SA SARDINE-ANCHOVY AND ROCK LOBSTER RESOURCES INTERNATIONAL ASSESSMENT WORKSHOP, Monday 9 to Friday 13 JULY 2007

SUMMARY OF KEY ISSUES TO BE ADDRESSED

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The South African fisheries for sardine-anchovy and for West Coast rock lobster are respectively the country's second and third most valuable after that for hake. Both are currently in the process of a review and revision (that is scheduled to occur at four-yearly intervals) of the formulae ("Operational Management Procedures" – OMPs) that are used to provide scientific recommendations for annual Total Allowable Catches (TACs). These particular reviews are due for completion before the end of 2007 to provide the basis for TAC recommendations for the next season, and the workshop is a component of that review process.

In addition, the workshop will consider the important South Coast rock lobster resource, which is planned to be placed under OMP-based management in the near future, as well as a few broader issues which are pertinent to other fisheries as well as the three under specific consideration. Key issues to be addressed under each of these headings, and the associated discussion times, are set out below.

Sardine-anchovy (pelagic) fishery (Monday and Wednesday mornings, and Thursday afternoon)

After a boom for both resources arising from four years of record levels of recruitment for each over 2000-2003, both have experienced marked downturns. Although immediate prospects for anchovy seem more promising again after good recruitment in 2007, the sardine situation following one somewhat below average and three poor recruitments over 2004-2007 is of some concern. Likely key discussion items are:

- How best to represent probability distributions for future recruitments, to enable an evaluation of alternative TAC formulae (to which the results of annual resource abundance surveys are input) to confirm that they would not put the resources at undue risk.
- Should the current quantitative criteria for thresholds for these risks be revised?
- How best is account to be taken of the eastward shifts of resource distributions over recent years (does this in part reflect multiple stock structure)?
- Whether and to what extent it might be desirable to revise various existing inter-annual TAC change constraints that are imposed in the interests of socio-economic stability. At present the possible extent of reductions in the TACs are limited over intermediate abundance ranges, but these limitations may be overridden both if survey biomass estimates are above or below this range. (This item will be discussed on the Thursday afternoon.)

The Monday morning's introductory discussions will include a brief presentation on the sardine and mackerel resources off California and their management.

Penguin-pelagic fish interaction (Monday early afternoon and Wednesday late morning)

Over the last two years in particular, there have been marked reductions in counts of the number of African penguins, especially at major Western Cape colonies. It seems probable that this is related to poor food availability linked in turn to poor recent recruitments for sardine and anchovy. Major points of focus will be:

- How best to evaluate the power of a proposed programme of experimental closures of areas around penguin breeding colonies to pelagic fishing to detect whether such closures improve the birds' reproductive success.
- The development of a model of the population dynamics of penguins in the Western Cape which links these to the abundances of sardine and anchovy. This would in turn be used in the evaluation of the consequences of alternative pelagic TAC formulae for the status of the penguin population, with the intent that such consequences be considered in selecting amongst these formulae.

West Coast rock lobster (Wednesday and Friday mornings, and Thursday afternoon)

Based on the recommendations from similar previous workshops, the formula (OMP) for recommending TACs is being extended to also include their spatial allocation. The evaluations take into account the extent (if at all) to which allocations to limited commercial rights holders (each restricted to operate in a specific area) may change from year to year, and that this differs from what applies to larger companies. Likely key discussion items are:

- Does the basis developed for evaluation of alternative formulae (OMPs) need modification?
- What changes to these formulae do current evaluation results suggest might be necessary?
- How might catch rate (CPUE) and survey monitoring be improved in future to enhance the abilities of formulae to react better to changes in underlying resource abundance trends?

South Coast rock lobster (Thursday and Friday morning)

Assessment of this resource has been problematic because the two primary data sources available to monitor the population, CPUE and catch-at-length information, do not seem mutually consistent, and have different implications regarding the level of catch that would be sustainable. The focus of discussion will be whether this inconsistency can be resolved by modelling the resource dynamics at a finer spatial scale; or whether other mechanisms need to be considered to achieve such resolution, such as possible effort saturation or changing selectivity patterns in the fishery.

Other issues with broader relevance (Thursday afternoon)

These matters have pertinence to other fisheries as well as those for sardine and anchovy, and those for rock lobster.

- Broad management objectives: the discussion will address the range of targets for measures such as resource recovery levels elsewhere in the world. This will be to inform (not finalise) the debate on the appropriate trade-offs between risk (of undue resource depletion or poor economic performance as a result of low catch rates) and reward (in terms of average catches over time) to be sought in selecting between alternative candidate new OMPs for the sardine-anchovy and west coast rock lobster resources.
- The OMP approach to advising on resource management decisions such as TAC levels is designed to take account of the Precautionary Approach by ensuring that formulae chosen will secure appropriate performance for both resource and fishery even if preferred hypotheses concerning resource dynamics are in error (i.e. there is scientific uncertainty). The results from the computer simulation "robustness" trials that address this for alternative scenarios for such dynamics have in the past been evaluated only by qualitative checks that performance does not degrade "too much". The application in SA of an approach developed in the IWC Scientific Committee whereby such trials also have to meet specific performance targets for the OMP under consideration, but those targets are set lower for alternative scenarios rated as less plausible, will be amongst approaches discussed.
- Appropriate methods for taking account of environmental information in resource assessments to be able to better estimate resource productivity and hence inform on appropriate TAC levels. This is, *inter alia*, to inform a planned initiative to address this matter for hake resources later this year.