

SEMINAIRE AMURE



Mercredi 05 novembre 2014

10h00 >12h

Salle B 101

UBO – Bât. B, 12 rue de Kergoat



↘ Examining the dynamics of the South African hake demersal trawl industry between target resource and markets through quantitative and qualitative data and an agent based model

Rachel Cooper
Marine Research Institute, University of Cape Town,
Private Bag X3, Rondebosch, 7701, Cape Town, South Africa
rachelc333@gmail.com

Abstract

The talk, in a few words: The project examines the demersal hake trawl in South Africa to understand the function and drivers of the fishery from an ecosystems approach perspective. To do this a study of the industry's structure, its markets and general function were undertaken, followed by the (ongoing) creation of an (economic) agent based model of the fishery.

The details: The offshore demersal hake trawl industry is the largest sub-sector accounting 85% of the catch, of South Africa's most valuable fishery, the hake (*Merluccius capensis* and *M. paradoxus*) directed fishery which generates ~30 000 jobs and comprises more than 50% of total SA fisheries value. This sector is an example of a highly vertically integrated industry that exports a large quantity of its mainly MSC-labelled product to Europe (including the UK). In 2006 the industry changed to long term rights allocated for a 15 year period and the effects of this, as well as changes in export markets with the economic crisis were examined. A structural representation of this subsector, its fleet,

vertical integration level, consolidation extent including horizontal clustering e.g. catch-share agreements, product value-adding and heterogeneity in business models were elucidated through government and industry consultation.

Due to the heterogeneous nature of companies in the industry, it is hypothesized that changes in market forces in terms of volume, price, product type demanded (e.g. fresh vs frozen) will have dissimilar effects on different types of companies and on the hake resource. Modelling provides one way of exploring scenarios of such changes. The aim of this project is to gain a preliminary understanding of the dynamics of the industry of this sub-sector, i.e. the post-harvest industry between target resource and market, with regard to its structure and the relative importance of internal and external drivers, such as consumer preferences/demand for fresh or frozen fish through the development of an agent based model prototype of the post-harvest industry. The importance of a prototyping approach in developing this type of model is emphasized, particularly where the ultimate aim is to use this economic model in conjunction with ecological models in an ecosystem approach to fisheries framework.

For further interest: Rachel Cooper, Anthony Leiman, & Astrid Jarre. An analysis of the structural changes in the offshore demersal hake (*Merluccius capensis* and *M. paradoxus*) trawl fishery in South Africa. *Marine Policy* 50 (2014) 270-279.