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Improving the analytical assessment of fish stocks by providing parameters of data quality via InterCatch

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Abstract

The last multiannual Community program for the collection, management and use of data in the fisheries sector (Commission Decision 2008/949/EC) stated the provision of precision levels and sampling intensities of the estimates at national level. However, the unequal compliance of this standard has hindered its application in stock assessment and the consequent scientific advice. The cost-benefit analysis of a sampling program, besides addressing logistical and economic constraints, should deepen the potential of the tools currently available. This article proposes to test the calculation, provision and use in stock assessment of extensively collected precision parameters. First, sampling intensities and coefficients of variation of fisheries-dependent parameters are calculated using the COST software, a statistical tool specifically designed to quantify uncertainty in marine sampled data. Secondly, alternative ways are explored to provide precision parameters to the stock assessment coordinators by using InterCatch, the existing ICES web-based system to submit national data and compile international catch matrices. Finally, the incorporation of these precision parameters in the assessment model is tested, through a stock assessed by statistical assessment models (such as SS3) which can account for sampling errors. Thus, it will be possible to quantify how errors in input data propagate through stock assessment models to affect harvest rules, and also to help identify the most cost-effective data collections that adequately support the advisory process.

Keywords:
Fishery-dependent data, quality parameters, stock assessment, InterCatch

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