Introduction to Myfish Decision Support Tables

Decision Support Tables (DSTs) are graphical tables reflecting the effects and trade-offs of implementing different Maximum Sustainable Yield (MSY) variants on ecosystem, economic and social constraints with a particular focus on the risk of exceeding acceptable levels for constraints. The goal of DSTs is to convey a large amount of information on alternative management scenarios in an accessible manner, making it better understandable to fisheries stakeholders. Decision Support Tables have been created for the **Baltic Sea**, the **Mediterranean Sea**, the **North Sea**, **Western Waters** and **Widely Ranging Fish** based on the Myfish models developed in WP1. More information related to the details of the models used to produce the tables can be found in D1.3 (Model development) which is available to view on the Myfish website.

The involvement of stakeholders in the Myfish project and their feedback is an integral component of the development of the project. Decision Support Tables have been used to present the results of the project to stakeholders in WPs 2 and 3. To further support the involvement of stakeholders, the Decision Support Tables have been made available on the Myfish website. Visitors to the website can investigate management measures, and find out which consequences an implementation could have on economic, ecological and social aspects in the region and the distance to the Maximum Sustainable Yield (MSY) variants optimums.

One of the visualization techniques used in MYFISH to communicate complex information is icon arrays. These have been demonstrated to be very effective visual tools to explain risks in other applications (Ancker et al., 2006; Spiegelhalter et al., 2011). There is scope to use icon arrays more widely in fisheries to demonstrate the various impacts of different management options, showing both trade-offs and uncertainty in being able to predict them. As far as we are aware such approaches have been applied in fisheries management in only a few examples.

MYFISH DSTs integrate a number of graphical devices: icon arrays which also incorporate ‘fading out’ to represent uncertainty; icons that closely resemble the actual species concerned; different types of icon to represent different quantities, fish stock or profit; and colour to show regions of particular concern. Much of the power of these graphical devices lies in them being more easily understood compared to complex tables of numbers. The number of cod icons refers to the mass of cod, the number of

Euro signs to profit, the colour red to problems, and fading to uncertainty. The goal is to convey a large amount of information in a manner which makes comparison across several criteria of the merits of alternative management scenarios more accessible to stakeholders than would be achieved with a table of numbers. Below, there are several examples from the project.

Ancker, J. S., Senathirajah, Y., Kukafka, R., and Starren, J.B. 2006. Design features of graphs in health risk communication: a systematic review. Journal of American Medical Informatics Association 13: 608-618.
Spiegelhalter, D., Pearson, M., Short, I. 2011. Visualizing uncertainty about the future. Science. 333 (6048): 1393-1400. DOI: 10.1126/science.1191181

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