

**Report of the Basic Document Working Group (BDWG) to The Joint  
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on

**Harvest Control Rules for Management of Fisheries on Cod and Haddock – and  
Optimal Long Term Optimal Harvest in the Barents Sea Ecosystem**

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**Optimal long-term harvest in the Barents Sea Ecosystem**

The work of IMR and PINRO on the joint Program for estimation of optimal long-term harvest in the Barents Sea Ecosystem was adopted at the 33rd session of the Commission continues. The study was focused on the comparative analysis of the Bifrost, Gadget and STOCOBAR models that are used in association with the Joint Research Programme. At a meeting in Bergen in December 2008 the plan for comparison of models was agreed upon. This plan was adopted at the 2009 March meeting between IMR and PINRO scientists.

The aim of this work is to produce model projections on NEA cod response to different fishing and ecosystem scenarios, and identify and analyse the differences in outputs between the Gadget, STOCOBAR and Bifrost models. Such comparison provides an idea of the effect of structural uncertainty in model projection on cod stock dynamics.

In accordance with this plan comparative model runs for historical and future scenarios were done. The models were run into the future using a common set of assumptions. A range of different cod fishing scenarios is constructed. The base case is based on the current management rule used in setting the TAC. There is a range of other alternatives that could be considered, such as a different biological reference point, or fishing mortality. A similar exercise will be conducted on climate scenarios, using temperature as the key variable.

Outputs of comparative model runs conducted at PINRO and IMR were exchanged. These results are discussed now and will be presented at the ICES Working Group on multispecies assessment methods (WGSAM) in October and at the UNCOVER symposium in Rostock in November.