



Relevance of socioeconomic information for the sustainable management of artisanal fisheries in South Europe. A characterization study of the Asturian artisanal fleet (northern Spain)



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ABSTRACT

Artisanal fisheries constitute an important source of employment and income for many South European coastal communities as Asturias (northern Spain), as well as a fundamental cultural and traditional identity factor at a regional level. However, and despite its importance, there is little information available about artisanal fleets and, generally, low attention has been given to their social, economic and cultural characteristics, which hampers the chance of developing sustainable and integrated management measures that take into account the complex interactions and linkages between the socioeconomic and the environmental dimensions within these fisheries. Hence, this study was aimed to improve the knowledge about the Asturian artisanal fleet focusing on its socioeconomic characteristics, to compare such characteristics with those of other artisanal fisheries in South Europe and to collect baseline information to facilitate the implementation of specific management measures aimed to improve the sustainability of the artisanal fleet. Findings on the annual days of activity and its spatial distribution have proven the necessity of implementing standardized data collection procedures in order to provide an accurate and sound basis for management planning. The analyzed social profile of the fleet confirms its marked artisanal character at the same time that highlights the existing similarities between the Asturian and other South European artisanal fisheries. The collection of economic information has allowed for the first time the assessment of real fleet profitability indicators taking into consideration both declared and undeclared incomes. Results confirm that current levels of profitability are clearly lower than those from other alternative economic activities, fact that acts as an entry barrier for new artisanal vessels. Finally, information on fishermen perceptions have shown that the sector is aware of existing difficulties and stresses out the necessity of reorienting traditional management policies toward more efficient strategies based on a profound knowledge about the specific context of artisanal fisheries.

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1. Introduction

Artisanal or small-scale fisheries are often defined as small capital exploitations, normally property of the own fishermen, that develop their activity in the coastal area (basically on the

continental shelf) exploiting areas within a few hours from the ports where the fishers are based (Colloca et al., 2004). Its fishing patterns are characterized by the use of diversified fishing gears targeting a great variety of species (Battaglia et al., 2010; Farrugio et al., 1993; Guyader et al., 2007), as well as by frequent changes in gears and techniques used trying to maximize profitability (Forcada et al., 2010). Regardless of the existence of these common characteristics, artisanal fisheries are highly heterogeneous in terms of their activities and fishing strategies, exhibiting great variations from one area to another depending on the environmental and socio-economic conditions where the activity takes place (Farrugio et al., 1993; Stergiou et al., 2006). In terms of its

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Fig. 1. Map of the study area and its context within Europe.

socioeconomic relevance, artisanal fishing activities provide food and income to millions of people worldwide. FAO (2005) estimated that approximately 35 millions of fishermen around the world (90% of the total) can be considered as artisanal fishermen, while over a 100 million people are employed within artisanal fisheries' dependent sectors.

At a European level, although EU members apply different criteria in their attempt to define artisanal fisheries (European Commission, 2001; Tzanatos et al., 2005) it is widely accepted that artisanal or small-scale vessels represent around 75–80% of the boats making up the European fishing fleet (Forcada et al., 2010; Stergiou et al., 2006; OCEANA, 2004). This artisanal fleet, characterized by being smaller than 12 m in length² and operating a vast selection of fishing gears (OCEANA, 2004), not only has a great economic relevance (rent creation, direct and indirect employment, induced effects in other economic sectors), but it also plays a very significant role in terms of human and territorial development (cultural and social dimensions) at a local-regional scale. However, in spite of its biological, socio-economic, and cultural relevance, the European artisanal sector had been poorly investigated until recent years, especially South European artisanal fisheries, where the lack of information is particularly marked. The lack of a common definition of artisanal fisheries and the large heterogeneity of their activities, gears and exploited stocks have traditionally hindered the collection of standardized data (Battaglia et al., 2010; Tzanatos et al., 2005; García-Rodríguez et al., 2006). In addition to this, and sharing common problems that also affect other fisheries (Stead, 2005), low attention has been generally given to social, economic and cultural considerations concerning artisanal fisheries in comparison to other aspects such as the technical characteristics of the fleets or the biological dynamics of the target species (Guyader et al., 2007, 2013). This lack of information has reduced the chance of developing effective and integrated management measures aimed at enhancing the sustainability of artisanal fisheries in the long term, taking into account the complex interactions and linkages between the human (socioeconomic, technical, cultural issues) and the natural dimension within these fisheries (Bowen and Riley, 2003).

As a consequence, in recent years there has been an increasing interest of research institutes and fishery managers to improve the

available data on European small-scale fisheries (Battaglia et al., 2010), with a clear focus on the socio-economic aspects of the artisanal fishing sector (Tzanatos et al., 2006). As a result, a number of studies concerning several aspects of artisanal or small-scale fisheries have been carried out based on a selection of case studies (40) or specifically in Greece (Stergiou et al., 2006; Tzanatos et al., 2005, 2006; Merino et al., 2007), Italy (Colloca et al., 2004; Battaglia et al., 2010; Himes, 2003; Whitmarsh et al., 2003), France (Guillou et al., 2002) and Mediterranean and SW Spanish waters (Forcada et al., 2010; García-Rodríguez et al., 2006; Merino et al., 2008; Piniella et al., 2007). However, the vast majority of the aforementioned studies are focused on the Mediterranean Sea, while studies on other areas, as northern Spanish and the Cantabrian Sea, are scarce (Freire and García-Allut, 2000; García and Santiago, 2007; Puente and Astorkiza, 2002).

The aim of this study is to analyze and define the basic socio-economic characteristics of the artisanal fleet of Asturias (northern Spain). Concretely, the objective is to study the fishing effort, its geographical distribution and the main socioeconomic aspects concerning the regional artisanal fisheries (social profile, costs and revenues, fishermen perceptions). Besides, these characteristics will be compared with those of other South European artisanal fisheries. Finally, it is hoped that the information collected will be useful as baseline data to allow further socio-economic studies that may lead to the implementation of effective regional management measures. The present study is part of a wider study of the artisanal fishing fleet of the European Atlantic Arc ("PRESPO: Sustainable Development of Atlantic Arc Artisanal Fisheries"), developed between 2009 and 2011 within the Atlantic Area Transnational Cooperation Programme 2007–2013 and co-funded by the European Regional Development Fund (ERDF).

2. Case study description, material and methods

2.1. Study area

The Principality of Asturias, a region of Spain located in the north of the peninsula (Fig. 1), has a total surface of 10 608 km² and around 335 km of shoreline along the Cantabrian Sea. Different sedimentary environments are common to be found throughout the coastline: small but numerous beaches nested between the steep cliffs, a few dune systems associated to the widest beaches and, finally, estuaries formed by the advancing sea waters on the river valleys. The Cantabrian Sea bathing the Asturian coast has its own characteristics that differentiate it from the Atlantic waters of

² According to the European Commission Proposal for a Council Regulation (COM (2004) 497 final) coastal small-scale fishing could be defined as the "fishing carried out by vessels no longer than 12 m that do not use trawling gears".

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