

## Exercise I – Material I5

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### The value chains of two fishing practices

We follow the fish on its 'journey from sea to table in an exercise raising the question how the final price of a fish bought by consumers is shared and distributed among the different companies and workers involved in the fishing, processing, distribution and sales along the value chain. The value chain is defined as:

***The value added to the fish in money terms from the different steps in the production process, assuming that after each processing step the value of the product has increased by a certain amount expressed in the price of the product after that step. Each step involves different actors who carry costs, invest, pay for handling, have income, etc.***

The composition of the value chain for halibut differs according to how the fish has been caught. The fishing practice being it trawlers fishing on the banks or inshore fishing from very small boats, from sea ice or from small fishing vessels using long lines or gill nets defines how the fish is handled and processed. Halibut caught by trawlers are almost always sold as whole fish or 'Japan cut' (fish with just head and tail removed) and may even be exported without further processing. The inshore catchment can be landed and temporarily stored in several of the cities and settlements at the Greenland coast that have freezing and storage capacities and of which some also can process fish, or for a minor part also be sold to purchasing ships that are often foreign but chartered by one of the Greenland fishing companies. These purchasing ships can handle exports in the same way as trawlers through their owners.



Picture: © Linå A/S

Four fishing companies registered in Greenland dominate the offshore trawler fishing and processing of halibut. These are Royal Greenland, Polar Seafood, Upernavik Seafood and Uummaanaq Seafood.

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To reduce the complexity of the value chain we focus on the two dominant fishing and processing chains that comprise of trawlers owned by Greenland fishing companies who export to markets abroad respectively the coastal fishing from sea ice and smaller fishing vessels selling their catch onshore in Greenland to the larger fishing companies who take care of exports. We hereby cover 80-90% of all halibut fishing and processing. To make the calculations we have averaged prices and cost estimates within the chosen year. Prices will vary from season to season dependent on how many fish are caught and reflecting variations in world market prices.

### Local prices for coastal fishing

The long line and coastal boat fisher have to land their fish onshore or sell them to purchasing ships as they have limited possibilities of transporting fish longer distances. When landing fish locally at freezing and fish processing facilities, the inshore fishermen receive around €2.0 per kilo for whole fish, by selling to purchasing ships they may be paid a little more as these have lower costs and are mobile.

Fish caught by net or trawl in coastal fishing will typically also get a slightly lower price if as they due to the handling of fish are often of slightly lower quality. In the outlying settlements and districts, the payment per kilo may be as low as €1.5 per kilo due to the higher cost of freezer storage and transportation. The purchasing price can be calculated from the statistics presented in Material I3. The local purchasing price is not least due to the market dominance of very few companies in Greenland.

### Export prices from Greenland

Trawlers fishing off shore and processing the fish onboard have the option of landing their halibut catch for more or less direct export, which gives them a higher price close to the export price of halibut out of Greenland calculated to be €3.2 per kilo whole fish. This price is obviously better than the purchasing price for coastal fishermen, but does include some extra handling and processing costs. The trawlers will typically get almost this price for the halibut they land, but with an estimated handling cost reduction of €0.3 making their sales price €2.9 per kilo.

Though approx. 10% of the halibut fish already has been cut and made into filets in Greenland, we have chosen not to take this into account as it would just make calculations more complicated. A higher share of filleting in Greenland would improve the country's economic benefit from fishing, but this would imply investing in fish processing in Greenland where the higher wages in Greenland have been used as counterargument.

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### Costs of handling, processing and transportation

The price difference between purchasing prices and the export price for halibut out of Greenland covers storage, processing, transportation and packaging. These costs add approximately €1.2 per kilo to the costs that are carried by the companies buying from the coastal fishermen. For trawlers (and purchasing ships) landing their fish in Greenland these cost a slightly lower round €0.3 per kilo.

### Cost of fishing gear, boats and profits

Both fishermen and trawler owners have costs for their fishing gear and boats and must eventually also pay interests on loans used to buy boat and engine out of their income. While the fishermen and workers on trawlers are paid a regular wage by the trawler's owner, the inshore fishermen's income and respectively the income of the trawler owner is what is left when costs and wages are paid.

For the inshore fishermen the costs of boat, petrol and fishing gear amounts on average to 25% of their income while the cost for the owner of the trawler on average are divided equally in three parts: (1) wages for fisher and workers, (2) loans and equipment costs, and (3) petrol and operational costs for the trawler.

### Whole sale and retail prices

The world market price for halibut varies a lot depending on season and availability, but can be estimated to be round €5.1 per kilo for whole fish. When traded on the world market some fish are sold to whole sale companies in Asia, some are exported to Europe and the American continent. The whole sale price at fish auctions for fillets is typically around €13 per kilo, while whole or 'Japan cut' fish are sold at around €8 per kilo. Approx. 70% of the halibut are exported as whole fish.

As we focus on the European market for halibut the filets are the dominant product sold and consequently we focus on the value chain of halibut filets. Consequently we haven't included world market trade in the value chain but focus on whole sale and retail in Europe.

Consumer prices are relatively stable in Europe and vary around €23 per kilo halibut filet (typically varying between €17 and €22) and we have chosen to fix these at €23 in the calculations of the complete value chain. To cut whole halibut to filets a loss of 40% is typical leaving 0.6 kilo filet per 1 kilo whole halibut.

### Cost of filleting and handling in whole sale and retail

The cost of filleting, processing, packaging and transportation in halibut whole sale is estimated to be €1.7 per final kilo filet. Storing, transportation as well as the cost of sales personnel and shop area in retail is estimated to be €3.5 per kilo filet.