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1 **Controversies over stakeholder participation in marine protected area**
2 **(MPA) management: a case study of the Cabo de Palos- Islas Hormigas MPA**

3 **ABSTRACT**

4 There is considerable controversy over the role of stakeholder participation (SP) in the management of
5 marine protected areas (MPAs). On the one hand, SP advocates claim that successful MPAs make use
6 of SP in their design and management. -On the other hand, SP critics- argue that it is difficult to reach
7 consensus between stakeholders on the need for MPAs, let alone the best way to manage them. This
8 study aimed to investigate the extent of SP in the Cabo de Palos-Islas Hormigas MPA (CPH-MPA) in
9 the Murcia province of south-eastern Spain, with a view to exploring this controversy. The research
10 focused on the perceptions of respondents on the value of SP in CPH-MPA decision-making; the
11 current extent of SP in the CPH-MPA; the challenges to it; and ways of overcoming those challenges.
12 Fieldwork was carried out during 2013-2015 involving the collection of qualitative data from key
13 informant interviews, community meetings, and individual surveys. ~~These is~~ data revealed a high
14 degree of support for SP; very different perceptions about its current extent in CPH-MPA; the existence
15 of many barriers to SP; and several recommendations to address these barriers. The study concluded
16 that since immediate consensus on SP was absent, an experimental approach of adaptive co-
17 management (ACM) could be adopted to determine what kind of SP works best.

18
19 **Keywords:** Stakeholder participation (SP); *Cofradía*; Resource users; Governance; Marine
20 Protected Areas (MPA).

21 **1 Introduction**

22 The complexities of socio-ecological relationships make it crucial to examine conservation
23 problems hand-in-hand with societal contexts, including local interests and perceptions (Voyer et al.,
24 2012). In response to these complexities, there has been for many years considerable support in the
25 literature and policy communities for stakeholder engagement in coastal fisheries management
26 (Delaney et al., 2007; Mikalsen and Jentoft, 2001; Nenadovic and Epstein, 2016). Supporters claim that
27 stakeholder participation (SP) in marine coastal management facilitates representation of diverse views
28 and values; provides local knowledge and solutions tailored to specific contexts; prepares the ground
29 for more effective implementation of policies for long-term management (Berghöfer et al., 2008; Pita
30 et al., 2010); and legitimises marine resource governance (EU, 2013; Hogg et al., 2013; Nenadovic and
31 Epstein, 2016). Indeed, advocates of SP assert that there is ample evidence to show that it is social
32 factors and people's perceptions that are the primary determinants of the success or failure of marine
33 protected areas (MPAs) (Blount and Pitchon, 2007; Christie, 2004; Kelleher and Recchia, 1998;
34 Mascia, 2004). However, opponents of SP urge caution in giving weight to community views in
35 conservation management decisions, on grounds that high levels of bottom-up SP are unsuitable given
36 the ecological issues that MPAs entail (Jones, 2014; West et al., 2006; Wilkie et al., 2006). These
37 ~~critics opponents~~ of SP argue for a science-based, top-down approach, involving 'preservationist' or
38 no-take solutions, which could be put at risk by excessive SP (Jones, 2014).

39 This theoretical controversy is reflected in practice, in that despite the efforts of its advocates,
40 the extent of SP in the management of MPAs appears to be diminishing rather than growing, and
41 currently there seems to be a trend away from the more active, towards the more passive, modes of SP
42 in decision-making (Berkes, 2009; Gray and Hatchard, 2003; Nutters and Pinto da Silva, 2012).
43 However, this trend is causing a backlash amongst stakeholders who are very dissatisfied with their
44 current level of participation in MPA decision-making processes, criticising their lack of involvement
45 in management decisions and in scientific assessments upon which those decisions are made, and
46 deploring the negligible recognition and respect that is given to their knowledge (Delaney et al., 2007;
47 Nielsen et al., 2004; Pita et al., 2010; Yates, 2014). It may be that scale is a significant factor in
48 resolving this controversy – i.e. that SP is less appropriate and certainly more complex in large-scale
49 MPAs on the high seas than in small-scale MPAs close to coastal communities (O'Leary et al., 2012).
50 But even if SP is deemed appropriate in small-scale MPAs, there is still controversy over the kind of
51 SP that a particular small-scale MPA should have. This is the issue with the present study of the Cabo
52 de Palos-Islas Hormigas (CPH-MPA) in Spain, which is a small-scale MPA in a community that is
53 strongly in favour of SP, but deeply divided over the type of SP that should exist.

54 The aim of the study is to investigate this issue in the CPH-MPA by examining the
55 perceptions expressed by respondents about, first, the value of SP; second, the extent of SP in decision-
56 making in CPH-MPA; third, the obstacles to such participation; and fourth, ways of improving it.
57 Ecological studies show the CPH-MPA to be an ecological success and that protection has resulted in
58 an increase in the abundance and biomass of numerous commercially important species, and a recovery
59 of the marine ecosystem (Felix-Hackradt et al., 2013; García-Charton et al., 2004; Hackradt et al.,
60 2014). The reason why the CPH-MPA was chosen for this study is because, while it has conserved
61 marine resources, it has not been successful in meeting its socio-economic objectives, and arguably this
62 is because it lacks the right kind of SP in its decision-making structures. The original contribution of
63 this paper is that it adds to the growing sense that while in principle SP is an important part of good
64 governance for fisheries management in general, and MPA management in particular, there is
65 considerable variation in the types of SP that could be instituted, as well as a wide variety of opinions
66 among stakeholders about the type of SP they would prefer. The paper's recommendation that an
67 experimental approach to adaptive co-management (ACM) should be introduced into the CPH-MPA,
68 reflects a view that is increasingly found in the literature that each MPA is unique (Pomeroy et al.,
69 2004) and that its stakeholders should be allowed to choose the form of SP that suits them best (Fox et
70 al., 2013; Nutters and Pinto da Silva, 2012; Reed, 2008).

71 In section 2, the case study's background is described. In section 3, the research methods used
72 in this study are explained. In section 4, the results of the data are presented, and in section 5, these
73 data are discussed for their insight into the four main issues in this study: the worth of SP; its current
74 extent; barriers to it; and ways of improving it. In section 6, there is a list of recommendations for
75 dealing with these issues.

2 Case study background

Cabo de Palos (pop. ~1200 (INE, 2015)) is a small village in Murcia, south-east Spain, which has a strong fishing heritage, but has recently become a popular tourist hotspot because of its legendary SCUBA diving attractions. The CPH-MPA (see Figure 1.), which is located at 37°39N, 0°26W, covering 19km², was established in 1995 by the Spanish government. As one of the country's first marine reserves, the designation, implementation and decision-making processes were a learning experience for all involved. For two years before its establishment, intense and often 'hard' discussions took place to establish the conditions of use of the reserve. The views of the *cofradía* appeared to prevail, since the CPH-MPA is a marine reserve of fisheries interest (MRFI) equivalent to an IUCN category VI MPA (Dudley et al., 2013), with an integral (category Ia) no-take zone. However, the objectives of CPH-MPA as described in its official terms of reference are not only to protect, regenerate and develop fishing resources for the maintenance of sustainable fisheries enabling artisanal fishermen in the area to preserve their traditional way of life, but also to support other low-impact activities (for example SCUBA diving and environmental education) that contribute to economic development in the area (BOE, 2010). The initial reaction of the fishers was reportedly one of fear regarding the loss of access to valuable fishing grounds and the ban on certain fishing gears. However, gradually the fishers reported seeing a return of groupers that had been eliminated by illegal fishers and began to have confidence in the reserve. But later, the fishers felt deceived as the use of the reserve shifted in favour of divers, and the initial agreements made with fishers regarding the use of the reserve were ignored.

The artisanal fishing fleet is small, and like other small-scale fishing fleets in the Mediterranean has been undergoing gradual decline (Fabio et al., 2016; Gómez et al., 2006). In 1993, there were 14 active vessels; 10 in 2010 when the reserve census was last modified (Esparza, 2010); and six at the time of study. To be included in the reserve census, artisanal vessels must have been operating in the area of the reserve for four years before the enactment of the marine reserve order (BOE, 2010). The system does not permit the addition of any new vessels to the census or the transfer of licences between vessels, so if a vessel is no longer seaworthy and a new boat is purchased, that fisher is not permitted to continue fishing in the reserve with the newly acquired vessel- the licence belongs to the vessel. If the boat is retired, the licence is lost, though another individual may buy a licenced boat and use it to fish in the reserve. These six vessels currently provide employment to 13 full-time fishers, and several part-time employees. The artisanal fishers from CPH-MPA belong to the second largest *cofradía* in the region - Cartagena (54 boats). *Cofradías* are local non-profit corporations with public rights, which represent the interests of the whole fishing sector by acting "as consultative and cooperative bodies for the administration, undertaking economic, administrative and commercial management tasks and with the ability to cooperate in matters of regulating access to the resources and informing over infractions occurring in their territory" (Pascual-Fernández, 1999). As in other regions, there is a strong tradition of 'family fishing' (Herrera-Racionero et al., 2015); almost 80% of the fleet in the CPH-MPA have familial links, and strong familial links also exist with the patron mayor (who is director of the *cofradía*). Within the reserve, the only fishing gears that are permitted are trammel nets and long line. Since the creation of CPH-MPA, the SCUBA diving industry has grown

116 substantially with nine dive centres operating at the time of study. These dive centres provided full-
117 time employment to 38-40 'permanent' employees, and many additional part-time posts during the
118 peak season. Since the SCUBA diving industry is relatively new, unlike the fishing industry it does not
119 have a well-recognised and respected representative organisation.

120 With regard to the management system of MPAs in Spain, the country aims to balance the
121 top-down authority of the national and regional governments with the bottom-up organisation of
122 fishermen within *cofradías* (Alegret, 1999; Herrera-Racionero et al., 2015). This may suggest a co-
123 management regime, but in practice, the national government plays the dominant role in the
124 management of fisheries, with some functions being devolved to the regional governments, and a
125 consultative role given to the *cofradías*, vessel owners' associations, producers' organisations, and the
126 unions (Suárez de Vivero and Frieyro de Lara, 1997). Theoretically, *cofradías* play an important role in
127 participatory management systems, helping to define needs and to channel aid within the sector
128 (Bavinck et al., 2015), but the bargaining power of *cofradías* varies regionally (Jentoft et al., 2012;
129 Pascual-Fernández, 1999). Some *cofradías* have played an important role in the implementation of
130 MPAs: for example, La Restinga - Canary Islands (Revenga, 2003), Lira - Galicia (Perez de Oliveira,
131 2013), and L'Estartit, and Medes Islands - Catalonia (Ballester-Nolla, 2008). But elsewhere, the
132 growing influence of other organisations in the fisheries sector has reduced their bargaining power.

133 There is a complicated (even opaque) relationship between the national, regional, and
134 community spheres of responsibility for management of the CPH-MPA. The CPH-MPA is managed at
135 national level by the National Ministry of Agriculture, Food and Environment and at regional level by
136 the Council of Agriculture and Water of the Region of Murcia. These two institutions are collectively
137 referred to as 'the administration' or 'management' throughout this paper. A formal framework
138 agreement outlines the collaboration and shared management responsibility of each body with regard to
139 the CPH-MPA. For example, the two administrations are jointly responsible for protecting the marine
140 environment, regenerating commercially valuable fish stocks, providing and maintaining a reserve
141 office, and ensuring monitoring, research, information and outreach. The national administration has a
142 duty to provide beaconing, signalling, and a surveillance vessel, while the regional ministry has to
143 contribute an additional surveillance vessel. This collaboration is overseen by a formal monitoring
144 committee, which includes representatives from both the national and regional ministries, which are
145 supposed to meet annually to review progress. An ad hoc advisory board, which supports the
146 management of the MPA, is composed of representatives from the administration, research institutions,
147 municipalities, environmental organisations, fisheries sector (i.e. *cofradia* representatives, trade union
148 representatives, and recreational fishing representatives), relevant marine business organisations, and a
149 representative of the federation of underwater activities in the region of Murcia.

150 **3 Methods**

151 **3.1 Data collection**

152 Fieldwork was carried out during 2013-2014 involving the collection and analysis of data from: survey
153 questionnaires (SQs), key informant interviews (KIs), observation, community meetings, and literature

154 review. The target population for the survey questionnaires included resource users (17 fishers, both
155 active and recently retired, and 37 full-time employees of SCUBA dive centres); and for the semi-
156 structured interviews with key informants (KIs) included three government officers, four researchers,
157 two fisheries sector representatives, two SCUBA diving sector representatives and two NGO
158 representatives. Respondents were targeted through opportunistic and snowball sampling (Bryman,
159 2012) from July to September 2013. Out of the 59 resource users identified as being eligible to
160 participate in the fieldwork, 5 refused, giving a response rate of 92%. All targeted KIs responded.
161 Gender distribution of resource users interviewed was 91% male and 9% female. The fishing sector in
162 Cabo de Palos is characteristically dominated by males, which is a common trend, though women play
163 a significant part in other fisheries such as in Lira- (Perez de Oliveira, 2013). The female resource users
164 were all employees within the dive industry. Community respondents were 56% male and 44% female.
165 Before the main fieldwork, a pilot study helped validate the survey layout and question phrasing. Table
166 1 provides the questions asked which comprised opinions on the current management of the MPA and
167 the marine environment, how decisions are made, what opportunities for participation exist, and how
168 information about decisions taken is communicated. As part of a wider study, the survey questionnaire
169 also covered issues of environmental change, environmental management, and social capital, and
170 gathered household and demographic information from resource users. Trained research assistants
171 along with the first author conducted interviews and gathered field notes. Observation was used in two
172 main ways during the research period: by the lead author as a non-participant observer of interactions
173 between different stakeholders; and by two of the co-authors as participants in CPH-MPA management
174 meetings. From direct experience, these two decision-making meetings followed the format of
175 informing/consulting, where some decisions had already been taken before prior to the meeting was
176 held, yet some opportunity was provided for resource users to declare whether- or not they agreed with
177 the decisions, or not. In general the different actors were given little opportunity to voice their opinion
178 and it was unclear as to whether their input would be considered when taking the final decisions. Three
179 community validation and feedback meetings were held between 2013 and 2014, allowing for open
180 discussion around key issues topics arising yielded from the results; additional data to be collected
181 through participative exercises; clarification of contradictory and confusing results; and validation and
182 triangulation of the data.

183 3.2 Data analysis

184 Audio recordings and field notes were transcribed verbatim, and professionally translated
185 from Spanish to English. Qualitative data were organized using Nvivo10 analysis software (QSR,
186 2012). Some themes were identified from perceptions of participation levels and of barriers to
187 participation identified in the literature, but most themes were chosen through an inductive process of
188 reading and re-reading the completed survey questionnaires and KI interview transcripts, identifying
189 repeated words and themes within and between respondents, and grouping the codes generated into
190 collections of similar content (Bryman, 2012). This technique, borrowed from grounded theory (Glaser
191 and Strauss, 1967), allows issues to arise out of the data, rather than from pre-conceived assumptions.

192 **4 Results**

193 There are four main ~~topics themes~~ in this Results section: respondents' perceptions of (1) the
194 value of SP; (2) types of SP; (3) obstacles to SP; and (4) ways of improving SP.

195 **4.1 Value of SP in CPH-MPA**

196 There was strong support for SP expressed by most respondents. What follows is a sample of
197 their comments. Fishers and the *cofradía* said that what is needed is: "*a good management from the*
198 *bottom up.*" They wanted management to take more account of the views of fishers and of divers.
199 Some fishers expressed strong resentment at their exclusion from decisions that affected them and their
200 families' lives: "*I don't know why three or four men from the European Commission have to decide*
201 *over my future or the future of my children, but that's the reality.*" Divers said that marine resource
202 users should be allowed to participate in management decision-making: while management should
203 manage, it should do so consensually, with the agreement of fishers and divers. NGO representatives
204 said there was a need for decisions to be made "*from the bottom up.*" Researchers said that the quality
205 of government decisions would improve if people with practical knowledge of the sea participated in
206 making them. When asked if they would like the opportunity to participate or have greater participation
207 in CPH-MPA management decision-making processes, 82% of fishers and 91% of divers agreed,
208 saying that they had much local knowledge to offer and a desire to do what is right for the future well-
209 being of the reserve.

210 **4.2 Types of SP occurring in CPH-MPA**

211 Resource users were asked to respond to a series of statements using a Likert scale regarding
212 their level of participation in the MPA, and whether or not they thought that MPAs take their opinions
213 into account- (Table 2). On the level of participation, 44% of fishers agreed they were informed,
214 ~~whereas -versus~~ 62% of divers ~~who~~ claimed not to be informed. For higher levels of SP, ~~both fishers~~
215 ~~and divers reported levels of disagreement above 55%. Both groups were found to perceive MPAs as~~
216 ~~being more considerate of users' opinions.~~

217 Respondents perceived ~~five six~~ types of SP in CPH-MPA, ranging from a less active level to a
218 more active level (Gray, 2005; Nutters and Pinto da Silva, 2012). This spectrum, which has been
219 adapted from the typologies compiled by five influential writers (Arnstein, 1969; Bouamrane, 2006;
220 Lawrence, 2006; Pimbert and Pretty, 1997; Pretty, 1995), contains the following types of SP: *passivity*;
221 *communication*; *consultation*; *influence*; and *collaboration*. This is a descriptive, not a normative
222 spectrum: it distinguishes between less active and more active SP, but it does not make the assumption
223 that less active is bad and more active is good.

224 **4.2.1 Passivity**

225 The least active form of SP is passivity, which incorporates negligible SP. Many respondents
226 held that the CPH-MPA was managed by a system, which afforded virtually no opportunity for SP.
227 For example, fishers said: "*They don't let us take part*"; "*Madrid decides, gives orders and it's done.*"

Commented [tsg1]: I don't understand these phrases

These phrases have been added to make note of the table that has been included to provide some more quantified data... Do you think I need to change them?

I still don't understand what these phrases mean. Can you explain them to me?

228 A *cofradía* representative remarked that: “it would seem that we went back to Franco times when you
229 do what they tell you to do and that’s all.” A researcher said: “There are no chances of participation.”

230 4.2.2 Communication

231 The next level of SP mentioned by respondents was communication. Some fishers
232 acknowledged that they received communication from management. For example, one *cofradía*
233 representative said that: “The Fisheries Service informs us too whenever they offer some aids for
234 fishermen, etc.” Likewise, a diver said: “We, users of marine resources are being informed about the
235 management.” Managers maintained that they regularly directed flows of information to fishers.
236 However, many fishers said they were not given information by management: “We receive zero
237 information from the bodies”; “once the decisions are made they don’t explain them.” Moreover, the
238 *cofradía* representative said the regional management (though not the national management) ignored
239 their attempts to communicate with them: “the National Ministry does reply whenever we appeal some
240 piece of legislation or report, even if it’s just to say no to our proposal. At least they reply when we ask
241 something. On the other hand in the Region, they don’t even bother to reply with a yes or a no.”
242 Another fisher said: “I have complained many times in Cartagena but they don’t reply.” A diver
243 asserted that the regional administration sometimes took years to respond to their communications.
244 ~~Another controversial issue of communication was over the existence of meetings between marine~~
245 ~~users and marine managers. These findings were corroborated by an exercise undertaken in community~~
246 ~~feedback meetings, which explored resources users’ perceived accessibility to different institutions~~
247 ~~involved in the management of the MPA. The results revealed that both administrations were placed in~~
248 ~~positions that revealed them to be inaccessible, yet, despite the physical distance between the resource~~
249 ~~users and the national ministry in Madrid, resource users perceived the national ministry as being more~~
250 ~~accessible than the regional. Another controversial issue of communication was over the existence of~~
251 ~~meetings between marine users and marine managers.~~ Some fishers acknowledged that regular
252 meetings ~~took did take~~ place with both national and regional management, and administrators
253 confirmed this. Researchers and NGO representatives also said there were meetings between fishers
254 and managers. However, many fishers complained about a lack of meetings: “No meetings are held”;
255 “Neither the Fisheries Service nor Madrid have ever held a meeting with us, the fisheries sector.”

256 4.2.3 Consultation

257 The next level of SP identified by respondents was consultation. Many respondents said there
258 was consultation. Indeed, a *cofradía* representative said: “Every time the administration is going to
259 make some new agreement or project they call us and they consult us.” A diver said that: “Usually we
260 are consulted for the regulation, same with fishermen.” National administrators claimed the
261 government not only honoured its obligation to consult all MPA stakeholders but that: “decisions are
262 adopted after consultation, evaluation and almost negotiation with them... they are taken into
263 consideration.” However, some respondents complained that such consultation was hollow. For
264 example, an NGO representative said: “It might be called a consulting or a dialogue but it’s not a real
265 decision making kind of participation.”

266 **4.2.4 Influence**

267 The next level of SP identified by respondents was influence. Several respondents perceived
268 that they exerted some influence on management. For example, a *cofradía* representative said: “*We*
269 *don’t make decisions, we depend on the administration. But if they ask us for information we can have*
270 *some influence.*” A diver said: “*they [management] begin to take our opinion into consideration.*” An
271 NGO representative claimed that: “*many projects have been stopped thanks to this and other*
272 *organizations.*” On the other hand, many respondents perceived their level of influence in CPH-MPA
273 decision-making processes to be low. For example, a *cofradía* representative said: “[Fishers have] *very*
274 *little influence because they [the administration] don’t contact the cofradía.*” A diver said: “*we have no*
275 *pressure and there is no way to channel the real interests to confront the wall imposed by the*
276 *administration.*”

277 **4.2.5 Collaboration**

278 The strongest kind of participation alluded to by respondents was collaboration. Some
279 respondents claimed there was a healthy form of collaborative management in CPH-MPA. For
280 example, a national administrator claimed that it was virtually co-management: “*Cabo de Palos is a*
281 *very interesting example of collaboration... we are in a joint venture of mutual benefit... It’s been done*
282 *hand in hand with them [fishers]... 25 years ago it wasn’t called co-management but it’s a model*
283 *based 100% on the idea of co-management.*” A regional administrator referred to: “*a management*
284 *committee for the reserve with several actors involved such as the fisheries sector, the State General*
285 *Administration, the Regional Administration, the Town Hall of Cartagena, Tourism, Diving, etc.*” On
286 the other hand, some fishers said there was no desire among management for collaboration, and so-
287 called collaborative arrangements were a sham.

288 **4.3 Obstacles to SP in CPH-MPA**

289 ~~Section 4.2 has revealed that there were very contrasting views among respondents about the~~
290 ~~types and extent of SP in the management decision making of the CPH MPA. Some respondents~~
291 ~~perceived significant amounts of communication, consultation, influence, and collaboration; while~~
292 ~~others perceived relatively little of any of these forms of SP, or, where they did exist, they were seen as~~
293 ~~tokenistic. Both these sets of respondents expressed opinions about how the quality of SP could be~~
294 ~~improved.~~ In this section, we consider seven types of obstacle to the quality of SP that were mentioned
295 by respondents. In the next section, we consider several ways of improving the quality of SP that were
296 suggested by respondents.

297 **4.3.1 Lack of administrative will**

298 The most frequently expressed obstacle to SP was administrators’ lack of will. One researcher
299 referred to: “*an absolute lack of will to incorporate actors in management and to yield part of their*
300 *decision power; I think this is a problem of management attitude or culture, which is very old, and not*
301 *in tune with the current times.*” One reason for regional administrators’ indifference to SP according to

302 a researcher is that all decisions are taken in Madrid: *“the authorities from Murcia tend to follow*
303 *blindly the national policies; there is no will to do something that hasn't been dictated from Madrid.”*
304 Another reason, according to a fisher, is aversion to conflict: *“they don't convene any meetings to*
305 *avoid conflicts and they give us excuses.”* An NGO representative corroborated this claim: *“the*
306 *administrations... fear social opposition, for example from the fisheries sector, when it comes to*
307 *implementing marine reserves.”* One respondent alleged that administrators were corrupt, and more
308 preoccupied with lining their pockets than with improving the quality of CPH-MPA governance. Some
309 respondents inferred that there was lack of commitment on both sides - the administration failed to
310 provide a platform for participation, while fishers failed to collaborate. This joint failure is a finding
311 supported by previous studies (Hollup, 2000; Jentoft and McCay, 1995).

312 **4.3.2 Lack of funding**

313 Another obstacle to SP was perceived to be lack of money- a common issue for MPAs
314 (Berghöfer et al., 2008; Nutters and Pinto da Silva, 2012; Pomeroy et al., 2001). An administrator said:
315 *“Meetings are held periodically to get to know their opinion and consider management alternatives but*
316 *due to the budget situation this is halted at the moment.”* Meetings for SP entail travel costs, and cuts
317 to public expenditure meant such costs could no longer be met by government.

318 **4.3.3 Fishers' low status**

319 Another obstacle to SP was perceived to be the poor status that fishers had in the eyes of
320 managers and researchers (Hollingshead, 2011; Hollup, 2000; McGoodwin, 1995), who regarded
321 fishers as inferior, using terms like *“uneducated”, “cheats”, “closed minds”,* and *“lazy”* to describe
322 them. A *cofradía* representative said: *“They come and make claims against us, they say we are*
323 *predators... at the European level Brussels speaks of the fisheries sector as criminals.”* Some fishers
324 internalised these prejudices, as an NGO representative remarked: *“when fishermen sit to talk with*
325 *managers they feel inferior.”* The fishers' poor level of education may be a contributory cause of their
326 poor status and low self-esteem: 65% had primary school level education, 18% secondary school, and
327 only 18% college level. A diver (divers had a higher level of education - 9% primary; 9% secondary;
328 14% technical/professional; 30% college; and 38% university) said: *“fishing is an activity for people*
329 *who cannot study, who didn't have that chance.”* A researcher said: *“because they have little education,*
330 *and this is typical of Spain, they think that going and talking to an administrator and telling them*
331 *what's happening is something beyond their ability.”*

332 **4.3.4 Lack of respect for managers**

333 Another perceived obstacle to SP was the lack of respect that resource users felt for the
334 authorities. Fishers had little confidence in the knowledge of fisheries managers: *“The problem we have*
335 *in Murcia [regional ministry] is that the people in charge of the administration are people whose*
336 *speciality is not this.”* A diver said: *“Management is bad because decisions are taken in an office not*
337 *knowing what's going on here.”*

338 4.3.5 *Dispute over science*

339 Another perceived obstacle to SP was a dispute over the evidence used to make decisions
340 (Coll et al., 2014; Mackinson et al., 2011). Fishers claimed that data collected by fisheries scientists
341 was flawed. Other respondents lamented the fact that fishers' ecological knowledge – i.e. fishers'
342 contribution to fisheries science - was ignored by managers. For example, a researcher said: “*they*
343 *[fishers] have an incredible knowledge of the matter and this traditional knowledge is not taken into*
344 *consideration when decisions are made.*” This conflict reflects the classic tension between positivist
345 scientific knowledge and experiential fisher's local ecological knowledge (Nielsen et al., 2004;
346 Pålsson, 1995), which reinforces the barrier between management and fishers.

347 4.3.6 *Failure of the cofradía to represent fishers*

348 Another perceived obstacle to SP was the failure of the *cofradía* to represent fishers
349 effectively in their relationship to fisheries authorities. When fishers were asked from whom they
350 received information, only two out of seventeen (12%) reported the *cofradía* as the source. Three
351 reasons explain this disconnect between artisanal fishers and the *cofradía*: first, although *cofradías*
352 represent both artisanal and industrial fishing, the latter generate the majority of the institution's
353 income; second, there is evidence that some individuals have used *cofradías* as instruments to further
354 their personal interests, suggestive of the ‘tyranny of localism’ (Lane and Corbett, 2005; Pascual-
355 Fernández, 1999); and third, *cofradías* lack staff with sufficient technical and promotional skills
356 (Alegret, 2000; Bavinck et al., 2015). The patron mayor of the *cofradía* himself is not a fisher, which
357 has had some effect on the confidence the fishers feel towards their representative. Several
358 respondents, including fishers and researchers, indicated that the *cofradía* was not particularly effective
359 in achieving its objectives and suggested that the patron mayor and those with responsibility to best
360 represent the fishers lacked the necessary leadership and skills to drive change and generate motivation.
361 These deficiencies chime with findings on other fishers' organisations (Hollup, 2000; Jentoft et al.,
362 2010; Nutters and Pinto da Silva, 2012; Suarez de Vivero et al., 2008; Yates, 2014).

363 4.3.7 *Personal and sectoral conflicts*

364 The final perceived obstacle to SP was the high level of personal and sectoral conflicts, both
365 within and between stakeholder groups (Jones, 2014). Throughout the fieldwork, there was substantial
366 evidence of underlying personal conflicts, which impeded communication and participation in
367 decision-making processes within and between sectors. For example, a researcher said: “*fishermen are*
368 *unable of getting together to write a proposal because they have conflicts amongst themselves, they*
369 *mistrust each other because of old issues related to fishing, they don't know how to cooperate.*” An
370 NGO representative said that: “*within the fisheries sector people are at odds with each other.*” There
371 was also evidence of conflicts between sectors, especially between fishers and divers and between
372 resources users and the administration. A diver said: “*Fishermen... are a special group because they*
373 *think the sea is theirs and it's difficult to communicate and collaborate with them.*”

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374 4.4 Ways of improving SP in CPH-MPA

375 Several ways of improving SP were proposed by respondents. First, self-governance by
376 resource users was suggested. For example, a researcher said: *"I befriend fishermen and have always*
377 *told them that they should have had a more active participation in the reserve, even managing the*
378 *entrance of divers."* An NGO representative agreed, saying fishers: *"should be the primary managers*
379 *of the resource."* Second, an NGO representative proposed co-management: *"I would like to establish*
380 *processes of co-management so that users and the community can take part in the decisions."* Third,
381 another NGO representative proposed: *"creating measures that make public participation mandatory."*
382 Fourth, a researcher proposed a round table: *"there is no forum or round table to work, that's where*
383 *the management policy should be created... if you don't participate in the round table things are often*
384 *decided from behind."* Fifth, a national administrator proposed that funding should be restored to
385 management budgets to finance SP. Sixth, a fisher proposed that meetings should be automatically held
386 before management measures were drawn up: *"I think before creating a management plan they should*
387 *meet with us, with the professionals of the fisheries sector, seek our advice about what and when to*
388 *fish."*

389 5 Discussion

390 From the above results, three main themes emerged for discussion.

391 5.1 Why the wide variation in perceptions of SP?

392 First, why was there such wide variation in stakeholders' perceptions about the actual extent
393 of SP in the management of the CPH-MPA? Even stakeholders within the same group (such as fishers)
394 perceived different kinds of SP operating. One explanation might be that they interpreted the meaning
395 of SP in different ways, so where one respondent saw SP, another would not (Nutters and Pinto da
396 Silva, 2012). However, this explanation cannot account for the fact that respondents differed over
397 whether or not an agreed kind of SP took place. For example, they differed over whether or not there
398 were meetings held between fishers and administrators. Why do many respondents claim there were no
399 meetings between fishers and administrators, whereas many other respondents claim there were such
400 meetings? One reason may be that because resource users resented their exclusion from meetings, they
401 exaggerated the extent of that exclusion, while administrators resented criticism for failing to arrange
402 meetings, and so exaggerated the extent to which meetings took place. Another explanation for the
403 divergence of views on the extent of SP may be the partial perspectives that most respondents have of
404 the CPH-MPA. For example, many artisanal fishers are independent and lone workers who keep
405 themselves to themselves and prefer to spend their time at sea rather than in meetings (McGoodwin,
406 1995). Accordingly, many of them may have limited knowledge of how fisheries management
407 decisions are actually reached. Likewise, many managers spend most of their time in their offices and
408 do not venture much out into the practical world of fishers. Accordingly, many of them may have
409 limited first-hand knowledge of whether and how fishers perceive they are excluded from contributing
410 to fisheries management decision-making (Herrera-Racionero et al., 2015). An administrator admitted

411 that their knowledge of the dive industry is very scant: “*that’s beyond our competency.*” The result is
412 that each side has a sketchy perception of the activities of the other side, and so different assessments
413 of the extent of SP are hardly surprising.

414 **5.2 The obstacles to SP are adventitious**

415 All seven obstacles to SP are adventitious, not immovable or inevitable. Three of them – lack
416 of will; lack of funding; and dispute over science – could be overcome by more attuned and sensitive
417 governance. Lack of will is myopic, turning a blind eye to future flashpoints. Lack of funding should
418 stimulate innovative ways of bringing parties together inexpensively (Berghöfer et al., 2008). Dispute
419 over science could be addressed by arranging more meetings between fishers and scientists (Mackinson
420 et al., 2011). The remaining four obstacles – fishers’ poor status; lack of respect for managers; failure of
421 *cofradias*; and personal conflicts – are largely cultural and can be overcome by increased
422 empowerment and social capital, though this takes more time (Hogg et al., 2013).

423 **5.3 Assumption that the more SP there is, the better**

424 Much of the above discussion is premised on the view held by most respondents that SP is
425 valuable for decision-making in the CPH-MPA, and that up to a point, the more SP there is, the better
426 for the running of the CPH-MPA. But this is a highly controversial assumption, and one that is
427 increasingly questioned in the literature as case studies of SP in MPAs show disappointing results
428 (Cooke and Kothari, 2001; Hickey and Mohan, 2004; Jones, 2014; Lane and Corbett, 2005;
429 McClanahan, 2004; Saunders et al., 2007). One of the assumptions made by some respondents was that
430 the greater the amount of SP, the greater the degree of consensus. But more SP may lead to more
431 fractiousness being expressed rather than more consensus being reached. Moreover, the question
432 arises of whether there ought to be extensive SP in decision-making if it leads to attempts to undermine
433 the obligations imposed on member states by the EU under the Habitat Directive and the Common
434 Fisheries Policy (Jones, 2014).

435 **6 Conclusion**

436 In conclusion, this study offers five recommendations to help deal with the controversies over
437 SP in the CPH-MPA. The real question is not whether there should be any SP in the CPH-MPA
438 management system, since there already are some SP elements in it, and most respondents seem to
439 believe they should be there. The real question is what kind of SP should there be, and to what extent.
440 Our first recommendation addresses this question by proposing that since an immediate consensus is
441 unlikely on the proper role and extent of SP, an experimental approach of adaptive management (AM)
442 could be adopted to determine what kind of SP might work best, and how to manage expectations
443 about the level of participative decision-making that is feasible (Fox et al., 2013; Nutters and Pinto da
444 Silva, 2012). The remaining four recommendations are made to facilitate this experimental process. For
445 example, our second recommendation is to initiate better communication between resource users and
446 the administration. Good communication channels and open, on-going dialogue are necessary to
447 overcome distrust between actors; to help fishers feed their experiential knowledge into management

448 decision-making (Coll et al., 2014; Damalas et al., 2015; Mackinson et al., 2011); and to enable
449 managers to explain decisions taken and how fishers' information has been used in them (Cvitanovic et
450 al., 2015; Yates, 2014). To achieve this, there needs to be a reversal in the cuts in the budgets of
451 fisheries managers allocated for stakeholder consultation processes (Berghöfer et al., 2008; Gill et al.,
452 2017; Pomeroy et al., 2001). Our third recommendation is to identify knowledge brokers (Crona and
453 Bodin, 2006; Weiss et al., 2012) (such as the Spanish Oceanographic Institute and the universities) and
454 encourage a two-way dialogue with fishers (Cvitanovic et al., 2015; Mackinson et al., 2011). For
455 example, it is suggested that knowledge co-production and participatory research projects be developed
456 to help garner increased support from fishers by including fishers' knowledge and ensuring that
457 research is more in line with local user needs, as has been successfully illustrated in previous studies
458 (Leleu et al., 2012; Mackinson et al., 2011). Our fourth recommendation is capacity building (Gill et
459 al., 2017) for every group involved, administrators and resource users, increasing their training and
460 experience with participatory processes, to ensure more equitable participation, empowerment of the
461 different actors, and increased confidence in the decision-making process (Alegret, 2000; Bavinck et
462 al., 2015; Nutters and Pinto da Silva, 2012). Our fifth recommendation is to give greater attention to the
463 selection of SP representatives, not only for the resource users but also for all other institutions
464 involved. This would enable users to capitalize on the strength of their representatives, thereby
465 focusing their pressure on the regional ministry, with whom travel and transportation costs associated
466 with meetings would be lower than with the national ministry based in Madrid (Aanesen et al., 2014).
467 These five recommendations are practical proposals designed to improve the management system for
468 the CPH-MPA by injecting modest amounts of SP into the decision-making process. They are not
469 intended to transform the process, but only to smooth its operations.

470 **7 Ethics statement**

471 Permission to conduct this study was granted by the Ministry of Agriculture, Food, and
472 Environment in Spain, and ethics approval was obtained through submission of an ethics assessment to
473 the University of Murcia Ethical Committee. Participants were informed of the aims of the project, how
474 data would be used, and how they could access the study results. Researchers obtained oral consent
475 from participants before conducting interviews. Personal identifying information was replaced with
476 respondent ID numbers to ensure anonymity.

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670

671 **Figures & Tables**

672 **Figure 1.** (a) Study site location; (b) CPH-MPA zoning and management responsibility

673 **Table 1.** Questions asked to determine perceptions of decision-making processes in CPH-MPA

674 **Table 2.** Marine users perceptions regarding the following statements: (1) marine users are well
675 informed about marine management decisions, (2) marine users are consulted about marine
676 management decisions, (3) marine users take part in the management process, (4) MPAs take more into
677 account the opinions of marine users. Percentages refer to level of agreement with each statement (1 =
678 strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree). Fishers
679 n=17, Divers n=38