SOME BRIEF COMMENTS ON "A RELATIONSHIP STUDY BETWEEN MCS AND DIFFERENT MANAGEMENT REGIMES IN THE SMALL PELAGIC FISHERY IN SOUTH AFRICA"

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1) I am pleased to note that this document did not recommend effort as the basis for management limitations on the sardine-anchovy fishery, but rather only as an adjunct to (means of implementing) TAC based control, as pelagic fisheries are generally inappropriate candidates for such input controls given the non-linear relationship between catch rate and abundance.

2) Nevertheless there are important issues overlooked by the analysis. In particular, it fails to draw on a rather more comprehensive (albeit still preliminary) analysis by De Oliveira, Butterworth and Freon (Capacity Management in the Pelagic Fishery – WG/MAR2001/PEL/10). The GLM analysis of that paper showed that the proportion of pilchard in the catch and the overall TAC (as a surrogate for resource abundance) were also determinants of catch per day, as well as vessel length.

3) Management of the pelagic fishery requires separate limitations on the sardine and on the anchovy catch. It is unclear how the mechanism suggested (effort control by way of a days-at-sea limitation, apparently without species monitoring of catches) could achieve this. In years when sardine abundance and hence the sardine TAC was low, what would then prevent an effective transfer of effort towards the more valuable sardine? Furthermore, the GLM analysis referenced in 2) indicates that different days-at-sea allocations per ton would be needed for the two species.

4) The GLM analysis also shows the relationship between catch rate and vessel length to be appreciably non-linear; thus the linear relationship assumed for Fig. 9 of this document is inappropriate.

5) Effort is notoriously difficult to manage/monitor, and is not necessarily a panacea for the problems of TAC monitoring. For example, both increasing vessel length and horse-power typically positively influence catch rates. Normally only one is included as an explanatory variable for vessel power in an effective effort analysis, because the two are usually strongly correlated. However, if vessel length, say, is legislated as the basis for power computations, companies simply install larger engines in their vessels to enhance catch rates (once one starts, the others are forced to follow). There are also other ways vessel power can be increased, and an effort limitation system would need constant recalibration of vessel power factors, no doubt accompanied by considerable bickering with industry.

6) A further difficulty is that availability of sardine and anchovy varies by month and area. Thus, to give an extreme example, a Lamberts Bay based vessel with a directed sardine quota will likely insist on extra sea days per ton allocated to get to the Agulhas Bank where most of its catches might be taken, compared (say) to a Gansbaai based vessel. Another complex scheme would have to be evaluated and agreed to make allowance for this. But what happens if the Lamberts Bay based

vessel then starts landing its catch in Mossel Bay to be trucked to the processing factory? Furthermore, modifications to such a home port-base allowance will be called for annually (if not monthly), as fish distribution changes from one year to the next. Ultimately, an additional system even more complex than the OMP for the TACs will likely be needed for such effort regulation specification.

7) The model test reported in the paragraph above Fig. 9 in the document, suggesting that the regression model gives an accurate catch prediction with less than 4% error, is misleading. The nature of the regression guarantees such a result in any case. The more relevant issue which needs to be addressed is the extent of variability about any such relationship which might be suggested for use as a basis to peg effort levels. If there is large variability between the catch rates of two vessels with the same value of a co-variate such as vessel length, then getting acceptance of such a basis to limit any vessel's fishing is certainly going to meet with strong opposition (as self-evidently "unfair") from many quarters.

8) Do not VMS data already provide a basis for taking some form of action against vessels making visits to harbour without recording any catch landed?

9) Discussions in the Pelagic Working Group have anticipated that Carryn Cunningham will shortly be updating extending the work of WG/MAR2001/PEL/10, in particular to provide an improved basis for scientific advice on capacity management as might be appropriate for the pelagic fishery. It would seem desirable that MCM's compliance section be represented at the Pelagic WG when this issue is next discussed, so that possible duplication of analyses can be avoided.