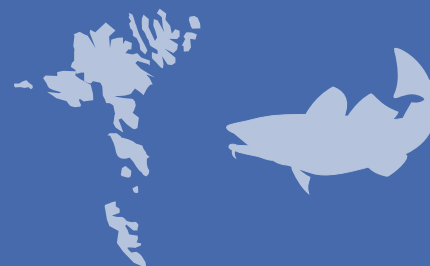




Summary of Myfish Task 1.2 Report on the Faroe Islands' Fisheries Governance System: Objective Setting and Implementation



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Contribution to Task: 1.2.

EU FP7 Project No: 289257 - Myfish

Project name:

'Maximising yield of fisheries while balancing ecosystem, economic and social concerns.'

Project acronym: **Myfish**

www.myfishproject.eu



1. Introduction

This report is part of a European Union (EU) FP7 project 'Maximizing yield of fisheries while balancing ecosystem, economic and social concerns' (Acronym: Myfish). It is one case study for Task 1.2, which aimed to review existing and proposed MSY variants, constraints and management measures. Accordingly, we have looked outwards from the EU to selected fisheries in other parts of the world (Australia, Alaska and the Faroe Islands) to investigate as 'case studies' which illustrate various aspects of sound governance from which the EU can potentially learn. The overall aim of Task 1.2 is to discover best practices and lessons learned with respect to MSY variants, objective (i.e. aim or goal) setting and implementation processes (i.e. means to achieve objectives), including the strengths and weaknesses, constraints and trade-offs, concerning the overall governance system for the particular fishery. We consider these 'practices' with regard to the three 'pillars' of sustainable development (c.f. Brundtland, 1987) and we refer to these three sustainability objectives as being a) Bio-ecological; b) Economic; and c) Social. We also consider 'Governance' as forming an integrative horizontal 'beam' interlinking the three sustainability 'pillars'.

The term 'governance' is defined in various ways in dictionaries. *For the sake of the current study, we consider fishery governance as the sum of the legal, social, economic and political arrangements used to manage the fishery. We view fishery-related stakeholders as persons and/or groups which believe they have a legitimate interest in the fishery.*

This specific report concerns the Faroe Island's demersal mixed-fishery for gadoids (cod, haddock and saithe), which is based *inter alia* on input (days-at-sea) management.

2. Methodology

The report involved a) the production of a literature review of the fishery management system resulting from a comprehensive and systematic desk study of the literature and web-pages, followed by b) interviews with key stakeholders using a standard set of questions which are used for all of the case studies.

A total of 17 interviews were conducted during a visit to the Faroe Islands in August 2012 with fishery scientists, the fishing industry (including catching and processing sub-sectors, etc.), fishery managers/administrators, and persons with a more societal and economic perspective. It was not possible for us to identify relevant respondents from

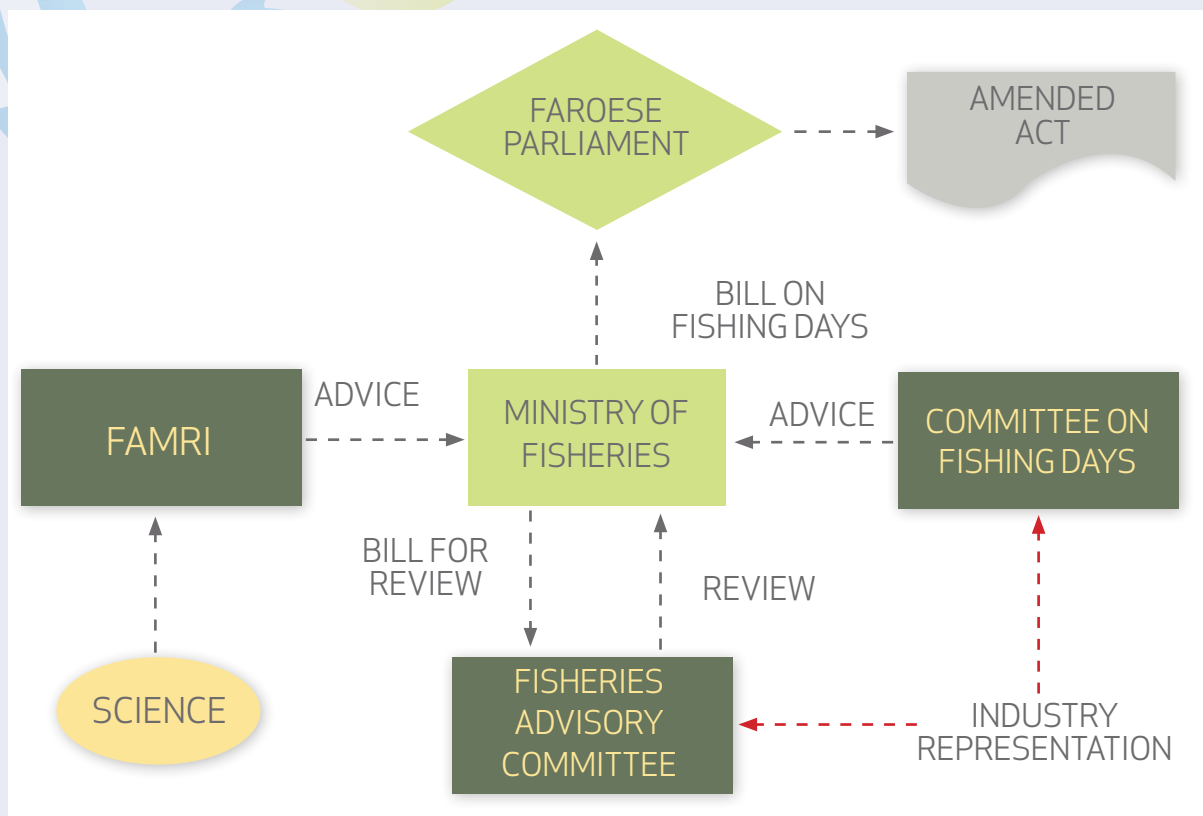


conservationist/environmental non-governmental organizations (NGOs) operating in the Faroe Islands. The interviews were conducted using the standard open-ended questions, and were recorded and subsequently transcribed and organized by means of textual analysis software (QSR Nvivo 9) and served a dual purpose. On one hand the interviews served as a source for filling in gaps in the factual knowledge obtained through the literature review. Equally important, however, the interviews also served as a means to uncover controversies and different perceptions on issues related to the fisheries management system. As a result of our investigations, we have considered outcomes of our study in the context of how they contribute not only to the three 'pillars of sustainability', namely 'Bio-Ecological', 'Economic', and 'Social' but also to the role of 'Governance' as a horizontal integrator acting across the three pillars.

3. Outcomes and conclusions

3.1 Main outcomes

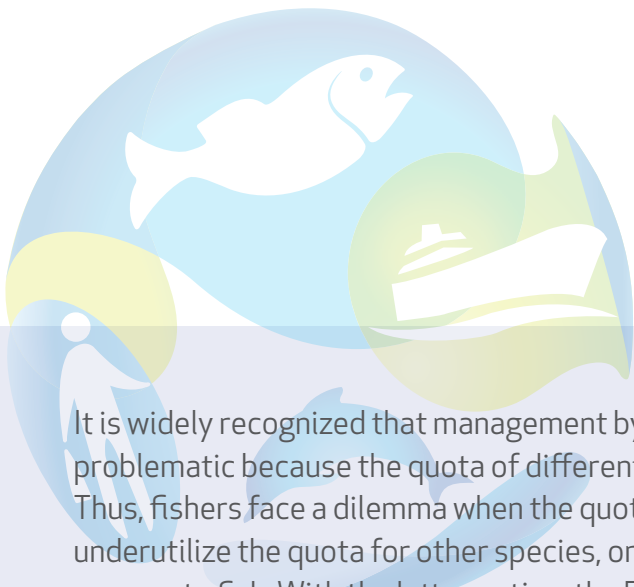
The governance system for the Faroe Islands' demersal mixed-fishery for gadoids can be the source of substantial wisdom and best practices for the EU in terms of potentially progressing the way its fisheries are managed. At the same time there are also lessons to be learned, and some caveats to keep in mind, which relate to how one prioritizes the three 'pillars of sustainability' (Bio-Ecological, Economic and Social) and the potential limitations that may arise from that. Here we bring together not only the main components of best practices, but also lessons learned, from the Faroese fishery governance system in the context of implementation of new legislation/policy within the EU's Common Fisheries Policy (CFP). In addition to the three sustainability 'pillars', we also emphasize the importance of Governance (*c.f.* definition in the 'Introduction') which acts as an essential cross-cutting and integrative 'beam' in this sustainability 'house'. We would like to emphasize that our comments apply specifically to this Faroese mixed-fishery, and therefore these should mainly be considered as best practices/lessons learned in that context, i.e. a mixed-fishery mainly catching gadoid stocks.



Flow chart of the institutional system for proposing and deciding on the setting of the number of Faroese fishing days. After Faroese Ministry of Fisheries (2012).

3.1.1 The Faroe Islands' mixed fishery for gadoids: from output to input controls

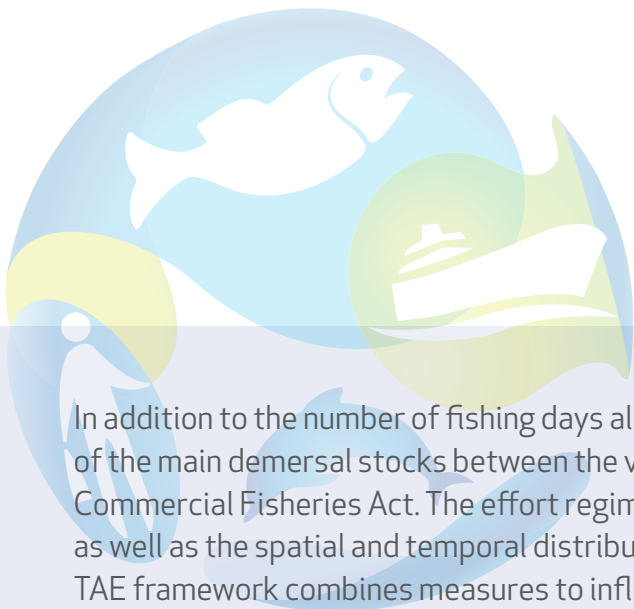
Following the establishment of the Faroese 200 nm Exclusive Economic Zone (EEZ) in 1977, the demersal fisheries in national waters are almost exclusively conducted by Faroese vessels. To reduce fishing mortality (F) and rebuild declining stocks, an output control management system based on total allowable catch (TAC, related to fish quantities) in the form of individual transferable quotas (ITQs), with establishment of a discard ban, was introduced in 1994 when the Faroe Islands constructed its first, comprehensive legal framework for fisheries management, the so-called Commercial Fisheries Act. However, this TAC-based system of ITQs was abandoned after only two years, not only due to the substantial costs and administrative effort necessary for this form of management, but also because it received considerable criticism and met with resistance from the fishing industry. An additional hinder was the unusually low primary production on the Faroe Plateau Ecosystem during the early 1990s which subsequently had a devastating effect on the Faroese gadoid fisheries and society in the mid-1990s.



It is widely recognized that management by TACs of species caught in mixed-fisheries is problematic because the quota of different species may be exhausted at different rates. Thus, fishers face a dilemma when the quota for one species is exhausted: stop fishing and underutilize the quota for other species, or continue fishing and discard or illegally land overquota fish. With the latter option, the F level dictated by the TAC will be exceeded, and the scientific basis for stock assessment and future management advice will be compromised if the stock assessment is based only on official landings data, assuming that landings equal the catches. In the Faroe Islands, the TAC-based system resulted in extensive discarding as well as underreporting and misreporting of substantial parts of the catch, related to bycatch problems that were increasingly difficult for fishers to handle in the mixed demersal fisheries, particularly when single species quotas had been used up.

In response to the wide-reaching criticism of the TAC-based ITQ system, there was a desire to establish a new system that was easy to administer and enforce, and should remove incentives for discarding incidental catches, misreporting and black landings. This led to amendment of the Commercial Fisheries Act to adopt and implement, from 1 June 1996, a new effort-based management system - replacing the TAC system - for fleet categories/segments (i.e. vessel groups, métiers) targeting demersal fish (especially cod, haddock, and saithe) in the Faroese EEZ, resulting from close collaboration with the fishing industry. This system regulates days-at-sea (i.e. fishing days) based on total allowable effort (TAE) for specific fleet segments/groups. In essence the Faroese TAE system consists of limited entry licensing regulating the number of participating vessels (assigned to diverse fleet categories/segments) in particular areas/depth zones, a system of fishing days regulating the amount of time each vessel in a fleet category/segment is allowed to fish in approved areas/depth zones, and regulations for the conservation of juvenile and spawning fish and protected species including comprehensive use of closed areas. The existing ban on discards continued. With the exception of small fish regulations and protected species, fishers are allowed to land and sell whatever they can catch within their quotas. The precondition for the use of the TAE system is that the total fleet is under Faroese control.

The initial allocation of fishing days originated from recommendations by a regulatory committee comprising managers, scientists, and key representatives of the fishing industry. In the first year of implementation, the initial allocation was based on an estimated historical allocation from data on partial fishing mortalities based on statistics on the number of days fishing used by the various vessel segments in the period 1985-1994. The committee estimated that sustainability of the fisheries could be achieved by setting the number of fishing days initially allocated so as to exert an average annual F rate of 0.45 on each of the three demersal gadoid stocks (cod, haddock and saithe) in the mixed-fishery, corresponding to average annual catches of the exploitable stocks in numbers.



In addition to the number of fishing days allocated by law, the target distribution (i.e. shares) of the main demersal stocks between the various vessel segments/groups was set out in the Commercial Fisheries Act. The effort regime was designed to take these shares into account as well as the spatial and temporal distribution of areas where trawling was banned. Thus, the TAE framework combines measures to influence both the catch quantity with those to affect catch composition. Built into the system is an assumption that the TAE system is self-regulatory because the fishing effort exerted on any of the three target stocks will shift according to that stock's availability, so that no stock will be overexploited. However, following its implementation, the number of fishing days allocated has been regulated annually. There have been large reductions in the number of allocated fishing days in order to reduce the fishing mortality.

The objective of constraining exploitation on the major demersal stocks by the effort management system, via controlling F at a level ≤ 0.45 on each of the three component stocks, has not been achieved, partly because the original number of fishing days allocated was too high. Additionally, it has been argued that the market for fishing days has not worked properly. Furthermore, effort regulation incentivizes fishers to increase their catchability because they are limited by the time they are allowed to fish. So called 'technological creep' coupled with improvement of knowledge regarding best fishing practice to maximize potential catches over time, acts to increase fishing efficiency of fishing vessels, and thereby increased fishing capacity in terms of catch levels per fishing day. Thus, changes in fishing effort should be carefully monitored and regulated.

The International Council for the Exploration of the Sea (ICES) considers that the Faroese effort management system has been impaired by a) application of excessive levels of effort from its first implementation; and b) this potentially has been exacerbated by substantial scope for increasing the efficiency of the catching process, related to the lack of a system for monitoring and effectively regulating changes in fishing effort. The main issue regarding fisheries management in the Faroe Islands is not the TAE system itself, but rather its inability to adjust to scientific recommendations and to variability and trends in catchability.

It has been increasingly apparent in recent years that a major deficiency in the Faroese TAE-related management system is the lack of a long-term management plan (LTMP), and especially the absence of related harvest control rules (HCRs), for the three demersal gadoid stocks. There is ongoing Faroese work to move away from the $F = 0.45$ target and to formulate a management plan for cod, haddock and saithe based on the precautionary approach (PA) and associated Maximum Sustainable Yield (MSY) target and limit reference points estimated by ICES. Theoretically, a TAE system should be able to produce a MSY-conforming fishery as should any other regulatory measure. This will normally mean that the fishing pressure shall be kept within certain bounds with a view to obtaining relative long-term stability in yields. One could potentially adjust the fishing effort periodically, for example, to reflect changes in the stock(s) biomass (and



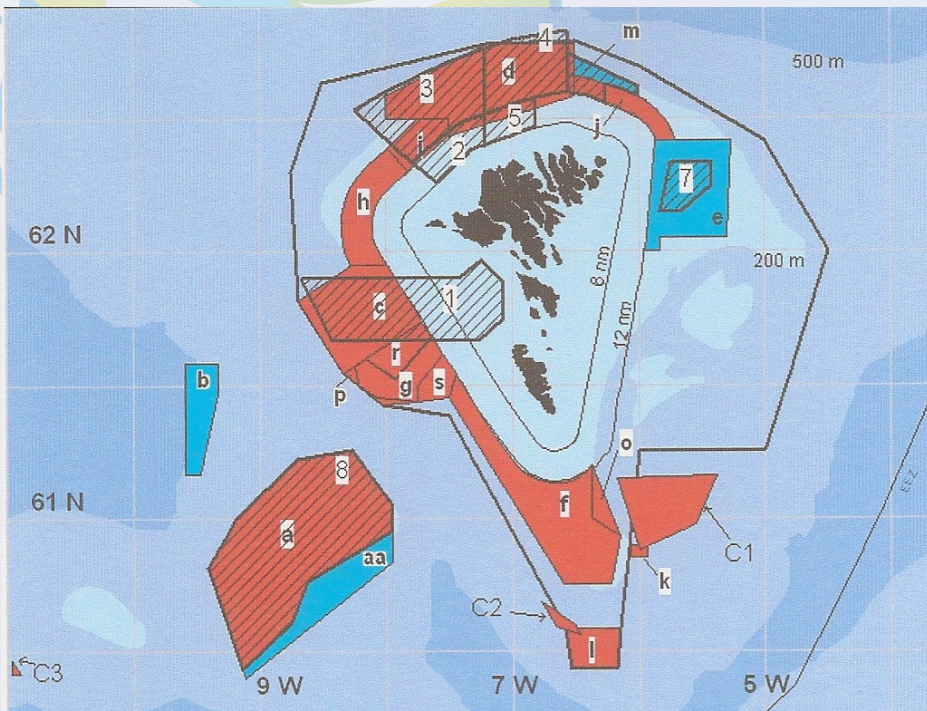
associated needs to achieve partial Fs) and relative management priorities for each of the three gadoid stocks.

Our review of the system was carried out at a time when the Faroe Islands might very well be on the way to adopt a new LTMP for the three main demersal gadoids currently managed through the TAE system. This management plan might, if adopted, tackle some of the most critical concerns that have been raised concerning the TAE system in this review and from other sides, in particular ICES. If the Faroe Islands manage to take yet another drastic turn in their fisheries management and adopt the new management plan, the system will potentially swiftly be able to move from being out of step with international requirements (i.e. MSY-related management) to yet again - as it did after the adoption of the TAE system in 1996 - position itself at the forefront of innovative, sustainable fisheries management.

In July 2013, the Marine Stewardship Council (MSC) announced that Faroe Islands saithe had gained certification as a sustainable and well-managed fishery. However, in so doing, the MSC provided a 'stick', with this 'carrot', to the Faroese regarding meeting the 'international' requirement to conform, within a short space of time, with PA and MSY-related management best practices in the form of having the eventually finalized LTMP scrutinized by ICES. Incidentally, the MSC process for Faroe Islands saithe is also putting great pressure on the two other components (i.e. cod and haddock) of the mixed-fishery which have not yet decided to seek MSC certification.

3.1.2 Policy and legislation

The 1994 Commercial Fishery Act states that the living marine resources in the Faroese EEZ, and indeed in allocations outside the fishery zone, are the property of the Faroese people and that these fisheries should be sustainable in both biological and economic terms. Socio-economic factors should also be taken into account. Besides this relatively simple declaration of policy, the Act does not explicitly, or indeed implicitly, provide further elaboration in terms of formal objective setting. Nevertheless, a range of objectives — from closed areas and technical measures aimed at conserving the target stocks as well as threatened, endangered and protected species and their habitats — are pursued through operational application of the Faroese TAE system.



Fishing area regulations on the Faroe Plateau (ICES Division Vb1) and Faroe Bank (ICES Division Vb2). Allocation of effort management (fishing day quotas) on the Faroe Plateau (surrounding the Faroe Islands) applies to the area inside the outer thick black-line (the 'ring') in waters that are generally shallower than 200 m. Holders of effort quotas who fish outside this line can triple their numbers of fishing days. Longliners >110 GRT are not allowed to fish inside the thick black-line. On the Faroe Plateau, many areas are closed for parts of the year to protect spawning grounds and exclude trawling. The Faroe Bank <200 m depths (areas 'a' and 'aa') is regulated separately from the Plateau: it is closed to trawling and longline vessels are regulated by individually allocated day quotas. After ICES NWWG (2012).

3.1.3 Bio-Ecological, Economic and Social Considerations

Bio-ecological sustainability is a central objective of the Faroese Commercial Fishery Act and accordingly the Faroese TAE/ITE system. However, according to conventional scientific practice, as elucidated by ICES and other intergovernmental advisory organizations, the Faroese system allows too high fishing pressure on the three main demersal stocks.

A group $F = 0.45$ target for cod, haddock and saithe is one of the central components of the Faroese TAE system. The TAE system has, in particular for cod, not been able to live up to these intentions. The F -levels of all these demersal stocks have varied substantially since the implementation of the TAE system. ICES contends that the target F is set much too high compared to the international practice of following the PA and setting F_{MSY}^1 as the target. A new LTMP is currently under discussion in the Faroe Islands, which may solve most of these problems. The LTMP includes a proposal for a stepwise reduction of the fishing mortality of each of the three stocks to F_{MSY} in 2015, or thereabouts, and a recovery plan if the spawning stock biomass (SSB) declines below the $MSY B_{trigger}^2$ as defined by ICES. The 2013 MSC

¹The fishing mortality that in the long-term will maximize yield.

²A biomass reference point that triggers a cautious response: 'A cautious biomass triggering action to maintain a stock within a desirable stock size range.'



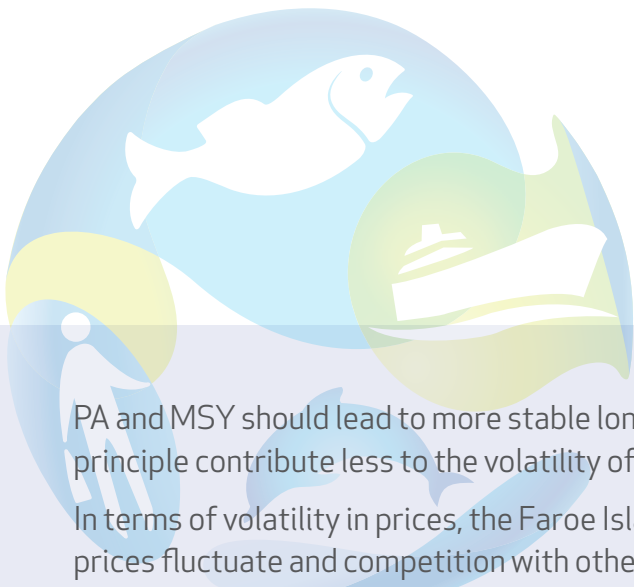
certification of Faroe Islands saithe is also coercing the cod and haddock components of the mixed-fishery which have not yet determined whether or not to 'join the fold'.

Another very significant element of the TAE/ITE system regarding the bio-ecological objectives is the arrangement of closed areas established on the Faroe Plateau and Faroe Bank, covering about 12,000 km². The closed areas are wide-reaching and innovative in terms of regulating access of diverse fleet segments and métiers, conserving fish stocks and protecting vulnerable species and habitats, including closures: a) to trawling which, depending on the area, may be year-round or temporal; b) seasonal all-gear closures in the fish spawning seasons; and c) real-time closures, whereby the fishery is banned temporarily if the numbers of small cod, haddock and saithe in the catches exceed 30% of the total. The latter has been used increasingly in recent years. The success of the closures for a) and b) require a well-developed system for monitoring vessel behavior (e.g. VMS) as indeed exists for relevant fleet segments, while c) appears to work well concerning self-reporting incentives related to bycatches.

In line with a high degree of acceptance of the TAE/ITQ system by the fishing industry, which were the main advocates of the system, there is a high level of compliance as evidenced by negligible levels of illegal, unreported and unregulated fishing, including discarding.

The Faroese exports consist almost exclusively of fish products (94%) and therefore the Faroese economy to a large extent stands and falls with the fisheries sector. The fishing industry in this small country is highly vulnerable to the volatility of catches and prices of the most important fish stocks. Management of fish resources needs to be successful. In general, the objective of long-term stability of effective fishing effort, and by association also of fishing days and *F*, with regard to attaining stable landings has not been achieved. Stability of landings may not be highly valued by the Faroese fisheries stakeholders, at least from the catch sub-sector, and excess capacity is thereby not necessarily viewed as 'overcapacity' or equated with an efficiency problem.

It is, however, of concern that the TAE system has so far not respected the scientific advice of either its own national fishery experts or the international scientific advice from ICES, on the target *F*. The fact that the TAE system in its current form does not live up to the PA is worrisome from an economic perspective, in so far that this according to conventional scientific wisdom increases the risk of (further) stock decline and collapse. Such events would potentially have a huge impact on the Faroese economy given its high dependence on fisheries. As described, however, there is currently a political process potentially leading to the adoption of a new management plan, which builds on current scientific advice concerning stock conservation. This will of course not necessarily remove volatility of catches, as potential natural fluctuations might have a big impact as well. But in general, application of the



PA and MSY should lead to more stable long-term yields, as future Faroese fisheries will in principle contribute less to the volatility of the targeted stocks.

In terms of volatility in prices, the Faroe Islands are dependent on how the World market prices fluctuate and competition with other providers of fishery products. The Faroe Islands do not have the volume to steer market prices and the best strategy is to optimize prices that the products are sold for. In this respect, the move towards certification of fisheries, and following best practices, is one way to secure the highest possible price for the products, and this seems indeed to be the direction that the Faroe Islands are taking - although there is little enthusiasm about the MSC on the Faroe Islands.

When it comes to increased economic performance (i.e. economic efficiency of the fisheries), we have not found evidence that the TAE system has led to the efficiency increases which might have been expected. This may be due to the existence of distorting subsidies which have, however, mostly been removed in later years, as well as due to fleet overcapacity (too many fishing days) and restrictions on tradability of fishing days. The restrictions on tradability of fishing days have been put in place mainly to maintain a diverse, and thereby flexible, fishing fleet as well as to cater for social objectives and secure legitimacy of the system. The volatility of international markets related to supply and demand of cod, haddock and saithe also affects profitability.

Fisheries have great social, and indeed socio-economic, implications on the Faroe Islands due to the high economic dependency on fisheries. However, for the most part, the achievement of social objectives is seen as a function of pursuing the bio-ecological and the economic objectives, for which there are of course competing interpretations of how it is best done.

The objective of maintaining a diverse fleet structure, which is the reason for a number of restrictions on tradability within the TAE system, can to some extent be seen as an attempt to pursue a social objective of maintaining fishing traditions and fleet or *métier* elements. In the Faroe Islands this also to a significant extent maintains geographical dispersal of the fleet and associated *métiers*. However, although this feature might be a social (or socio-economic) element, it is generally portrayed as being part of, on one hand, keeping the system in balance, as a major philosophy behind the system is that it was 'in balance' at the outset of the TAE system in 1996. On the other hand, it is making sure that the system is seen as legitimate and serving everybody's best interests, which might not be the case if certain segments of the fleet and *métiers* could be squeezed out by other segments — even though this might possibly appear optimal from a narrow economic point of view. We also note that, particularly for the smaller vessels and nearer shore segments, they represent a way to provide statutory 'quota shares', albeit effort-based, to fishers who in one form or other are 'part-time' particularly operating during the summer.



The high level of acceptance of the management system is a result of not only its practicality but also that it was a system other than the old TAC/ITQ system which was viewed as leading to bankruptcy of a number of vessel owners.

The Faroese TAE system, or rather the overall governance system around it — *basically equating to the decision-making system* — appears to have some shortcomings, which are in part related to the small population of the Faroe Islands. These include the set of stakeholders, who are actually involved in making key recommendations for political decisions, appearing narrow. Importantly, there are no influential environmental organizations. Moreover, political processes can, it appears, be put on ice in the political system without any apparent explanation — and much policy-making goes on in closed networks, bordering on nepotism. In addition, there is no automatic uptake of scientific advice.

On the other hand, it should not be ignored that the governance system has its strengths, as well. Not least, it has shown an impressive ability to adapt to changing circumstances when required and to do this in innovative ways. In the first instance by setting up the TAE system within a very short timeframe, secondly by incrementally adapting the TAE system not least by increasing use of closed areas, and now, finally, it appears likely that the system will move towards the use of HCRs to respond to changing international circumstances. Potentially, some of the features — which are presented above as weaknesses — are key features in terms of facilitating this.

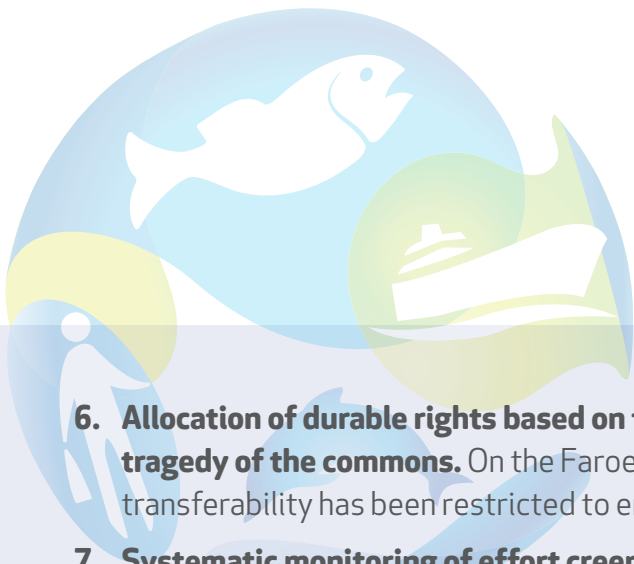
In summation, there is in practice - at least in the short- to medium-term - a trade-off between economic objectives and bio-ecological objectives, as the bio-ecological objective at present calls for reduced fishing pressure, at least according to conventional fisheries science. However, the possibility to certify fisheries if more emphasis is put on the bio-ecological objective serves to reduce the magnitude of this trade-off by securing higher prices for Faroese fisheries products or securing outlets, which would otherwise not be available. Similarly, there is also a trade-off between the economic objectives and the social objectives pursued. Further liberalization of the TAE system in terms of allowing more free trade of 'quotas' in the form of fishing days would likely not be possible without jeopardizing some of the social objectives of maintaining a varied fleet structure manned by the Faroese, which also allows smaller vessels to have their place without being bought out. However, it appears that there is some movement towards focusing more on getting the most out of what is increasingly portrayed as the *Faroese people's* fishery resources. This seems to indicate that the economic and bio-ecological objectives might be gaining strength at least compared to the traditional social objective of accommodating different fleet segments and fishing for all, i.e. fishing cultures.



3.2 Conclusions on best practices for EU fisheries

The Faroe Islands TAE/ITE system exhibits many good and some less good practices. On the basis of our study of this system, we provide the following 'take home message' to the EU concerning a few key lessons, which we believe merit particular consideration by the Myfish project and fishery interested stakeholders:

- 1. Large closed areas as established in the Faroe Islands are not incompatible with prolific fisheries, but the positive effects of the areas need to be documented to maintain legitimacy.** Closing areas with a particular, well-founded reason intuitively makes sense — also to fisheries stakeholders. When the areas are as wide-ranging as in the Faroese context, they definitely have an effect in relation to the bio-ecological objective. Nevertheless, to maintain legitimacy, the effects need eventually to be documented, something that has not happened sufficiently on the Faroe Islands.
- 2. Effort (input control) management can under some circumstances be a competitive approach as it goes a long way towards solving the discards issue.** Although catch quota (output control) management for a variety of reasons is the preferred option in most European fisheries, the Faroe Islands have shown that it is possible — and in some cases makes good sense — to use effort management especially in mixed-fisheries due to problems that would otherwise occur with discards. There is theoretically no reason that a Total Allowable Effort/Individual Transferable Effort (TAE/ITE) fishery cannot be set up to autonomously handle effort creep and adjustment challenges.
- 3. The experiences of the Faroe Islands show that self-regulation can be an important element in a TAE/ITE management system.** Although there may in general be too many days-at-sea available in the system, it is argued that the TAE/ITE system is an example of a system where the presence of overcapacity does not necessarily lead to overfishing due to a combination of vessel owners deciding not to use their days and the presence of large closed areas, etc.
- 4. Overall acceptance and ownership over management is crucial in fostering compliance.** The fact that the TAE/ITE system to a large extent came out of the fishing industry itself has resulted in a management system that is considered highly legitimate, and this has led to only negligible problems with compliance.
- 5. Clear, common understanding of the mechanisms of the system between scientists and fishers is needed from the outset.** One of the problems of the TAE/ITE system has been the lack of agreement on to what extent the system was 'self-regulating' and thereby disagreement on the conditions on which the (from the outset) available pool of fishing days should be adjusted.



- 6. Allocation of durable rights based on the overall TAE system helps to overcome the tragedy of the commons.** On the Faroe Islands this has been done by ITE quotas. The actual transferability has been restricted to ensure the maintenance of a varied fleet structure.
- 7. Systematic monitoring of effort creep in different fleet sectors or métiers is a vital element of an effort-based system.** The Faroe Islands failed to set up a credible system for monitoring effort creep and this has contributed to the problems of getting a systematic approach to adjusting the available pool of fishing days.