

"Using multi models to design multi-annual management plans. The experience of the North Sea and European Western Waters"

Ernesto Jardim, Arina Motova, Finlay Scott and Iago Mosqueira

In 2015 the Scientific, Economic and Technical Committee for Fisheries of the European Commission was asked to evaluate a set of proposals for multi-annual management plans (MAPs), in agreement with the 2013 Common Fisheries Policy (CFP) regulation. The new MAPs increased the scope of the previous plans, which were mostly single species, to cover mixed-fisheries in large areas. These MAPs included 20+ species and 10+ fleets, covering three large areas: the North Sea; the Celtic Sea, West of Scotland and Western Channel; and the Bay of Biscay and Iberian waters. The analysis was required to include ecology, ecosystem and economic impacts. As expected, bio-economic-ecosystem models covering all the required species, fleets and areas were not available. Using developments from recent scientific projects like SOCIOEC, GAP2, DAMARA, GEPETO and MYFISH the analysis used a wide range of models (Fcube, FLBEIA, Ecopath with Ecosim, SIMFISH, FISHRENT, IAM, a4a, SSFDYN) to evaluate parts of the scope of the plans and build a (quasi) coherent narrative on the effects of the different management options and provide scientific advice to policy makers. These models implement very distinct concepts of the marine system. Due to the differences in models the analyses were carried out in relative terms, comparing the outcomes of specific scenarios to a baseline scenario for each model. Such approach allowed the evaluation of the changes induced by the different scenarios to be compared while minimizing the model effect.

Keywords: multi-annual, management, models, North Sea, Celtic Sea, West of Scotland, Western Channel, Bay of Biscay, Iberian waters, FCube, FLBEIA, Ecopath with Ecosim, SIMFISH, FISHRENT, IAM, a4a, SSFDYN, CFP, Europe

Contact author: Ernesto Jardim, European Commission Joint Research Centre, ernesto.jardim@jrc.ec.europa.eu