Ocean and Coastal Management 168 (2019) 1–11

Contents lists available at ScienceDirect

Ocean and Coastal Management

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

Enhancing of the cultural fishing heritage and the development of tourism: A case study in Isla Cristina (Spain)

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1. Introduction

Fishing has been linked to humanity since its origins, influencing the ways of life and world-view of the societies dedicated primarily to this practice. Fishing is defined not only as the act of obtaining fish for consumption, but also as a way of understanding life, interacting with one another, and co-habiting with one's natural environment. In other words, fishing touches all aspects of culture. It generates a whole set of knowledge, skills, and techniques that are passed down from one generation to the next. Fishing also entails the creation of, for example, specific instruments, devices, gear, and tools, and it favours the development of other closely-related activities. All this implies that fishing is something that characterises society as a whole. When we speak of fishing societies and the culture of fishing, we speak of Cultural Fishing Heritage.

Over time, certain elements that make up our culture are selected as being representative of it. These elements we now call cultural heritage. They are elements that symbolically identify a particular village or group of people, and that act as differentiating factors to distinguish them from other villages or groups. We call them “identity markers”. Most coastal people have been characterised by their dependence on the sea. The sea is their primary economic resource and communication channel. Therefore, each fishing community, while culturally permeated by fishing, acquires differentiating nuances that act as heritage identity markers, and it is precisely these identity markers, whether intentionally or unintentionally, that come to characterise them. On some occasions, local governments have developed “patrimonialisation” or the process by which these identity markers are protected and disseminated, but their legitimacy goes beyond cultural policies to where citizens' awareness, and their actions and participation have become fundamental (Sharina Abdul Halim, Ong Puay Liu, 2011). Thus, fishing heritage includes identity markers common to all fishing villages, as well as markers that are unique to each village, but it is the latter that stand out especially. Heritage markers have an interweaving effect on people's lifestyles and daily activities regardless of their patrimonialisation, and they, in and of themselves, can become not only cultural, but economic resources.

In recent decades, the effects of globalisation in developed countries have led to a visible transformation of fishing as an economic activity, sometimes reducing its profitability. Communities that traditionally devoted themselves to fishing, strongly influencing their culture by doing so, have succumbed to other activities, mainly tourism. There is no doubt that tourism has spread worldwide to the extent of being transversal to any other type of activity, and in many countries, including Spain, it is one of the leading drivers of the economy (Martindale, 2014). The acceptance of this economic potential has led, or is leading, to increased attention being paid to heritage in general, and fishing heritage in particular. This is leading to studies and actions aimed at fostering elements typical of the fishing culture as a tourist resource (Doyon, 2015). At a local level, the yield of the fishing heritage as a tourist resource can become counter-productive for the fishing sector itself and related activities that attempt to compensate for its decline. It can also increase its added value to promote the sustainability of fishing and boost the survival of the sector without changing cultural habits, customs, and lifestyles (Urquhart and Acott, 2013). What is more, it can help people to become aware of the cultural value of fishing, and thus contribute to maintaining their identity (Claesson, 2011; Urquhart et al., 2011).

Fishing takes place in very specific environments: coastal or riverside areas. The location determines the type of habitat and activities that can be carried out in these areas, and the communities that settle here are different from those dedicated to other productive activities. But this environmental determinism is not sufficient to explain the layout of fishing communities. There are historical and political reasons, too. Not to mention human interaction with the environment, which also inevitably alters things. In short, a great many factors play a part in defining fishing communities.

Naturally, fishing societies live along the coast, although the forms that their populations take and the place where they are located differ depending on their geographical, historical, and political conditions. A unique landscape has been created around them. Humanity has changed its environment to suit its activities, not only for the construction of houses, but also for specific installations such as piers, lighthouses, canning factories, *chancas* (fish salting factory), *lonjas* (fish

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https://doi.org/10.1016/j.ocecoaman.2018.10.023
Received 27 October 2017; Received in revised form 29 September 2018; Accepted 28 October 2018

markets), traditional fish markets, and activities focussed on exploiting natural resources linked to the fishing industry, such as salt pans, bivalve mollusc farms, *corrales* (fish enclosures), canals, and dykes. The availability of accessible resources has favoured the concentration of people in specific population centres, and a more or less homogeneous architectural style for houses. The natural environment may have changed, but flora and fauna, as well as *esteros* (waterways), estuaries, marshes, and lagoons are paramount for fishing.

In recent times, demographic growth, the expansion of tourism along the coast, and urban speculation have led to an extraordinary growth of towns, so much so that fishing settlements have become strongholds immersed in urban environments, sometimes surrounded by hotels, urbanisation, marinas, and many tourist services. Despite all this, fishing communities have maintained a certain social cohesion that has facilitated the survival of what we could call "fishing architecture" (Chiarappa, 2005).

The fact that fishing societies have granted access to resources to certain groups has also historically facilitated maintaining organisational structures around fishing to this day. This institutionalised the differentiation through exploitation and access rules, which maintained the internal cohesion of these communities and ensured the survival of immemorial cultural traditions until quite recently. No, access to fishing resources was not free, contrary to popular belief. As they were publicly-owned resources, their use was limited to specific, cohesive, and organised collectives. The liberalisation of fishing did not take place until the end of the 19th century. It is a recent phenomenon and so are its effects, although some authors argue otherwise (Russ and Zeller, 2003).

In Spain, the existence of the *Matrícula de Mar* during the 18th and 19th centuries,[1] and its survival nuanced in maritime recruitment, meant the existence of entry and exit barriers to the sector, delimiting the populations devoted to this, reinforced by longstanding associations (e.g., *pósitos* or cooperatives, *cofradías* or guilds, associations of fishing vessel owners), which had long disappeared into other sectors. The *cofradías*, of medieval origin, consolidated their importance in the sector after the Spanish Civil War and, despite constituting structures derived from the Francoist vertical trade unions, their social work permitted their survival and prevented the development of a relevant business association and the unionisation of sea workers. Although fishing resources are public property, communities have often been responsible for managing resources on a communal basis, as is still the case with certain fishing grounds in the Spanish Mediterranean or, as happened during part of the 19th century with the *almadrabas* (tuna traps) in the Gulf of Cádiz, in a historical context characterised by the sustainability of the activity. However, with the end of the *Matrícula de Mar* and the irruption of capitalism in the sector, from 1870 onward, this communal management of resources gave way to a vast amount of public regulation that has not yet succeeded in slowing down the competitive race to exploit resources and the overexploitation process (Gordon, 1954). Similar processes have occurred in most European countries, where access to the profession of fisherman was linked to different regulated exploitation regimes, which were gradually liberalised over the last century.

Indeed, what identifies fishing societies is fishing itself, which, in some cases, stands out for its uniqueness and for being passed down from one generation to the next through oral tradition. In artisan fishing, we can still get a glimpse of how mankind adapted to the environment to obtain his livelihood and what fishing gear was like in the past.

[1] The *Matrícula de Mar* was a system to ensure recruitment into the Navy with exhaustive listings of persons, professional categories, and vessels. In exchange for the obligation to serve in the Navy, one year out of every four, those registered enjoyed exclusive access to fishing and other sea-related professions (García del Hoyo, 2009).

Despite some technological innovations introduced in the last century, fishing techniques, tools, and instruments whose origin date back thousands of years, and which are described in classical texts, are still used today. However, their survival is proving to be more and more problematic due to the decline of the sector and the homogenisation induced by national and international regulations and policies (Durán et al., 2015; Khakzad and Griffith, 2016). An example of this is the legal action brought by fishermen from southern Spain in an attempt to demonstrate that *alcatruces*—fishing gear used to capture octopus—constitute traditional fishing gear in the area despite having been excluded by the minor fishing gear regulations. Another example is the fishing of clams with dredges, which until quite recently was used by small rowing boats to tow clam dredges in the estuaries, and which has now disappeared with the fishing regulation. *Tapaesteros*, *lavadas*, *jábegas*, *boliches*, *corvinales*, and *sardinales* (see Appendix I) are other types of fishing gear that have since disappeared or been prohibited by different regulations, but which sustained the fishing sector in the past. It is, therefore, essential to document these intangible activities that undoubtedly form part of our cultural heritage. Not only fishing gear *per se,* but also their production and maintenance, shipbuilding techniques, methods of conserving the catch, auction procedures, functions and specialities, food and gastronomy, gender and age roles, fishing terminology, myths, beliefs and festivals that marked the annual cycles, and the entire collection of material elements, tools, objects, and instruments related to this intangible heritage (Khakzad et al., 2015).

This accumulation of these components of heritage is striking evidence of the cultural richness of our people and seafarers, and it constitutes substantial markers of identity, so much so that people recognise themselves in them, and others recognise them by these identity markers. The importance of fishing heritage as an identity reference results in the need for its protection, among other forms, through documentation, registration, and something fundamental: dissemination. Undoubtedly, the best way to safeguard the intangible fishing heritage is by raising society's awareness of it and making it an appropriate cultural and economic resource, mainly by supporting tourism and ensuring it is supported by tourism (Vallega, 2003, 2007).

This paper analyses, first, how the cultural fishing heritage can become an important tourism resource for the economic development of communities. Second, how tourism can facilitate the improvement of the added value of the fishing sector, thus contributing to its sustainability and boosting its survival, without having to make significant cultural changes in the fishing habits, customs, and lifestyle of fishing communities.

2. Protection and patrimonialisation of fishing

In 2003, UNESCO adopted the "Convention for the Safeguarding of the Intangible Cultural Heritage", which has the characteristics of an international treaty. This document defines Intangible Cultural Heritage as "the practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith—that communities, groups and, in some cases, individuals recognise as part of their cultural heritage". At this time, a register was generated, called the "Representative List of the Intangible Cultural Heritage", which includes the elements considered to be heritage. In addition, the member states that have signed this Convention are obliged to draw up inventories of the cultural heritage that exist in their territory. Spain ratified the Convention in 2006 and included some intangible assets in the listing.

In Spain, heritage protection is legislated by the Spanish Historical Heritage Law of 1985 (Law 16/1985). This law does not reflect the specificity of the intangible heritage. So, in 2015, the Spanish state approved a specific law, namely Law 10/2015, of 26 May, for the Safeguarding of Intangible Cultural Heritage, following UNESCO's recommendations. However, during the thirty years between when the general law on heritage and the specific law on intangible heritage were

enacted, political competences in the field of culture, and with it heritage, were transferred to the regional governments or autonomous communities in Spain.[2] During this time, autonomous communities gradually adopted their own laws for the protection of their heritage. In the case of Andalusia,[3] the first law to be enacted was the Historical Heritage Law of Andalusia of 1991 (Law 1/1991), which introduced two novelties with respect to the state law by giving specific protection to two types of ethnological heritage: ethnological places of interest and activities of ethnological interest, the latter being an approach to the intangible heritage that includes "practices, knowledge and other cultural expressions". Later, in 2007, this Law was reformulated as Law 14/2007, but it retained this ethnological protection. In both cases, the strategy for the protection of cultural property was to register it in a "General Catalogue of Historical Heritage". Since 1991, we can highlight the registration of two riverside carpentries in the Andalusian Catalogue as activities of ethnological interest: the wooden vessel builders of Coria del Río (Seville) in 2003 and the wooden vessel builders of Pedregalejo (Málaga) in 2008. These two properties are the only examples of intangible heritage related to fishing heritage in Andalusia, hence the need to expand the register. We must also consider, as the law points out, the special protection of assets in danger of disappearing, and sponsor their study and dissemination to guarantee their transmission to future generations. This disappearance has already happened, as pointed out above, with some traditional fishing gear.

In other autonomous Spanish communities, actions to safeguard intangible cultural heritage, in general, and cultural fishing heritage, in particular, were also regarded as insufficient. The protection of fishing in the salt pans of Santa Pola and fishing in the Hondo de Elche, as well as various legends, such as "The Witch and the Fisherman" in the Valencian Community, are worth mentioning. In the Canary Islands, an Atlas of Intangible Heritage was compiled, which includes fishing gastronomy (e.g., *jareas*, fish *churros*, *casseroles*), as well as practices such as *Moreniar* or the seduction of moray eels (Muraenidae spp.) at night with ornate language and singing. In Cantabria, an emphasis is placed on the protection of the real estate heritage related to fishing, such as the *rula* (or fish market) in Llanes, the Fishermen's Guild of La Arena, or several canning factories in Tapia de Casariego, Puerto de Vega and La Arena.

On the other hand, the presence of fishing-related intangible heritage in UNESCO's listings worldwide is scarce compared to other cultural expressions and manifestations. The *List of the Cultural Intangible Heritage in Need of Urgent Safeguarding* includes "Sanké mon, collective fishing rite of the Sanké" in Mali, registered in 2009, and the "Traditional skills of building and sailing Iranian Lenj boats in the Persian Gulf" from the Islamic Republic of Iran, registered in 2011. The "Representative List of the Intangible Cultural Heritage" also includes "Shrimp fishing on horseback in Oostduinkerke" from Belgium, which was included in 2013, and more recently, in 2016, the "Culture of Jeju Haenyeo (women divers)" in the Republic of Korea, and the "Argungu International Fishing and Cultural Festival" of Nigeria. Also in the "Register of Good Safeguarding Practices", there is an example of an activity connected to craft shipbuilding, "The Oselvar boat—reframing a traditional learning process of building and use to a modern context" from Norway, registered in 2016.

Although there are very few examples of fishing culture included in UNESCO's Listings of Intangible Heritage—only six so far—their presence can be observed in the three types of registers (Representative List, List of the Cultural Intangible Heritage in Need of Urgent Safeguarding, and the Register of Practices that are Considered "Good" and Appropriate), and in different parts of the world (Mali, Islamic Republic of Iran, Belgium, Republic of Korea, Nigeria, Norway). We also note that they relate to different aspects of fishing culture: the importance of collective action in ritualised fishing in Mali, the value of material culture (the boats) and constructive techniques in the Islamic Republic of Iran and Norway, traditional fishing gear in Belgium, the role of women in diving in the Republic of Korea, and the folklore of fishing in Nigeria.

The registration of these events and many others that are yet to be recognised as Intangible Heritage of Humanity in relation to fishing culture would be justified by the very definition of the element to be registered, according to UNESCO's own definition of intangible heritage (Section. 2 of the 2003 Convention). Some fishing gear and techniques bring us closer to the histories of the people that use them. They constitute knowledge transmitted orally in an intergenerational way, going back several generations. The holders of this knowledge are true "living human treasures," people that can be considered as cornerstones of this heritage. This essentially means that should they disappear, so would history. They forge cultural group identities (among the fishermen who are dedicated to the same fishing activity), but also cultural individual identities, and have a critical symbolic value as a specific culture of work.

In this vein, and by way of example, there is a possible proposal to register traditional fishing with *alcatruces*, which is practiced off the coasts of Huelva, Cádiz and the Portuguese Algarve, in UNESCO's Representative List of the Intangible Cultural Heritage. Our proposal is in line with UNESCO's criteria for registration, because this is a fishing heritage that requires urgent safeguarding measures as its continuation is at risk. To formalise the registration, safeguard measures should first be prepared so that local communities, in particular fishermen's groups, may continue to practice the activity and pass it on. Secondly, the awareness of the population must be raised in order to obtain its consent and so that there can be as broad participation in the project as possible. Thirdly, it should first be registered in one of the cultural heritage inventories that exists in the designated areas, such as Spain, the Autonomous Community of Andalusia, or Portugal. The purpose of our proposal coincides with the objectives of the UNESCO Convention on the Intangible Cultural Heritage, and so our objective is to foster "measures aimed at ensuring the viability of the intangible cultural heritage, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage" (UNESCO, 2003).

3. Material and methods

This section go initially through the interrelations between cultural heritage, fishing activity and tourism in the context of the sustainable development of coastal areas. Then, it describes some relevant attends related to this implemented in Spain. Finally, we analysis how fishing heritage as a tourism product can improve fishing and fish products processing industries. Moreover, this paper go more deeply on how these advantages that result on more profitability of fishing activity facilitate medium and long run conservation and preservation of fishing heritage. Finally, we developed a methodological proposal to analyse the relevant elements of the fishing cultural heritage and its possible use as a tourist resource.

3.1. Fishing heritage and cultural tourism

An insight into the processes that have turned many places in the world into tourist attractions in recent years inevitably leads us to link them to cultural heritage. Heritage and tourism have been transformed in a parallel and interwoven manner, affecting each other in such a way that it is now difficult to understand the "heritage, culture and tourism"

[2] These competences were transferred in 1984, when democracy was consolidating in Spain after years of dictatorship. With the 1978 Constitution, the State was configured as a territory of "autonomous communities". Legally recognised communities would have major capacity for self-decision and management.

[3] A region declared as an "Autonomous Community" in southern Spain.

triad without taking into account how much they are interrelated.

It is well known that tourism has become one of the most influential economic sectors worldwide. One effect of its industrialisation is that it has become accessible to many parts of society, such as different social classes and socioeconomic levels, and to groups with various interests, such as sports, gastronomy, and nature. The changes in tourism come from its adaptation to new market demands and the variation in and expansion of the activities tourists are seeking. Travel agencies and companies have been innovating tourism beyond mere leisure by creating such activities as cultural, rural, sports, religious and ethnotourism, which need not be mutually exclusive. Tourism has thus diversified in line with emerging interests. Within these new interests, we can include an interest in fishing heritage as a tourist resource.

Countries with a deep-rooted fishing tradition have experienced a loss in the importance of fishing in recent years, not only due to the decline of the sector's productivity, its overexploitation, and rising costs, but also due to strong competition from imports (Gascuel et al., 2011). For example, in Spain, the fishing sector has expanded steadily since the 18th century. Fishing communities, consolidated by the Register of Seamen, experienced a never-before seen boom that generated a culture that has survived to this day. Now, when this social and cultural heritage is facing the risk of disappearing, it becomes necessary to invest further effort into maintaining and preserving it, as well as to try to ensure that this heritage helps to compensate for the loss of competition in the sector. It is necessary to break away from the idea of "fishing more" by focussing on the idea of "fishing better", thereby giving additional value to the products of fishing, and thus demonstrating the effort inherent in this activity, conserving and disseminating the fishing culture, traditions and customs, for the ultimate goal of persuading the general population of the need to conserve marine and coastal ecosystems. It is often said that only what is known is valued, and there is no better way of knowing an activity than by experiencing it personally, in the case of fishing through such activities as visiting ports, fish markets and guilds, discovering first-hand how the gear and boats are made, learning how to identify quality fish, and observing how it is marketed.

3.2. Fishing heritage and tourism in Spain

In general, the tourism of fishing aims to make the world of professional fishing compatible with tourist demand. In Spain, it occurs seasonally along the coast, through the promotion and dissemination of traditional fishing culture (Molina García, 2013). Examples of activities include guided tours along the coast to fish auctions, workshops where fishing gear are manufactured and repaired, lighthouses, local shipyards where traditional wooden vessels are built, and visiting reproductions and originals of traditional fishing and vintage boats, as well as festivals commemorating the culture of fishing (Apraiz Zallo, 2007).

The tourism of fishing also includes sea-themed shops selling nautical merchandise, museums and monuments dedicated to the local history and traditions of fishing, accommodations in fishing or lighthouses, as well as a focus on the gastronomy of fishing, including seafood competitions and cookbooks. One example is the replica of the *Nao Victoria* that was built in a shipyard in Isla Cristina (Huelva), and its subsequent recreation of the original ship's historic voyage around the world. Other examples are festivals and gastronomic fairs, such as the *Chirla* (Chamelea gallina) Fair in Punta Umbría (Huelva), Tuna (*Thunnus thynnus*) Week in Isla Cristina (Huelva), and the Tuna (*Thunnus thynnus*) Fair in Barbate (Cádiz), as well as the *Erizada* (*Paracentrotus lividus*) Festival and *Ostionada* (Crassostrea angulate) Festival at the Carnivals of Cádiz, and the cooking and recipe competitions sponsored by the government of the Canary Islands and held at various locations on the Canary Islands. There is the use of fishing benchmarks in festivals, such as the *Entierro de la sardina* (the burial of the sardine-*sardina pilchardus*), which is present in many carnivals and which marks the end of the sardine season, and the multiple museums dedicated to fishing, such as the Palamós Fishing Museum, and the O Grove Fishing and Salting Museum, located in such places as Santa Pola, Fuerteventura, and Castro Urdiales.

3.3. Tourism, fishing and fishing heritage

Touristic and fishing activities, both on land and aboard a boat, can be very diverse and varied, depending on the area, the port, and the time of year; therefore, it is possible to adapt them specifically to each tourist. The aim is to bring the visitor closer to the world of fishing, as presented directly by the fishermen themselves, the rightful cultural owners. As a result, the cultural heritage of fishing offers enormous possibilities for the development of complementary touristic products that combine nature and the traditional culture of coastal areas. It is therefore necessary to take advantage of this cultural heritage in order to avoid a decline in the profitability of the fishing sector, and thus ensure the viability of fishing communities and allow employment levels to be maintained, not only in the sector, but also in activities related to this cultural heritage, which, is undoubtedly the main differentiating characteristic of fishing communities. It is also worth mentioning that the role of women, as keepers of fishing traditions, has been paramount for heritage being passed down to future generations (Nadel-Klein, 2000). In this vein, intertwining fishing with tourism is a necessary task for both sectors in coastal communities (Kaltenborn et al., 2012), where the promotion and preservation of the fishing heritage is a complementary activity that must strengthen local economies (Howard and Pinder, 2003). Fishing tourism, developed by seafaring professionals, can add much value to fishing products. This entails turning heritage elements into touristic resources, such as repurposing fish markets and open spaces as restaurants, salting factories and similar venues as museums and interpretation or research centres, and lighthouses as hotels. The goal is to ensure that this new use does not alter the appearance and spoil the authenticity of the particular element of fishing heritage, but instead reminds the user of the element's original purpose. It is also essential that this new use take into account the preservation of the marine and coastal environment and ecosystems (Howard and Pinder, 2003).

Now that the risks and difficulties have been identified, let us reconsider the suitability of generating development from the fishing heritage, and understanding this development from both an economic and social point of view. We cannot ignore the benefits that tourism can provide the local economies of these fishing destinations, especially if they are small populations that are often marginalised by more popular tourist destinations. Tourists and travellers are becoming increasingly interested in destinations related fishing. Attracting this type of tourism can enhance the beauty—in terms of cultural interest—of any place in the world, if the appropriate strategies are managed properly, and generate wealth and promote local economic development.

Pursuing economic gain from the cultural heritage of fishing is perfectly legitimate, and moreover, at times it has been possible to preserve elements of the cultural heritage of fishing, which would otherwise have faded into oblivion, thanks directly to these economic gains. We find magnificent examples of fishing architecture and immovable heritage that have been restored and adapted for tourism or repurposed for new use. For example, everyday fishing utensils are now being used as decorative objects, and the household goods and traditional kitchens of fishing communities have now become fashionable. Buildings and artisanal tools and fishing techniques are still conserved today thanks to the new uses they have been given. This repurposing of the fishing heritage is undoubtedly the best strategy for its protection, conservation, and dissemination. Thus, tourism can be viewed as one of the most important engines for disseminating the cultural heritage of fishing today.

Using a terminology close to that used in studies of impact based on input-output analysis (Bowitz and Ibenholt, 2009; Parga Dans and

Alonso González, 2017), we are able to establish different levels of the economic effects of tourism on the fishing sector. One direct effect may be comprised of activities in which tourists pay to board fishing vessels in order to observe and learn about fishing activities, navigation instruments, coastal routes or the marine environment. These activities could be done in conjunction with actual fishing expeditions, on which tourists learn fishing techniques, both during and off the fishing season. Another direct effect could be derived from guided tours to fish markets, where the additional revenue may allow for a reduction of the sales tax on the merchandise, which in turn would reduce the overall price of the merchandise and thus increase the net income of the fishermen.

Then there are activities related to the tourism of fishing that may have an indirect effect on the fishing sector, such as the organisation of guided tours along the coast, and workshops for the manufacture and repair of fishing gear, lighthouses, local shipyards, and dry docks. Similarly, stores selling nautical and marine merchandise, museums dedicated to fishing, the promotion of local seafood and cuisine, and offering accommodations in the homes or neighbourhoods of fishermen may also have an indirect effect on local fishing communities by improving the image of the products, promoting them internationally, and creating customer loyalty.

In addition, both the direct and indirect effects of the tourism of fishing will generate "induced effects" through the incorporation of the income obtained in the consumption of the families.

Obviously, the perception by fishing societies that the tourism linked to fishing cultural heritage can and should contribute to improving the "added value" of fishing and, in general, all coastal populations, implies a greater propensity on their part to defend, protect, and preserve the cultural heritage of fishing.

3.4. A methodological proposal

Specific projects have been designed to implement a clear-cut plan for the patrimonialisation of the cultural heritage of fishing, focussing primarily on protecting, safeguarding, and disseminating it for tourism (Florido-Corral, 2013). One example is the project, "People of the Sea: an Approach to the Cultural and Fishing Reality of the Peninsular Coastline Through Photography," that covers the autonomous communities of Andalusia, Galicia, and Murcia, and also extends to the south of Portugal. Another example is the "Andalusia Fishing & Tourism Project", which analyses the Andalusian historical and cultural fishing heritage by identifying and cataloguing heritage elements. Specifically, it re-evaluates architectural heritage, traditional trades, and knowledge of the environment, recovers historiographical materials, traditional objects, oral traditions and traditional gastronomy, and creates various pilot projects, such as an interpretation centre for tuna traps, seminars, and conferences.

However, a proposal for action should be established to identify the relevant elements of the cultural fishing heritage, economically evaluate these elements, and identify the effects that such implementation could generate in the affected communities, in order to help propose specific touristic activities.

Specific objectives for action should be considered in any project to safeguard the cultural fishing heritage. First, information and documentation should be sought. To this end, we differentiate the bibliographic record between specialised literature on heritage, cultural fishing heritage and fishing culture, case studies of specific areas, and the documentation record, distinguishing between archival-journalistic documentation (e.g., sources and publications in newspapers and magazines), graphic documentation (e.g., photographs) and audio files (e.g., interviews and videos).

Secondly, the fishing heritage must be identified and studied in the selected case studies. The aim is to locate, record, and geographically reference the elements of the fishing heritage that are found in each study area: immovable heritage (e.g., factories, ports, fish markets, markets, shipyards, salt pans, and cold storage), movable heritage (e.g., boats and unique fishing tools), and intangible heritage (e.g., knowledge and techniques, festivals, food, and oral traditions). The heritage elements in a case study areas that are legally protected should be analysed, catalogued, and inventoried. A database containing all elements of the cultural heritage of the area under study should be created, classifying their level of protection (if any), conservation, and possible risk of disappearance. Another objective should be to suggest to the governments of each area under study that selected elements be declared as an Intangible Cultural Heritage of Humanity.

Thirdly, the current impact of the fishing heritage on tourism, and the potential effect on the areas under study should be assessed from a socioeconomic perspective. To do this, current users and agents of the tourism sector would need to be surveyed in order to gather information for the implementation of "contingent valuation models" and other techniques to quantify the use-value and the non-use value of cultural heritage of the fishing (Claesson, 2011).

Finally, proposals should be drawn up to promote elements of the fishing heritage by linking them to tourism. Studies will be conducted of fishing heritage elements that are currently tourist resources, as well as of a selection of elements that may be potential tourist resources. Nevertheless, several proposals shall be put forward and encouraged, such as tourist routes and guided tours of the fishing heritage, the creation of local museums, workshops and schools, the sale of merchandise (e.g., model boats, miniatures, reproductions of maps, and cookbooks), and the creation of associations in defence of the fishing heritage.

In this vein, it is essential to bear in mind the actions and interventions of already existing associations whose goal is to protect the maritime heritage. *Los Astilleros Nereo*, an enclave in the form of a riverbank carpentry shop formally protected by the Junta de Andalucía, has been the subject of controversy for some time when the City Council of Málaga wanted to demolish it. The association *Amigos de la Barca de Jábega*, together with other associations, fought to defend this heritage. Other noteworthy associations in Spain include *El Laúd* of Isla Cristina (Huelva), the *Plataforma en Defensa del Sector Marítimo Pesquero* of Galicia, *Albaola de Pasaia* (Gipuzkoa), *Villas Marineras* on the Cantabrian side, which promotes fishing tourism, the cultural association *Remadoira*, in Vigo, and the project developed by the *Cofradía de Lira de Carnota* (A Coruña).

4. Results: a case study

One possible proposal to implement this methodology is the case study of Isla Cristina in Huelva (Spain). Isla Cristina was founded in the middle of the 18th century when *fomentadores* (sardine merchants) from the Spanish Mediterranean settled the area. These people had been making seasonal trips to purchase sardines from local *jábegas* fishermen to then sell them on the beach since the beginning of the 19th century (see Fig. 1). They settled on a small island surrounded by marshes called *La Figuereta* or *La Higuerita*. The sardine business reached its maximum glory at the end of the 18th century, when more than 40 companies were engaged in the fish salting business, exporting their products to ports all over the Mediterranean (Miravent y Soler, 1850; Oyarvide, 1776). At the end of the 19th century, canning factories were set up, and the fishing gear of *tarrafa* was introduced and several tuna traps were placed. The golden age of the fishing industry occurred between the second and third decade of the 20th century (Rodríguez Santamaría, 1923).

After the Spanish Civil War, the fall in foreign demand for canned food led to the closure of many factories and tuna traps, although the business of salting sardines survived, as it became a low-priced food that helped to supplement the food shortages in Spain at the time. The depletion of stocks in the Gulf of Cádiz caused more traditional vessels, such as *galeones tarraferos* and *jábegas*, to be replaced by modern ones—the *massones*—which began to operate in the waters of the rich

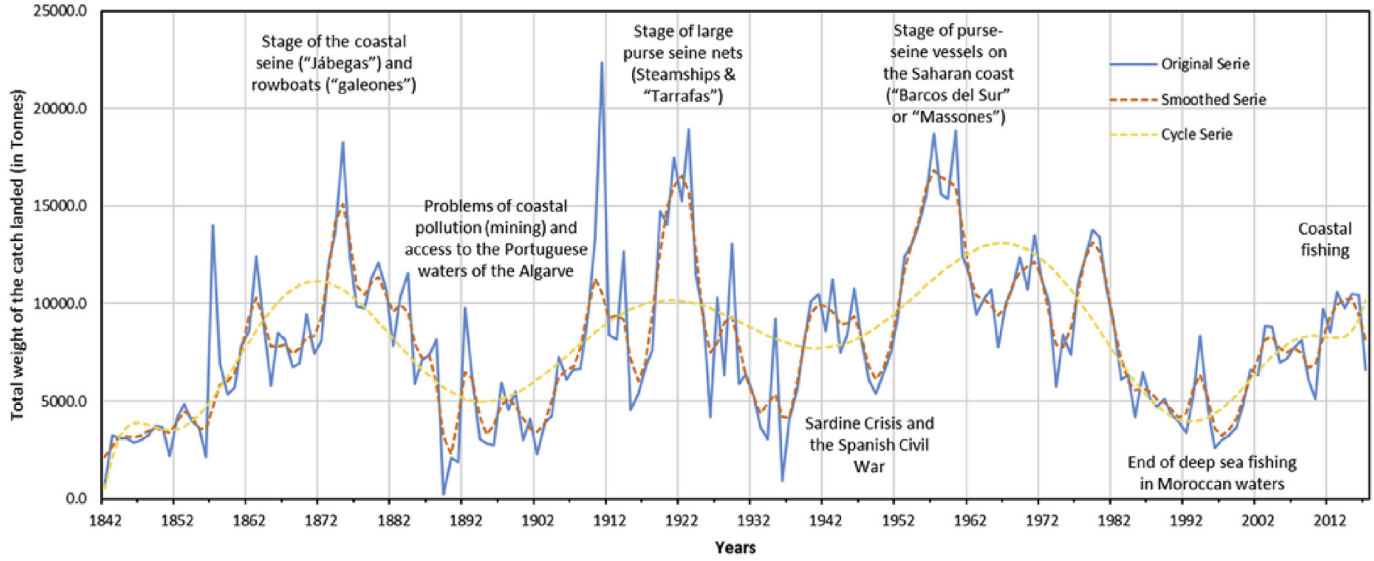


Fig. 1. Evolution of the fishing landings in the port of Isla Cristina (1847–2017). Sources: 1842–1846, Archive of the Naval Museum; 1847–1856; "General State of the Army", 1856–1918, estimates made from "General statistics on foreign trade in Spain" and "General statistics of cabotage trade"; 1919–1936, Public Archive of the City Council of Isla Cristina, 1940 to 1970, "Fisheries Statistics", Ministry of the Navy; 1971–1984, Maritime Fishing Yearbooks, Spanish Government, 1985 to 2017, Regional Government of Andalusia. The series includes the landings of the coastal fleet and the tall fleet, as well as the tuna traps.

Saharan fishing grounds in the 1950s (Arranz, 1966). After the independence of Morocco in 1954, and the extension of its territorial waters in 1981, it was difficult to maintain this activity, although it was the strengthening of the Spanish economy and the decline in consumption of salted fish and preserved sardines that led to its ruin (see Fig. 1). Of the eighty factories that existed in the 1960s, only half a dozen survived into the late 1970s. It was at that time that the fishing sector was forced to reinvent itself by focussing on trawlers that directed their efforts towards the capture of crustaceans (deep-water pink shrimp *-parapenaeus longirostris-* and Norway lobster *-nephrops norvegicus-*), on small purse seiners that caught sardines, anchovies *(engraulis encrasicolus)*, and chub mackerel (*scomber colias)*, and on small vessels that used to capture bivalves such as the Striped Venus *(chamelea gallina)*.

Isla Cristina is a municipality located in the province of Huelva in southwestern Spain (see Illustration 1). Its population has grown 2% from 1996 to 2016, reaching 21,165 inhabitants, in contrast with a 1.6% growth rate during that twenty year period of the entire population of Spain (Table 1). In 2016, Isla Cristina's labour force was 5899 workers, making its unemployment rate 30.3%, whereas the unemployment rate in the province of Huelva was 22.1%, and in the whole of Spain it was 18.1% (Table 2). In Isla Cristina, fishing employs 519 fishermen and generates 744 jobs in canning, distribution, and other related industries. The population of Isla Cristina is employed 10 to 30 times more by the fishing industry than the populations of the province of Huelva or Spain as a whole (Fig. 2).

Tourism has developed considerably in Isla Cristina in the last two decades, so that hotel rooms increased from 1000 in 1996 to 3803 in 2016. This represents a growth rate of 280.3% and 179.7 rooms per 1000 people, compared to a growth rate of 93.2% and 40.4 hotel rooms per 1000 people in Spain (Table 3). This is evidence that a regime shift took place in the main industries of Isla Cristina in recent decades.

Table 2
Labour market situation in 2016.

	Isla Cristina	Province of Huelva	Andalucia	Spain
Employed population	5899	196,148	2,841,075	17,518,426
Unemployed population	2567	55,174	935,018	3,868,898
Unemployment rate	30.32%	21.95%	24.76%	18.09%

Source: Ministry of Labor, Migration and Social Security.

Presently, Isla Cristina is the most important fishing port on the Andalusian coastline with a production of 10,400 metric tonnes per year (in 2016), reaching an auction value of more than 29.7 million euros and a fleet of 390 boats. All of these factors, and some yet-to-be described, make Isla Cristina and its fishing culture an appropriate case study.

Due to its historical trajectory and strong fishing roots—a priority for the islanders—Isla Cristina treasures an essential and extensive cultural fishing heritage. We will highlight some of the most outstanding elements of its immovable, movable, and intangible heritage, and then propose actions that may have a positive impact on activating this heritage as a resource for touristic and local development.

Immovable heritage includes buildings such as the *chancas* (fish salting factories) of the early 19th century that, reused as warehouses

Table 1
Evolution of the population of Isla Cristina, Huelva and Spain (1996–2016).

	Population (10^3)			Annual Accumulative Growt Rate		
	1996	2006	2016	1996–2006	2006–2016	1996–2016
Isla Cristina	17,3	20,3	21,2	1.6%	0.4%	2.0%
Huelva (Prov.)	454,7	492,2	519,6	0.8%	0.5%	1.3%
Andalucia	7,234,9	7,975,7	8,388,1	1.0%	0.5%	1.5%
Spain	39,669,4	44,709,0	46,557,0	1.2%	0.4%	1.6%

Source: Official population figures resulting from the revision of the Municipal Register, National Institute of Statistics (INE).

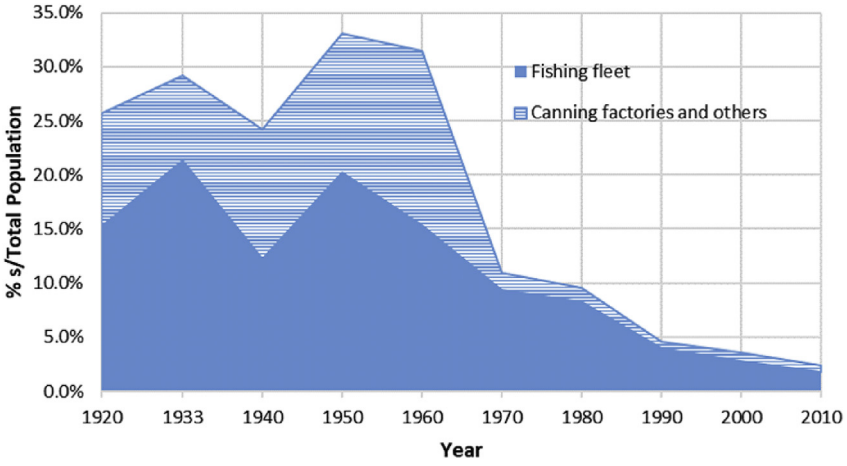


Fig. 2. Relative importance of jobs related to fishing activity in the maritime district of Isla Cristina (1920–2010). Source: Rodríguez Santamaría (1919); Fishery Statistics (1933–1980), Canning Industry Statistics (1953–1978); SABI Database (1990–2016); Ministry of Labor, Migration and Social Security (1980–2016); Population Censuses, National Institute of Statistics (INE).

Table 3
Evolution of hotel capacity (1996–2016) in Spain, Andalusia, Huelva and Isla Cristina.

	1996		2016	
	Number of hotel places	Rate per 10^3 inhabitants	Number of hotel places	Rate per 10^3 inhabitants
Spain	972,721	25	1,879,369	40
Andalucia	173,559	24	293,600	35
Province of Huelva	11,244	25	25,641	49
Isla Cristina	1000	58	3803	180

Source: IECA, Junta de Andalucía.

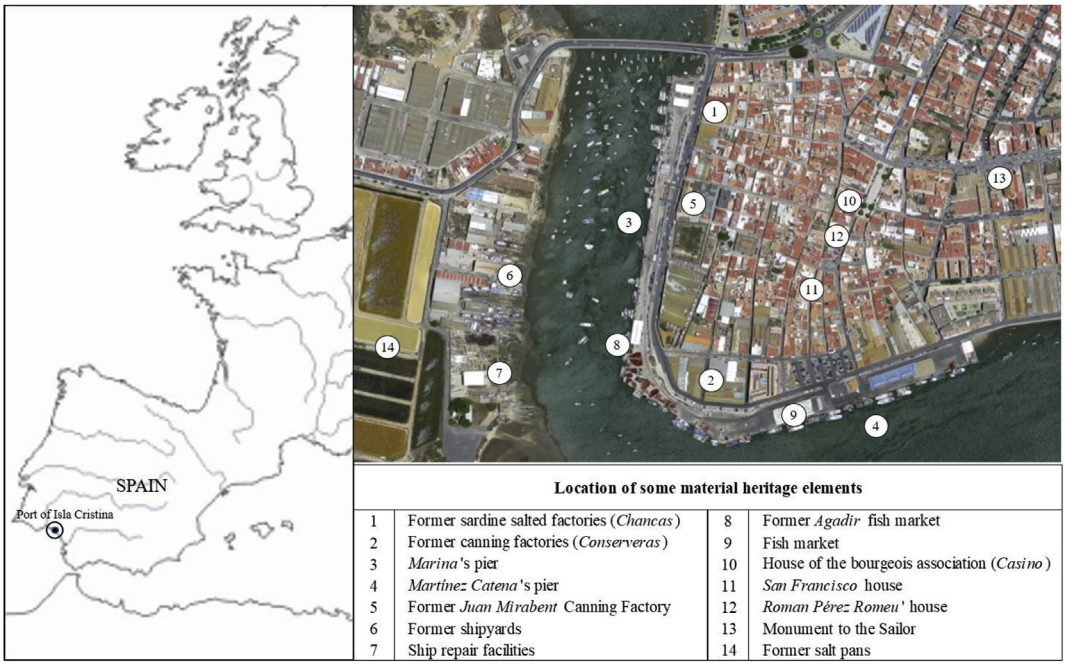
and shops, still retain part of their original architectural structure, including the salt ponds. We propose to select some, for example the one in *Muelle de Marina*, and convert them into interpretation centres on the manufacture of salted fish.

The buildings of some of the canning factories from the late 19th and early 20th centuries in *Muelle Martinez Catena* and *Muelle de Marina* are still being maintained today. The most remarkable building is the former Juan Mirabent Canning Factory (see Illustration 1), which has been restored to house the "Innovation and Technology Centre for Fishing and the Processing of Fish Products (GARUM)". We consider this measure to be appropriate in that it grants a new use to this property without distorting its original use, although at present it is underused due to a lack of funds.

Other important buildings are the shipyards and dry docks, where wooden vessels were once built, but which now are used mainly for to the maintenance of polyester and fibreglass boats. Some of these shipyards could be part of a tourist trail.

The ancient lookouts used by the owners of salt and canning factories to receive visual signals from boats and thus estimate the manpower needed to unload and to processing the fish before the boats arrived at the port are of great interest. The oldest preserved lookout in Isla Cristina is located at Calle Real 12 (Illustration 1). It was built in 1880 by the ship-owner Diego Pérez Pascual, and you can still see the support for the telescope (López Márquez, 2006). This and other lookouts could also be part of a tourist trail.

The old fish market house or *Lonja de Agadir,* built in the 1940s in *Muelle de Marina* to auction the sardines caught in the south, is actually a metal pergola that bears the weight of a roof, and currently serves as a



Location of some material heritage elements			
1	Former sardine salted factories (*Chancas*)	8	Former *Agadir* fish market
2	Former canning factories (*Conserveras*)	9	Fish market
3	*Marina*'s pier	10	House of the bourgeois association (*Casino*)
4	*Martínez Catena*'s pier	11	*San Francisco* house
5	Former *Juan Mirabent* Canning Factory	12	*Roman Pérez Romeu*' house
6	Former shipyards	13	Monument to the Sailor
7	Ship repair facilities	14	Former salt pans

Illustration 1. Location of Isla Cristina and some of its heritage sites.

shelter for net makers (Illustration 1). It could be used to show tourists how nets are reviewed before being used. This would involve hiring a net-making expert for a few hours a day, and would inevitably have a positive impact on safeguarding the intangible heritage of the art of net making.

Some buildings, monuments, neighbourhoods, and streets show how fishing is linked to different social classes in island society. For example, the houses of the local oligarchy (professionals of the canning industry, ship-owners, and industrial workers), such as the one built by Aníbal González, the *Casa Patio San Francisco* (former masonic lodge and current Department of Culture), the *Casa de Román Pérez Romeu* (currently a library), and the *Casino,* represent the bourgeoisie, while the monument *La Estibadora* (dedicated to the women who worked in salting factories), the Monument to the Fisherman, and the Monument to the Sailor, and fishing districts, such as *Punta del Caimán,* represent the working class. These buildings, monuments, and neighbourhoods could be part of a tourist trail, and, in some cases, could even be visited (see Illustration 1).

The salt pans, located on both sides of Pozo del Camino road, are still in use, though some have been transformed into aquaculture farms, where gilthead seabream *(sparus aurata)* and European seabass *(Dicentrarchus labrax)* are fattened. Its inclusion on tourist trails would help us to understand how mankind adapted to the environment and created new specialities, such as *flor de sal*, as well as to visualise the role played by the fishing reservoirs in the salt marshes.

One type of **movable heritage** that stands out is the traditional boat, especially the small dredge boats and trawlers built in the 1960s whose construction is reminiscent of the vessels used in the 19th century (e.g., *jábegas, laudes, faluchos*).[4] Unfortunately, over the last twenty years, many of the traditional wooden boats have disappeared and have been replaced by polyester boats. The last wooden boat built in Isla Cristina harbour dates to 2001, although fifteen boats built between 1950 and 1970 are still in operation, and one even dating back to 1900.[5] Some of the vessels that have been removed have been used for ornamental purposes, such as public monuments. Boats currently in use could be displayed, and boats no longer in use could be used for catering purposes, to offer seafood, for instance. Other elements of movable heritage, such as fishing gear, *nasas, alcatruces*, trap nets or different types of nets (e.g., *trasmallos, tapaesteros*) could be exhibited or recreated through models in a museum or interpretation centres. Some of these pieces and/or their reproductions, not to mention other types of elements, such as paintings, engravings, maps, books and literature on traditional fishing, furniture, scale models, and ornaments with seafaring motifs could also be sold in specialised shops.

But, without a doubt, if there is one thing that stands out in all this, it has to be **intangible heritage**, above all because of its capacity to identify and differentiate between specific groups of people, its vulnerability (a consequence of its symbolic capacity as a cultural identifier), and its risk of disappearing. In this regard, we draw on the areas of Intangible Cultural Heritage that UNESCO distinguishes in its 2003 Convention. The latter two areas refer to “knowledge and practices relating to nature and the universe” and “traditional craft techniques”. In other words, fishing entails knowing for example the environment, habitats, and the customs of marine fauna (including, for example, locating fish by observing the flight of seabirds), reproductive cycles, sea currents, orographic features of the seabed, climatology, and the coastline. It also includes knowledge of the fishing gears and crafts, and mastery of the techniques used in traditional and artisanal fishing (see Appendix I).

Regulations have to a large extent led to the disappearance of many of the gears that have been used over the centuries, such as creels, built with reeds or nets, which were banned by Royal Decree 1428/1997, and only survive in illegal activities. These particular forms of fishing used to comprise—and still do—a whole compendium of knowledge about a trade that was not learned in school, but was transmitted from one generation to the next, from parents to children.

However, in addition to the knowledge and techniques involved in the actual practice of fishing, the fisherman or his assistants—sometimes family members, apprentices or other retired fishermen—had to master other related tasks that also involved specialised knowledge: maintenance of vessels and boats, making gear, repairing nets, taking care of equipment, and preserving the catch on board (putting it on ice) and preparing it on shore for consumption and use through curing, drying or salting. Three actions should, therefore, be taken to protect and disseminate this heritage. First, collect this knowledge and experience in sound and video archives, thereby giving voice to its protagonists, and storing and amassing life stories that UNESCO has called “living human treasures”. Second, display these techniques and material culture in interpretation centres and museums. Third, transmit this knowledge, techniques, and material culture through courses and workshops.

Another of the traditional craftsmanship techniques is the building of traditional wooden vessels. There used to be eight small carpentries in Isla Cristina that supplied the local fleet and those of other nearby areas. Its period of splendour was in the 1960s and 1970s, when the Social Credit for Fisheries led to the reconversion and modernisation of the sector. The manufacture of these ships included a whole set of knowledge and techniques: the design of the boats, drawing blueprints, acquiring the appropriate wood, the pre-treatment of this wood, the arrangement of the ship's internal structure, the lining of the frames, the caulking of the boat, acquiring appropriate materials (e.g., hessian, pitch, and tar, to guarantee insulation), painting the boat, installing engines and technical instruments, if applicable, and the rest of the topside. Local governments should be encouraged to help finance the maintenance of a riverside carpentry workshop, which, in addition to building new boats, could be a repair shop for older vessels.

The preparation of food, produce or gastronomy related to fishing is another intangible heritage that is worth highlighting. Fish and shellfish are staple foods on fishing coasts, something that is clearly observed in Isla Cristina. In this vein, we can differentiate between the daily food consumed by the fishermen at sea—a communal meal consisting of a fish stew—and the food of the families on land, which, although it also included stews, was made with fish of lower quality (which was not sold), such as *morralla* or *jarampa.*[6] Families also had the possibility of frying the fish. Apart from the catch brought by fishermen—the breadwinners—there was and still is an underground economy of harvesting and shellfish, which complemented the daily diet or was sold through informal channels, such as catching *coquinas* (Donax trunculus), *longuerón* (Solen marginatus), *almejas finas* (Ruditapes decussatus), *camarones* (Palaemon spp.), and *bocas de cangrejos* (Uca tangeri). It should be borne in mind that the islanders constitute a population born from the salt and canned fish factories, so they have a deep cultural tradition that includes different ways of salting and conserving fish, the half-salting (*salpresado*) of fishes, the skinning and filleting by hand *(ronqueo*) of the bluefin tuna (*Thunnus thynnus)*, the preparation of traditional sauces, and the manufacture of traditional containers and barrels. Ways to protect this heritage could include compiling it in recipe books, promoting it through contests and competitions, and disseminating it to local restaurateurs.

All these activities involve a specific vocabulary, oral expressions, and ways of speaking (which would be UNESCO's primary domain), the

[4] Traditional wooden sailing fishing boat.

[5] This process of replacing traditional craft with new polyester or fibreglass vessels is taking place throughout Europe. See the Adriatic coast, for example (Bender, 2014, 2015).

[6] The parts of the fish that had deteriorated or were damaged by the nets, and were separated from the rest of the catch by the crew. The crew shared in this low quality fish equally.

value of which should be considered. In addition to an extensive oral tradition that narrates nautical events and those related to fishing, and includes the names of people and places, vernacular names of fish and other species, expressions, proverbs, superstitions, and beliefs, fishing communities, such as Isla Cristina, regardless of whether the population is Catalan, Levantine, Castilian or Galician-Portuguese, have their own way of speaking due to the cultural influences of fishing. It is essential to document this heritage, if possible, by means of recordings.

Finally, taking into account the third area of intangible heritage identified by UNESCO, that of *"social uses, rituals and festive events,"* when speaking about Isla Cristina, we cannot overlook the Festivities of the Virgin of Carmen, which are celebrated on or around the 16th of July, as they are in many other coastal areas. The connections with the fishing sector are evidenced by the annual homage paid to the oldest sailor of the Brotherhood, the fishing competitions, the boat races along the Carreras estuary, and the procession of the Virgin of Carmen, an undisputed patron saint (symbol) of the sea.

However, the area where most of the sailors from Almería and their families live, a stronghold of the main fishing enclave, the *Barriada de la Punta del Caimán*, still maintains its own festivities (Sosa, 1970). Paradoxically, the festival of this neighbourhood is dedicated to the Virgin of Sea, patron saint of Almería, which denotes the origin of its inhabitants. Most of the sequences and elements that make up this festive ritual are related to the sea: the floral offering to the Virgin is made with traditional sailors' costumes, a large grilled sardine party is held in *El Cantil*, a regatta is held along with a procession that reaches down to the sea. The importance of women in marine culture is highlighted in this procession, which begins with the Virgin being carried by the women, who lead her onto the beach, where she is collected by the men who place her in a fishing boat and take her through the estuary. The fishing villages are matriarchies where women, who spend long periods on their own without men, make all decisions about family expenses, take care of all domestic affairs, and raise children by themselves. In the case of Isla Cristina, women had an additional peculiarity compared to other seafaring societies: their work in the canning and salting factories made them wage earners, which gave them a certain economic status even under male control.

The sense of neighbourliness that living in *Punta del Caimán* meant and its links with the nearby town of *Punta del Moral* (Ayamonte), isolated for a long time (Cáceres and Corbacho, 2013), are seen in the close personal relationships between them, including female solidarity, formal and informal associations among seafarers, and the sharing of both daily life and important life events. These festivities and the social cohesion between towns, including their ways of living and interpersonal relationships should be supported by the local government, for example, by recognizing them as being a "Festivity of National Tourist Interest".[7]

In short, we believe that Isla Cristina's marine heritage is extraordinarily relevant and representative of other similar towns. On the one hand, it has its own unique characteristics that make it suitable for analysis. On the other, it offers an object of study that can be applied to other cases.

5. Discussion and conclusion

With a simple glance at the changes that have taken place in the fishing industry, we can see that they are indeed related to various other factors, all of which are interrelated: changes in fishing itself, with the incorporation of new technologies in vessels and fishing gear (Prosperi, Bartolini, Brunori and Kirwan, 2016); changes in fish species, in their number, size, and age distribution, and even in the relative share of sexes, due to the effect of humans on the environment (e.g., overfishing, climate change, use of the seas as landfills) (Allison, Beveridge and van Brakel, 2009); changes in regulations, such as introducing limits on catch quantity, on the composition of a catch, on discards, restrictive policies on fishing seasons or the size of fleets, banning locations and limiting the size of the fish to be sold (Morales-Nin, Grau and Palmer, 2010); changes in the organisation of fishing, this being much more organic and structured, and breaking with informal customary institutions (Acheson, 2006); and changes in economic models and strategies for the commercialisation of fish in global markets, with intense and growing competition (Manuel-Navarrete, Kay and Dolderman, 2004).

All these changes, and others not mentioned, reveal a transformation in the perception of fishing as a livelihood. Fishing societies have gradually changed their habits and customs, and diversified their economy due to the lack of profitability of traditional fishing. Many coastal, traditionally fishing communities have radically transformed their economy by focussing on tourism and the service sector, leaving subsistence fishing behind as a marginal activity in light of the emergence of more profitable types of fishing, namely the fishing industry and even sports fishing (Durán et al., 2015; Khakzad, 2018; Piasecki et al., 2016; Ropars-Collet, Leplat and Goffe, 2017).

The idea of applying the axioms of patrimonialisation to fishing appears during the process, which, as we have seen, is an activity that identifies and distinguishes people and groups. It is a heritage of cultural interest. Traditional fishing is still a job, a hard and risky job, which can even lead to the death of those who perform it. Although working conditions have changed with new technologies and regulations, fishermen still find it difficult to see fishing as a heritage of cultural interest. However, many manifestations, expressions, techniques, and traditional knowledge are being maintained and preserved as identifying elements of social cohesion and evidence of a common history—historical memory (Garavito-Bermúdez and Lundholm, 2017; Sampson and Goodrich, 2009; van Ginkel, 2001). Keeping this heritage alive by promoting and protecting it is something that our governments must do. For this purpose, there is already legal recourse in many states, including at the international level, highlighted by the role UNESCO plays in relation to preserving Intangible Cultural Heritage. However, there is still little interest in this type of heritage, which makes greater commitment and action by the agencies involved essential.

The case study included in section 4 evidences multiple options available to turn fishing cultural heritage into a resource for tourism. This paper standardizes the more relevant options to turn fishing cultural heritage into a tourism product for this case study according section 3.2 typology. Some remarkable tourism business ventures are taking advance of the aforementioned options offering visits to wholesale fish markets, fish cannery, salt marshes and fishing port facilities. An example of how tourism based on the exploitation of the fishing cultural heritage can increase the added value of the fishing sector itself is as follows. During the last two years, there have been widespread tourist visits to the fish markets in Isla Cristina, Ayamonte or Punta Umbría, towns on the coast of the province of Huelva, sometimes organised by companies and other times directly by fishermen's organisations (associations of shipowners and fishermen's guilds), where visitors attend fish auctions and are then offered a tasting of seafood cuisine. The income generated by the visit goes directly to the fishing sector and its associations and is therefore additional income to the extractive activity itself derived from tourism based on intangible cultural heritage. Another example is the fishing-tourism activities, limited initially by restrictive legal interpretations of the professional competences of the professional titles of the skippers and fishing captains, now they are slowly incorporated, with tourists who share a day's fishing on the vessel by paying the shipowner pre-established rates. We could give many other examples, such as visits to canning factories or salt pans, activities that are becoming generalized and, in some way, allow the extractive and transforming sector to obtain additional benefits. Nonetheless, this is not subject to previous

[7] The *Fiesta de Interés Turístico Nacional* is a honorary denomination granted to festivities or events that are celebrated in Spain.

planning and does not consider the positive impact of this interest on the conservation and safeguarding of fishing cultural heritage.

Nevertheless, the setting up of the association for fishing development of the Western coastal area of Huelva (Costaluz) can encourage policy maker to develop new policies not only aimed at using fishing cultural heritage as a tourism resource, but also at the preservation of it for future generations. This is evidence if we analysis main themes of the Participative Local Development Strategy that includes actions like the promotion of tourist fishing, valuing environmental cultural heritage, integrated maritime policy for the protection of ecosystems and exploited maritime resources, or the revitalization and optimization of cultural heritage wealth of local areas as a sign of cultural identity.[8] There are not specific policies implemented related to this action by now due to the recent adoption of this strategic actions, however it is expected that actions related to the principles stated in this paper will be in place soon next years. The vision of cultural heritage from the perspective of the economic profitability it may generate has an impact on the increased attention paid to this heritage as a resource capable of developing local economies. Tourism and its new demands are presented as an alternative to reactivate fishing, through its reinterpretation as a cultural heritage, highlighting cultural elements that would otherwise be lost. The patrimonialisation of fishing, even with new uses and benefits, new meanings and pretexts, and old and new participants (fishing communities and tourists, respectively), can become a tremendously effective means of safeguarding the fishing culture.

Acknowledgements

This work was supported partially by the research project of excellence, “La Gestión Pública del Patrimonio Etnológico,” (Grant number P11-HUM-7377) of the Consejería de Economía, Innovación, Ciencia y Empleo de la Junta de Andalucía and the Spanish Ministerio de Economía y Competitividad; and by the research contract, “Patrimonio Cultural Pesquero”, funded by the Caja Rural del Sur, S.C.A. (Contract number 11/2015).

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ocecoaman.2018.10.023.

Appendix I

Fishing Gears and Fishing Instruments.

Spanish	English
Alcatruz	Traditional mud traps for octopuses
Almadraba	Tuna trap set
Azada, azadón	Hoe
Boliche	Small beach seining net with codend
Cordel	Handline
Corvinal	Bottom set gillnet
Jábega	Beach seine net with codend
Lavada	Small beach seine net without codend
Nasas	Fish pots
Palangres	Long lines
Rastros	Clam dredges
Sardinal	Fixed gillnet
Tapaestero	Stake net, stake gillnet
Tarrafa	Purse seine

References

Allison, E.H., Beveridge, M.C.M., van Brakel, M., 2009. Climate change, small-scale fisheries and smallholder aquaculture. In: Wramer, P., Cullberg, M., Ackefors, H. (Eds.), Fisheries, sustainability and development. Royal Swedish Academy of Agriculture and Forestry, Stockholm, pp. 109.

Apraiz Zallo, J.A., 2007. La recuperación del Patrimonio Marítimo y la Navegación Tradicional en el País Vasco. Revisión y nuevas perspectivas. Zainak 29, 215–238.

Arranz, J.B., 1966. Isla Cristina (Huelva): Aportación al estudio de la pesca en España. In: Homenaje al Excmo. Sr. D. Amando Melón y Ruiz de Gordejuela. Universidad de Zaragoza, Zaragoza, pp. 191–202.

Bender, J., 2014. Intangible heritage in the maritime realm: the pedagogy of functional preservation. Narodna Umjetnost 51 (April), 7–28. https://doi.org/10.15176/vol51no101.

Bender, J., 2015. Conceptual development of the trail methodology for the preservation of intangible maritime heritage: a case for the Adriatic coast and islands. J. Mar. Island Cult. 4 (2), 55–64. https://doi.org/http://doi.org/10.1016/j.imic.2015.09.001.

Bowitz, E., Ibenholt, K., 2009. Economic impacts of cultural heritage - research and perspectives. J. Cult. Herit. 10 (1), 1–8. https://doi.org/10.1016/j.culher.2008.09.002.

Cáceres, R., Corbacho, M.A., 2013. Una propuesta para el análisis de la articulación social del litoral andaluz a través de la pesca. Revista Andaluza de Antropología 4, 55–78.

Chiarappa, M., 2005. Great lakes commercial fishing architecture: the endurance and transformation of a region's landscape/Waterscape No title. Perspect. Vernac. Archit. 10, 217–232. Retrieved from. http://www.jstor.org/stable/3514350.

Claesson, S., 2011. The value and valuation of maritime cultural heritage. Int. J. Cult. Property 18, 61–80. https://doi.org/10.1017/S0940739111000051.

Doyon, S., 2015. Losing ground: the marginalization of the St. Lawrence eel fisheries in Québec, Canada. Mar. Pol. 61, 331–338. https://doi.org/https://doi.org/10.1016/j.marpol.2014.11.011.

Durán, R., Farizo, B.A., Vázquez, M.X., 2015. Conservation of maritime cultural heritage: a discrete choice experiment in a European Atlantic Region. Mar. Pol. 51, 356–365. https://doi.org/https://doi.org/10.1016/j.marpol.2014.09.023.

Florido-Corral, D., 2013. Ethnological values and opportunities for establishing a heritage policy a round tuna-trapping in Andalusia (Spain). Int. J. Intang. Herit. 8, 55–70.

Garavito-Bermúdez, D., Lundholm, C., 2017. Exploring interconnections between local ecological knowledge, professional identity and sense of place among Swedish fishers. Environ. Educ. Res. 23 (5), 627–655. https://doi.org/10.1080/13504622.2016.1146662.

García del Hoyo, J.J., 2009. El desarrollo de las estadísticas del sector pesquero durante los siglos XVIII y XIX. In: Basulto Santos, J., García del Hoyo, J.J. (Eds.), Historia de la Probabilidad y Estadística (IV). Servicio de Publicaciones de la Universidad de Huelva, Huelva, pp. 265–310.

Gascuel, D., Bez, N., Forest, A., Guillotreau, P., Laloë, F., Lobry, J., Trenkel, V., 2011. A future for marine fisheries in Europe (Manifesto of the Association Fran??aise d'Halieum??trie). Fish. Res. 109 (1), 1–6. https://doi.org/10.1016/j.fishres.2011.02.

[8] As examples, we refer to some specific initiatives that are being developed directly by the fishing sector or by companies collaborate with it (Landero, 2017a, 2017b; 2018a, 2018b).

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Gordon, H.S., 1954. The economic theory of a common-property Resource : the Fishery. J. Polit. Econ. 62 (2), 124–142.
Howard, P., Pinder, D., 2003. Cultural heritage and sustainability in the coastal zone: experiences in south west England. J. Cult. Herit. 4 (1), 57–68. https://doi.org/https://doi.org/10.1016/S1296-2074(03)00008-6.
Kaltenborn, B.P., Thomassen, J., Linnell, J.D.C., 2012. Island futures—does a participatory scenario process capture the common view of local residents? Futures 44 (4), 328–337. https://doi.org/https://doi.org/10.1016/j.futures.2011.11.001.
Khakzad, S., 2018. Promoting coastal communities through cultural tourism: the case of fishing communities in Brunswick County, North Carolina. J. Herit. Tourism 13 (5), 455–471. https://doi.org/10.1080/1743873X.2017.1391272.
Khakzad, S., Griffith, D., 2016. The role of fishing material culture in communities' sense of place as an added-value in management of coastal areas. J. Mar. Island Cult. 5 (2), 95–117. https://doi.org/https://doi.org/10.1016/j.imic.2016.09.002.
Khakzad, S., Pieters, M., Van Balen, K., 2015. Coastal cultural heritage: a resource to be included in integrated coastal zone management. Ocean Coast Manag. 118, 110–128. https://doi.org/10.1016/j.ocecoaman.2015.07.032.
Landero, J., 2017a. Isla Cristina ofrece una ruta teatralizada por 'La Higuerita Marinera.' *Huelva Costa*. July 18. Retrieved from. https://huelvacosta.com/isla-cristina-ofrece-una-ruta-teatralizada-la-higuerita-marinera/.
Landero, J., 2017b. Una tradición también en miniatura. August 14. Huelva Información, pp. 11. Retrieved from. https://www.huelvainformacion.es/huelva/tradicion-BminiaturaB_0_1163284111.html.
Landero, J., 2018a. Visitas turísticas para conocer la lonja. June 5. Huelva Información, pp. 9. Retrieved from. https://www.huelvainformacion.es/provincia/Visitas-turisticas-conocer-lonja_0_1251775122.html.
Landero, J., 2018b. Huelva y su patrimonio pesquero. August 29. Huelva Información, pp. 10. Retrieved from. https://www.huelvainformacion.es/huelva/Huelva-patrimonio-BpesqueroB_0_1277272678.html.
López Márquez, V., 2006. Isla Cristina. Por los caminos de la historia. Diputación Provincial de Huelva, Huelva.
Manuel-Navarrete, D., Kay, J.J., Dolderman, D., 2004. Ecological integrity discourses: Linking ecology with cultural transformation. Hum. Ecol. Rev. 11 (3), 215–229. https://doi.org/10.1109/WAINA.2008.247.
Martindale, T., 2014. Heritage, skills and livelihood: reconstruction and regeneration in a Cornish fishing port. In: In: Urquhart, J., Acott, T., Symes, D., Zhao, M. (Eds.), Social Issues in Sustainable Fisheries Management. MARE Publication Series, vol. 9. Springer, Dordrecht, Netherlands, pp. 279–299. https://doi.org/https://doi.org/10.1007/978-94-007-7911-2_15.
Miravent y Soler, J., 1850. Memoria sobre las pescas que se cultivan en las costas de España, desde el cabo San Vicente hasta el Estrecho de Gibraltar. Imprenta Reyes, Huelva.
Molina García, A., 2013. Diagnóstico Estratégico de la Actividad Pesca-Turismo en España. (Madrid).
Morales-Nin, B., Grau, A.M., Palmer, M., 2010. Managing coastal zone fisheries: A Mediterranean case study. Ocean Coast. Manag. 53 (3), 99–106. https://doi.org/10.1016/j.ocecoaman.2010.01.003.
Nadel-Klein, J., 2000. Granny baited the lines: perpetual crisis and the changing role of women in scottish fishing communities. Wom. Stud. Int. Forum 23 (3), 363–372. https://doi.org/https://doi.org/10.1016/S0277-5395(00)00094-7.
Oyarvide, J.M., 1776. Informe a la Real Sociedad patriótica de Sevilla. Obra manuscrita. In: Archivo Historico de Sevilla. Papeles del Conde del Águila, tomo 61, número 4. Sevilla.
Parga Dans, E., Alonso González, P., 2017. The Altamira controversy: assessing the economic impact of a world heritage site for planning and tourism management. J. Cult. Herit. 30, 180–189. https://doi.org/10.1016/j.culher.2017.09.007.
Piasecki, W., Głąbiński, Z., Francour, P., Koper, P., Saba, G., Molina García, A., ... Stergiou, K.I., 2016. Pescatourism—A European review and perspective. Acta Ichthyol. Piscatoria 46 (4), 325–350. https://doi.org/10.3750/AIP2016.46.4.06.
Prosperi, P., Bartolini, F., Brunori, G., Kirwan, J., 2016. Strategies of fishers and fish farmers : a preliminary analysis for Sustainable Fisheries and Aquaculture. In: 12th European IFSA Symposium. Harper Adams University, Shropshire, pp. 1–25. Retrieved from: https://www.harper-adams.ac.uk/events/ifsa/papers/5/5.4 Prosperi.pdf.
Rodríguez Santamaría, B., 1923. Diccionario de artes de pesca de España y sus posesiones. Imprenta de los sucesores de Rivadeneyra, Madrid.
Rodríguez Santamaría, B., 1919. La Industria Pesquera de Isla Cristina. Vida Marítima XVIII (632), 316–317.
Ropars-Collet, C., Leplat, M., Goffe, P. Le, 2017. Commercial Fisheries as an Asset for Recreational Demand on the Coast: Evidence from a Choice Experiment. Mar. Resour. Econ. 32 (4), 391–409. https://doi.org/10.1086/693022.
Russ, G.R., Zeller, D.C., 2003. From mare liberum to mare reservarum. Mar. Pol. 27 (1), 75–78. https://doi.org/https://doi.org/10.1016/S0308-597X(02)00054-4.
Sampson, K.A., Goodrich, C.G., 2009. Making Place: Identity Construction and Community Formation through "Sense of Place" in Westland, New Zealand. Soc. Nat. Resour. 22 (10), 901–915. https://doi.org/10.1080/08941920802178172.
Sharina Abdul Halim, Ong Puay Liu, N.Y., 2011. Participation towards heritage Conservation : case of a fishing community. In: PLANNING MALAYSIA PLANNING MALAYSIA Conservation with Development: Focus on Langkawi Conservation with Development: Focus on Langkawi, pp. 185–196.
Sosa, J., 1970. Historia de Isla Cristina (Biografía sentimental). Gráficas Salesianas, Sevilla.
UNESCO, 2003. Convention for the safeguarding of the intangible cultural heritage. In: The Impact of Uniform Laws on the Protection of Cultural Heritage and the Preservation of Cultural Heritage in the 21st Century, (October), pp. 9–110. https://doi.org/10.1163/ej.9789004180444.I-786.6.
Urquhart, J., Acott, T.G., 2013. Re-connecting and embedding food in place: rural development and inshore fisheries in Cornwall, UK. J. Rural Stud. 32, 357–364. https://doi.org/https://doi.org/10.1016/j.jrurstud.2013.09.004.
Urquhart, J., Acott, T., Reed, M., Courtney, P., 2011. Setting an agenda for social science research in fisheries policy in Northern Europe. Fish. Res. 108 (2–3), 240–247. https://doi.org/https://doi.org/10.1016/j.fishres.2010.12.026.
Vallega, A., 2003. The coastal cultural heritage facing coastal management. J. Cult. Herit. 4 (1), 5–24. https://doi.org/https://doi.org/10.1016/S1296-2074(03)00004-9.
Vallega, A., 2007. The role of culture in island sustainable development. Ocean Coast Manag. 50 (5–6), 279–300. https://doi.org/https://doi.org/10.1016/j.ocecoaman.2007.02.003.
van Ginkel, R., 2001. Inshore fishermen: cultural dimensions of a maritime occupation. In: Inshore Fisheries Management. Reviews: Methods and Technologies in Fish Biology and Fisheries, vol. 2. Springer, Dordrecht, pp. 104–119.