Marine Policy xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Does size matter? Assessing the use of vessel length to manage fisheries in England

Peter Davies[a,*], Chris Williams[b], Griffin Carpenter[b], Bryce D. Stewart[a]

[a] Environment Department, University of York, York YO10 5DD, UK
[b] New Economics Foundation, 10 Salamanca Place, London SE1 7HB, UK

ARTICLE INFO

Keywords:
Small-scale fisheries
Stakeholder survey
Sustainability assessment
Coastal fleets
Brexit

ABSTRACT

Recent European Union policy objectives have committed to support small-scale coastal fisheries (SSCF), but the characteristics and sustainability of SSCF in Europe are poorly understood. In the UK, there is no clear definition of 'small-scale' beyond a 10-m length threshold used for fishing vessel administration. This paper examines the consequences of length-based management of English fisheries, and explores future management possibilities. The 15 highest-value species for the English under-10 m fishing fleet were evaluated according to Marine Stewardship Council (MSC) pre-assessment criteria. Based on the information collected through Project Inshore, very few of the key under-10 m fisheries, the majority of which are shellfish, would be suitable for MSC certification due to poor stock health and/or stock uncertainty. The current structure of the under-10 m fleet was examined by vessel length class. Policy measures based on the under-10 m/over-10 m vessel classification have led to an increase in high-catching capacity 'super-under-10s', which contribute disproportionately to total landings by under-10 m vessels, and may have fishing patterns more representative of larger vessels. In a survey of English fishers (n = 41), fisheries managers (n = 12) and other stakeholders (n = 8), the majority (91%) supported a distinction between small-scale/inshore and large-scale/offshore vessels. Most (65%) viewed the current classification (based on vessel length alone) as inappropriate. Length remained the most popular criterion for future management, but several alternatives scored highly, including fishing gear type. In the UK, post-'Brexit' fisheries policy reform will require further examination of the meaning of 'small-scale', to ensure that support for SSCF is directed appropriately.

1. Introduction

Globally, an estimated 90% of the world's fishers are employed in artisanal or small-scale coastal fisheries (SSCF) [1]. These fisheries provide a source of food, security, and income for millions of people in both developing and developed countries [2]. Estimates suggest that SSCF contribute around one-third of global marine fisheries landings, but a lack of reporting makes any estimate of SSCF activity highly uncertain [3]. Despite this, SSCF have often been overlooked with fisheries management focused on offshore, large-scale fleets [4]. However, the social benefits of SSCF are increasingly recognised; these include the nutrition and employment they provide to coastal communities, their cultural significance, and their role in attracting tourism [5]. In many instances small-scale fishers may derive a higher overall value per landed tonne than large scale fishers (LSF), and have also been shown to be more profitable than their large scale counterparts in some cases [6,7].

Many small-scale fishers have developed effective governance structures for the sustainable management of marine resources [8], but SSCF are not by definition 'sustainable'. Like any fishery, SSCF have the potential to over-exploit resources. The impacts of poorly regulated SSCF on the marine environment can be severe [9]. Conflict and competition with large-scale fisheries has also emerged as a barrier to sustainability for the SSCF sector, as their fishing effort must increase to maintain catches where stocks have been over-exploited [6]. SSCF, when considered as 'low-impact' fishing, offers the promise of supporting coastal communities and delivering food, jobs and revenue in a sustainable, equitable manner. Policies that aim to maximise employment, and minimise wider environmental impacts of fishing (such as bycatch, seabed impacts or fuel use) now support the development of SSCF [7]. However, these policies rely on a clear definition of SSCF.

* Correspondence to: Department of Life and Environmental Sciences, Bournemouth University, Christchurch House, Talbot Campus, Fern Barrow, Poole BH12 5BB, UK.
E-mail address: pdavies1@bournemouth.ac.uk (P. Davies).

https://doi.org/10.1016/j.marpol.2018.06.013
Received 25 January 2018; Received in revised form 22 June 2018; Accepted 22 June 2018

Table 1
Definitions of small-scale coastal fleets used in major European fishing nations. kW (kilowatts) = engine power, Gt (gross tonnage) = cubic capacity, nm = nautical miles, m = vessel length in metres.

Country	Name	SSCF vessel definition	Purpose	Source
Belgium	Coastal fleet	< 221 kW, < 70 Gt, passive gear, trip length and port restrictions	Quota allocation	[21]
	Small-scale segment	< 221 kW	Quota allocation	[21]
Denmark	Coastal fleet	< 17 m, conduct 80 or more fishing trips/year of < 48 h	Quota allocation	[22]
	Coastal fleet	< 15 m & conditions	Quota allocation	[22]
Finland	Coastal fleet	Trap net fishery	Quota allocation	[23]
France	Tax regulation	< 24 h at sea	Administrative division	[24]
Germany	No national regulation	None	None	[25]
Iceland	Coastal fleet	< 15 m, < 30 Gt, < 5 jig machines, May–August, < 14 h per day Monday–Thursday, < 650 kg per day cod equivalents	Quota allocation	[26]
	Small-boat ITQ system	< 10 Gt	Protected quota	[27,28]
	Hook-and-line ITQ system	< 15 m, < 30 Gt, hook and line	Protected quota	[27]
Ireland	Small-scale fleet	< 16.76 m	Quota allocation	[29]
	Inshore fisheries	< 12 m	Management forum 0–6 nm	[30]
Netherlands	No national regulation	None	None	[31]
Norway	Sami Parliament agreement	< 11 m	Protected fishing opportunities	[32]
	Sami Parliament agreement	< 15 m	Protected fishing opportunities	[32]
Poland	Common quota pool	< 8 m demersal/ < 12 m pelagic	Quota allocation	[33,34]
Portugal	Local fleet	< 9 m, < 75 kW, operating near registered ports	Protected fishing opportunities	[35]
Spain	No national regulation	'Minor gears'	Quota allocation	[36]
Sweden	Coastal fleet	< 12 m, passive gear	Quota allocation	[37]
	Coastal fleet	Flexible definition of seven criteria	General	[37]
UK	Under 10 m quota pool	< 10 m	Quota allocation	[38]
EU	Small-scale coastal fleet	< 12 m, excluding towed gear	Data reporting and EMFF funding	[39]
	Small-scale coastal fleet	4 conditions	General	[40]

1.1. Defining small-scale fisheries

Globally, definitions of SSCF fishing vary greatly. Socio-economic studies of SSCF have tended to focus on developing countries, but developed countries with large industrialised fishing fleets also have fleets that are small-scale by comparison, and which make a significant contribution to landings and employment [10]. The European Union (EU) currently defines SSCF as vessels 12 m-and-under in length, which do not use towed fishing gear [11]. However, within the EU, national policy makers have struggled to define SSCF in a consistent manner. As national fisheries policies have evolved independently, fishing fleets in the EU have been divided into small-scale/large-scale for various administrative purposes. These purposes include allocation of fishing opportunities (quota), licensing and taxation [12]. In nations such as Belgium, SSCF are defined by multiple linked criteria relating to vessel size, fishing gear types, trip length and the markets they supply; in others, definitions of SSCF simply relate to physical characteristics of fishing vessels (Table 1).

In England, the term 'inshore fleet' is used for SSCF. Inshore vessels are generally considered under-10 m in length, not members of a fish producer organisation (PO), and fish mostly within the 6 nautical mile inshore zone [13]. These 'under-10s' represent over 76% of the English fishing fleet by number [14] and provide 65% of the direct employment in fishing [13]. Inshore fishers employ a diverse range of vessel types and fishing methods, and are central to the identity and local economy of many coastal communities [15]. However, in recent years, profit margins have narrowed for the UK inshore fleet, against a backdrop of decade-high profits for larger vessels [16]. Difficulties for English inshore fishers have attracted national attention in government [17] and the media [18], as well as being at the centre of two high-profile court cases on a perceived lack of quota for under-10 m vessels [19,20].

The length-based threshold, which now separates English inshore vessels from other vessels, may have had unexpected and unintended consequences. In the 1990s it is believed that many vessel owners modified their vessels or used decommissioning subsidies to scrap their vessels and purchase or build new ones below the 10 m threshold [41]. This was to avoid new license conditions which restricted catch, which were first introduced for vessels over 10 m, and to avoid new administrative requirements for skippers of over-10 m vessels to record and report landings [42]. Due to these incentives, the inshore fleet experienced an increase in high-catching capacity 'super-under-10' vessels, just under 10 m in length [42]. This has effectively shifted fishing effort from the over-10 m fleet to the under-10 m fleet, but it remains unclear to what extent this effect may be driving recent quota shortages [43].

1.2. Small-scale fisheries in the EU and England

Recently, new legislation has been created that could favour inshore fishers using low-impact methods. This includes Article 17 of the reformed Common Fisheries Policy (CFP), which urges European Member States to consider environmental, economic and social criteria when allocating fishing opportunities [44]. In the UK, the need for local management of inshore fishing has been recognised, with the creation of Inshore Fisheries and Conservation Authorities (IFCAs) in England, under the Marine and Coastal Access Act. There have also been attempts to address uncertainty relating to the species targeted in inshore waters, notably Project Inshore, a data gathering collaboration between Seafish and the Marine Stewardship Council from 2012 to 2014 [45].

This study attempts to improve the understanding of English under-10 m fleet and examines how their management could be improved in the future. First, the current status of the under-10 m fishing fleet was examined, by identifying key fisheries and assessing their sustainability in the context of Marine Stewardship Council criteria. The effect of the under-10 m/over-10 m division on fleet structure, and the rise of 'super-under-10' vessels was then investigated using the EU fleet register. The extent of vessel modification to enter the under-10 m sector was