

# “Best assessment” approach VS. “Evaluated Management Strategies”

Based on material from Victor Restrepo (ISSF)

Management Strategies for Tuna Industry Stakeholders in the Eastern Pacific Ocean (EPO)  
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# Topics

- Current IATTC approach
- Management Strategy Approach
  - What advantages it could have?
  - Management strategies in the IATTC context

**NOTE:** Other presentations will cover this in more detail

# Current approach, based on “best assessments” (Tropical tunas)

1. Scientific Staff compile and analyze data
2. Scientific Staff conduct stock assessments [BET, YFT] and decide on a best model (“base case”) for each species (SAC reviews it)
3. Scientific Staff make conservation recommendations (e.g. days of closure) based on the  $F_{mult}$  of the species that requires the strictest management, and the active fishing capacity
4. The Commission negotiates and adopts (or not) conservation measures. *Article IX of Antigua requires consensus. Just 1 of the 21 members that is not in agreement is enough to halt a decision.*

# Current approach: some uncertainties

- Uncertainty affects stock assessment results (growth, data-weighting, natural mortality...). The base case does not include those uncertainties in a quantitative way. Commissioners and their advisors consider them (or not) qualitatively.
- Negotiations about management decisions creates management uncertainty. If objectives are not clear and stable over time, the decisions are not part of a proper strategy.
- The need to decide by consensus can create political/industrial uncertainty. There is no guarantee that proper management will continue once a Resolution expires.

## Current approach: summary

- IATTC has many years of experience following this approach. It has worked

### **Things that could be improved:**

- Perception of stock can change rapidly: changes in methodology and data.
- Management inconsistencies. Rules and objectives not completely specified.
- Difficult to evaluate long term consequences of alternative decisions.
- Uncertainty is not rigorously incorporated (*Art. IV of Antigua and Precautionary Approach*)
- Difficult to evaluate how alternative strategies achieve management objectives.
- By default there is a tendency to a system of minimal management changes.
- The process can be contentious at times.
- Costly in the long-term: many assessments and many meetings.

# Management Strategies

Is the combination of **pre-agreed data**, **specific analyses** applied to those data and the harvest control rule used to determine **management measures** based on the results of those analyses (Punt et al 2016)

Also known as *management procedure*

# Management Strategies: elements

## 1. Pre-agreed strategy

- Objectives
- Monitoring (stock indicators/fisheries)
- Methodology for data analyses
- Harvest Control Rule
- Implementation of management

## 2. Strategy is evaluated using computer simulation (MSE)



# Management Strategy Evaluation (MSE)

- Simulation
- Strategic tool to evaluate risk
- Prospective evaluation of alternative management strategies
- Selection of the management strategy more probable to achieve management objectives while being robust to the main uncertainties
- Two components:
  - Consultative/dialogue process
  - Technical implementation



# But we already have a Harvest Control Rule!

## RESOLUTION C-16-02

### HARVEST CONTROL RULES FOR TROPICAL TUNAS (YELLOWFIN, BIGEYE, AND SKIPJACK)

C-16-02 has a harvest control rule (HCR) with target and limit reference points. But:

- HCR has not been fully evaluated using simulation
- No alternative HCR have been considered which could be better (e.g., more robust to uncertainty)
- HCR does not specify what management actions are to be implemented
- HCR does not have a mechanism calculating magnitude of management actions
- There has not been a consultative process, typically here is

**C-16-02 has elements of a management strategy, but it is not a complete management strategy**

# Expected benefits of Management Strategies

- Basis for pre-agreed and transparent decision making. Stability
- More time for scientists and managers to investigate and decide on other important issues. Stock assessments are still important, possibly less frequent
- Better understanding of cumulative impacts of management decisions and uncertainty
- Helps with planning, providing an evaluation of performance via MSE
- Based on the experience of other fisheries, improved results for fish populations, fisheries and communities

# Expected issues/challenges

- The consultative and evaluation parts can last several years, initially costly
- Challenges given the multi-species nature of the fisheries (YFT, BET and SKJ):
  - More difficult to simulate
  - Different objectives by fishing strategy?
  - Manage based on the species needing the strictest management ? The three? or two?
- It is not going to solve issues like allocation, fishing capacity, etc.
- Expectations about chronogram of evaluation/adoption
- The pace of Commission meetings can lead to discontinuity in dialogue
- Multiple ways to address this issues: all require dialogue, work and patience

# IATTC today, in relation to Management Strategies

## **Advantageous position:**

- Modern Convention including the Precautionary Principle
- Highly qualified Scientific Staff
- One of the most comprehensive databases and data collection programs
- A fishery composed of mainly one gear (86% purse-seine)
- Already adopted (C-16-02) limit and target reference points and a harvest control rule



Thank you!

