Performance Indicators for WCPO Skipjack

{Team MSE} SPC-OFP

What are Performance Indicators?

Performance indicators are used to evaluate how well candidate management procedures (MPs) are expected to perform in relation to fishery management objectives.[1] They can be used to select a preferred MP from a range of candidates, where the preferred MP is the one that is most likely to achieve the objectives.

Interpreting Performance Indicators

Performance indicators should be used to compare the *relative* performance of the candidate MPs, i.e. "MP A outperforms MP B on performance indicator X". An important factor is the *trade-offs* between the indicators because some candidate MPs will score highly on some indicators but less well on others.

Currently available Performance Indicators

There are currently 7 performance indicators calculated for WCPO skipjack. It is anticipated that more will be added in the future. Apart from $SB/SB_{F=0}$, the larger the value of the indicator, the better the MP is thought to be performing. The average value of each indicator is calculated over different time periods: short-term (2016-2024), medium-term (2025-2033) and long-term (2034-2042). The range of values should also be considered as it gives information on the level of certainty in the indicator value.

Name	Performance Indicator	Range	Notes
	Biological		
$SB/SB_{F=0}$	$SB/SB_{F=0}$	0 - 1	A higher value is not necessarily better. Ideally, the value should be above the LRP and close to the TRP. Note that it is possible to use *PI 1* and *PI 8* to measure how close $SB/SB_{F=0}$ is to the LRP and TRP respectively.
PI 1. Prob. above LRP	Probability of $SB/SB_{F=0} > LRP$	0 - 1	The higher the value, the smaller the chance of falling below the LRP. For example, a value of 1 means that there is no chance of falling below the LRP and a value of 0.9 means that there is a 10% chance of falling below the LRP. WCPFC has agreed that risks higher than 20% would lead to an MP being rejected.
	Economic		
PI 3. Catch (rel. to 2013-2015)	Catch relative to the average catch in 2013-2015.[2]	0 - X	A value of 1 means the catch is the same as the average catch in 2013-2015.
PI 4. CPUE (rel. to 2010)	CPUE relative to the CPUE in 2010.[3]	0 - X	A value of 1 means the CPUE is the same as the CPUE in 2010.
PI 6. Catch stability	Based on the average annual catch variability.[2]	0 - 1	The higher the value, the more stable the catches or effort, meaning that they are less variable over time. A value of 1 means the catches or effort do not change over time. A low value means the catches or effort vary relatively strongly over time compared to the other MPs.
PI 7. Effort stability	Based on the average annual effort variability.[3]	0 - 1	
PI 8. Proximity to TRP	The average distance of $SB/SB_{F=0}$ from the TRP.	0 - 1	The higher the value, the closer $SB/SB_{F=0}$ is to the TRP on average. A value of 1 means that $SB/SB_{F=0}$ is exactly at the TRP. If $SB/SB_{F=0}$ is above or below the TRP, the value of the indicator will be less than 1.

[1] An managment procedure (MP) comprises the data collection process, the estimation model and the harvest control rule (HCR). When testing candidate HCRs the MP is considered as a whole.
[2] Calculated for different model areas and fisheries.
[3] Only calculated for the purse seine fisheries in model areas 2, 3 and 5 (excl. associated purse seine in area 5).