



Social sustainability of cod and haddock fisheries in the northeast Atlantic: what issues are important?



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ABSTRACT

Research on the sustainability of capture fisheries has focused more on environmental and economic sustainability than on social sustainability. To assess social sustainability, first relevant and important social sustainability issues need to be identified. The objective of this study was to identify relevant social sustainability issues for cod and haddock fisheries in the northeast Atlantic and to determine the importance of these issues based on stakeholder input. A heterogeneous group of stakeholders was invited to take part in two consecutive surveys on social sustainability issues. The first survey ($n = 41$) resulted in a long list of 27 relevant social sustainability issues, including six issues that were not identified in previous studies and that address aspects of fish welfare, employees' training and education opportunities, and employees' time off from work. The second survey ($n = 51$) resulted in a ranking of the social sustainability issues in order of importance. The most important issues are worker safety, product freshness and companies' salary levels. In general, social sustainability issues concerning working conditions, employees' job fulfilment and fish welfare are seen as more important than other social sustainability issues. A main discussion point concerns the relation between the importance of a social sustainability issue on the one hand and the type of need that the issue relates to and the state of the issue on the other hand. From the study it can be concluded that the relative importance of social sustainability issues differs per stakeholder group depending on the relation between the stakeholder group and each particular issue. This demonstrates the importance of consulting different stakeholder groups in future studies on social sustainability in order to get a balanced view on the importance of social sustainability issues. Results on the relevance and importance of social sustainability issues for cod and haddock fisheries in the northeast Atlantic enable the fishing industry and policy-makers to direct improvement efforts towards the more important issues.

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1. Introduction

Since the release of 'Our Common Future' (Brundtland, 1987), sustainability assessment of food production has been an important research domain. Sustainability assessment concerns environmental, economic and social sustainability, as well as the interlinkages between these pillars of sustainability (Lozano and Huisingsh, 2011). Methodologies for environmental sustainability assessment (e.g. life cycle assessment), however, are far better developed than methodologies for economic or social sustainability

assessment (Finkbeiner et al., 2010; Kloepffer, 2008; Martínez-Blanco et al., 2014).

Environmental sustainability assessment of capture fisheries (i.e. the sum of all fishing activities on wild fish; FAO, 1997) has attracted considerable scientific attention (e.g. Pelletier et al., 2007; Thrane, 2006; Ziegler et al., 2003). Research has focused on traditional impact categories such as global warming potential and eutrophication (e.g. Ellingsen and Aanondsen, 2006; Vázquez-Rowe et al., 2010; Ziegler et al., 2011), and biological impact categories such as overfishing (depletion of natural resources), discarding and by-catch (e.g. Emanuelsson et al., 2014; Hornborg et al., 2013; Langlois et al., 2014). Some of these impacts have been addressed by policy responses such as total allowable catch, individual transferable quotas, marine protected areas and effort restrictions (e.g. Chu, 2009; Côté et al., 2001; Karagiannakos, 1996).

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Economic sustainability assessment of capture fisheries has received little scientific attention, as evidenced by the limited number of publications on this topic (i.e. Glaser and Diele, 2004; Pelletier et al., 2009; Utne, 2007; Whitmarsh et al., 2003). Since social sustainability assessment has received even less scientific attention (Glaser and Diele, 2004; Utne, 2007), social sustainability is the focal point of this study.

A social sustainability assessment should start with a description of the (problem) situation (Mollenhorst and De Boer, 2004; Van Calker et al., 2005). The situation considered in this study concerns a group of cod and haddock fishing companies in the northeast Atlantic that initiated and participated in the EU-project 'WhiteFish'.¹ The study described in this paper formed part of this EU-project. These Norwegian and Icelandic fishing companies employ trawlers, longliners, auto-liners, and Danish seiners in coastal and offshore fisheries to produce fresh and frozen fillets. The second step in social sustainability assessment is identification of social sustainability issues (SSIs) (Mollenhorst and De Boer, 2004; Van Calker et al., 2005), i.e. aspects of social sustainability that should be considered in an assessment. In general, SSIs have been identified in the context of various initiatives (Parris and Kates, 2003), such as social life cycle assessment (Benoît-Norris et al., 2011) and the global reporting initiative (Parris and Kates, 2003). There is no consensus, however, on the set of issues that should be addressed in social sustainability assessments (Hutchins and Sutherland, 2008; Parris and Kates, 2003). Since it is not practicable nor desirable to consider all SSIs identified (Mitchell et al., 1995), social sustainability assessment should concentrate on the most important issues.

The importance of SSIs depends on the cultural, political, social and economic context of the situation considered (Benoît-Norris et al., 2011; Glaser and Diele, 2004). Therefore, stakeholder input should be used to identify SSIs for cod and haddock fisheries in the northeast Atlantic. Stakeholders are those individuals or organizations that can affect or are affected (Freeman, 1984) by the activities of the cod and haddock fishing companies in the northeast Atlantic. This approach has been used successfully to identify SSIs for egg production systems (Mollenhorst and De Boer, 2004), dairy farming systems (Meul et al., 2008; Van Calker et al., 2005) and aquaculture (Caffey et al., 2000), but not for capture fisheries.

So far, SSIs for capture fisheries have been identified by FAO (1999), Utne (2007) and Kruse et al. (2009). FAO (1999), however, only provided eight examples of SSIs such as employment and income, recognizing that the set of issues that should be addressed in an assessment depends on the context of the situation considered. Utne (2007) identified accident risk and employment as important SSIs for Norwegian cod fisheries, though she did not specify the method used to identify issues. These two SSIs cannot adequately address social sustainability of Norwegian cod fisheries, since social sustainability concerns a diversity of stakeholders with different interests (Caffey et al., 2000; Van Calker et al., 2005). Kruse et al. (2009) identified 11 SSIs such as fair wage and employment benefits as important issues for salmon production systems (i.e. capture fisheries and aquaculture). The method used to identify SSIs was a combined top-down and bottom-up approach, using international conventions while taking into account industry specific impacts. As SSIs identified by Kruse et al. (2009) covered only industry specific impacts, it is unlikely that these issues will also cover interests of other stakeholders.

The objective of this study is to identify relevant SSIs for cod and haddock fisheries in the northeast Atlantic and to determine the importance of these issues based on stakeholder input. Since social sustainability concerns a diversity of stakeholders with different interests, a heterogeneous group of stakeholders was consulted in order to get a representative set of issues (Caffey et al., 2000; Meul et al., 2008; Mollenhorst and De Boer, 2004; Van Calker et al., 2005).

2. Methods

Stakeholders were invited to take part in two consecutive surveys on SSIs. The first survey served to compile a long list of relevant SSIs. The second survey served to determine the importance of each issue on the long list of relevant issues that resulted from the first survey. Similar to Caffey et al. (2000) and Van Calker et al. (2005), surveys were chosen rather than focus groups as in Mollenhorst and de Boer (2004), because surveys allow more structured data collection and because the geographical scope of the study precluded the use of focus groups. Surveys, however, do not allow for interaction between respondents.

2.1. Stakeholder identification

Stakeholders for the two surveys were identified from the value chain characterization. This value chain characterization (Table 1) starts with the five fishing companies participating in the EU-project. At this stage of the value chain, four different types of vessels are employed in Norway's offshore waters and in Iceland's coastal and offshore waters. Catch of these fishing vessels is processed into fillets in China, Iceland and the UK, either by separate processing companies that purchase catch in auction markets or by the same companies that own these vessels. Processed fillets are then sold in Iceland, the UK and the rest of Europe.

Owners and employees of these fishing companies were identified as stakeholders and regarded as separate stakeholders because the interests of owners and employees can differ. Other value chain actors, i.e. processing companies (both company owners and employees), merchants and retailers were identified as stakeholders because their mutual dependency in the value chain means that they all can affect and are affected by the activities of the fishing companies. Fishing company associations, labour unions, processing company associations and consumer organizations were identified as stakeholders because they represent the interests of different value chain actors, i.e. fishing companies, employees, processing companies and consumers, respectively. Municipalities where the vessels are harboured were identified as stakeholders because fishing companies' decisions can affect these communities. Governments' fisheries departments were identified as stakeholders because any change in policy can affect the fishing companies' activities. Certifiers of stock sustainability were identified as stakeholders because future assessments of stock sustainability may be extended to include social sustainability. Organizations promoting the sector were identified as stakeholders because social sustainability might become another factor that these organizations can use to promote the sector. Finally, a fish welfare organization was identified as a stakeholder because concerns for fish welfare (Chandoo et al., 2004; Huntingford et al., 2006; Robb and Kestin, 2002) might affect the fishing companies in the near future.

Based on this stakeholder identification, seven distinct stakeholder groups were defined: fishing companies, fishing company employees, suppliers and processors, sales organizations, consumers, policy-makers, and fish welfare organizations. These stakeholder groups encompass multiple stakeholders who share

¹ WhiteFish is a research project on the automated and differentiated calculation of sustainability impact for cod and haddock products that ran from January 2012 to December 2014. Visit <http://www.whitefishproject.org/> for more information on this project.

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