ANNEX D

Suggested SPRFMO SWG Work Program Components

The Second session of the Preparatory Conference requests the Science Working Group (SWG) to consider the following issues in the development of a draft SWG work program:

Jack Mackerel

Stock assessment

- Incorporation of explicit spatial structuring in the Jack Mackerel assessment model, to facilitate evaluation of area specific management measures,
- The effect of seasonal and/or spatial closures of areas, including those with higher concentration of juveniles or adult aggregations (this requires that detailed seasonal/spatial time series are available),
- The effect of environmental conditions on the population dynamics of Jack Mackerel,
- Alternative population structures and possible management areas (this topic is presently under research).

It is emphasized that explicit incorporation of spatial structuring into assessment models, and investigating of the effects of alternative spatial management approaches and area-specific management measures, will require all the necessary data to be provided at fine spatial resolution, at least at the spatial scale at which spatial management approaches are to be investigated.

For catch and effort data, this will require that all participants submit tow-by-tow data, including fishing position data. For biological data (including catch-at-length, catch-at-age and gonad condition / spawning activity data), this will require that observer and onshore sampling programmes are adequate to provide the necessary biological data at adequate spatial scale for all areas covered by the fisheries. Observer programmes will need to be planned to ensure adequate spatial coverage of all areas. This will likely require that scientific observer coverage levels be increased above 10%.

Management advice in relation to reference points

The SWG is requested to evaluate and provide advice on a range of management options as well as a risk analysis for each option. If possible, management options should include:

- Catch levels likely to achieve particular fishing mortality and/or biomass reference points, within particular time frames,
- Minimum size limits and minimum mesh sizes,
- Closed areas and/or seasons, including those related to concentration of juveniles or spawning aggregations.

If possible, the combined effect of additional measures such as minimum catch sizes, minimum mesh sizes and/or closed areas/seasons should be evaluated.

Management Procedures and Harvest Control Rules

With the view to further developing the link between fisheries management and science, and in order to have a clearer understanding of the stock dynamics of Jack Mackerel in response to management measures, the SWG is requested to initiate and progress the necessary analyses, assessments and evaluations to support implementation of a Management Procedure for jack mackerel, including development of an appropriate operating model and evaluation of a range of alternative Harvest Control Rules to reach suggested target reference points over an appropriate year range, together with evaluation of associated risks and probabilities.

It is emphasized that development and evaluation of Management Procedures and Harvest Control Rules is an iterative process that will require sequential, repeated and close consultation between scientists, fisheries managers and Commissioners throughout the process.

Evaluation of Composition and Rates of By-Catch

Using available observer and other appropriate data, conduct initial evaluations of the composition and rates of by-catch of non-target, associated and dependant species, both retained and discarded, including impact assessments.

It should be noted that, to enable the above evaluations to be done, participants will need to ensure that data collected by observers includes data on retained and discarded by-catch, as required by the Data Standards for observer data.

Deep-water species

The SWG work plan should include the areas identified in the 2010 DWSG report, including:

- Predictive modelling to evaluate the likelihood of the presence of vulnerable marine ecosystems (VMEs),
- Methods to assess deepwater species and the provision of advice on their stock status and potential management approaches.
- Using available observer and other appropriate data, conduct evaluations of the composition and rates of by-catch of non-target, associated and dependant species, both retained and discarded, including impact assessments.

Squid

The SWG work plan should include the development of an understanding of the squid fishery, including stock status, predation rates on other species, potential management approaches and initial evaluation of by-catches.

Other Components

The SWG may consider other additional components, as needed.