

Title: Towards Development of Biological-Economic Evaluation tool in Fishery Policy: Cost-Effectiveness Analysis of Protecting Species in a Multi Species Fishery

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Abstract: The paper argues that Cost-Effectiveness Analysis (CEA) can be a suitable evaluation tool in cases where some of the benefits are difficult to measure (e.g. habitat protection) and where the tangible benefits are lower than the cost. An example is policies aiming at protecting a single species in multispecies fisheries. The resulting cost-effectiveness ratio gives the cost of achieving a certain objective and can be compared with the willingness-to-pay for the policy, often expressed by the politicians. Implementing more selective fishing technologies with the purpose to reduce discards of juvenile fish and unwanted bycatch has been identified as one of the primary means in rebuilding plans. The paper develops how to measure the effects of selective fishing gears and how to include several effects such as different species or age classes in the analysis. It further evaluates the consequences of the different effect measures on the recommendations from the cost-effectiveness analysis. The paper compares results from two different selective gears implemented to a case study in Kattegat and Skagerrak applying the proposed cost-effectiveness tool. The results point to cost involved in protecting the cod stock and cost-effectiveness ratios around 100 DDK, showing the cost per unit changing stock biomass. Given that a selective gear policy is already in place, the (implicit) willingness-to-pay has been higher than 100 DKK.