

# Adoption of a table of performance indicators for the evaluation of Management Procedures for IOTC stocks.

Iago Mosqueira\*, Toshihide Kitakado†

IOTC-2015-WPM05-16 – 19-21 October 2015

## Introduction

The Working Party on Methods (WPM) of IOTC, at its 5th session in 2014, discussed and evaluated a draft table of Performance Indicators to be used in the evaluation of the capacity of different Management Procedures. These statistics would show their ability at achieving a range of objectives, with certain levels of probability and at given time frames. This table (Table 1 in WPM, 2014) was presented to the Scientific Committee (SC) during its 17th session, but it was not formally adopted by the SC.

We suggest that the same table (Table 1) is again reviewed by WPM and a proposal is made for SC to formally adopt it. These table should form the basis for scientific view of the IOTC SC on what indicators the IOTC plenary should consider when discussing the adoption of alternative Management Procedures for IOTC stocks.

## References

IOTC. 2014. Report of the Fifth Session of the IOTC Working Party on Methods. Seychelles, 5-6 December 2014. IOTC-2014-WPM05-R[E]

IOTC. 2014b. Report of the Seventeenth Session of the IOTC Scientific Committee Seychelles, 8-12 December 2014. IOTC-2014-SC17-R[E]

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\*European Commission, Joint Research Center (EC JRC), Institute for the Protection and Security of the Citizen (IPSC), Maritime Affairs Unit G03, Via E. Fermi 2749, 21027 Ispra VA, Italy.

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Management objective and associated performance statistics	Performance measure/s	Summary statistic
<b>Status : maximize probability of maintaining stock in the Kobe green zone</b>		
Mean spawner biomass relative to unfished	$B/B_0$	Geometric mean over years
Minimum spawner biomass relative to unfished	$B/B_0$	Minimum over years
Mean spawner biomass relative to $B_{MSY}$	$B/B_{MSY}$	Geometric mean over years
Mean fishing mortality relative to target	$F/F_{target}$	Geometric mean over years
Mean fishing mortality relative to $F_{MSY}$	$F/F_{MSY}$	Geometric mean over years
Probability of being in Kobe green quadrant	B, F	Proportion of years that $B \geq B_{target}$ & $F \leq F_{target}$
Probability of being in Kobe red quadrant	B, F	Proportion of years that $B \leq B_{target}$ & $F \geq F_{target}$
<b>Safety : maximize the probability of the stock remaining above the biomass limit</b>		
Probability that spawner biomass is above 20% of $B_0$	B	Proportion of years that $B > 0.2B_0$
<b>Yield : maximize catches across regions and gears</b>		
Mean catch	C	Mean over years
Mean catch by region and/or gear	C	Mean over years
<b>Abundance: maximize catch rates to enhance fishery profitability</b>		
Mean catch rates by region and gear	A	Geometric mean over years
<b>Stability: maximize stability in catches to reduce commercial uncertainty</b>		
Mean absolute proportional change (MAPC) in catch	C	Mean over years of $abs(C_t/C_{t-1} - 1)$
Variance in catch	C	Variance over years
Probability of shutdown	C	Proportion of years that $C = 0$

Table 1: Performance statistics for the evaluation of management procedures