



Serial No. 3582
(A.a.4)

ICNAF Comm.Doc. 75/19

ANNUAL MEETING - JUNE 1975

Minimum fish and mesh size regulations in Iceland

by

the Icelandic delegation

I. As explained by the Icelandic delegation to the 24th Annual Meeting, Iceland makes a point of using minimum fish and mesh sizes as conservation tools. This paper accounts for recent Icelandic development in this respect and the reasons behind the new regulations which have been put into force.

II. 1.

On 16 May 1974 (now regulation No. 393, 31 December 1974), the Iceland Ministry of Fisheries issued a regulation which increased considerably the minimum sizes of fish and meshes in bottom trawls, midwater trawls and Danish seines. The new minimum sizes, according to this regulation, are as follows:

a) Minimum size of fish	<u>Iceland</u>	<u>NEAFC (Area (a))</u>	<u>NEAFC (Area (b))</u>
Cod	43 cm	34 cm	30 cm
Haddock	40 cm	31 cm	27 cm
Coalfish (<i>Pollachius virens</i>)	45 cm	No minimum size	No minimum size
Plaice	34 cm	25 cm	25 cm
Whitch	30 cm	28 cm	28 cm
Whiting	40 cm	23 cm	23 cm
Dab	20 cm	15 cm	15 cm
Catfish	40 cm	No minimum size	No minimum size
Redfish	500 gr	No minimum size	No minimum size
b) Minimum mesh of nets	<u>Iceland</u>	<u>NEAFC (Region 1)</u>	
<u>Seine net</u>	135 mm	110 mm	
Such part of any trawl net as is made of cotton, hemp, polyamide or polyester	135 cm	120 mm	
Such part of any trawl net as is made of <u>any other material</u>	135 mm	130 mm	
Lobster trawl	80 mm	No minimum size	
Prawn trawl wings	45 mm	No minimum size	
Prawn trawl other parts	36 mm	No minimum size	

Iceland being in the NEAFC Convention Area, it is considered to be appropriate to make the above comparison to the NEAFC regulations.

II. 2.

On 31 December 1974 the Ministry of Fisheries also issued regulations establishing a minimum mesh size for gillnets at 177.8 mm in the period from 1 February to 1 July when cod nets account for 35-55% of the total catch of cod. Other times of the year when gillnets are of minor importance, the minimum mesh size is 139.7 mm.

III. In the opinion of the Iceland Government, the international regulations on minimum fish size for the NEAFC Area around Iceland allow landings of fish of many species which are far too small to be used for human consumption. Such catches of juveniles are contrary to the optimal exploitation of the fish stocks aimed at in the Icelandic fisheries and could, moreover, constitute a direct threat to the most important Icelandic fish stocks, most of which are being overfished at present.

On the other hand, it must be emphasized here that in practice the minimum size of fish landed in

Iceland has always for almost all species been well above the international regulation. Thus, the industry in most parts of the country has for a long time refused to buy from the fishermen cod which is less than 50 cm, as one example.

The new Iceland regulation, therefore, is to a great extent a confirmation of the existing situation, but at the same time it presents a possible future exploitation of the very small fish.

IV. The new regulation on minimum fish size called for a revision of mesh size regulations for bottom trawls, midwater trawls and Danish seines. By this revision the selection in the above gear for cod, haddock, and redfish was taken into consideration.

For an optimal exploitation of these stocks, it is urgent to protect the small fish increasingly and it is believed that the 50% retention length may reach or even exceed the minimum fish size which may be landed according to the new rules. It should be mentioned here that the Marine Research Institute in Reykjavik has recommended a minimum mesh opening of 140 mm. This mesh size should be adequate for cod (50% retention length = 46 cm by selection factor = 3.28) and haddock (50% retention length = 44.5 cm by selection factor = 3.18). These selection factors are definitely too high in fair or good fishery, with the consequence that even a bigger mesh size could be used.

In the case of redfish the highest possible mesh size was considered to be 135 mm. Some recent Icelandic experiments show very different selection of redfish and always a long selection range. In no case the selection factor exceeds 2.4 which means a 50% retention size of 32.4 cm, which is close to the minimum size of redfish that may be landed (500 g). Trawler fishermen have reported that even by using 130 mm codend meshes redfish of good commercial size get meshed. Marine scientists have confirmed this statement. Thus, the 135-mm mesh size was considered to be the maximum mesh size which could be used generally.

The decision to use 135-mm meshes uniformly, regardless of material, was founded on the following calculation. The distinction of materials into two categories depending on selectivity is based on selection experiments made on many different fishing grounds under more or less different conditions. It is assumed that some biological factors may influence the selectivity: 1) daily, seasonal, annual or long-term variations in the length/girth relationship; 2) diurnal and seasonal variations in behaviour; 3) behaviour changes in the net associated with the size of the catch and/or the presence of other species; and 4) differences between stocks (ICES/ICNAF Working Group Paper CM 1970/B:2). Moreover, many other factors such as weather, water visibility, water depth, bottom contour, towing speed, and vessel size could be of importance. Some ICES members of the Gear and Behaviour Committee have, for instance, pointed out the probable importance of the size of the experimenting vessels. Evidently the comparison of the selectivity of different materials is more or less inaccurate and, therefore, any prescriptive difference of mesh size according to material used is speculative.

If, however, the different materials should have different selectivity, then for what reason? The closest answer seem to be the elongation of the netting material. At least in polyamide, this is not the case since materials of half-breaking strength elongation 50.1% and 23.8% showed no significant difference (Bohl, 1974).

Since the elongation is of no or minor importance for the selectivity, the physical properties of the net materials must cause the different selectivity of different materials (assumed there is a difference). If this is the main reason one should predict different mesh opening of each material, depending on twine construction, type of knitting, flexibility, stiffness, etc.

The uniform mesh size is also of great convenience for all controls and it is also worth mentioning that the only Icelandic net factory which spins and knits net material almost entirely of polyethylene now has started to produce codend netting of mixed polyethylene - polyamide twine. What mesh size should be used in this case?

Danish seines are mainly used in Iceland for the exploitation of plaice. Icelandic selection experiments show that almost no plaice of commercial size would escape through 135-mm meshes. No selection experiments have been carried out on other species (planned for October 1975).

No selection data on midwater trawling for white fish are available. Since cod is the only white fish species caught in this fishery at present, the 135-mm codend meshes will most probably be adequate or even too low.