## Boarfish in the Northeast Atlantic: the basis for the ICES advice and how it relates to the landing obligation

Martin Pastoors (IMARES)

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The ICES advice for boarfish in the Northeast Atlantic was based on a full assessment in 2013. This was the first time that the assessment model was applied for this stock. ICES noted that:

"The 2012 and 2013 acoustic survey data were considered reliable, but there is high uncertainty in the estimates of total biomass due to the short time-series. Bottom-trawl survey indices were considered indicative of trends in their respective areas. The commercial catch data are thought to be quite complete, including discards from other fisheries from 2003 onwards. It is thought that discarding due to bycatch fisheries prior to 2003 were likely to have been small in comparison with subsequent catches." (ICES 2013, section 9.4.6).

The ICES expert group dealing with this stock (WGWIDE) commented on the discard data (Table 6.1.2.4) available for boarfish as follows:

"Discard data were available from Dutch and German pelagic freezer trawlers (areas not specified) and from Irish, Spanish and Portuguese demersal fleets (Prista et al., WD 2013; Valeiras et al., WD 2012; van Overzee and van Helmond, 2013). The Portuguese data relate to Division IXa and are not relevant to this stock. (...) Discard data were included in the calculation of catch numbers at age. All discards were raised as one métier using the same age length keys and sampling information as for the landed catches. In the absence of better sampling information on discards, this was considered the best approach." (WGWIDE 2013)

Table 6.1.2.4. Boarfish in ICES Areas VI, VII, VIII. Discards of boarfish in demersal and non-target pelagic fisheries by year (t), 2003–2012. (Data provided by Working Group members). These figures may not in all cases correspond to the official statistics and cannot be used for management purposes.

Year	Germany	Ireland	Netherlands	Spain	Total
2003		119	1998	8812	10929
2004		60	837	3579	4476
2005		55	733	5007	5795
2006		22	411	3933	4365
2007		549	23	2617	3189
2008		920	738	8410	10068
2009		377	1258	5047	6682
2010		85	512	5947	6544
2011	49	107	185	5461	5802
2012		181	88	6365	6634

This means that discard data have been integral part of the stock assessment procedure and the ICES advice. This also means that the calculation of recent fishing mortality and Fmsy takes into account the discards that have been generated since 2003.

There appears to have been a weak relationship between discards and landings over the period that a targeted fishery has developed (2007-2012). In the table below (based on WGWIDE 2013), the estimated discards have been relatively stable whereas the landings have fluctuated substantially. This is also visible from the higher Coefficient of Variation (CV) for the landings compared to the discards. This indicates that the landings are probably related to targeted fisheries for boarfish, whereas the discards are generated as bycatches in other fisheries for horse mackerel or whitefish.

Year	Ireland	Denmark	Scotland	Total	Discards	Total catch	%disc			
landings										
2003	458	0	0	458	10929	11387	96%			
2004	675	0	0	675	4476	5151	87%			
2005	165	0	0	165	5795	5960	97%			
2006	2772	0	0	2772	4365	7137	61%			
2007	17615	0	772	18387	3189	21576	15%			
2008	21585	3098	0.45	24683	10068	34751	29%			
2009	68629	15059	0	83688	6682	90370	7%			
2010	88457	39805	9241	137503	6544	144047	5%			
2011	20685	7797	2813	31295	5802	37097	16%			
2012	55949	19888	4884	80721	6634	87355	8%			
Avg 2007-12	45487	14275	2952	62713	6487	69199	13%			
StDev 2007-12	29849	14523	3619	46381	2201	46616				
CV 2007-12	66%	102%	123%	74%	34%	67%				

Because the discards have already been taken into account in the assessment and advice, setting a catch quota in line with the ICES advice would include the level of discards observed in the recent three years. Whether these discards would be landed under the agreed landing obligation or whether they would be discarded under a de-minimis exemption would not matter for the resulting fishing mortality, as long as these catches are fully and verifiably documented. It could be debated whether a catch quota would need to be established if a de minimis exemption would be applied.

## References

ICES (2013). Report of the ICES Advisory Committee, 2013, ICES advice, 2013. Book 9, section 9.4.22.

WGWIDE (2013). Report of the Working Group on Widely Distributed Stocks (WGWIDE), Copenhagen, 27 August-2 September 2013. ICES C.M. 2013 / ACOM:15.