



The myth of the poor fisher: Evidence from the Nordic countries

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ABSTRACT

Fishers are often perceived to be poor, and low income levels are used to justify subsidies and other types of direct and indirect income support to maintain coastal communities. In this study fishers' income levels are investigated in four Nordic countries; Denmark, Iceland, Norway and Sweden for different types of fishers and vessels and in comparison to alternative occupations. The most important result is that fishers in these countries are doing relatively well, and only in Sweden is the fishers' average income level below the average national income. Within the fleets, there are substantial differences. Owners of coastal vessels tend to have the lowest income, and also lower than crews. Owners as well as crews on larger vessels tend to do much better and in the largest fishing nations, Iceland and Norway, they do especially well.

1. Introduction

Fishers and the coastal communities where they live are mostly regarded as poor. In developing countries, fishing is often an occupation for those who do not have access to land or more rewarding occupations. When fishing is conducted by the poorest of the poor, it is a subsistence activity where access to market can be a challenge to livelihoods [11].¹ In developed countries, fishers' income is often augmented by subsidies to not fall too far behind other occupations, to support them in continuing their traditional activity and to maintain vulnerable coastal communities [16,51,58].² This support takes a number of forms. It is infrequently direct income or price support, but is often related to cost reducing measures such as investment and fuel support.

To our knowledge, most studies investigating fisher income focus on few communities in a specific place or region, or, as in Natale et al. [33], identifying local communities with high fisheries dependency. In this study, a different approach is taken by focusing on observed income for fishers covering entire national fishing industries. Register data, which allows data from different government agencies to be connected,

is increasingly being made available in some countries. This has, for instance, been utilized by Nordin et al [34] to analyze income differences between Swedish siblings choosing careers in fisheries or farming and alternative employment. For this study, access is given to income data from the tax records for fishers in four Nordic countries; Denmark, Iceland, Norway and Sweden. As the fisheries as well as the tax systems in these countries are different, the exact information that is collected varies. Hence, the data is not fully comparable. Still, the data allows us to provide information on a number of key aspects with respect to fishers' income.

Fishing does not take place disconnected from the rest of society. This has long been acknowledged by economists when using opportunity cost to represent the income of fishers [39,40].³ In countries with a relatively well functioning labor market this implies that the development in fisher income as well as returns on capital invested in fishing must follow similar patterns to alternative occupations and uses for fishing to continue as an occupation.

In all the Nordic countries studied, income has increased substantially in recent decades. Everything else kept equal, this implies that also in fishing there must have been productivity growth to ensure a

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¹ Béné et al [12] also lays out how the evidence is mixed with respect to access to markets and particularly trade for fishers in African countries. Smith et al [38] and Asche et al [4] provide evidence that overall, trade provides substantial benefits, and Eggert et al [19] provide one interesting example from Lake Victoria fisheries.

² Hannesson [24] provides a good discussion of how subsidies primarily are provided in countries that can afford it in around the North Atlantic.

³ The opportunity cost of a factor is the payment the factor would receive in its best alternative use.

similar income development.⁴ However, everything has not been kept equal as biological management of the fish stocks has improved, and individual fishing quotas (IFQs) with varying degrees of transferability has been introduced in most fisheries [5,2,8,26,43,54,17,18,32,57]. As over-capacity has been a main motivation for the introduction of these management systems, this has helped improve productivity but also resulted in reduced number of fishers.⁵ Hence, the developments in the number of fishers or fishing vessels are poor indicators of how well a fishing sector is doing. In this study focus is therefore on the development of fishers' incomes compared to income in other sectors of the economy.

In the following, a brief discussion of the fisheries and fisher income in each of the four countries studied is provided, before a general discussion is conducted based on the results from these countries.

2. Denmark

The Danish fisheries landed 500 thousand metric ton of fish in 2012 with a corresponding value of € 392 million. The Danish fisheries have two main sectors: 1) A pelagic sector targeting herring and mackerel for human consumption and sand eel, blue whiting, sprat together with other low value pelagic species for reduction, and 2) a demersal sector targeting whitefish, primarily cod, and other higher valued species like plaice, sole and lobster. The majority of Danish fishing vessels land demersal species, especially vessels below 24 m [33].

The Danish fishery is part of the European Union's Common Fisheries Policy (CFP), which sets the basic framework for fisheries management. All marine stocks are shared with other countries. Under the CFP, many important management choices are delegated to the Member States, for example how the national Total Allowable Catch (TAC) is allocated among fishers. For the Danish pelagic fleet IFQs were introduced in 2003 for herring, followed by mackerel and reduction species. Similar regulations were introduced for the demersal fleet in 2007.

In the Danish IFQ system, permanent quota shares as well as annual leases can be traded, and there are no restrictions on quota trade between regions and vessels groups. However, some restrictions are set to meet social objectives. Firstly, to avoid a too high concentration of quotas, a maximum share of the total Danish quota per owner is set for each species in the demersal fishery. In the pelagic fisheries, ownership is limited to a maximum of 10% of the quota of all pelagic stocks, but higher ownership limits for individual species, like for North Sea herring where the limit is almost 20%. The higher concentration limits are to allow for the increasing returns in these fisheries. Hence, the pelagic fishery is highly concentrated on the large purse seines. In addition, there is a quota share premium for small scale vessels below 17 m for cod, plaice and sole and vessels fishing with gears that are perceived to be more sustainable, such as gill nets, receive a larger share than vessels fishing with trawl.

Table 1 displays the key figures for the economic performance of the Danish fishing fleet in 2012. The table shows positive average earnings before interest and taxes (EBIT) and profit per vessel, which has improved compared to the years before the introduction of IFQ's [43] with the reduction in number of vessels and number of fishers. Moreover, earnings and profit is largest for vessels above 40 m length, mainly the large pelagic purse seines.

To analyze the development in the income for persons employed in the fisheries sector a dataset has been obtained from Statistics Denmark, covering individual income data throughout the period 2002–2012 for everyone that has at some point during the period obtained income

(wages or income from own enterprise/vessel) from any activity on a Danish fishing vessel with an annual turnover of more than € 6700.

The following definition has been used to divide the fishers into groups: A full-time fisherman is a person that is at least 18 years old for whom more than 60% of his total income comes from fishery. Owners are fishers receiving an income/profit from fishing enterprises. Crew is fishers only receiving salaries from fishing. A small scale fisherman/crew is a person for whom more than 50% of the income from fisheries has been earned on vessels of length less than 17 m. The remuneration system in Danish fisheries is based on a crew share system. In this system, fisher salary consists of a minimum wage combined with profit or earning that is allocated through fixed shares of the landing value between the single crew members and the owner of the vessel.

Table 2 displays the average total income from all sectors, the income from fishing and the number employed, first for everyone receiving an income from Danish fisheries and second for the category defined as full-time fishers. In total, 1687 persons were employed on Danish fishing vessels in 2012, of which 834 was hired as crew, 514 was owners, and 339 were both owners and crew. 1043 (62%) of the employed fishers could be classified as small-scale fishers and 387 (46%) as crew on small-scale vessels. Moreover, it is seen that people employed on small-scale vessels on average have lower income than the average fisher, and all full-time fishers. It is worth noticing that crew members actually are doing quite well and earning just as much as the owners. For the small-scale fisheries this picture is even more pronounced as the crew earns more than the owner. This can partly be explained by the fact that the owners have to cover risk and investments, which in some cases affect their capital income from the enterprises negatively. Another issue is that these small-scale owners, who often personally own the enterprise and who are not receiving salary from the fishing activity, often have a relatively low income compared to owners of larger vessels. Furthermore, the remuneration to the owner is paid by the profit generated by the enterprise, which raises some tax issues, which again might lead to an underestimation of the remuneration of the owners.

The average total income in the Danish work force was € 34,048 in 2012 [46]. Thus, Danish fishers on the average have a considerably higher total income than the average worker in Denmark. However, the Danish average includes both persons active at the labor market and also persons obtaining unemployment benefit, retirement pensions and other social transfers. When fishers' salary is compared to employees in specific sectors, the difference is less pronounced. The average wages for full-time employed (FTE) in 2012 were (i) € 48,662 in agriculture, (ii) € 54,093 in the craftsmen sector, (iii) € 58,160 in the process and machine-operator sector, (iv) € 48,495 in the sales and service sector, and (v) € 51,113 in the office sector [45]. Thus, on the average people employed in fisheries earn more or the same as people employed in "comparable" sectors, while a Danish small scale fisherman on the average could earn the same or more by re-locating to other sectors or large-scale fishery.

Fig. 1 show the development in employment of Danish full-time fishers, their total income and the average income in Denmark. The employment reveals a remarkable development in full-time persons from 2002 to 2012 with a reduction of 57%. The reason for this is the introduction of individual vessel quotas in 2003–2007, making quota trade possible, which have led to growth in productivity and a reduction in overcapacity, but also an effect of the reduced quotas e.g. on cod in the North Sea.

The income increases from 2003 until the start of the financial crisis in 2008. After a dip in 2009, the income increases again to the level before the crisis. Over the whole period, the average salary in 2012 price level fell from € 62,607 to € 57,614. While the average income in Denmark remained stable over the period, the development in fishers' earnings must be seen in the light that landing values fluctuate considerably, especially among landings for reduction. Moreover, different drivers counterbalance each other. With the number of vessels and the

⁴ Eggert and Tveteras [20] provide some evidence of this for three of the four Nordic countries studied here.

⁵ Traditionally, there was substantial over-capacity in all countries [7,9]. When investigated, this also leads to most of the resource rent being dissipated [21].

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