# A Response to Some of the Views of The South African Deep Sea Trawling Industry Association

D S Butterworth

MARAM (Marine Resource Assessment and Management Group)
Department of Mathematics and Applied Mathematics
University of Cape Town
Rondebosch 7701

This document contains some responses to views express in the SADSTIA document (WG/11/05/D:H:43) of 21 October 2005. For the ease of the reader, the original text is replicated below and the responses are inserted in italics after the paragraphs to which they apply.

## Views about the medium term management of the South African hake resource

The South African Deep Sea Trawling Industry Association (the industry.) submits:

1. The available evidence indicates that the resource is under pressure. Industry concurs with the scientific view that the TAC must be reduced.

   *Certainly assessments indicate this to be the case for the M. paradoxus component of the resource, which is estimated to be heavily depleted. The situation does not appear quite so gloomy for the M. capensis resource, though this merits further discussion. Possibly the intended meaning of terminology "under pressure" is ambiguous here: industry may perceive "pressure" as when CPUE drops below a desired level, but that level might correspond to a relatively high proportion of the pre-exploitation level for M. capensis.*

2. The industry accepts the proposal to reduce the South African hake TAC in two phases.

3. The first phase will be to reduce the TAC by an amount of 5000 tons in 2006, to 153000 tons.

   *Simulations which are to be reported to the DWG are considering the implications of various initial levels of reduction, in conjunction with subsequent further action, to evaluate the longer-term consequences for the resource. The choice of the quantum here (5000 tons or otherwise) should be based upon consideration of the results of these simulations.*

4. The second phase will involve reducing the TAC by an amount of <u>at least</u> 5000 tons in 2007, to 148 000 tons. Prior to instituting this reduction and during 2006, the scientific determination of the appropriate TAC for 2007 will be revisited in the light of fresh data, to consider whether a reduction of 5000 tons is sufficient. The reduction should not be less than 5000 tons as a result of this determination, i.e. the 2007 TAC shall be <u>at most</u> 148 000 tons.

   *To date the DWG has agreed to focus candidate OMP evaluations on a fixed reduction for at least the first **TWO** years, with a decision rule coming into play for the first time in 2008.*

*Is the above suggesting that the decision rule should rather first be implemented one year earlier, in 2007?*

5. The industry is firm on the principle of reducing the TAC in two distinct phases but takes its information about the actual amounts involved from the scientific advice.

   *That indeed would seem consistent with the response to 1 above, and also to 4 if the decision rule came into play a year earlier in 2007.*

6. Reducing the TAC by two pre-agreed amounts gives time to re-evaluate the scientific basis for management and to gather fresh data which may lead to an improved understanding of appropriate management action for 2008 by mid-2007.

   *It is not quite clear here what is intended to be pre-agreed. Certainly the TAC for 2006 would be, but 4 above suggests otherwise for 2007.*

7. Industry is of the view that the steps set out above represent a responsible and conservative approach to the management of the resource consistent with the precautionary approaches articulated in the overriding Objectives of the Marine Living Resources Act and that they are fully compatible with the principle of sustainable resource utilisation as set out in the MLRA.

   *The suggestions hardly seem compatible with the application of a precautionary approach as now conventionally understood in international fishery management. No basis is offered to assess the medium term implications for the resource (which requires some specification of what action might be taken after the first two years, as well as consideration of associated uncertainties); no associated computations are offered providing forecasts to link to recovery reference points.*

8. A view has prevailed that the adoption of a formal OMP is binding on MCM and on industry in terms of the MLRA. The industry holds that there is no such statutory requirement. Industry proposals meet all provisions in the MLRA, particularly about the need for "precautionary approaches" for marine living resources. Industry regards these proposals as an effective precautionary management plan for the resource for the medium term.

   *As clarified in response to 7, the industry view stated (at least in its current form without accompanying analyses) is not consistent with a precautionary approach. An OMP is only as "binding" as there might be an absence of sound evidence that merits its change at the scientific level within MCM, which is the limit of the responsibility of the DWG. The procedures proposed in D:H:41 would seem to cover all industry's apparent concerns here.*

9. The industry has been deeply concerned that the current species splitting hypothesis has not been experimentally verified under commercial trawling conditions. It has consequently commissioned Capfish CC to carry out sampling work to obtain direct estimates of the actual species splits of hake on commercial trawlers. The one part of the project will be completed before the end of January 2006, and will gather species split information from 144 commercial trawls on 6 commercial trawlers. The other leg will start November 2005 and last approximately 24 months and will aim to gather information from more than 1200 commercial trawls. Interim data reports will be available throughout the duration of this

work. The data may well be relevant to crucial assumptions underpinning present estimates of resource productivity. These data should add considerably to scientific knowledge and contribute to an optimal strategy for the future management of hake resources. Thus, agreement on structuring the scientific process over the next two years needs to recognise the potential contribution that this study might make to the implementation of management measures.

*The information to be gathered is valuable and industry's efforts are to be commended. However, there needs to be realistic consideration of what statistically defensible outcomes are possible from this exercise. These will likely comprise a single estimate of the extent of bias in the current algorithm for splitting M. capensis and M. paradoxus in the offshore trawl catch. OMP2* (see Fig. 1b of D:H:42(rev)) is already being developed in anticipation of this information, so as to be able to take it into account.*

10. The industry considers that managing the resource substantively on the basis of a TAC alone is inadequate and is firmly of the view that the present downturn can be attributed in large part to a lack of management rigour in respect of effort control in all sectors of the hake fishery. Effort controls must become a part of the management of the resource. The industry is committed to a consultative process involving MCM with a view to developing appropriate effort controls in the fishery. This comment should not be taken to represent agreement on any particular method for instituting effort controls. All possibilities need to be considered going forward, the aim being to achieve consensus wherever possible but the industry is resolute that effort controls should be an integral part of any long term management approach for the resource.

    *No quantitative basis is offered to justify the statement that "the present downturn can be attributed in large part to a lack of management rigour in respect of effort control in all sectors of the hake fishery". Analyses attribute the current difficulties for the M. paradoxus resource primarily to poor recruitment over the turn of the century. Notwithstanding this, the possibility of input in addition to output controls for the hake fishery does merit attention.*

11. A better appreciation about recent recruitment trends should be achieved towards the end of 2007. The authorities and industry should then be in a better position to adopt appropriate management action for the 2008 calendar year and beyond.

    *It is true that by that time the strengths of the year-classes for which there is currently uncertainty will be more precisely estimated; but also by that time, further year-classes will have entered the fishery and their strengths will be uncertain (perhaps as much so as for the present ones). This form of argument raises concerns, as it can rapidly transmute to advocacy of a continuing entirely ad hoc approach which fails to evaluate and act on other than short term considerations.*

12. The scientific surveys normally conducted by the FRV Africana are essential to sound hake resource management. They would at this stage provide valuable information about the relative plausibility of stock assessment variants SR1 and SR2 in particular. The recent hiatus in the execution of these surveys may extend some time into the future and this possibility should be addressed in any overall agreement about future management action, and the attendant scientific process.

    *Continued Africana surveys are certainly important, and any OMP developed needs to be tested for robustness to the possibility of cancellation of one or more such cruises.*

13. Finally, it is noted that the two species paradigm upon which recent scientific management recommendations are based implies a number of new issues not previously encountered in the generic approach to management. For example, it becomes necessary to manage the entire TAC in order to address issues relevant to only one species – i.e. reduce the TAC significantly to address problems of depletion and poor productivity for ***M. paradoxus*** while ***M. capensis*** is assessed to not require any TAC reduction. Given the scale of management change required in order to affect any benefit for ***M. paradoxus***, it is important to be in a position to say whether the intended effect, at least at the level of a catch reduction, has in fact been achieved. It seems therefore that there needs to be a mechanism to assess the impact of the fishery on each species, i.e. there needs to be a way of calculating (and verifying) the annual catches of ***M. paradoxus*** and ***M. capensis*** directly. While a formula based on survey data (and supposed historical catch patterns) may be all that can be achieved with respect to disaggregating historic catches by species, it will not suffice for ongoing management. The industry feels that direct assessment of commercial catches is needed for future purposes. The implementation of such a mechanism should in industry's view be a condition for the acceptance of any long term approach to two species resource management.

    *Perhaps this reflects unfortunate choice of words, but the last sentence gives the impression that the industry is suggesting that **UNLESS** direct assessment of the species split of the commercial catch can be achieved, management should revert to treating the resource as if it were a single species. This would hardly be defensible as precautionary, particularly given current assessments of the status of the M. paradoxus component. Certainly it is to be hoped that direct assessment of this split will become an ongoing exercise. BUT in the meantime, the two species nature of the resource HAS to be addressed by management (indeed this has been the intent ever since the introduction of longlining changed selectivity for the fishery as a whole), and the **best available** information (the survey data) at the very least would seem essential to take into account until the situation might be improved.*

## Wording for consideration by the Demersal Working Group

The TAC for 2006 will be set at 153 000 tons, i.e. a reduction of 5 000 tons from the amount of 158 000 tons allocated for the 2005 season.

The TAC for 2007 will be set at 148 000 tons, i.e. a further reduction of 5 000 tons. This reduction of 5 000 tons will however be revisited during 2006, in order to determine whether a larger reduction should be put in place, or whether the 5 000 tons reduction for 2007 is enough. The cut cannot be made smaller than 5 000 tons at that stage. This revision will incorporate interim findings from a privately funded study aimed at obtaining direct estimates of species of hake landed in the fishery, and any other authentic new information that is available at that time.

The working group recommends that the basis for managing the resource be changed from one solely based on a TAC, to one which also involves substantive effort controls. Effort control implies the existence of a mechanism for distributing effort amongst participants in the fishery, and monitoring compliance with individual effort limitations. The working group recommends the immediate initiation of a process to develop appropriate effort control mechanisms for all sectors of the hake fishery. This should be achieved in consultation with industry. Such controls must be seen as integral to any long term management approach, and are essential for the successful management of the resource. The 2008 fishing season will constitute the target date for appropriate effort control mechanisms failing which the long term management plan will be delayed until such time as proper effort controls have been implemented.

The working group recommends the development of a mechanism for directly assessing the separate annual catches of ***M. paradoxus*** and ***M. capensis***. Such a mechanism is regarded as an intrinsic element of long term management plans based on a two species paradigm for South African hake. This mechanism needs to be fully in place in time for the 2008 fishing season. Failing this, other ways of mitigating against the implications of not being able to calculate the separate annual catches of ***M. paradoxus*** and ***M. capensis*** with acceptable levels of confidence need to be developed, implying the automatic revision of all long term resource management plans.

The working group recommends that two research surveys continue to take place each year (indeed more survey work would be desirable). These surveys are crucial to verifying the scale and timing of recruiting year classes, with substantial implications for future resource management. The implications of failure to execute these surveys are therefore considerable.