

Hake catchability: any relation to environmental parameters in the Namibian waters?

Paulus Kainge, Kai Wieland, Johannes Kathena

Studies on several demersal fish species have shown that variability in environmental conditions (including oxygen, temperature, wind and time of day) during trawling may result in differences in the catchability of the trawl gear, which may cause differences in abundance estimations of stocks. This is even complicated in the case of the hake stocks, which are known to perform a diurnal vertical migration in search of food. These survey abundance estimations, together with commercial catch-at-age and catch per unit effort (CPUE) indices, are key input data into the stock assessment model that guides scientific TAC (Total Allowable Catch) recommendations and other management measure advices, for the Namibian hake stocks. The project aims at studying the effects of such environmental parameters on the availability of hakes to the demersal trawl gear and will attempt to correct the abundance estimations accordingly. At this stage, the work encompasses an exploratory analysis to identify key variables and hypothesis, literature review on diurnal effects on bottom trawl catches of hake (local, regional and international), an analysis of annual routine monitoring surveys and then come up with appropriate methods for future work, including dedicated new field studies on the effect of various environmental factors on the consistency of hake abundance estimates from the surveys. This will provide essential information and biological background data in particular for the application in size-based stock assessment models. The knowledge obtained from the study will provide a new dimension to monitoring stock assessment surveys in the BCLME (Benguela Current Large Marine Ecosystem) region. It will improve the reliability of abundance estimates and also understanding of stock behaviour, which will in turn result in an improved assessment and better management advice for the sustainable utilization of the two hake species in Namibian waters.