

Title: **Parallel Agreements in Fisheries Management**

Authors: Lone Grønbaek Kronbak, Department of Environmental and Business
Economics (Denmark)
Marko Lindroos, University of Helsinki (Finland)

Abstract: Many commercial fisheries around the world experience spatial coexistence of species and imperfectly selective harvesting gears. This makes these fisheries multi-product industries, that often harvest multi-species or have a bycatch of another (maybe also valuable) species, which may or may not be target species for another fishery. Traditional game theoretic fisheries literature often ignores this above sea interlink of species when applying one species models. Also, in the management setting the interlink between species above sea level is often ignored since these species are managed both biologically and economical separately. This paper explores the biological and the economic consequences of ignoring this interlink, thus making separate management agreements instead of parallel agreement in both a cooperative and a non-cooperative framework. The paper shows that there will always be economic gain from including the knowledge about the interlink in the joint management of species, but the biological consequences for stocks is ambiguous and very dependent on the economic importance of the species. Our results are illustrated by applying the model to the mixed trawl fishery in Kattegat and Skagerrak where there is coexistence in habitat of cod and Norway lobster.