Annex 06. List of Working Documents

WD 01 Irish Maturity Ogives 2004–2014
Hans Gerritsen
This document provides maturity-at-age estimates for stocks assessed by the WGCSE and WGBIE. All data are obtained on surveys and commercial sampling carried out by the Marine Institute.

WD–02 Information from the Irish and French IBTS surveys to inform the assessment of monkfish in 78ab
Hans Gerritsen
The French and Irish IBTS surveys appear to have good coverage of most of the distribution of Lophius spp. For L. piscatorius the first two age classes appear to be fully covered by the depth range of the surveys. It is not clear whether the full adult population is covered as considerable numbers may be present at depths greater than those covered by the surveys. It is possible to track cohorts in the length frequency distribution of both species, allowing growth parameters to be estimated. This, in turn, allows the length distribution to be split into age classes. The resulting numbers-at-age index shows good cohort tracking and internal consistency. If accurate catch or landings length-frequency data can be obtained, it may be possible to apply a similar length splits, using growth parameters estimated from the survey, which would allow an age-based assessment which can make use of the strong contrast between cohorts.

WD–03 IEO scientific estimation of WGBIE stocks landings
José Castro
The methodology used to estimate Spanish landings had to be updated when processing the 2013 fisheries data due to changes in the quality and availability of fisheries statistics. WGBIE discussed and accepted this new methodology but requested a review of data from the previous two years (2011-2012) in order to facilitate comparison between both approaches. The 2013 data submitted last year were obtained with a preliminary version of the new methodology and therefore new landings estimations for the period 2011-2013 have been uploaded this year to InterCatch for northern and southern stocks of hake, anglerfishes and megrims. This working document describes both methodologies and provides an interpretation of their respective results.

WD-04 Review of the Spanish commercial tuning indices used in the assessment of the southern stocks of hake and anglerfish, and FU25 of Norway lobster
J. Castro and R. Morlán
The largest Spanish commercial tuning indices in Atlantic Iberian waters are based on the bottom otter trawl fleet that operates from the port of A Coruña (Galicia, Spain). They are used by ICES in the assessment of a variety of Iberian demersal stocks, such as hake, anglerfish, megrims and Norway lobsters. However, the adaptation of scientific data bases to the recent update of raw fisheries statistics has caused irregularities in the submission of these tuning indices in the last five years. This paper provides the A Coruña commercial tuning indices for the southern stocks of hake, white anglerfish and black anglerfish, as well as Functional Unit 25 (West Galicia) of Norway lobster for 2009-2014.
**WD–05 Improved time-series of Hake catches per unit of effort for the Portuguese OTB fishery**  
João Pereira and Bernardo Alcoforado  
During the 2010 benchmark, a new approach to the definition of a standardised hake CPUE time-series was proposed by Cardador and Jardim for the Portuguese commercial trawl fleet (as part of a Working Document). This methodology was defended and eventually approved to become part of the stock annex for the assessment of the species. It involved the analysis of vessel activity logs relating to individual vessel catches in weight by species, made within particular ICES rectangles over a specific number of hauls of a set duration. To this the main characteristics of each vessel (power, gross registered tonnage, length overall and type of license) were added in order to better characterise the catchability of fleet segments. The approved methodology was followed to produce a time-series used in the 2010 assessment with data up to 2009. Thereafter, several constraints made it impossible to update the series, which was nonetheless kept in the model. One of the main constraints was the introduction of a different data recording methodology used by the Fisheries Directorate General in Portugal, which relates to the gradual replacement of paper-based by electronic logbooks. In 2014, after the near complete implementation of electronic logbooks, a whole new time-series was reconstructed, which was then processed following the benchmark agreed methodology in order to obtain a new cpue time-series.

**WD–06 Langolf survey carried out from 2006 to 2014**  
Spyros Fifas et Michele Salaun  
The WD (powerpoint presentation) summarise the results of the Langolf survey carried out in the Bay of Biscay from 2006 to 2014.

**WD–07 UWTV survey trial carried out on the Nephrops stocks of the Bay of Biscay**  
Spyros Fifas et Michele Salaun  
The WD (powerpoint presentation) presents an exploratory Nephrops UWTV survey carried out in 2014 in the Bay of Biscay.

**WD–08 Estimation géostatistique de l’abondance de langoustine du Golfe de Gascogne par campagne de vidéo sous-marine**  
Mathieu Woillez, Spyros Fifas et Michele Salaun  
The WD (powerpoint presentation) presents a geostatistical analysis of the LAN-GOLF-TV carried out in the Bay of Biscay in 2014 to map and estimate the abundance of the Nephrops stock.

**WD–09 Improving stock assessment and managing bycatch rates using a multispecies approach. A case of study of the European Hake, Common and Bottlenose dolphins in Atlantic waters of the Iberian Peninsula**  
Camilo Saavedra, Santiago Cerviño and Simon Nothridge  
Single-species models have been widely used to assess fish stocks; however, multispecies models offer a number of advantages over single-species models as a better appreciation of the fishing on ecosystem structure and function, and of the need to
consider the value of marine ecosystems for functions other than harvesting fish. The EU fishing policy demands that fisheries management moves toward an ecosystem approach, and ICES is seeking ways to ensure more integrated ways to present advice. In this working document a multispecies model is presented. Two species of cetaceans (Common and Bottlenose dolphins) were joined to the current Gadget model used for the assessment of the Southern European Hake. Dolphins act as predators of hake, since high consumption of hake and strong trophic interactions between these species were noted in previous studies. In this document we described the available data that were used to construct the model and the lack of good information to estimate some parameters were discussed. Special attention was placed on the estimation of the natural and bycatch mortality from strandings, trends in the abundance and proportions of prey consumed. Moreover, the possibility of assessing fisheries and marine mammals simultaneously was discussed. Cetacean bycatch mortality is fleet dependent and partial effort levels can be linked with a potential bycatch rate. Bycatch rates provided by observers on board are the best way to obtain accurate bycatch estimates of the fleet. However, since those are not currently available, our model might also provide a way to explore the feasibility of considering impacts of fishing on non-target species.

**WD-10 Nephrops (FU 30) UWTV Exploratory Survey on the Gulf of Cadiz Grounds**

Yolanda Vila, C., Sobrino, I., Soriano, M., Barragán, C., Rueda, J.L., Gallardo, M., Farias, C., Canoura, J. and Gil, J.

The WD presents an exploratory Nephrops UWTV survey carried out in 2014 on the Gulf of Cadiz fishing grounds by the Spanish Oceanographic Institute (IEO) within the framework of a project supported by Fundación Biodiversidad (Agricultura, Alimentación y Medio Ambiente Ministry) and European Fisheries Funds (EFF). The survey was designed from a multidisciplinary approach and the main objectives of the survey were: To set up the equipment and the UWTV survey methodology in the Gulf of Cadiz, obtain estimates of Nephrops burrows densities from a randomized isometric grid of UWTV stations spacing 5 nautical miles, obtain density estimates of macro benthos species and the occurrence of trawl marks on the sea bed, to collect sediment samples using a meso Box-Corer, to collect oceanographic data using a sledge mounted CTD.

**WD-11 Stock definition of plaice and sole in 7hjk (WGCSE) and 89a (WGBIE)**

Hans Gerritsen

Plaice and sole in 7hjk and 89a are generally caught on distinct patches of sandy ground. It is not known how much exchange of eggs/larvae/fish there is between these patches. With the exception of sol-89a the landings are minor and result from bycatches in a mixed fishery. For these species areas 7hjk and 89a are at the edge of their distribution and their abundance in these areas is very low compared to their main distribution area.

**WD 12 French Logbook data analysis 2000–2013: possible contribution to the discussion of the sea bass stock(s) structure/annual abundance indices.**

Alain Laurec and Mickael Drogou

Daily catch rates per vessel, grouped within months and ICES rectagles, have been analysed.
basically through a multiplicative two factors model in order to estimate fishing powers and apparent abundances time series of sea bass within ICES rectangles. The abundance times series could potentially be used as an index of abundance for the stock assessment of sea bass.