MARINE PROTECTED AREAS AND FISHERS INVOLVEMENT

THE CASE OF THE IROISE SEA, WESTERN BRITTANY, France

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ABSTRACT

Access restrictions to traditionally-used resources, that are associated with the establishment of marine protected areas (MPA), often generate conflicts. Public participation in decision-making process has been widely recognised as a critical factor in legitimising conservation policy and enhancing its success. This paper discusses fishers involvement issues in the context of the Iroise Sea where the first marine national park in France should be implemented. The aim is to understand why it is crucial for managers to involve local communities, and especially fishers. It also analyses the fishers motivations to get involved or not in such conservation strategy. In the Iroise case-study, fishers and their representatives have generally adopted a rather positive attitude toward the project. They claim for deeper participation in the decision-making process and in the future management institutions of the park. The analysis suggests that their goal is to get exclusive territorial rights, with local governance to implement sustainable fisheries.

Keywords: Marine protected areas; fishers involvement; participation; Iroise Sea (France); decision-making process

INTRODUCTION

Developed in the late 19th century, the concept of parks and other type of protected areas was one of a large land area from which all human activities were excluded, except those associated with resources management and accommodating tourists. Park residents and local population who had traditionally used the park area for physical subsistence or spiritual needs were excluded [1]. According to this classic paradigm for protected areas, large game parks were setting up without too much concern for the impact on local people and local communities were sometimes considered as a threat [2]. Issues on local population relationship with protected areas has received increasing attention since the end of 1970, especially through the concept of biosphere reserve. In 1982, the World Congress on National Park in Bali called for increased support of communities living next to park through participation in decision (e.g. [3]). Participation is one of the six principles recommended for a sustainable governance of the oceans [4]. Local participation can be defined as “empowering people to mobilize their own capacities, be social actors rather then passive subjects, manage the resources, make decisions, and control the activities that affect their lives” [5]. Thus participatory planning means more than “(…) asking people to provide input. It implies understanding people’s perspectives and valuing their concerns, i.e. assessing the value of local knowledge” [6]. However, in practice, many marine protected areas (MPAs) are established using a traditional ‘top-down’ approach. Opposition from users groups, resource conflicts and economic concerns are common and are the most important factors which often lead to MPAs not being fully implemented [7]. Confronted with the prospect of losing customary access privileges, consumptive users of marine resources often do not embrace the concept of MPAs, particularly no-take zones, especially when these stakeholders are not fully involved in the planning of protected areas [8]. As underlined by several authors, this approach to protect area will require a shift in ruling paradigm of protected areas (e.g. [2, 9]). Whereas MPAs are usually justified and assessed with reference to ecological priorities, conserving resources is more than a bio-ecological process. MPA have important
socio-economic, cultural and institutional implications [6, 10-12]. This concept has equally attracted both scientific support and political controversy (e.g. [14]). The potential costs and benefits are manifold and often differ between user groups (e.g. [11]). Most of the controversy stems from the immediate costs of implementing MPA, which tend to be borne by consumptive users of an area, such as commercial and recreational fishers. The benefits tend to be delayed and accrue primarily to non consumptive users (e.g. [15, 16]).

Whereas stakeholders’ involvement is largely recognised as an crucial way in the design, implementation, and management of MPAs, effective participation of resource users doesn’t seem to so common. The aim of this paper is to understand why it is crucial for managers to involve local communities, and especially fishers community. It also analyses the fishers motivations to get involved or not in such conservation strategy. After a literature review about participation of fishers in decision-making of MPAs, this paper analyses an original French case study concerning the project to implement the Iroise Sea National Park (PNMI). Located at the West of France, the Iroise Sea is subject to a high anthropic pressure where fishers are important socio-economic actors. In contrast with other existing marine parks, the Iroise case-study can be analysed as a “happy” example of fishers’ involvement. In fact, fishers and their organisation have adopted a largely positive attitude toward the project.

FISHERS INVOLVEMENT, A NEED TO IMPROVE EFFICIENCY AND A SOCIAL INCENTIVE TO PROTECT

Public participation and support has been widely recognized as a key of success of establishing new regulation governing resource use, including those that provide for the protection of natural assets, such as MPA (e.g. [6, 8, 17-24]). Ideally, stakeholders (those who are liable to be affected by the creation of a marine reserve) should be involved as early as possible in the process and at each phase of the decision-making process, including: consultation, design, implementation, monitoring, enforcement, but also in the choice of management rules and in the day-to-day management… (e.g. [25-28]). The more local communities are dependent on their adjacent marine resources for their livelihoods, the more the local participation positively influences the social acceptability of MPA and the sustainability of resource uses ([8, 29-32]). Community involvement can have important benefits for both protected area and local people [8]. People affected by planned change should be allowed to have an input into its formulation (e.g. [8]). Beside this ethical argument, there are socio-economic arguments for public participation in the decision-making process and the management of protected areas.

Public participation as a condition of acceptability and efficiency

A large part of the literature on public participation makes reference to the cooperative action theory and the several advantages of bottom-up approach. This theory emphasizes the role of legitimacy and social acceptability of regulations in making users to comply with new regulation or conservation measures. In conventional management schemes, local communities are expected to comply with these new regulation, even if the regulations have adverse effects on their livelihoods. This approach can lead to conflict over resource use and discourage local support for the MPA, commonly resulting in local non-compliance with park rules. These effects of conventional management approach decrease effectiveness, efficiency and equity of MPA [33].

Fishers choose to comply with regulations if they perceive regulations or the decision-making process which has produced them as legitimate. Stakeholders participation improves legitimisation and proficiency of public policies, and thereby contributes to their compliance and results in more effective conservation strategies (e.g. [17, 34-36]). Thus, it contributes to local community support for the conservation measures and positively influences their efficiency [7, 37]. Public support is essential for the effective functioning of MPA and avoiding that MPA degenerates as a ‘paper park’ [38]. It reduces
potential conflicts due to misconceptions or fears to lose access rights [39, 40] and ensures cooperation and compliance through early and continued public investment in the making-process decision.

In a more economic perspective, by increasing legitimacy and social acceptance, stakeholders involvement affects positively the efficiency of MPA by minimising some transaction costs linked to its implementation and management (design, enforcement, litigation costs...) and increasing MPA benefits.

Users perceptions of the costs negatively influence the social acceptability of a new regulation [15]. Most of the time, fishers feel they would suffer the brunt of management without benefitting from it (e.g. [26]). For MPA managers, involving fishers is a good way to give information and alleviate fishers threats and avoid unnecessary conflicts due to misperceptions. Secondly, fishers involvement may improve the quality of information (e.g. [41-43]). The local ecological knowledge accumulated over time by resource users is often complementary to more formal scientific knowledge. Resource users can provide the needed information for baselines studies, monitoring efforts [44] and offer an insider understanding of the social and cultural context.

Even if it needs great demands of staff, time and money from the protected areas agencies, benefits of stakeholders’ involvement seem to be higher than costs. The existence of “paper parks” shows that reliance on regulation and enforcement is costly and too often fails [2]. Community involvement and use of local knowledge can facilitate enforcement of regulations, as local people will understand and accept their purpose more readily. The community can assist or even be responsible for enforcement, thus reducing costs to government agencies [8]. In consequence, it helps to reduce costs of enforcement and litigation [45, 46]. Fishers’ involvement improves compliance which may be essential to discourage poaching, which is considered as the most common reason of MPA failure (e.g. [38, 47]). By limiting poaching, it improves the conservation objectives. Moreover, stakeholders participation is a way to decrease negative impacts of MPA on local populations by meeting the needs of local people. Thus, social acceptance and public involvement is frequently pointed out as a selection criteria for the establishment of MPAs [8, 27, 38, 48-51].

**Involvement as a mean to get exclusive use rights**

Users of marine resources do not always embrace the concept of MPA. Confronted with the possibility of losing their customary access privileges, users of marine resources, especially consumptive users such as fishers may react negatively (e.g. [9, 15, 17, 26, 40, 52]). It can generate resentment and hostility in both violent and non-violent ways, affecting both short and long-term success [44].

Notwithstanding the conservation benefits of a marine reserve, legitimating some traditional or informal local-level management systems seems to be the main incentive for fishers to be involved in the decision-making and implementation process of a MPA (e.g. [30]). The creation of a MPA can give the institutional framework to get exclusive use rights, as compensation measures (e.g. [53, 54]).

**THE IROISE SEA CASE STUDY, WESTERN BRITTANY (FRANCE)**

The creation of a national park in the Iroise Sea has been on the agenda since 1989. This case study is very specific because of two main reasons. First, it would be the first national marine park in France. Moreover, the process of implementation tries to be more participative and less centralised than the traditional French experiences of terrestrial national park, based on the French Law of 1960 on terrestrial national park. Secondly, this project of creation a marine national park can be considered as a relatively “happy” case study, regarding the fishers’ involvement in this conservation strategy. After a brief presentation of the area under survey and the ongoing project of creating a marine national park in this
area, this section analyses the effective involvement of fishers and discusses the reasons of this commitment.

**Context of the Iroise Sea**

At the western extremity of Brittany, the Iroise Sea is a coastal sea located on the frontier between the English Channel and the Atlantic Ocean. It is bounded to the north by the Isle of Ouessant and the Molene Archipelago and, to the south, by the Isle of Sein. In the east, the Iroise Sea is connected to the Bay of Brest and the Bay of Douarnenez. In the West, the limit between the Iroise Sea and the Celtic Sea is the 100 meters isobath (see map 1). The whole area is included within the 12 nautical miles line of French coastal waters. Several small islands, only three of which are inhabited, are located in the area.

![Map 1: the Iroise Sea](image)

The Iroise sea is above all a remarkably well-preserved area, providing a habitat for many sensitive species on fragile sites of national and even international significance for nature conservation (labelled as a ‘biosphere reserve’ by UNESCO since 1989). But it is also an area put under great strain by the fishing industry and has an influx of tourists during the summer months. About 110 different types of uses on the sea and on the coastal zone has been counted [55]. In turn, the development of these various activities may become a threat for the equilibrium of ecosystems. In fact, the Iroise Sea is a coastal area, the water quality of which is threatened by heavy uses such as maritime traffic.

Traditionally, the Iroise area was the site of a range of small-scale activities on the sea and in the coastal zone including commercial fishing, seaweed harvesting, both by boat or on the strand, maerl extraction for local agriculture, and seafood processing.

Fishing community is still economically and culturally important in the area. It is mainly a small-scale, multi-species, and multi-gear fishery, largely within the 12 nautical mile zone. Landings are geographically scattered, and only partly marketed through fish auctions. Nowadays, some 900 fishers frequent the Iroise Sea operating on about 350 boats, most of them are under 16 metres. The Iroise fleet practises generally two métiers per boat among a total number of 25 different types [56]. Fixed nets with large mesh or small mesh target finfish (monkfish, bass, pollack, hake etc.) or crustaceans (spider crab
and spiny lobster); handlines target mainly bass and seabream; longlines target bass, seabream, and conger; dredges target common scallop and other shellfish; and pots target crustaceans and cuttlefish. The estimated annual catches are around 12000 tons (fish, crustaceans and molluscs) for a total value of 39 millions of euros, with an average price of 3.2 €/kg [56]. Another characteristic of the Iroise Sea until now has been the absence of trawling. In the summer season, a specialised fleet of around 40 boats harvests seaweed (mainly Laminaria digitata) around the Molène archipelago, which is the principal area for this activity in Francevi. This activity is operated seasonally and complemented by scallop dredging in the Bay of Brest during the winter season.

In terms of time, the Iroise fleet spends about 74% of its fishing effort in the Iroise sea. However, this rate depends on the type of métier and the geographic origin. Globally, boats from the North are more dependent of this area than boats coming from the South. In terms of turnover, the Iroise sea generates about 41% of the overall landings. This dependence rate of fishers to the Iroise sea fluctuates according to the species.

Even if the Iroise sea is important for the fishing community, fishing activities are matched by the development of recreational activities, such as yachting, recreational fishing and tourism [55]. Before the middle of the 1970s, few places were devoted to tourism in the Iroise area. Tourism is nowadays an important activity in Brittany and the creation of a marine national park in the nearby Iroise Sea might encourage tourists to visit the area. Meeting relatives, visiting the inhabited islands of the Iroise Sea (Ouessant, Molène, and Sein) constitute an important part of the tourist flow. Tourism is highly concentrated during the summer season and generates a turnover of 137 millions of euros [56]. The natural/cultural heritage and the possibility of undertaking sea related activities are the main declared motivations of tourists from outside Brittany who visit the Iroise area for leisure. Yachting and sailing are widespread hobbies. The little harbours bordering the area shelter some 10 000 recreational boats, most of which are small boats. According to a recent IFREMER survey, 43% of these boats are used for recreational fishing. Recreational fishing includes fishing onboard leisure boats, underwater fishing (snorkelling), and picking shellfish and small crustaceans on the beach at low tide. Approximately 7 500 snorkellers practising underwater fishing frequent the Iroise Sea. Sailing and recreational fishing approximately represents respectively 11.6 millions and 9.6 millions of euros of total expenditures. The total of catches from recreational activities (fishing onboard and diving) in the Iroise Sea has been estimated at 620 tons, which represents 5% of the commercial fishing catches and 6% in value [59].

**The project of a marine national park**

Concerns for the protection of the natural heritage of the Iroise Sea has led to the proposal of creating a national park there [60]. The idea is relatively old (April 1989) and has been initiated at the request of some inhabitants of the area themselves.

According to French law on national park, environmental preoccupations are the *raison d'être* of national parksvi. However, business considerations are also present because of the tourist use which parks are liable to stimulate (and which may be a cause of contradictions in the process of park managementvii). Because of the cultural, social, and economic importance of fishing in Brittany, fishing is also an important issue.

After a first consultation in 2000, a Prime Ministerial order in September 2001 stressed that the marine park should promote both the protection of natural heritage and the sustainable development of human activitiesviii. In fact, the government took into account fears expressed during the previous consultation process, as it set three strong conditions: the preservation of fishing activities, maritime and island tourism, as well as the development of the islands. Since 2001, scientists, conservationists associations, tourism industries, and representatives of local fishers are involved in a more consultative decision-
making process, within the different working groups implemented by the steering committee. However, nothing precise has been decided concerning the management of human activities inside the park. Concerning fisheries management, only the principle of a fisheries management plan for the park area has been decided. Stakeholders are still debating the size, the borders of the parks (see map 2), and restricted or prohibited activities [63]. For example, commercial fishers ask for a larger park at the scale of the Iroise fishery but are opposed to the idea of a complete interdiction of fishing in specific areas.

However, the final decision will be taken at the national level by the government, following a legal procedure based on public consultation with the different stakeholders (residents of the Iroise area, local authorities, and local administrations) about the final project.

An unusual case-study with the progressive and conditional support from the Iroise fishers

In most existing marine parks, fishers didn’t play an active role in the park design. Emotions of alienation and of loosing their use rights are very common. Fishers felt that they would be harmed by the creation of a marine reserve and that the marine park was only an attempt to exclude them (e.g. [64]). In contrast, commercial fishers from the Iroise sea have up to now displayed a rather positive attitude towards the project. After underlining this relatively favourable support to the park implementation, the fishers motivations will be discussed.

As for the fishing community of the Iroise sea, commercial fishers from the area have adopted a largely positive attitude towards the project of a national park in Iroise. However, their involvement in the consultation and decision process was progressive and not without difficulties.

At the beginning of the 1990s, these commercial fishers felt they lacked being involved in the feasibility study. Invited to steering committee meetings, the local fishing council for North Finistère voiced their dissatisfaction with this. They also expressed their hope that the fishing community would be actively associated with the park’s creation. They would also like to see IFREMER (a scientific institute) better represented on the scientific board. Seaweed fishers from the Molène archipelago were the first to express their concerns regarding the area envisaged for the future park. They wanted to be better informed about the project’s progress. They were afraid of the project becoming an obstacle to their business’ economic development, banning fishing and seaweed activities.

In 1995, they were followed by other fishers (especially from the Conquet harbour), who feared the national park project would lead to overly-protective measures for seals. The future of seaweed harvesting is all the more worrying, as the adopted plan aims to impose constraints on habitats, but not on species (for example, see the designation of areas of particular interest). Seaweed is both a used resource and a habitat for many species.

The implementation of an administrative in charge of the project (“Iroise Mission”) permitted a reviewing of the working methods and allowed for the more active involvement of commercial fishers. Thus regional and local professional sea-fishers’ organisations have become an ever more important part of the decision process since 1996.

During the advisory consultation stage (in 2000), the regional and the four local fishing committees assumed a common position concerning the project and expressed their opposition to a project which would be focused on the islands, fearing the implementation of additional regulation. They asked that their power of decision be upheld as regards fisheries management in the future park. They claimed for deeper participation in decisive meetings and also within a fisheries commission. Finally, they came out in favour of an enlargement of the future park area, requesting the extension of the outer limit of the zone to the edge of French territorial waters.
However, the current involvement of fishers is not supported unanimously and is still weak. The commitment of fishers is liable to turn to hostility if they feel that they might be deprived of these expected benefits by phenomena such as a proliferation of seals in the protected area. The number of fishers supporting the project differs according to maritime area and according to the trade in question [65]. Fishers using lines, from southern Brittany, are more likely to support the project than fishers who use nets, or trawlers, who benefit from a special dispensation to fish in forbidden areas. In the South of the area, some fishers support the project in the hope that the extraction of aggregate from banks of "maërl" sediment will be outlawed. Some fishers from the Northern area conceive the park as a means to exclude other fishers from the Iroise Sea, especially trawlers coming from the South of the Brittany.

Moreover, several fishers has questioned the legitimacy of their representatives. The rejection of the park is shown through a strong distrust of the ecological lobby, and refers to the EC ban of the driftnets. The park project has become subject to campaigning during local fishing committee election (January 2003). One fishers union xii has voiced its categorical opposition to the project.

Among recreational and commercial fishers and other users, some dissenting voices appear, which are not always represented. Thus, a lobby xiii opposed to the project has been created since 2002. Restrictions on the right to pursue recreational activities, especially fishing, has been a common point of contention. The open-access principle still exerts a strong influence on local attitudes. But this dissident association is not yet involved inside the working groups.

**Fishers motivations to support the project**

Globally, the fishing community is in favour of the project to create a marine national park in the Iroise sea, due to the benefits fishers expect from the project in terms of fisheries management. Two explanations allow us to understand this favourable situation. First, the fishers organisations have for some years been thinking about new, long-lasting management mechanisms for fishing in the coastal area xiv. They view the national park project as a way of facilitating the implementation of these mechanisms, such as an improvement in the selectivity of devices, biological pauses, co-management or diversified activity, with the help of public authorities. On the other hand, mistrusting some aspects of the project (particularly under pressure from environmental protection agencies), fishers have preferred to place themselves within the park implementation procedure in order to influence the directions it takes. Thus fishers organisation prefer to be insiders rather than opponents of a project liable to receive an important degree of public support.

Fishers organisations demand that coastal fishing activities within the limits of the park be maintained. They request the guarantee that no area will be classified as a full-scale no-take reserve. They ask the recognition of the role that coastal fishing has to play in the local economy. They want the park to guarantee the upkeep of a sustainable fishing industry: economic viability for fishing companies, a defence of coastal fishing interests and the preservation of fishing stocks.

The fishing community is committing itself to the concept of an experimental management area. They want to make the Iroise sea a pilot scheme for sustainable management of coastal fisheries and to try out new practices (device selectivity, artificial reefs etc). They are looking for possible financial compensation for biological pauses for certain areas, in order to rebuild stock levels, and they are thinking in terms of financial incentives to develop fishing methods that respect the environment [62]. Lastly, they are examining different ways of promoting fish products (labelling etc).

Representatives of commercial fishers believe that the park could help the industry overcome some of the difficulties attributed to the Common Fisheries Policy (CFP) – particularly buyback programs). Their willingness to actively involve themselves in the park construction demonstrates that they are searching
for an alternative to the CFP. Water quality also represents a major stake for commercial fishers. Indeed, they believe that stock levels are not only a result of over-fishing, but also pollution coming from land. The park must therefore bring the financial means to improve the quality of the water.

Moreover, some fishers have put forward the idea to profit from the creation of the park by diversifying their activities, combining commercial fishing and boat-chartering. The “fishing and tourism” business that exists elsewhere in Europe should have been able to emerge and develop in these places.

CONCLUSION

The effectiveness of MPAs appears strongly linked to local fishing community support, because involving the community can reduce the conflicts which often arise in MPA establishment. Thus many authors underline the need for managers to include local communities in the establishment and management of the marine protected areas (at the all stages of the decision making process). It is a way to improve social acceptability, making enforcement easier and decreasing transaction costs, and thereby contributing to improve efficiency of these conservation policies. Direct involvement of the local community positively influences the sustainability of resource use, especially in the case where local groups are heavily dependent on the marine resources. Less analysed, fishers motivations to be involved are linked to the defence of their needs as regards ocean stock management. Some authors emphasize the fact that demonstrating local benefits expected from marine protected areas (in terms of fish stock replenishment through the spillover effect) can be an incentive for fishers to support a marine park (e.g. [29, 68]). Fishers will support a project to create a marine national park because of the expected benefits in terms of fish stock (spillover effect) and sustainable fisheries management. Thus, the fishers commitment in a marine park project can be opportunistic.

In the Iroise sea case study, commercial fishers claim for deeper participation in the decision-making process and in the future management institutions of the park. They would like to apply alternative and adaptive management based on sustainable fisheries and talk about the appropriation of space. They claim exclusive territorial rights for the zone, in order to “protect” themselves against other uses or other commercial fishing trades. Being suspicious of some environmental orientations such as a tendency to “overprotect” the seals, they also prefer to be insiders than opponents, as regards a project liable to receive an important degree of public support and in order to get more weight and be better heard by policy-makers. However, their commitment is liable to turn to hostility if fishers get the feeling that they might be deprived of these expected benefits. So, one should avoid drawing exaggeratedly optimistic conclusions from this relative consensus, since precise questions concerning the management of fishing and other human activities within the limits of the park have not yet been addressed. It is noticeable that stakeholders at present generally avoid expressions such as “marine reserve” or “no-take-zone”.

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ENDNOTES

i. 70% of boats are under 12m long and 75% of the fishers operate on boats under 12m length [56].

ii. The yield of Laminaria digitata vary around 50 000t and 65 000t per year, in the Iroise sea and represents 89% of the French yield [57].

iii. Two third of this tourism frequentation, which is estimated at 800 000 persons in the Iroise area, is concentrated during July and August [56].

iv. 57% are less than 6 meters long, and only 3% over 10 meters.

v. Picking shellfish and small crustaceans at low tide is a popular recreational activity in Brittany, involving the resident population all the year round and tourists during their holidays.

vi. French Law on National Park of the 22th July 1960, article L241-1.

vii. In the case of the Iroise Sea, the potential development of “ecotourism” is often regarded as high for several reasons, including the presence of marine mammals in the area and the importance of tourist frequentation in western Brittany. Some 2.4 million tourists from outside Brittany have visited the department of Finistère (western Brittany) between April and September in 1998, generating locally a flow of expenditure estimated at 550 million of euros [61].

viii. In its first article, the Prime Minister Order of the 25th September 2001 states that “the national marine park project in the Iroise sea shall allow for the permanent protection for outstanding natural beauty and the development of human activities compatible with this preservation will be taken into consideration”.

ix. The themes of these working groups are conservation, tourism and sustainable fisheries.

x. The maritime core zone would be 2 500 km², and the buffer zone 2 800 km². The buffer zone would be composed by a terrestrial buffer zone of 800km² and a maritime one of 2 000 km² [62].


xii. Syndicat National des Chefs d’Entreprise de la Pêche Maritime (SCEP).  

xiii. Association de défense et de valorisation des îles et du littoral (ADVIL).

xiv. The reasons for the growing concern of local fishers for management mechanisms are institutional (since the 1991 French law, commercial fishers’s organisations participate in the management of marine resources and in the enforcement of rules), but also economic: if the fisheries of the Iroise Sea and around behaved rather well during the crisis that shook the French fishing industry in the first half of the 90’ [66], increasing signs of overfishing have brought the executives of local organisations of fishers to the conclusion that limiting the fishing effort in the area had become a priority.

xv. The 1997 French law on fishing allows the transportation of passengers once certain administrative procedures have been completed, and this opens the way to the development of new activities. However, besides institutional obstacles, the lack of economic incentive can impede this type of pluri-activity [67].