Plans for Assessment-related Analyses for the South African Hake Resource in 2008

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The effect of improved species-split of the catches based on date from on-board observers on the existing assessment will be investigated. This, in conjunction with other sensitivity tests on the 2006 assessment, will be carried out given the two further years of data now available to inform decisions (in terms of the agreed protocol) later in the year of whether there is any need to depart from the existing OMP.

Furthermore, modelling work for the South African hake resource in 2008 will be extended by concentrating on taking account of the gender-specific growth rates of each species, their spatial distribution, as well as the effect of predation/cannibalism. This will be carried out in three parts:

1) *Spatially-structured, species- and gender-disaggregated model*: This will consist of an age-structured model of the same form currently used, but further disaggregated by gender and into regions (100m depth zones on west and south coasts, maybe further divided longitudinally). Movement of the fish between regions will be explicitly modelled. The effect of gender-specific growth rates might be investigated first using a simple simulation, in particular to ascertain the consequences of using gender-aggregated age-length keys in circumstances where there are appreciable differences in somatic growth rate between males and females.

2) *Species-disaggregated model taking predation into account*: The current species-disaggregated age-structured model will be updated to include mortality due to predation (hake-on-hake only in the initial phases).

3) *GADGET model*: A model using the software GADGET will be constructed. It will be species-disaggregated, spatially structured and include predation/cannibalism.

Data required

The following data are required for the work described above:

1) Annual catches: disaggregated by species and regions.

2) GLM-standardised CPUE: disaggregated by species and regions.

3) Survey biomass estimates: disaggregated by species, gender and regions

4) Commercial catch-at-age/length: for fleet for which it is available, disaggregated by coasts at least. Catch-at-age data will be used only for years for which age-length keys are not available, for the other years, catch-at-length data will be used.

5) Survey catch-at-length: disaggregated by species, gender and regions. As for the commercial data, catch-at-length data will be used for years for which age-length keys are not available.

6) Stomach content information.

7) Any update on biological data (length-weight, weight-at-age, maturity-at-age, etc.).

Note that this will generally require data at a finer level of spatial resolution than that provided in the past. Furthermore:

i) regarding updated species-disaggregation of commercial catches, clarity is needed as regards the availability of observer data for this, who is to do the analysis, and what the target data for this is;

ii) detailed age-reading data, disaggregated by sex, will be needed for the investigation of the effects of the current practice of averaging age-length keys over sex.