

8.6 Icelandic case study

8.6.1 Brief presentation of the CS and fisheries concerned

The individual transferable quota system (ITQ) has been in effect in Iceland since 1984, and like most other fisheries management regimes, it can generate an incentive for discarding catch. However, there is a discard ban in place in Icelandic waters. It is obligatory to land all catch with the exception lumpsucker that is alive in hauled nets and all halibut (*Hippoglossus hippoglossus*) catches that are believed to be able to survive. Moreover, it is permitted to discard worthless fish, intestines, fish heads and other things alike that results from on-board handling. Few exceptions are to that rule, such as factory trawlers that are obliged to land a portion of cod heads. So in practice, the landing obligation only applies to catches that have potential commercial value.

The level of discarding and estimation of the amount of discards has been controversial. In general, discards have been seen as an unfortunate but rather small problem in large scale fisheries in Iceland. Discards are primarily noticeable in the demersal fisheries, and are only estimated for cod and haddock; the two most valuable species and the species most commonly characterised as choke species.

Latest estimates for discarding are since 2012. Discards were low in 2012 in all gears, or 0-0.71% of landed catch. Total cod discards were 0.41% of landed catch and total haddock discards 0.08%

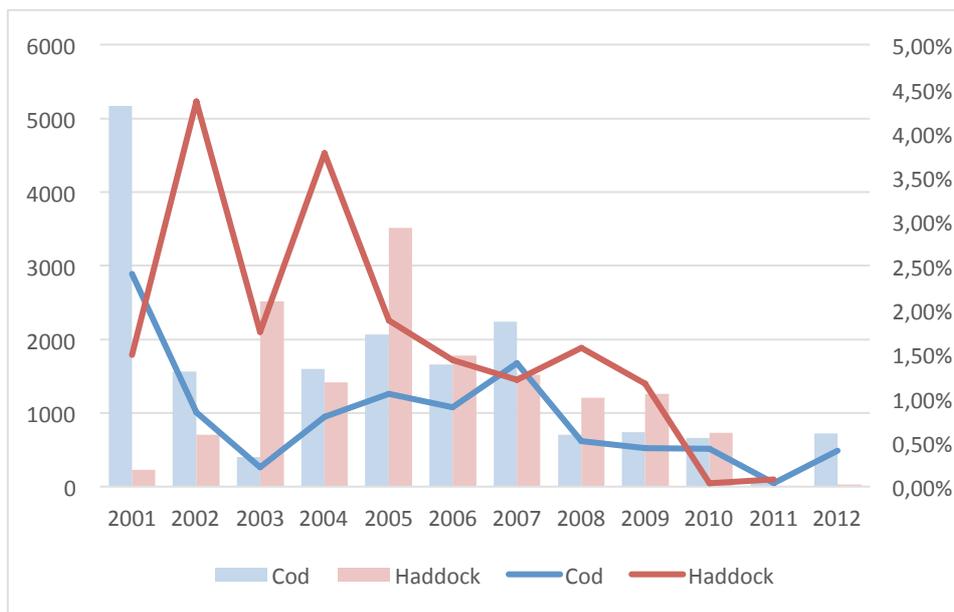


Figure 31: Discard estimates for cod and haddock (Pálsson et. al, 2013).

8.6.2 Causes of discarding

The main reason for discarding is high-grading which result from the ITQ system – so the cause can be classified as legislative. For example, there are some indications of discarding of cod in the lumpsucker fishery. Although this has not been thoroughly investigated, it seems that in some cases cod is not

caught by those lump sucker fishers who don't have cod quota, despite other vessels in same area are catching cod at the same time. Recently, small boat owners have been complaining about too much haddock close to the coast where the small boats operate and too little quota at the same time⁹.

During the early years of the ITQ system (1991-2005) there were a considerable part of the Icelandic fishing fleet that rented a substantial part of the quotas they fished. Most of these vessels were owned and operated by their captains, larger part of the crew. The ITQ rental fee was an incentive to high-grade and/or discard chock species. Over the past 10-20 year these vessels, relying on rental quotas, have sized operation and have been bought up by larger seafood companies. As results, almost all of the Icelandic fleet is now owned by relatively few companies that have adequate quotas and the crewmembers do not have private financial incentive to discard.

8.6.3 Effects of discarding

There have been done some experiments on mortality of discards and escapees in Icelandic waters (Pálsson et al 2003) but these studies have been far apart and focused on few species. Ecological and economic effects of discarding have not been studied much in Icelandic waters, since discarding is illegal.

8.6.4 Discard Data

Systematic collection of data in order to estimate discards has not been carried out in Icelandic waters. The discards are estimated with statistical methods, based on landing data and length data. Observers have however during the decades made length measurements of fish on board commercial vessels but the aim is to minimize the catching of undersized fish. The data used to evaluate discards are those length measurements at sea and landings data. The data collection is mainly directed towards long-line, gillnet, Danish seine and trawl fisheries for cod (*Gadus morhua*), and long-line and trawl fisheries for haddock (*Melanogrammus aeglefinus*). In addition, the species composition of landed catch is viewed in relation to quota status and other factors.

8.6.5 Methods for reducing discards

The Icelandic ban on discarding has been coupled with the establishment of a "bycatch bank" in 1989 which operated for a few years. The primary aim of the bank was to demonstrate to fishermen and the fish trade that there were markets for unusual species of fish caught as bycatch and where necessary introduce and promote those new species to consumers. This was done by such activities as "strange fish weeks" in restaurants, manuals which assist in identification of new species and recipe booklets. The bank organised to purchase blocks of frozen fish of normally non-commercial species from fishing boats, arranged taste panels, promotion schemes and sales to restaurants etc. As a result fish such as megrim, witch/pole dab and rough dab are the subject of specific fisheries in Iceland and a number of others such as starry ray (*Raja radiata*), great silver melt (*Argentina silus*), grenadiers (*Macrouridae*)

⁹ <http://www.smabatar.is/2014/01/ysukvoti-krokabata-a-klarast.shtml>

and piked dogfish (*Squalus acanthias*) are caught and traded through normal channels, with other species such as Portuguese shark (*Centroscyrnus coelolepis*) showing potential for market expansion.

Technical measures to mitigate and/or avoid discards include grids in trawlers that let the smaller fish easily escape, escape panels and T90 netting (turned mesh netting) which also improves size selection. In demersal fisheries, the minimum mesh size is 155 mm in the cod-end and 200 mm elsewhere.

8.6.6 References

- Pálsson, Ó.K., Björnsson, H., Gísladóttir, H., Guðmundsson, S., Ottesen, Þ. 2013. Mælingar á brottkasti þorsks og ýsu 2012 (e. Measurements of discards of cod and haddock in 2012). Hafrannsóknir nr. 171. Published by Hafrannsóknarstofnun (Icelandic Marine Research Institute) and Fiskistofa (Icelandic Fisheries Directorate).
- Pálsson, Ó.K., Einarsson, H.A., Björnsson, H. 2003. Survival experiments of undersized cod in a hand-line fishery at Iceland. Fisheries Research 61 (2003) 73-86.
- Ministry of fisheries and agriculture. Regulation on utilisation of catch and bycatch (810/2011). 2011. Available online: <http://www.reglugerd.is/reglugerdir/allar/nr/810-2011>
- Thorsteinsson H P and G Valdimarsson (1994) Experimental utilisation and marketing of by-catches and deep water species in Iceland. From: Deep-Water Fisheries of the North Atlantic Oceanic Slope: Proceedings of the NATO Advanced Research Workshop, Hull, UK, March 1994. A G Hopper (Ed) Kluwer Academic Pubs.