- Management objectives in Australians Eastern Tuna and Billfish Fishery.
- Management frameworks under the Magnuson-Stevens Act.
- Northern Fishery considerations.

Session 3: Scenario Workshops

Session 3 on Day two of the workshop commenced with two scenario workshops. Two breakout groups discussed the issues associated with establishing management frameworks for i) the Southern Albacore Fishery and ii) the tropical purse seine and longline fisheries. The outcomes of these breakout groups are listed below and provided additional guidance on candidate objectives and associated issues.

Southern albacore longline fishery

A presentation on South Pacific Albacore catch and CPUE trends in the WCPFC was provided by SPC, followed by a brief reminder of some key elements of CMM 2010-05, which seeks to limit capacity, and a review of how the measure is being implemented.

It was noted that although the WCPFC Scientific Committee had recommended a reduction in fishing mortality from the current level, the amount of reduction was unspecified. Capping vessel numbers had little effect since catches continued to increase. This raised questions about the effectiveness of the measure.

There is a lack of clarity around operationalizing other objectives for the fishery. While the economic viability of the fishery was identified as a goal of the CMM, it was omitted from management objectives based on the fact that current effort limits appear to be ineffective. More information on fleet dynamics is needed in order to provide more scientifically sound CMMs. There is also a clear need to improve reporting and statistics for this sector.

In discussion the following points were raised:

- The economic viability varies between fleets with different levels of efficiency.
- Liming vessel numbers appears to be ineffective at controlling catch/fishing mortality due to increased efficiency of the fleet (newer vessels landing more fish).
- There should be a reduction in fishing mortality in the short term whilst developing strategic measures to accommodate the objectives and aspirations of all CCMs.
- Limiting the number of vessels is a blunt instrument; an alternative would be to establish separate benchmarks for catches in-zone and in international waters. [SC has provided some guidance].
- With regard to TACs, Pacific Island Countries have already discussed zone-based allocations.
- Provision of data, especially for vessels, should be improved, and this relates to the annual reporting under the CMM.
- The South Pacific albacore stock should be managed throughout its entire range - including the area of overlap with IATTC jurisdiction and in IATTC waters.

Tropical purse seine and longline fisheries

Charles Karnella, Chair WCPFC, provided an overview of the Chair's Draft Measure 2012-01.

The workshop noted that, as has been identified earlier, the measure represented a reaction to an undesirable biological status of a target species i.e. bigeye tuna, rather than an action to move the fishery to a more "optimal" point which considered a clearer set of objectives. Discussion was limited to considering the broader aspects of the fishery and, objectives and how compromise may be reached. The following points were raised:

- Importance of the long term conservation of stocks at levels that meet both sustainability and

economic targets – this will promote viability at the vessel level through time (stable catch rates).

- Overarching need for frank discussions on how best to share benefits between CCMs.
- Ensure an acceptable level of benefits throughout the value chain.
- The importance of ensuring SIDs development aspirations and opportunities are maximised and that that any disproportionate burden of fisheries management regulation is minimised.
- Promote domestic industry development.
- Need for transparency – economics objectives need to be on the table and frankly discussed – moves to increase profitability by limiting a particular fishing operation should be seen as such and not disguised as a concern for sustainability.
- Maintain ecosystem health.
- While some CCMs and groups of CMMs (PNA) are already developing and implementing fisheries management frameworks, there remains a role for the commission in setting overall TACs/TAEs.

Session 4: Developing a candidate list of management objectives for the WCPFC

The workshop considered a candidate list of fisheries management objectives and performance indicators drawn from participant input provided through questionnaires, as informed through presentations, scenario workshops and from plenary discussions. The full list of suggested objectives and indicators is provided at **Attachment 1** and summarised into four major categories in the table below. Given the time constraints and the number of workshop participants, the list of candidate objectives was accepted as a package for future development.

Summary of some candidate management objectives by fishery arising from MOW1. Numbers in brackets represent the submissions by broad category. [2]

	Fishery				
Objectives	**ALL**	**PS SKJ**	**TTLL**	**SPALB**	**NFsh**
Ecosystem (6)					
Minimise bycatch	X	X	X		
Minimise ecosystem impact	X	X		X	
Biological (21)					
Maintain biomass at target	X	X	X	X	X
Optimise spatial characteristics		X		X	
Economic (34)					
Minimise IUU	X				
Catch	X				X
Catch stability	X	X	X	X	X
CPUE	X			X	X
MEY	X	X	X	X	
Minimise mgt costs		X			
Development				X	
Food security	X				
Social (14)					
Employment	X			X	
SIDS	X	X		X	
Maintain small scale fisheries			X		X
Food security	X			X	

[2] While the figures in brackets indicate the numbers of objectives, they do not necessarily reflect importance of said group of objectives.

Session 5: Roadmap for future actions.

The Director introduced Session 5, outlining a possible road map for future action to develop a conservation and management framework for all target stocks. He noted that it was important that work be progressed before the next Commission meeting in such a way that CCMs would be in a better position to take decisions.

The workshop suggested the involvement of the Scientific Committee in the process and that it was important to ensure that engagement and consultation with the full membership of the Commission was essential. The following process was endorsed for transmission to WCPFC9 for consideration.

Step 1: Finalise Development of Management Objectives, Performance Indicators and Reference Points.

Take outputs from workshop to develop a candidate list of management objective, performance indicators, and reference points for each major fishery i.e.:

- Tropical longline
- Purse seine
- Southern longline
- Pacific Bluefin
- North Pacific albacore

Process to finalise Management Objectives

Use an expert group of the current facilitator and the international experts to take the outputs from the MOW1 and develop these into refined candidate objectives, performance indicators, and reference points for the WCPFC fisheries. This expert group will be supported by the Secretariat and Science Service Provider.

The expert group will develop draft management framework options (refined candidate objectives, performance indicators, and reference points). This 'strawperson' will be referred to all Commission members for review prior to being sent to the SC9, for comment and suggestions. These comments and suggestions will be provided to MOW2.

The expert group will not work in isolation in developing the above management framework options. They will interact extensively with CCMs, the Secretariat and SPC, industry and NGOs. In addition, the expert group will consult with relevant regional and sub-regional bodies, to ensure compatibility between the Commission and other existing and planned management framework.

In developing management frameworks, the expert group will also consult with regional and subregional groups on initiatives by these groups to consider how best to integrate these initiatives to ensure compatibility.

Step 2: MOW2

MOW2 will be conducted prior to WCPFC10 and provide a forum for Commission members, and subsidiary bodies/stakeholders to consider and provide feedback on expert groups refined candidate objectives, performance indicators, and reference points for the WCPFC fisheries.

Step 3: WCPFC 10

Recommendations from MOW2 to be considered by the Commission members at WCPFC 10.

[Note: this will require a budget agreed at WCPFC9]

Improving reporting

In addition SPC-OFP/WCPFC will take on board the suggestions from MOW1 to improve reporting on information on fishery indicators that would assist fishery managers and other stakeholders.

Concluding Remarks

The Executive Director thanked workshop participants, the facilitator and international experts for their endeavours during the workshop. He noted that good progress had been made in working towards clearer objectives, but that considerable work needed to be done to complete the task.

Attachment 1

Collated responses to objectives questionnaire

Northern Fishery (5 responses: 2 Fishery Manager, 3 Scientists)

Objectives

- MSY
- Stock recovery to reduce risk of collapse
- Stable annual catches
- Maintain SSB above Bloss
- F below Floss
- Maintain SSB within historical variation
- Protecting local/artisanal fishers
- Fmedian
- Fssb at ATHL (median of lower 10th SSB)
- Bmedian
- Bssb at ATHL (median of lower 10th SSB)

Indicators

- Biomass (SSB, Bo, Bloss,)
- Catch
- Fishing mortality (Fo, Fspr,)
- CPUE
- Fishing effort
- Stable income of fishermen
- F ratio
- Contraction of fishing ground (range contraction)

Other comments

- Setting up a precautionary approach framework with LRPs, TRPs, and HCR
- Choose indicators that easily interpreted by fishermen

Tropical Tuna Longline (3 responses – 1 Scientist, 1 manager and 1 Industry)

Objectives

- Sustainability of fish stock
- Maximum utilisation
- Minimise inter-annual variability
- Maintain local fisheries culture
- Reduction of PS bycatch
- Stock rebuilding

Indicators

- Biomass
- Size distribution (reduce small fish)
- Continuation of traditional fisheries festival
- Spawning biomass
- BET bycatch rate in PS

South Pacific Albacore (8 responses: 7 Fishery Managers, 1 Scientist)

Objectives

- MEY
- TRP below MSY
- Increased participation of SIDS in fishery
- Stable catch levels
- Maximise employment in onshore processing and on vessels
- Maximise government revenues
- High catch rates
- Sustainable target stocks
- Profitable industry
- Avoid range contraction
- TRP at 1.3 BMSY
- Minimise environmental impact
- Food security
- Maintain fleet size
- Reduce CMM exemptions but compensate SIDS

Indicators

- License fees
- Stock status
- Value of fishery
- Level of SIDS participation
- Catch
- Variability in EEZ catch levels
- Local employment
- Government revenue
- CPUE
- Biomass TRP
- Size distribution
- Bycatch/incidental catch rates
- Kg fish per inhabitant
- Number of vessels
- Vessel profitability

Other comments

- Allocation

- Rights based fishery established
- Harvest control policy with TRPs for all tunas
- Improved/more timely data collection and analysis to reduce time lag/uncertainty in model predictions and focus risk on biological factors

PS skipjack (15 responses: 2 scientists, 6 managers, 7 industry)

Objectives

- Reasonable licence fee and long term stable profits
- Maximum employment
- Increasing employment
- Maximizing economic returns (wages and tax)
- minimising impacts on/catch of BET and YFT
- minimize impact on environment/ecosystem
- max sustainable benefits to SIDS
- sustainable stocks (above LRP)
- stocks at levels to achieve profitable fisheries
- avoid localized depletion
- avoid range contraction
- maintain catch value
- minimize inter-annual CPUE variation etc.
- stable fish supply for cannaries/processors, minimising inter-annual variation
- MEY/returns
- Low probability of decline in rent in the future
- Max efficiency of fishing operations
- Minimize cost of fishery management to nation
- Increased domestication of fishery
- Sustainable usage of resource w/ no exemption measures
- Adequate fishing opportunities (VDS availability)
- Compatible measuresSKJ > B_{msy}
- Minimize bycatch
- Equal share of management burden
- Minimise interaction w/ coastal fisheries
- Target 1.2 B_{msy}
-

Indicators

- Net revenue of PS fishery
- Number employed in PS fishery (e.g. in SIDS)
- Catch levels of BET and YFT in PS fishery
- Licence revenue
- % catch processed in country
- Stock status from stock assessment relative to F and SB RPs (target and limit)
- Spatial distribution of SKJ, CPUE and catch in marginal areas
- Unit price
- CPUE levels
- Annual catch variability

- Number of companies fishing and level of processing
- Amount of fish processed
- Income through wages/tax/service sector
- Foreign onshore investment levels
- Security of rights/allocations
- Cost of fishery management
- Licence revenue
- Domestic fleet numbers
- VDS Fee
- Fuel price
- Vessel day / non-fishing day
- Employment
- Export value
- Contribution to GDP
- Industry profitability
- Level of bycatch

All fisheries (9 responses: 5 fishery managers, 2 NGOs, 1 scientist)

Objectives

- Maximise economic returns (country level)
- Maximise economic returns (across all species caught)
- Maintain profitable catch/fishing levels for ALL fleets and gears
- Sustainable fishery effort levels (no excess capacity)
- Maintain stocks at MSY levels, maximize catches
- Reduce inter-annual variation in value achieved /stable supply
- Minimize inter-annual variability in catch and effort
- Minimize bycatch, reduce waste and discard
- Stock sustainability (minimize risk of exceeding LRP)
- Achieve article 5b of the Convention with high probability…
- Minimize impacts of industrial fisheries on small scale artisanal fisheries
- Protect food security
- Optimize catch levels to maximize rent throughout the process marketing chain
- Maximize employment through the processing/marketing chain
- Ecosystem health
- Minimize IUU

Indicators

- Licence revenue levels
- Stock status/Stock assessment results (e.g. F, SSB vs reference points, and the probability of exceeding/achieving them)
- Resource rent levels
- Bycatch levels and mortality rates, bycatch stock health
- Short and long term average catch
- Variance in catch in short and long term
- CPUE by fishery/fleet/gear of interest – e.g. LL fishery, small scale fishery, etc
- Long term depletion levels

- Rent in processing sector
- Price trends (supply and demand?)
- Employment numbers (throughout the processing chain)
- Estimate of IUU… e.g. comparing market data and catch levels
- Ecosystem function levels
- Species composition
- Size structure of catch
- Coastal catch trend (artisanal/local fishery)
- Number/trend in vessels and capacity
- Price of fish

Other comments

- 100% observer coverage to help improve indicators and achieve objectives
- National objectives may include indicators such as proportion of allocation achieved
- No exemptions in CMMs, simple CMMs
- Fair shares in benefit for all (could be an objective)
- Sustainable benefits, not necessarily optimum benefits