

**REPORT OF FAO WORKSHOP ON “MODELLING ECOSYSTEM  
INTERACTIONS FOR INFORMING AN ECOSYSTEM APPROACH TO  
FISHERIES”, TIVOLI, ITALY, 3-6 JULY 2007**

D S Butterworth

In response to increasing global acceptance of the need for a wider ecosystem approach to fisheries (EAF) assessment and management, and the associated requirement for methodologies that go beyond conventional single-species approaches for the provision of scientific advice, FAO convened a meeting of leading practitioners in the development of aquatic ecosystem modelling as a tool for the provision of management advice. The group of 19 scientists invited from around the world, which met in Tivoli for four days, included four regular and four occasional attendees of IWC Scientific Committee meetings.

The group focused on the development of “best practice” guidelines intended to assist users in the construction and application of ecosystem models for EAF. These guidelines were detailed under the headings of:

- Model aggregation
- Spatial considerations
- Model components
- Predator-prey interactions
- External forcing
- Model structure
- Technical and non-trophic interactions
- Dealing with uncertainty
- Use and outputs.

The group recognized the considerable uncertainties in the predictions provided by ecosystem/multi-species models, but also that management decisions need to be taken concerning ecosystem issues. They stressed that in the context of EAF, the best available scientific advice, based on ecosystem models which rest on explicit and principled arguments, needs to be offered; this is to avoid the situation of decision makers having to resort to their own mental models which may frequently be subjective, untested and incomplete.

The group considered that ecosystem models are not yet at the stage where a single model of this type could be selected as a “management model”, and be reliably used to provide tactical management recommendations (e.g. concerning catch limits) in a particular case. Rather they considered that the immediate use for such ecosystem models was to provide a range of operating models for testing simpler models (one example would be the IWC’s RMP) for providing management advice, so as to confirm that these provided satisfactory and robust performance in the presence of ecosystem interactions and objectives related to ecosystem aspects.

The report will shortly be published by FAO under the title: 2. The ecosystem approach to fisheries. 2.1 Best practices in ecosystem modeling for informing an ecosystem approach to fisheries. *FAO Fisheries Technical Guidelines for Responsible Fisheries*. No. 4, Suppl.2, Add.1. Rome, FAO. 2008. 42p.