



**SCIENTIFIC COMMITTEE  
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**SUMMARY OF DISCUSSION POINTS IDENTIFIED BY SMALL WORKING GROUP 9  
FOR CONSIDERATION BY THE SCIENTIFIC COMMITTEE ON THE REPORT OF  
THE EXPERT CONSULTANCY ON REFERENCE POINTS**

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**WCPFC-SC3-*Informal Small Group*/WP-5**

## **Summary of Discussion Points Identified by Small Working Group 9 for consideration by the Scientific Committee on the Report of the Expert Consultancy On Reference Points**

### **Introduction**

Following the success of the small group discussions at SC2 (Manila), D. Moon (SC Chair) proposed that several discussion groups be established in conjunction with the SC3 meeting. An SC3 discussion group on biological reference points (BRP) was established with R. Conser (USA) serving as convener. The group held three one-hour meetings: (i) 12 August 2007 (prior to the start of the formal SC3 meeting); (ii) 13 August 2007 (during the SC3 session lunch break); and (iii) 17 August 2007 (after the SC3 session). All of the meetings were well attended with most of the most of the WCPFC members represented.

The BRP Discussion Group (the Group) recognized that the breadth of the subject matter – including a vast literature and numerous world-wide case studies – could not be adequately addressed in three brief discussion periods on the periphery of the formal SC3 meeting. Further, the Group acknowledged that the BRP topic will be taken up by both the Methods Specialist Working Group (ME-SWG) and the SC3 Plenary (Agenda Item 4).

The Group focused primarily on SC3 working paper ME-WP-3 entitled “A brief review of the use of the precautionary approach and the role of target and limit reference points and Management Strategy Evaluation in the management of highly migratory fish stocks” by Davies and Polacheck (CSIRO). The SC2 adopted a work program for 2007 to investigate alternative stock status reference points, including identification of appropriate target and limit reference points. Consistent with the 2007 work program, the WCPFC Secretariat commissioned a review of BRPs and related issues. ME-WP-3 is a product of the resulting consultancy.

The Group approached the discussion of ME-WP-3 at three levels.

- A. General introduction to BRPs – a presentation by C. Davies – to assist those without expertise on these issues to more fully benefit from the discussions.
- B. Questions of clarification and more detailed explanation of points raised and conclusions reached in ME-WP-3.
- C. General discussion of the BRP issues with particular emphasis on identifying key points that would benefit most from in-depth discussion during the ME-SWG and the SC3 Plenary.

It was agreed that the product of this Group would be a list of the discussion points identified in Level C above

## Discussion Points

1. ME-WP-3 concludes that the WCPFC management cannot be considered precautionary at least until both BRPs and the concomitant decision rule(s) are agreed and implemented. The SC has been using  $F_{MSY}$  and  $SSB_{MSY}$  as BRPs but no clear decision rule has been put forth.
  - a. Does the SC agree with the ME-WP-3 conclusion (noted above) regarding WCPFC and the precautionary principle?
  - b. Recognizing that full development of decision rule(s) may take considerable time (perhaps 3-5 years), can interim decision rule(s) be put forth by the SC to satisfy the precautionary principle?
2. ME-WP-3 suggests that a full management strategy evaluation (MSE) is needed to integrate the best choices of stock assessment methods, appropriate BRPs, decision rules, and higher-level management objectives. An MSE for the WCPFC stocks would be a time- and resource-consuming endeavor. Does the SC agree that a full MSE is necessary or are there other objective means of establishing the best BRPs and control rules?
3. The ME-SWG concluded that there were no perceived major methodological impediments to the application of an MSE approach to the tuna fisheries within the WCPO. Does the SC agree with this conclusion? Furthermore, if an MSE is needed, what does the SC see as the major technical issues (e.g. feasible range of sensitivity cases, conditioning the currently-used assessment methods, robustness tests, etc) and institutional impediments that need to be resolved to make this feasible?
4. The ME-SWG agreed that economic considerations are important and are usually incorporated in MSE analyses through proxies such as annual catch levels and the stability in these levels between years. Indeed, when alternative management approaches are shown to give similar biological results, the economic factors may provide an objective means of choosing among them. However, the ME-SWG concluded that the full incorporation of socio-economic factors is generally too complex for explicit consideration in an MSE, though in development of an MSE for the WCPFC the Commission will have great influence in establishing the multiple objectives against which alternative management strategies will be assessed under an MSE. Does the SC agree?
5. ME-WP-3 suggests that a proper MSE cannot be done by the SC alone. Rather the full involvement and continuing feedback from fishery managers, stakeholders, and other interested parties are essential.
  - a. What is the best process for involving non-scientists in the MSE?
  - b. What are the responsibilities of the various groups? For example, fishery managers will need to establish the acceptable level of risk for the MSE. What else is needed from the fishery managers?
  - c. What institutional arrangements are needed? For example, the Commission meeting is the only place where the broad scope (suggested above) can be fully considered. How should the SC and the Commission interact regarding MSE planning?

6. Given that the science contribution to an WCPFC MSE process would be costly (both in monetary terms and time of the individuals involved), what is the best mix of involvement of national scientists and Secretariat contracted services?
7. The SC has been considering MSY-based BRPs to be limit reference points but no target reference points have been put forth. The precautionary principle requires both. Does the SC agree that MSY-based BRPs be used as interim limit BRPs and other BRPs be established as target reference points?
8. Associated with the adoption of any BRP, there will always be a non-zero probability that “current” value of the associated performance indicator will fall below the reference level. As such, the use of a BRP is often accompanied by adoption of a probability which maximizes the acceptable level of allowing this to occur. Does the SC agree that the use of such defined probabilities (or levels of associated risk) should also be adopted with the use of BRPs?
9. The current mix of fisheries and their relative catches implies an aggregate selectivity that greatly influences BRP estimates, e.g.  $F_{MSY}$  and  $SSB_{MSY}$ . Does the SC recommend that the scope of an MSE undertaken by the SC should allow for changes to the aggregate selectivity to better meet the pre-established management objectives, e.g. to maximize long-term yield?
10. The HMS species identified in Annex 1 form a diverse and lengthy list, including many species considered to be bycatch in the tuna-targeted fisheries. Should bycatch issues and BRPs for bycatch species be considered in the initial MSE planning?
11. If an MSE is to be undertaken, it will not be practical to initially specify all of the details needed to model the complex multi-national, multi-species WCPFC fisheries; and the current process for assessing them and providing management advice. The ME-SWG recommended – as a means of progressing a future work program – that the SC should recommend to the Commission that a Scoping paper and a draft Work Plan should be developed over the next year to inform both the SC and the Commission on the potential costs and benefits of alternative approaches for identification of appropriate reference points and implementation of an MSE within the WCPF. This Paper should include identifying:
  - a) the components of the MSE model, e.g. the regional scope of operational model, what species of species mix it should encompass, etc,
  - b) the management objectives (e.g. conservation and economic objectives) against which the harvest strategies will be evaluated, and the operationalization of these objectives for modelling purposes,
  - c) the classes or categories of harvest strategies/decision rules to be evaluated,
  - d) the organizational arrangements required to engage all parties in the MSE process, and
  - e) the use of interim management strategies (including reference points and decision rules) whilst full MSE is underway.

Does the SC agree with the above recommendation of the ME-SWG?