**GBYP 04/2013 MODELLING APPROACHES: SUPPORT TO BFT STOCK ASSESSMENT**

**Lot 1: Risk Assessment**

**ICCAT\GBYP – Phase 4 – 2013**

**ICCAT Atlantic–Wide Research Programme on Bluefin Tuna (GBYP)**

**Imperial College London**

In the previous phases of the Risk Assessment, Imperial College has identified, through literature review, a list of uncertainties relevant to the management of the Eastern Bluefin tuna stock. This list was completed through interviews with stakeholders: GBYP scientists, managers and NGO observers. Semi-quantitative feedback was elicited from 28 stakeholders which allowed Imperial College to prioritise that list in terms of urgency of being tested in fully quantitative manner within either assessment or MSE approaches. It was discovered that individual stakeholder opinions differed on all three dimensions in which uncertainties were analysed: 1). importance in the management context - what impact a source of uncertainty is anticipated to have on the probability of achieving management objectives; 2). how likely it is that a particular uncertainty could be reduced by investing in research; 3). to what extent it was already represented in the current GBYP assessment. In order to understand the reasons for disagreements and explore the possibility of achieving consensus in a larger group, a focus workshop group of five people (four scientists and an NGO representative) was conducted (Tenerife, Spain). Through a group discussion, we succeeded in achieving consensus opinion on the most relevant dimension of these uncertainties to risk management, Importance. Using both these consensus scores and the overall stakeholder responses, we arrived at an action plan in consultation with the GBYP modellers of what order these uncertainties should be quantitatively tested. The resulting list of priorities (Table 1) is subject to computational constraints as some uncertainties are more difficult to translate into scenarios for MSE or to incorporate into an existing stock assessment model.

Proposed activities from the Accepted Tender

1. Attend BFT meeting in Tenerife, May 2013 **- Completed**
2. Construct the framework that will integrate the quantitative sensitivity analysis with the stakeholder uncertainty assessment – **Completed**
3. Prioritise uncertainties to reveal the most important candidates for elasticity analysis **- Completed**
4. Identify uncertainties not included in the current GBYP model **- Completed**
5. Weight the plausibility of scenarios to be used in MSE framework – **In progress**
6. A SCRS paper describing a quantitative risk analysis based on the qualitative work conducted under Phase 3, which provides a basis for weighting the scenarios used in the MSE) – **In draft**
7. Final report describing process, activities and findings – **In draft**

Table 1. Prioritised list of top 21 uncertainties, the following table show top 21 uncertainties that were agreed by the focus group to be either massively or majorly important; hoop diagrams showing all-stakeholder responses; the last column shows the a plan for quantifying each source of uncertainty (within Assessment, OM or elasticity analysis).















