‘No Ocean, No Us’-

Stakeholders’ Perceptions of Social Equity and Participatory Governance in Marine No-take Zones of the Calanques National Park

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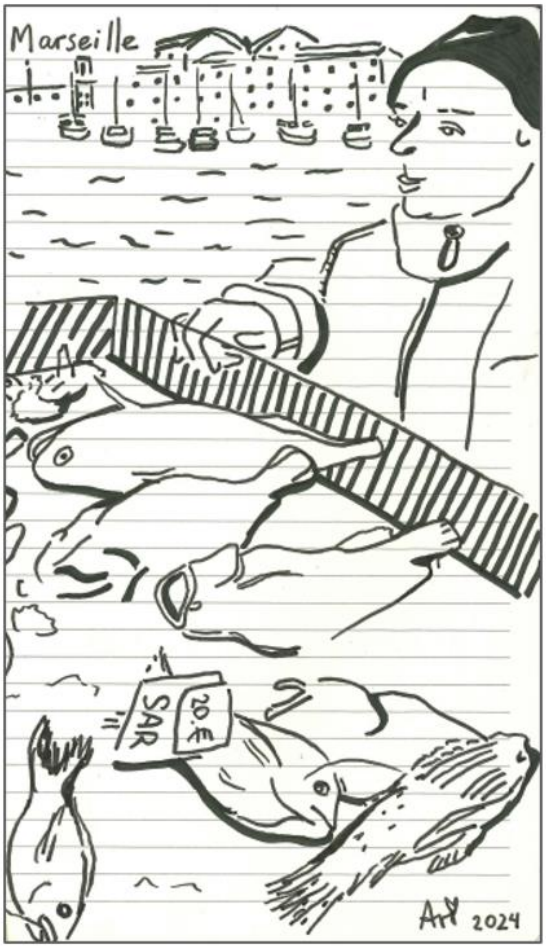

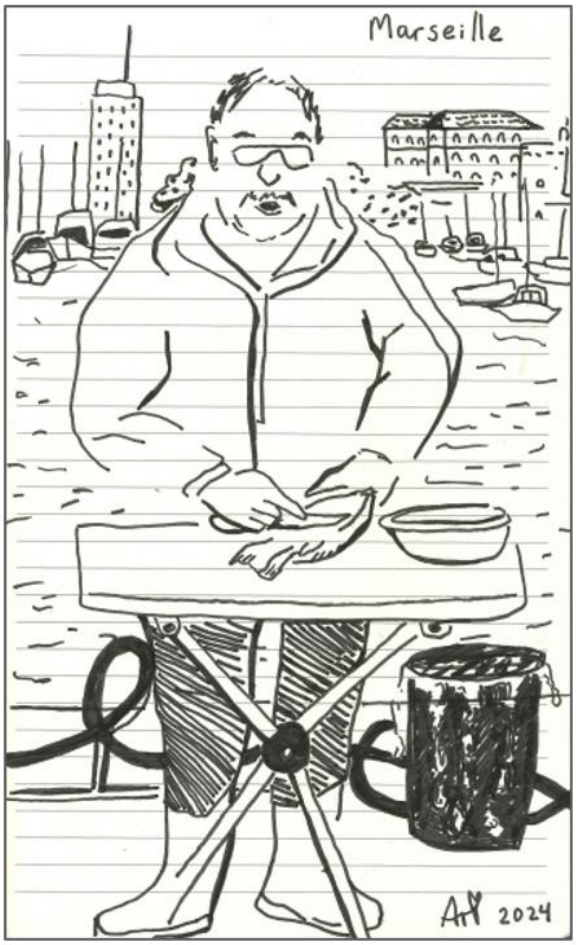

Author: **Kristína Smiešková**

Registration nr.: 1309781

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MSc Thesis Environmental Policy Group

MSc Environmental Sciences

Supervisor: dr. EC (Eira) Carballo Cárdenas

WAGENINGEN
UNIVERSITY & RESEARCH

Environmental Policy Group
WAGENINGEN UNIVERSITY

Abstract

Global calls for increased marine protection require scaling up Marine No-Take Zones (MNTZs), whose implementation requires equitable governance involving affected stakeholders. There is only limited literature on integrating social equity in marine governance, particularly MNTZs, with lacking research on different stakeholder groups' perceptions of social equity and their influence on stakeholders' experience of participatory governance processes. This study assesses multiple stakeholder groups' perceptions of social equity and participatory governance processes of MNTZs in the Calanques National Park, France. Accordingly, a framework of social equity indicators in MNTZs, including recognitional, distributional and procedural equity, has been used in 19 semi-structured interviews covering all local key stakeholder groups. The thematic analysis reveals variations among stakeholder groups but also many overlapping themes: e.g. while MNTZ's impacts on ecosystems were perceived positively, the recognition of stakeholders' knowledge was largely perceived negatively. Social equity perceptions were identified as important shapers of stakeholders' perceptions of participatory governance. The study emphasizes the need for stakeholder engagement and integration of all social equity dimensions in MNTZ governance processes. It deepens the understanding of social equity perceptions of stakeholder groups in MNTZs and provides lessons learned from the Calanques case for ensuring equitable stakeholder engagement in MNTZs governance processes.

Keywords:
Social Equity Perceptions, Marine No-Take Zones, Stakeholder Engagement, Participatory Governance, Marine Protected Areas

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Abstrait

Les appels globaux en faveur d'une protection marine accrue nécessitent l'implémentation des plus des zones marines de non-prélèvement (ZNP), dont la mise en œuvre nécessite une gouvernance équitable impliquant les parties prenantes concernées. Il n'y a que peu de littérature sur l'intégration de l'équité sociale dans la gouvernance marine, en particulier les ZNP, avec un manque de recherche sur les perceptions de l'équité sociale des différents groupes de parties prenantes et leur influence sur l'expérience des parties prenantes des processus de gouvernance participative. Cette étude évalue les perceptions de plusieurs groupes de parties prenantes sur l'équité sociale et les processus de gouvernance participative des ZNP dans le parc national des Calanques, en France. Par conséquent, un cadre d'indicateurs d'équité sociale dans les ZNP, y compris l'équité de reconnaissance, de répartition et de procédure, a été utilisé dans 19 entretiens semi-structurées couvrant tous les groupes de parties prenants importants locaux. L'analyse thématique révèle des variations entre les groupes de parties prenantes, mais aussi de nombreux thèmes qui se chevauchent : par exemple, alors que les impacts du ZNP sur les écosystèmes ont été perçus positivement, la reconnaissance des connaissances des parties prenantes a été largement perçue négativement. Les perceptions de l'équité sociale ont été identifiées comme des facteurs importants de la perception des parties prenantes de la gouvernance participative. L'étude souligne la nécessité de l'engagement des parties prenantes et de l'intégration de toutes les dimensions de l'équité sociale dans les processus de gouvernance du ZNP. Il approfondit la compréhension des perceptions de l'équité sociale des groupes de parties prenantes dans les ZNP et fournit des leçons tirées du cas des Calanques pour assurer un engagement équitable des parties prenantes dans les processus de gouvernance des ZNP.

Contents

1. Introduction

"No ocean; no life. No ocean; no us! [...] Nature is not an option, it is vital. [...] We've treated the ocean as capital that we've consumed. [...] We have not just an opportunity, we have the responsibility to get it right. [...] And now we also know that our very lives depend on taking care of these natural systems. [...] If there are going to be fishers, you have to have fish," marine scientsist Sylvia Earle (Howard, 2014, p. 1).

This chapter will introduce the research problem and context, as well as the chosen case study: The Marine No-Take Zones of the Calanques National Park in South of France.

1.1. 'No Ocean, No Us': The call for equitable Marine No-Take Zones

Marine ecosystems have been the foundation of many civilisations since millenia. The sea offers a vast richness of resources people depend on, it plays a core role in many cultures and traditions, plays an important factor for human health and well-being, coastal protection, has served for trade, or is used for leisure activities (Allison et al., 2020). At the same time, the oceans and marine ecosystems are key drivers of the global climate dynamics – being main producers of oxygen we breath, impacting global weather systems, playing an important role as carbon sinks in our fight against climate change, and nourishing and protecting coastlines with their rich coral reefs and mangrove ecosystems (Bigg et al., 2003; Costanza, 1999). The importance of both natural and social impacts of oceans makes them a complex, and incredibly important system to protect. The oceans' immenseness had made them appear as limitles resources of food, tranportation, and leisure, posing a difficult challenge to govern them, resulting in oceans becoming a common good that anyone with the means can take advantage of (Bigg et al., 2003).

However, it is in the recent decades, that we have realized the immense impacts of humans on our oceans and seas. The very ecosystems that we perceived as too large to be fragile are endangered. In the context of climate change, oceans are now facing threats of ocean acidification, rising sea levels and water temperatures (Tyrrell, 2011). Moreover, as a result of human overexploitation, the oceans are under threat from pollution, rapidly declining fish populations, and marine biodiversity, ultimately driving fish populations and species to the verge of collapse. Approximately 85% of fish stocks are harvested at biologically unsustainable levels, which has also led to declines in total catches from around 2 million tons in the 1980s to 787,000 tonnes in 2013 (FAO, 2016). The loss of marine biodiversity in recent decades has led to Marine Protected Areas (MPAs) becoming an essential part of national and international conservation strategies (Havard et al., 2015). Because of the ocean's interconnection with human populations, these threats present difficult challenges for human populations who depend on oceans and marine ecosystems (Sala & Knowlton, 2006). Therefore, when designing policies for marine conservation, it is crucial to embrace the meaning of Sylvia Erales quote "no ocean, no us" and take into account both social and ecological factors when addressing these challenges.

There has been rising evidence and calls for the necessity of an increase in Marine Protected Areas (MPAs), with the Convention on Biological Diversity, as well as the European Union, calling for at least 30% of oceans, respectively marine and coastal ecosystems, to be protected by 2030 (Convention on Biological Diversity, n.d.). However, not all MPAs offer the same level of protection and many „fail to be effective

because of too weak levels of protection, [with] governments aim[ing] to increase the coverage of fully and highly protected areas within their waters" (Schultz et al., 2022). Even though 8.17% of the global ocean's surface is protected by MPAs, only 2.9% of the ocean is fully or highly protected from fishing impacts (Marine Protection Atlas, n.d.). When it comes to the Mediterrenean, where this study is focused on, from the total of 1231 MPAs covering 7.14% of the Mediterranean Sea (MedPAN, 2016) 0.04% of the area is covered with MPAs that are no-take or fully protected (Partnership for Interdisciplinary Studies of Coastal Oceans and University of Nice Sophia Antipolis, 2016), not offering sufficient protection. Moreover, most of these marine no-take zones (MNTZs) are very small - almost half are between 0.01 and 1 km2 (Di Franco et al., 2018). There is a need to ensure an increase in fully protected MNTZs, also encompassing biodiversity priority areas, to help build crucial sanctuaries and reproduction sites for decreasing wildlife and biodiversity (Jefferson et al., 2021).

Highly Protected Marine areas or MNTZs (which can either include the whole MPA or parts of it) are areas designated for the protection of marine life, with the main focus on nature conservation. The strict protection status prohibits any extractive activities, and thus, all forms of fishing. The only exceptions might be non-extractive and sustainable research purposes (if not able to be performed elsewhere) and access for traditional use by indigenous communities, if the activity is of cultural value. MNTZs thus usually refer to IUCN categories I-III, see figure 1 (Day et al., 2019). These categories are guidelines developed by IUCN, however, each MNTZ may vary in its level of restrictiveness and regulation of activities. Hence, the there is no one definition of MNTZs, other than the prohibition of extractive activities for the pupose of nature conservation.

Activities	Ia	Ib	II	III
Research: non-extractive	Y*	Y	Y	Y
Non-extractive traditional use	Y*	Y	Y	Y
Restoration/enhancement for conservation (e.g. invasive species control, coral reintroduction)	Y	Y	Y	Y
Traditional fishing/collection in accordance with cultural tradition and use	N	Y*	Y	Y
Non-extractive recreation (e.g. diving)	N	Y	Y	Y
Large scale high intensity tourism	N	N	Y	Y
Shipping (except as may be unavoidable under international maritime law)	N	N	N*	N*
Research: extractive	N*	N*	N*	N*
Renewable energy generation	N	N	N	N
Restoration/enhancement for other reasons (e.g. beach replenishment, fish aggregation, artificial reefs)	N	N	N*	N*
Fishing/collection: recreational (sustainable)	N	N	N	N
Fishing/collection: local fishing (sustainable)	N	N	N	N
Industrial fishing, industrial-scale aquaculture	N	N	N	N
Aquaculture – small-scale	N	N	N	N
Works (e.g. harbours, ports, dredging)	N	N	N	N
Untreated waste discharge	N	N	N	N
Mining, oil and gas extraction (seafloor as well as sub-seafloor)	N	N	N	N
Habitation	N	N	N	N

Key:	
No	N
Generally no, a strong prerogative against unless special circumstances apply	N*
Yes	Y
Yes because no alternative exists, but special approval is essential	Y*
Variable; depends on whether this activity can be managed in such a way that it is compatible with the MPA's objectives	*

Figure 1: Matrix of marine activities that may be appropriate for each IUCN management category (Day et. Al., 2019)

MNTZs are key tools for succesfull marine conservation on both global and regional level. They are crucial for the recovery of a variety of marine species (Lester & Halpern, 2008; Sciberras et al., 2015). MNTZs also benefit local fishers, as by protecting the adult fish and supporting reproduction, the dispersion of offspring increases fish dispersal into neighbouring fishing grounds (Roberts & Sargant, 2002). Studies have shown, that fully protected MNTZs resulted in higher increases in fish numbers, population density and significantly higher biomass of fish when compared to partially-protected marine areas (Sciberras et al., 2015). Furthemore, studies have found, that especially main target species for commercial and

recreational fishing, may only be protected by MNTZs which exclude any form of extractive fishing (Lester & Halpern, 2008).

Global policies will require an increase in networks of marine protected areas (MPAs), which are complex socio-ecological systems. So far, research has mainly focused on management effectivness, however less attention has been given to social aspects such as equity (Bennett et al., 2020). Global voices for marine conservation, however, have recognized the interconnection of marine and human systems, calling for the integration of social perspectives into marine conservation. Studies stress the importance of designing marine protection policies in a way that is both benefiting the marine ecosystems and the people who depend on them, (Convention on Biological Diversity, n.d.). There is a danger that in the quest of achieving spatial coverage goals for marine protection, the importance of social equity is neglected, leading to a restriction of rights of local stakeholders (Bennett et al., 2021). It is impossible to ignore the vast diversity of relationships and dependencies of people on the ocean if we want to implement succesful MPAs and MNTZs. A succesful ocean governance must reflect these diverse relationships, in a way that encourages inclusivity and equity as well as the non-material elements of human wellbeing. Protecting the ocean is a 'collective responsibility of humanity' and can only be ensured if those who have been dependent on coastal and continental waters since centuries- with a special focus on the small-scale fishers- are involved in the decisions on its future governance, (Allison et al., 2020). The Convention on Biological Diversity, in its Target 3 of the Global Biodiversity Framework, stresses both the importance of Equitable Governance and the acknowledgement of Local and Indigenous rights for a succesfull global marine protection.

It appears that eventhough the importance of MPAs has been recognized, there seems to be a challenge to the implementation of fully protected MNTZs. In fact, one of the main identified challenges behind failures of MNTZs implementation is the resistance of stakeholders. Schultz et al. (2022) found that stakeholders' perceptions of MNTZs and impaired interaction between stakeholders and decision-makers hinder the implementation of higher protection levels for MPAs, as stakeholders display resistence. Many stakeholders, particularly fishers and fishing industries, who, to a smaller or greater extent, rely on fishing as their source of income, oppose MNTZs proposals (P. J. S. Jones, 2009). This is due to the conflict of interests, where stakeholders feel their dependencies on the sea are being neglected and perceive that MNTZs disproportionally impact their access to the sea, their livelihoods and their 'way of life' (Jones, 2009). Stakeholders' perceptions of social equity have also been seen as crucial for their compliance with regulations (Roberts and Hawkins, 2000), while stakeholders compliance with the cosnervation measures has been identified as one of the main elements to achieve success of MNTZs (Campbell et al., 2012). Moreover, understanding stakeholder's perception of social equity in MPA processes can help identify drivers and barriers and be valuable for scaling up MPAs (Schultz et al., 2022).

Equitable governance has been identified as core to successful MNTZs implementation, (Bennett, 2016; Bennett et al., 2021; Campbell et al., 2012; Klein et al., 2015), which effectively ensures that both social and ecological objectives of marine conservation are being fulfiled, (Convention on Biological Diversity, n.d.; Schultz et al., 2022). Effective marine conservation should, thus, ensure, that "the ocean does not divide us, it connects us," according to this Pacific island aphorism, (Allison et al., 2020). "Insufficient attention to social equity in conservation not only produces social harms, it can also undermine local support thereby hindering the effectiveness of conservation" (Bennett et al., 2021).

Furthermore, to ensure equitable governance in MNTZs, stakeholder engagement and participatory governance have been identified as crucial (Schultz et al., 2022). (Gall & Rodwell, 2016) have shown that

“social acceptability of MPAs is generated by effective and ongoing stakeholder engagement, transparency and honesty relating to the costs and benefits of designations”. Succesful implementations of MNTZs, therefore, require good stakeholder engagement and participatory governance to ensure resolution of conflicts of interests (Schultz et al., 2022). Furthermore, (Jentoft et al., 2007) write that in order to “address[…] governing challenges effectively […] the engagement of stakeholders representing the state, market and civil society is essential”. Therefore, understanding how MNTZs can act to bridge conflicts between stakeholder groups and improve stakeholder engagement, is an important but understudied step to achieving successful and equitable marine protection (Bennett et al., 2021; Schultz et al., 2022).

What equitable governance means in practice in the context of MNTZs is not sufficiently known. “Many actors involved in marine conservation [...] often lack a clear understanding of what social equity means and how to integrate it into conservation practices“ (Bennett et al., 2021).While studies on social equity perceptions in MNTZs, mostly limited to the stakeholder group of small-scale fishers and focusing on quantitative studies, offer a general overview of social equity perception, there is a lacking in-depth understanding of how social equity perceptions interlink and their variation among different multiple stakeholder groups. The vast variety of human relationships with the sea also translate into a diversity of stakeholder groups affected by MNTZs, which has not been studied yet sufficiently. Moreover, there is currently a lack of empirical evidence on what equitable governance means in the context of MNTZs, how equitabele governance in MNTZs can serve to overcome conflicts of interests between stakeholder groups and what leads to governance being perceived as equitable by stakeholders (Bennett et al., 2021). Understanding the perceptions of participatory processes by stakeholders and how they impact their participation, is a necessary step to developing comprehensive frameworks for participatory governance of MNTZs, as well as their succesful implementation (Havard et al., 2015).

When it comes to perceptions as a tool to evaluate the successfulness of MPAs, (Bennett, 2016) suggests that “Studies of the perceptions of local people can provide important insights into observations, understandings and interpretations of the social impacts, and ecological outcomes of conservation; the legitimacy of conservation governance; and the social acceptability of environmental management. [Therefore,] [i]t is positive perceptions, not just objective scientific evidence of effectiveness, that ultimately ensure the support of local constituents thus enabling the long-term success of conservation.” According to (Bennett, 2016), studies of perceptions can serve as crucial tools for improving nature conservation, including MNTZs, in terms of understanding the social impacts of conservation, ecological outcomes of conservation, legitimacy of conservation governance and acceptability of conservation management. The importance of studies of perceptions, thus, should not be underestimated when studying MNTZs.

There are studies on how social equity perceptions affect the acceptability of MPAs (Gall & Rodwell, 2016), the success of conservation measures (Klein et al., 2015), however, not how different dimensions of social equity influence each other. While social equity consists of recognitional, procedural and distributional equity (Bennett et al., 2020), see more in chapter 2.2, in most studies on social equity perceptions it is being reduced to only one of the dimensions. Mostly, it is distributional equity and looking at the “distribution of costs or benefits between individuals or groups of people” (Klein et al., 2015) when describing social equity, while neglecting the other two important dimensions of the recognition of local stakeholder knowledge and livelihoods (recognitional equity), and their fair participation and access to information (procedural equity) (Bennett et al., 2020). Therefore, the complexity of what social equity in

MNTZ governance entails and how the different dimensions of social equity affect each other, lacks further research.

Thus, this study responds to calls for systematic integration of equity in ocean governance, (Crosman et al., 2022). It aims to investigate the relationships between the various components of social equity and to gain a deeper understanding of how various stakeholder groups perceive social equity in MNTZs. Additionally, it aims to strenghten the understanding of stakeholders‘ perceptions of participatory governance processes in MNTZs and how these are linked to their perceptions of social equity in the MNTZ.

1.2. Research Question

In order to reach the previously described reseach aim, the following research question has been formulated:

General Research Question:

What are different stakeholder groups' perceptions of participation in the establishment and governance process of the marine no-take zones of the Calanques National Park, and how do these relate to their perceptions of social equity?

Sub-research questions:

1) How do different stakeholder groups perceive the participation in the MPA governance process of the MNTZs of the NP Calanques?

2) What are perceptions of the different dimensions of social equity by different stakeholder groups affected by the MNTZs of the NP Calanques?

3) How are the perceptions of different dimensions of social equity related to the stakeholders' perceptions of participation in the governance process of the MNTZs of the NP Calanques?

The concepts of social equity and participatory processes will be further elaborated in chapter 2 on the Conceptual Framework and Theoretical Background.

To answer this research question, the French National Park Calanques (NP Calanques) has been selected as a case study for empirical investigation of multiple stakeholder groups' perceptions of social equity and participatory governence processes in its MNTZs. The following chapter 1.3 ellaborates on why the NP Calanques has been chosen as a case study and on its characteristics.

1.3. French National Park 'Calanques' as a Case Study

After conducting a preliminary analysis of global best-practice marine protected areas and a literature review (De Santo, 2013; European Environment Agency, 2023; Fenberg et al., 2012; N. Jones et al., 2020; Marine Protection Atlas, n.d.; Rodríguez-Rodríguez et al., 2015), it was discovered that, despite its stated ambition to protect 30% of its ocean by 2030 from which 10% highly protected (European Environment Agency, 2023), continental Europe does not currently have a significant number of fully protected marine areas. Furthermore, (De Santo, 2013) stated the problem of European MPAs aiming for quantity over quality when aiming to achieve targets, which creates the risks to undermine social justice/equity in MPAs. This makes continental Europe an interesting case to study the implementation of marine-no take zones and related stakeholders' perceptions.

Within Europe, France has been recognized as an interesting case as it possesses the largest economic exclusive zone (EEZ) in Europe as well as the second largest EZZ worldwide. As a result, France presents an interesting case study for MPA research given its large maritime territory and comparatively strong marine protection ambitions (Schultz et al., 2022). By 2022, it aimed to protect 30% of its marine territory, as well as having one third of these MPAs fully protected. Despite the 30% target already being exceeded, France has failed to ensure strong protection for its MPAs, with only 1,6% of French marine territories finally being fully or highly protected. Furthermore, mainland France exhibits substantially lower levels of protection within its waters than its overseas territories, as nearly 80% of French fully protected areas are located in one of its overseas territories. Several studies have observed that while France demonstrates high ambition and coverage of MPAs, it fails to increase the protection levels of its marine protected areas (Claudet et al., 2021a). Additionally, the country shows efforts in ensuring stakeholder engagement in MPAs through passed guidelines on the establishment of MPAs (interview 1), making it an important case to study stakeholders' perceptions of participatory processes in MNTZs. While one would expect that participatory processes enhance equity perceptions among affected stakeholders, and this in turn enables the process of establishing equitable MNTZs, the French case shows that there are several challenges. Despite France's ambitions to establish MNTZs and support stakeholder participation in their governance, studies have found that, specifically in the case of France, stakeholder engagement has been ineffective due to the differing equity perceptions of different stakeholder groups. These differing perceptions impaired stakeholders' interaction with decision makers, ultimately "hamper[ing] [France's] transition from ambitions to action" (Schultz et al., 2022). France, thus, offers a useful case study to investigate how participatory processes and social equity perceptions play out regarding MNTZ implementation.

Especially in metropolitan France, where its coastline has been historically subject to intense human activities, implementing higher protection levels fail due to stakeholders' resistance. Using the Marine Protection Atlas database, French MPAs were identified. The only no-take zone and fully protected MPA in mainland France registered in the database is the Calanques National Park in southern France. While it is the only MNTZ in the database (interview 1) pointed out that the definition of MNTZs varies, and, thus, the Calanques National Park possibly is not the only MNTZ in mainland France, as others might simply carry different names. Despite only covering 0.1% of the French Mediterranean waters (Claudet et al., 2021b), its significance lies in being one of the few successfully implemented no-take zones in the French Mediterranean, as well as in its location directly bordering Marseille, the second biggest city of France. With the national park directly neighbouring the city of Marseille, it is located on a relatively highly inhabited coastline with high levels of human activities. It thus comprises a variety of stakeholder groups with interest in the protection of the area, (Claeys et al., 2011).

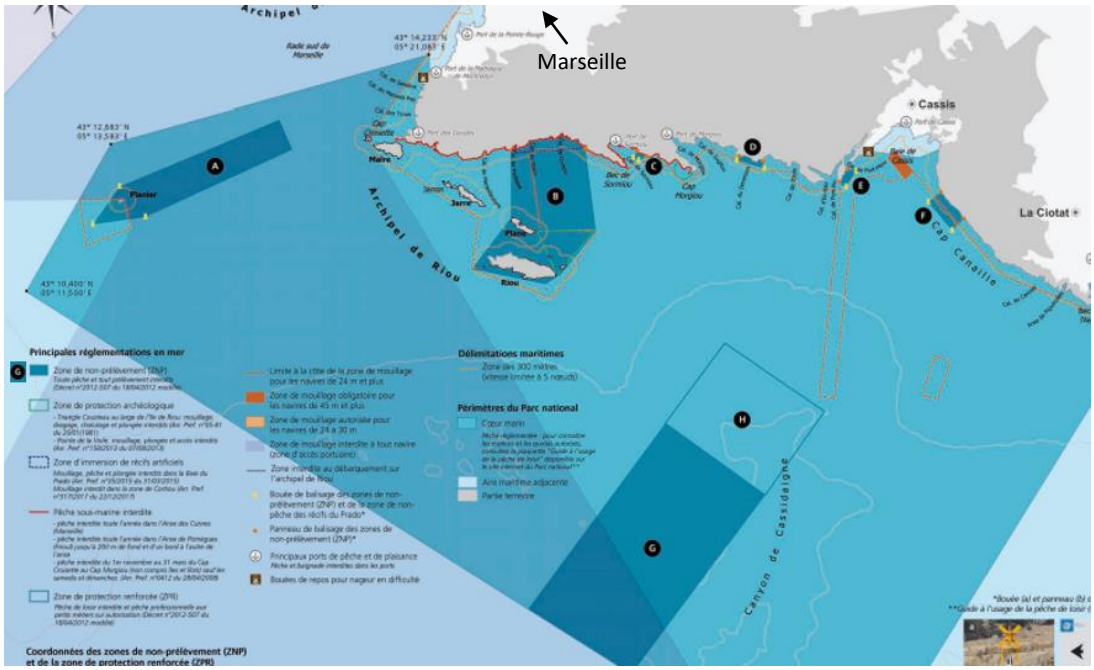
Therefore, due to its significance for French marine protection, as well as its location in a highly inhabited coastal area and the expected high variety of stakeholders, the MNTZs of the National Park Calanques have been chosen as the case study for this thesis.

The Calanques National Park lies in South of France neighbouring the city of Marseille, see Figure 2. Ninety seven percent of its area is marine area, the rest terrestrial. In 90% of its established core marine protected area fishing is allowed, while 10%, comprising of 4.634 ha, is a dedicated no-take zone. The MPA has been established in 2012 (Marine Protection Atlas, n.d.), at the same time as the Park itself (interview 1). Within the National Park, there are 7 no-take zones established in which any type of extraction or fishing is prohibited, see dark blue areas marked with a letter in Figure 3. Next to MNTZs, the National Park is comprised of marine zones with different protection levels and regulations, see Figure 3. The National Park is a popular destination for many visitors and maritime activities (NavetteAixMarseille, n.d.). The Park's conservation measures impact adjacent communes which are directly bordering the National Park, including Marseille, and two smaller towns: Cassis and La Ciotat. Stakeholders from all three adjacent communes are involved in the National Park's governance. Since the establishment of the MNTZs, the National Park has recorded positive impacts on protected marine ecosystems, in the form of increased biodiversity, fish populations as well as improvement of the status of the local corals, (Parc National des Calanques, n.d.c).

Figure 2: The Location of the Calanques National Park, (Google Maps, n.d.)

Figure 3: Map visualizing the MNTZs in the Calanques National Park (dark blue) and other maritime regulations, (Parc National des Calanques, 2021a)

(Google Maps, n.d.)



2. Conceptual Framework and Theoretical Background

This chapter integrates knowledge from literature to establish a strong theoretical background and conceptual framework for the study to operate in. Firstly, it operationalizes the terms used in the Research Question: 'perceptions' and 'participatory instances in governance processes', before conceptualizing 'social equity' in marine conservation. This conceptual framework has also been applied in data collection and analysis.

2.1. Operationalizing 'Perceptions' and 'Stakeholder Participation'

Perceptions, as mentioned in the research question, describe ways in which stakeholders categorize themselves, others or situations in order to make sense out of a situation, (Hegtvedt, 1988). After examining literature on perceptions in nature conservation and drawing from established definitions (Given, 2008), (Bennett, 2016) suggests the following definition of perceptions to be used in research in nature conservation: "[P]erceptions refer[...] to the way an individual observes, understands, interprets, and evaluates a referent object, action, experience, individual, policy, or outcome. [...] These individual and subjective interpretations of reality are socially constructed, the product of one's history and surroundings. [...] A myriad of contextual factors (e.g., culture, politics, socioeconomics, livelihoods), past experiences of similar events (e.g., imposition of a different environmental policy), and individual and collective attributes (e.g., gender, race), values, norms, beliefs, preferences, knowledge, and motivations mediate and influence perceptions". Moreover, perceptions can vary over time and, as they depend on many contextual factors, different individuals or groups might percieve the same situation in different ways. Perceptions, thus, result from personal experiences of individuals and in this study are meant as subjective evaluations of presented participatory instances and social equity domains. For example, when talking about perceptions of stakeholder involvement, the study does not mean to evaluate how stakeholders have been officially involved, but whether they felt sufficiently involved based on their personal experience. Perceptions can have an impact on decisions and choices of individuals. That is why, stakeholders in this study will be qualitatively asked about their personal subjective experiences about instances of the participatory process in the NP Calanques to determine their perceptions.

When it comes to **stakeholder participation,** the interactive governance theory emphasizes that governance is dependent on contexual factors and thus, "no single institution alone is capable of addressing governing challenges effectively. Therefore, the engagement of stakeholders [...] is essential" (Jentoft et al., 2007). When it comes to the typology of stakeholder participation, Arnstein's ladder (Arnstein, 1969), which is presenting different degrees of citizen participation, is seen as a foundation for typologies of stakeholder participation, also used in nature conservation (Reed, 2008). There have been several adaptations of this framework. For example, (Rowe & Frewer, 2000) developed a typology, which, rather than focusing on the degree of enagagement, focuses on the nature of engagement, separating different types of stakeholder engagement by the way communication flows between involved parties. The literature review of stakeholder participation used in environmental domains (Reed, 2008), which has been used in many studies regarding marine protected areas (Rasheed & Abdulla, 2020), offers an overview over the development of typologies of stakeholder participation that can be applied to the

domain of nature conservation. Based on these typologies, and supported by adaptations of Arnstein's ladder (Davidson, 1998; L. Lawrence, Debbie A. Deagen, 2001), (Luyet et al., 2012) developed a framework to implement stakeholder participation in environmental projects, which can be also applied to MPA processes. This framework consists of five degrees of stakeholder participation:

" [1] Information: explanation of the project to the stakeholders.

[2] Consultation: presentation of the project to stakeholders, collection of their suggestions, and then decision making with or without taking into account stakeholders input.

[3] Collaboration: presentation of the project to stakeholders, collection of their suggestions, and then decision making, taking into account stakeholders input.

[4] Co-decision: cooperation with stakeholders towards an agreement for solution and implementation,

[5] Empowerment: delegation of decision-making over project development and implementation to the stakeholders" (Luyet et al., 2012).

Participatory instances in governance processes, in this study, thus, refer to those instances in a participatory process, that intentionally create opportunities for stakeholder participation, including information, consultation, collaboration, co-decison or empowerment.

2.2. Theoretical background: Social Equity Frameworks

In literature, equity is often linked to studies on social or environmental justice or the social pillar of sustainability (Saunders et al., 2020). Theory on equity draws from important studies of social justice and links them to participatory processes. There is increasing literature concerned with injustice in ocean governance and MPAs as a result of inequitable governance processes failing to ensure social equity (Saunders et al., 2020). Ocean governance that proceeds without a clear and thorough understanding of the complexities of equity is […] unlikely to achieve stated ambitions (Crosman et al., 2022)

While drawing on literature defining equity in nature conservation, the widely recognized frameworks for equity in protected areas conservation (Schreckenberg et al., 2016), ecosystem services (Pascual et al., 2014), marine protected areas (Bennett et al., 2020) and marine patial planning (Saunders et al., 2020), have been used, to define social equity for the purpose of this study.

Social equity in MPAs focuses on studying the variety of social repercussions of marine governance processes, which traditionally have been more focused on ecological implications. Equity is often conceptualized as comprised of three main categories (Bennett et al., 2020; Pascual et al., 2014; Schreckenberg et al., 2016): 1) Recognitional Equity; 2) Procedural Equity, and 3) Distributional Equity. All three outlined catgories interact and reinforce each other, while none is replaceable nor superior to the other (Saunders et al., 2020). To achieve equitable governance it is, thus, necessary to include all three dimensions of social equity (Pascual et al., 2014; Schreckenberg et al., 2016). The three dimensions of social equity have also been used in other studies of social equity in MPAs, (Bennett et al., 2021). Below, the three dimensions of social equity are examined more in-depth.

Recognitional equity relates to the cultural dimension of social equity, (Saunders et al., 2020), and is defined as the 'acknowledgement and representation of the rights, cultures and identities, values and visions, knowledge systems and livelihoods of local groups in conservation planning and management', (Bennett et al., 2020). The recognition of this socio-cultural diversity is important for the representation of the variety of needs of diverse marine communities and stakeholder groups in MPA governance. Applied to the concept of marine conservation, De Koning et al. (2020) argue that participatory governance cannot be successful without considering different values and relationships stakeholders hold for marine ecosystems. Evaluation of social equity in MPAs would entail the identification of all groups that are to be recognized as relevant claimholders. Misrecognition of stakeholders in the planning of MPAs may leave out less visible or prominent segments of society, further exacerbating already existing inequalities throughout the MPA process, (Saunders et al., 2020). Recognition can serve to empower otherwise excluded group and increase their capacity to engage in MPA actions, (Saunders et al., 2020). Moreover, a balance between local and scientific knowledge is important, as it may be beneficial to address local contexts, assumptions and uncertainties, (Reed et al., 2018). The diversity of groups to be represented creates potential for an interdisciplinary and valuable exchange of knowledge. Equitable institutions promote and respect group differences without oppression, (Saunders et al., 2020).

Recognitional equity is also adressed in Stakeholder Engagement Theory, which suggests that a governing body should take into account interests and concerns of all stakeholders affected by its decisions. It encompasses individuals or groups who are affected by the outcomes or have an interest in the outcome, (Reed, 2008). By involving diverse stakeholders in decision-making processes the theory says that decisions are more likely to be accepted and are more sustainable, as the perspectives and concerns of different groups are being considered. This theory is often being used also in environmental governance (Reed, 2008), outlining key aspects for a successful participatory process in environmental management. Important factors to recognitional equity defined by stakeholder engagement theory are ''power dynamics, the values of participants, and their epistemologies, that is, the way they construct knowledge and which types of knowledge they consider valid'' (Reed et al., 2018). Thus, to achieve recognitional equity, the different values, meanings and knowledge backgrounds of stakeholders must be recognized in the process.

Furthermore, **procedural equity** is being seen as the representation in decision-making and described as 'the inclusive and effective participation of all relevant actors and groups in rule and decision-making for conservation policies and programs',(Bennett et al., 2020, p. 2). Procedural equity also takes into account politics of participation, which are visible in different instances of decision-making, where known hierarchies as well as invisible power relations might influence power-dynamics in decision-making processes. If not addressed, these might lead to the disadvantage of the least influential stakeholder groups, allowing "powerful actors misuse opportunities for concerted action to pursue sectoral goals", (Tafon et al., 2019, p. 754). Hence, procedural equity also takes into account who is included and excluded in decision-making, as well as which opportunities to impact decision-making stakeholder groups are given in their struggles over marine resources, (Saunders et al., 2020). Moreover stakeholder theory stresses the importance of stakeholder empowerment, ensuring participating stakeholders have both the given power and technical capability to effectively influence decisions (Richards et al., 2007). Furthermore, participatory governance theory, which deals with the procedural factors of stakeholder engagement, advocates for an engagement of stakeholders from an early stage on, as it is crucial to ensure participants

feel empowered and can contribute to high-quality and durable outcomes. The outcomes of the engagement can be influenced by cultural, institutional, contextual and socio-economic factors, as well as certain process design factors (Reed et al., 2018).

Bennett et al. (2021) further elaborate on other important elements of stakeholder engagement. Access to information is an important element that ensures stakeholders are well informed about their role in the participatory process and the decisions made. Moreover, participatory processes should involve stakeholders in a way that is increasing their trust and perceived legitimacy of decisions, (Bennett et al., 2020). Furthermore, access to conflict resolving mechanisms and accountability ensures that stakeholders are able to hold authorities accountable and have means to address conflicts that might arise during the governance process.

Lastly, **distributional equity** refers to 'the fairness of distribution of benefits and burdens between different groups, including current and future generations, of the outcomes of conservation actions', (Bennett et al., 2020). Already marginalized groups, often disproportionally suffer burdens of impacted measures and face barriers that prevent their participation in processes, (Saunders et al., 2020). Ensuring an equitable distribution of benefits and burdens helps prevent the disproportionality of impacts on certain stakeholder groups and ensures that all stakeholders benefit from implemented MNTZs. There is a variety of impacts in the context of MNTZs. The study by (Bennett et al., 2020) describes that next to impacts on economic security and livelihoods, impacts on social well-being and community life should not be underestimated. Their framework stresses that burdens and benefits do not only relate to material impacts, but also non-material subjective impacts, which are equally important, as they have the potential to either uplift or harm stakeholders and their communities. Furthermore, the impacts on environmental education as well as the stakeholders' connection to nature are important element. Last but not least, a very important element of distributional equity in the context of MNTZs, is their impact on the marine ecosystems themselves and how it is perceived by stakeholders.

3. Methods

This chapter describes the methodological approach used in this study to by investigate the perceptions of relevant stakeholders groups of their participation in the establishment and governance process of the Calanques MNTZs, and how these relates to their perceptions of equity. The chapter describes all steps taken, from desk research, stakeholder identification and mapping, sampling and fieldwork, adaptation of social equity frameworks to MNTZs, design and conduction of interviews as well as analytical methods.

3.1. Desk research

A literature review has been conducted to build the conceptual framework of social equity in MPAs applied in this study. The search engine 'Google Scholar' has been utilized, using main key words: "Marine No-Take Zones", "Marine Protected Areas", "Perceptions of Social Equity", "Social Equity" and "Participatory governance". Articles have been included or excluded based on their relevance and applicability to the matter of research of this study. Examples of criteria of exclusion were: a) the article is not applicable to MPAs or nature protected areas; b) the article has a too narrow focus on a specific case study which is not well applicable to the case of this study. Furthermore, the forward and backward 'snowball method' (Wohlin, 2014) has been used for a systematic literature review. Forward snowballing looks at articles which are referenced in a relevant article, while backward snowballing reviews articles which cite the included article (Wohlin, 2014).

Identified frameworks of equity in nature conservation, which were chosen based on their relevance in nature and marine conservation domains (amount of citations), have been integrated to form the social equity framework that has been adapted for the purpose of this study, see Table 2 and Table 3 in chapter 3.4.

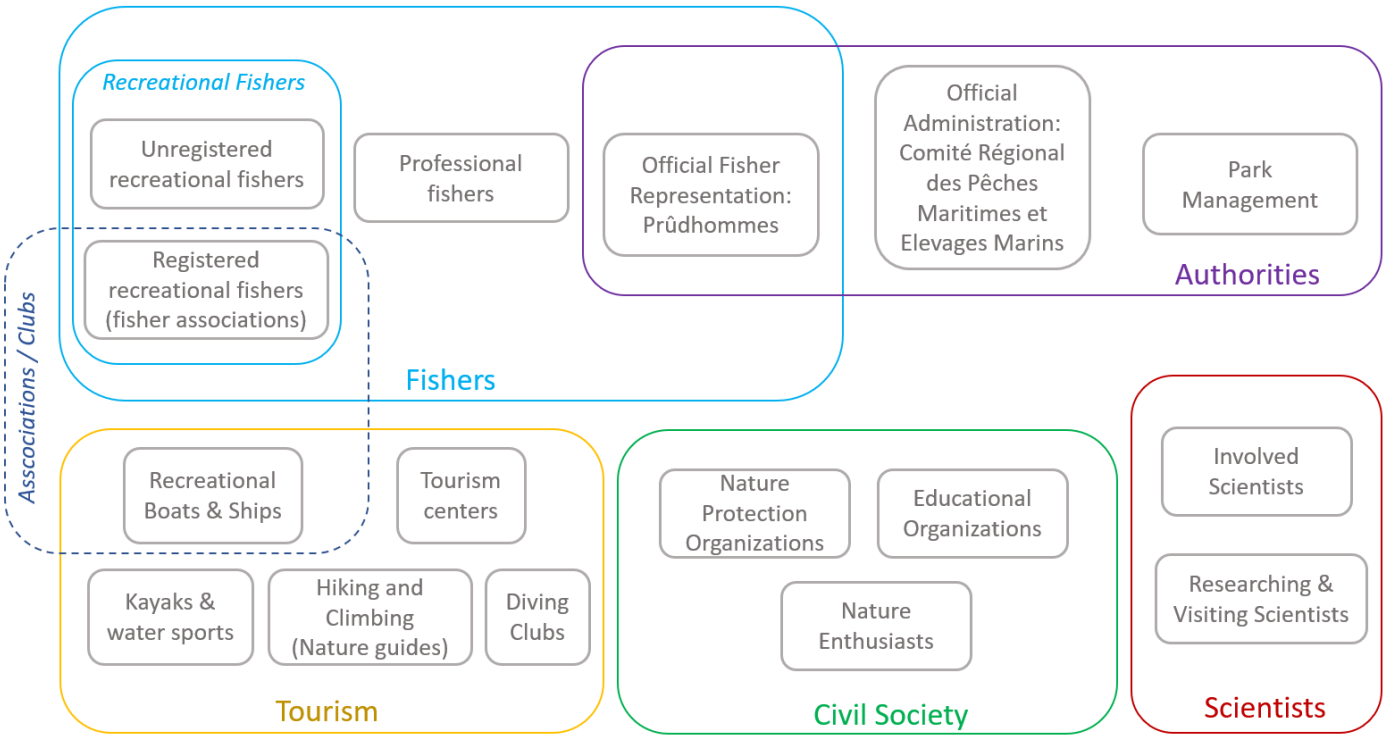
Furthermore, for information on the case study, such as but not limited to reconstruction of the MPA governance process, stakeholder identification and mapping, as well as specific marine regulations, grey literature, mostly consisting of documents published by the National Park Calanques or relevant authorities and local organisations, has been used, e.g. (La ministrie de l'écologie, du développement durable et de l'énergie, 2012; Parc National des Calanques, 2021a, 2021b, n.d.c; Préfet des Bouches du Rhône, 2012). The information on the case study has been further complemented by information from interviews conducted, mainly the interview with a responsible from the National Park management.

3.2. Stakeholder Mapping

To analyze stakeholder perceptions, a systematic representation of relevant stakeholders needs to be ensured. Stakeholder analysis, after defining the affected parts of the studies system, "identifies individuals and groups who are affected by or can affect those parts of the system" (Reed, 2008, p. 2423), differentiates between the stakeholders and categorizes them; and in case it is the focus of the study, investigates relationships between them (Reed, 2008).

For the sake of this study, the affected system are the MNTZs, which are part of the National Park of the Calanques. Groups affected by the MNTZs, or involved in their establishment or governance process, were identified and categorized. However, the investigation of relationships has not been conducted during the initial stakeholder mapping, as it has not been of relevance for conducting this study. It has rather been subject of the later thematic analysis when equity perceptions of different stakeholder groups were investigated.

Main stakeholder groups (marked with colour in Figure 4) were first pre-identified through literature on MNTZs in general terms. Next, official documents of the Calanques National Park where studied to solidify the findings and further specify the stakeholder groups. Furthermore, interviews offered a deeper insight into understanding the different stakeholders within a stakeholder group and helped with more detailed mapping of the stakeholder groups. The stakeholder map is not an exhaustive overview of stakeholders, however, it aims to portray the diversity of stakeholders and represent the main stakeholder groups identified by and used for this study. The main stakeholder groups identified were Fishers, Authorities, Tourism, Civil Society and Scientists, see Figure 4.



Stakeholder groups of the Calanques MNTZs

Figure 4: Map of Stakeholder Groups of the Calanques MNTZs

Tourism

The Calanques have been a popular nature site for locals and visitors since a long time before the establishment of the National Park. Some of the activities in Tourism, Figure 1, have been identified as 'historic activities' in the region: diving, hiking and climbing (Parc National des Calanques, n.d.a). Today, hiking and climbing are offered either by associations providing nature guides, or by private guides themselves. Both hiking and climbing also happens along the coast, with visitors views of the MNTZs, or

entrance to the sea (INTADAM13). Furthermore, hiking, climbing and entrance to the sea have been restricted in some protected marine areas, which is why also these two activities are of relevance to MNTZs. Diving outside of research purposes is performed by diving clubs, of which there are plenty in the region, in Marseille, Cassis and La Ciotat. Water sports also enjoy popularity and especially sea kayaking is a popular way to explore the National Park, some associations also offering trainings for kayak guides (interview 15). Tourist centres fall under the provincial tourist centre and coordinate different activities, offering information and guidance to visitors in the region. Recreational boats and ships are popular for both tourists or locals and are used to explore local coastlines, nearby islands or for recreational fishing. There are local associations which bring together both recreational fishers and boaters together, as many recreational fishers also own boats (interview 10).

Fishers

Fishers are an important stakeholder group as their livelihood are directly impacted by the fishing restrictions of the Calanques MNTZs. Fishing is an important tradition in Marseille and the surrounding region, with fishing markets being a traditional part of daily life in harbours of the cities since generations (Office de tourisme, Loisirs & Congres Marseille, n.d.). Professional Fishers are registered, holding an official license, recognizing fishing as their profession and source of income. There are several registered in Marseille, Cassis and La Ciotat, with the biggest community in Marseille, as it is the biggest city (interview 1). Professional fishers holding their license are also allowed to sell their fresh catch at the city's harbour during the daily fresh fish market. Recreational fishers are also a prominent stakeholder group in the region. Recreational fishers do not have fishing registered as their livelihood and they are only allowed to catch fish for personal consumption, not for sale (interview 1). There is a difference between independent recreational fishers, who are not part of an association and recreational fishers who are part of a registered association for recreational fishers (interview 13). The scale of recreational fishing also varies, as well as the means used by fishers, with some owning boats used for fishing and some preferring spearfishing from the coast (interview 2). Lastly, the Prûdhommes are the official representatives of Fishers in every city. Traditionally, they are fishers themselves and have been elected by the fishing community to represent their needs to the outside, such as towards the park management of the Calanques and in legal contexts, however also to resolve conflicts among fishers themselves (interview 9), (Mabile, 2007) .

Authorities

The ´Prûdhommerie de pêche´, which can be seen as a tribunal of official representatives of the fisher community, is a one of the oldest still persisting maritime institutions and governance structures, unique to the Mediterranean. With the long tradition of fishing in Marseille, this tribunal tradition dates back to the Middle Ages, with the idea of fishing resources being collectively governed as a 'common' by an assembly of fishers representing the fisher community. The assembly was given responsibility to govern over the access to resources, needs and conflicts of its fishing community as well as guaranteeing a stable fish stock over generations. This community-managed approach has persisted until today, with the ´Prûdhommeries de pêche´ being recognized as specialized jurisdictions and integrated into the official French judicial system of territorial structures and fishing organization (Mabile, 2007). Every local community, in the case of the Calanques region: Cassis, La Ciotat and Marseilles, has their own

Prûdhommes representatives which are directly elected by the fisher communities they represent (interview 1).

The Regional Committee for Maritime Fisheries and Marine Farming of Provence-Alpes-Côte d'Azur (CRPMEM PACA), Comité Régional des Pêches Maritimes et des Elevages Marins, is the regional branch of the National French Fishing Committee. It represents the interests of all professional fishermen and marine farmers in the region, offering support and promoting a sustainable management of marine resources (CRPMEM, n.d.).

The Park Management is the main authority managing the National Park of the Calanques, with all related regulations. It is divided into several departments, which are directing different areas of the National Park, (Parc National des Calanques, 2021b). It has also established several participatory governance committees which give involved stakeholders an advisory role when it comes to decision-making in the park. These committees are the Economic, Social and Cultural Committee (ESC), the Fishing Committee (FC) and the Scientific Commitee (SC), during which its members are invited to participate in the governing processes of the Park on a voluntary basis. For this study, the Director of Fishing and the Management of Marine Biodiversity, Patrick Bonhomme, has been interviewed on behalf of the Park Management, after a referal by the Director of the National Park, who identified Mr Bonhomme as the main authority dealing with issues connected to the MNTZs on behalf of the National Park.

Civil Society

The stakeholder group of Civil Society consists of individuals and organziations from the civil society, who have an interest in the National Park and related MNTZs from different perspectives. Nature protection organizations have an interest to advocate for sustainability and the protection of natural resources within the region and National Park. Such a NGO is for example MerTerre (interview 18 and 17), which has been interviewed for this study, who enagage in cleaning up waste from natural areas. Furthermore, there are organizations who organize educational activities on nature and thus have interest in the National Park and MNTZs. The third category of the civil society, nature enthusiasts, are individuals or associations who are simply interested in spending time and performing outdoor activities in the natural areas of the National Park (Conseil Economique Social et Culturel, 2019).

Scientists

Another stakeholder group are the Scientists and the Researchers. These are divided into scientists who, with their research, are involved in the National Park, e.g. for monitoring, population assessment or data-based decision-making (Préfet des Bouches du Rhône, 2012). The second category are scientists who are not directly involved with the Park management but perform their scientific region in the area or region of the Calanques National Park (interview 2). Scientists are a stakeholder group as they are impacted by the system – MNTZs - in their research and on the other hand can impact it through their scietific inputs. Several marine research institutes can be found in the region, with the most prominent being the Mediterrenean Institute for Oceanography (MIO); The Mediterranean Institute of Biodiversity and Ecology, Marine and Continental (IMBE); and the Institite of Ocean Sciences (OCEAN) as part of the Aix-Marseille University. The interviewed scientists are a marien ecologists from MIO (interview 19); and CNRS Marseille (interview 12).

Stakeholdergroups chosen for interviews

To study the perceptions of social equity by stakeholder groups, not all stakeholder groups, identified in Figure 4 were considered. The social equity perceptions were studied for the stakeholder groups of Tourism, Fishers, Civil Society and Scientists, as those are the once experiencing the implications of the establishment of MNTZs. The Park Management, as part of the Authorities stakeholder group, has been the body implementing the establishment of the MNTZs and thus is regarded as a governing body rather than a stakeholder group for the sake of this study, as from an equity perspective it is the party responsibel to ensure equity in the process. As this study focuses on how stakeholder groups experience the process, this stakeholder groups has been left out from the thematic analysis of stakeholder perceptions. However, the Park Management has been interviewed to offer a better understanding of the establishment and governance process of the National Park and MNTZs, the National Park's objectives, structures, participatory approaches, or insight information into the different stakeholder groups. During the interviews, a clear differentiation between the Recreational and Proffessional Fishers became clear, which is why it was decided to split the Fishers Stakeholder Group into two separate stakeholder groups to be compared in the study: Recreational Fishers and Professional Fishers.

3.3. Sampling and Fieldwork – Preparation and Conducting of Interviews

First, an initial stakeholder mapping has been conducted, mainly using grey literature from the NP Calanques, official documents and legal decrees nominating the members of the advisory councils, research and reports by members of advisory councils, as well as reports and articles on the history and cultural significance of the area, (Claeys et al., 2011).

Once main stakeholder groups have been identified: fishers, scientists, tourism (diving, boats, hiking, tourists centers), civil society (NGOs), a list of relevant stakeholders has been made based on grey literature (Parc National des Calanques, 2021b), the Park's official documents and legal decrees on involved stakeholders, (La ministrie de l'écologie, du développement durable et de l'énergie, 2012; Préfet des Bouches du Rhône, 2012), social media posts, as well as searchers in the google search engine for potential stakeholders with key words mentioning the stakeholder group and location: 'Calanques', 'Marseille', 'Cassis' or 'La Ciotat'. As Cassis is a small town with only few relevant stakeholders, of which those contacted did not respond to interview requests, due to restricted time during the field trip, no stakeholders in Cassis have been interviewed. Stakeholder contacts were searched by using the google search engines, and based on the most relevant contacts found, stakeholders were either contacted through email, webpage contact forms, social media or phone numbers. To contact the Park Management, grey literature (Parc National des Calanques, 2021b) has been used to identify the management board and relevant positions within the park, which were then contacted by e-mail. Moreover, relevant contacts provided by interviewees were also contacted. An especially important source of contacts has been the interviewed representative of the park management (interview 1), who provided access to a number of involved stakeholders. As the initial round of contacting did not bear sufficient responses from stakeholders, an on-site fieldwork was planned. The on-site fieldwork has been conducted from 01.03.2024 until 07.03.2024 in and around the area of the National Park Calanques. Interviews have been conducted in Marseille and La Ciotat. For more details on the interviews, including the dates and means of interviews, see Table 1. The stakeholder groups are differentiated by different

colours in the 'Stakeholder Group' column, to allow for a quick overview, as some stakeholders were part of two stakeholder groups.

Table 1 List of conducted interviews with details

Classification	Stakeholder group	Organization	Position	Name	Advisory Council	Date & Mode
Interview 1	Park Management	NP Calanques	Director of the Managemengt of Fishing and Marine Biodiversity	Patrick Bonhomme	Main responsible	20.02.2024, online via 'Teams'
Interview 2	Civil Society Fisher (Recreational)	Marseille	Recreational Fisher, Nature Enthusiast	Romain Semperez	/	28.02.2024, phone call
Interview 3	Fisher (Recreational)	MACT	Recreational Fisher	anonymous	/	03.03.2024, in-person
Interview 4	Fisher (Recreational)	Marseille	Recreational Fisher	anonymous	/	03.03.2024, in-person
Interview 5	Fisher (Recreational)	Marseille	Recreational Fisher	anonymous	/	03.03.2024, in-person
Interview 6	Fisher (Professional)	Marseille	Professional Fisher	anonymous	FAC	02.03.2024, in-person
Interview 7	Fisher (Professional)	Marseille	Professional Fisher	anonymous	/	02.03.2024, in-person
Interview 8	Fisher (Professional)	Marseille	Professional Fisher	anonymous	/	02.03.2024, in-person
Interview 9	Fisher (Professional)	Marseille	Professional Fisher	anonymous	/	04.03.2024, in-person
Interview 10	Tourism Fisher (Recreational)	MACT- local acossiation for the culture or recreational fishing and boats	president	Stéphane Kazarian	/	05.03.2024, in-person
Interview 11	Fisher (Professional)	La Ciotat	Professional Fisher	anonymous	/	05.03.2024, in-person
Interview 12	scientist Fisher (Recreational)	Recreational Fishing association FNPP, research laboratory CNRS	Director at CNRS, Vice président of FNPP and main responsible for PACA region	Gérard Giordano	FAC	13.03.202, phone call
Interview 13	Tourism Fisher (Recreational)	Fishing asscociation, Yachting Club YPCR	Recreational Fisher, Manager of Fishing section at YCPR	Yves Tambon	FAC	14.03.202, phone call
Interview 14	Tourism	Diving Club Anaya Plongee, La Ciotat	Diving Teacher, Manager	Patrick Zygmanowsky	/	05.03.2024, in-person
Interview 15	Tourism	Raskas Kayak	President	Jérémie Metzger	ESCAC	27.2.2024, online via 'Teams'
Interview 16	Tourism	ADAM13	Nature Guide	Alexandre Caramello	ESCAC	11.03.2024, online via 'Teams'
Interview 17	Civil Society	MerTerre	Coordinator	Océane Niemann-Fery	MerTerre in ESCAC	04.03.202, in-person
Interview 18	Civil Society	MerTerre	Coordinator	Teo Juričev		04.03.202, in-person
Interview 19	Scientist	Mediterrenean Institute for Oceanography	Marine Ecologist	Sandrine Ruitton	SAC administration	29.04.2024, online via 'Teams'

When planning how to approach relevant stakeholders, again, information from already conducted interviews, grey literature, social media posts as well as using 'Google maps' to look for relevant stakeholder groups in the area- e.g. 'diving clubs', 'tourist centres', 'fishing stores', has been used. To

approach professional fishers, the researcher has been present every morning for a week on the local fish markets in the harbours of Marseille and La Ciotat, to approach fishers directly. Personal references from interviewees were also followed up upon. In total, 19 interviews have been conducted, see Table 1 for a detailed list of interviewees and the stakeholder groups they represent.

Interviews were either conducted over Teams, in which case an automatic transcription has been made via the Teams software, or over a phone call or in-person, during which a manual transcription has been made. The interviews were conducted in French language and translated to English for the purpose of analysis via the Microsoft Word translation feature. All stakeholders signed forms of consent, given the opportunity to either stay anonymous or have their name mentioned, see Annex D. Only 2 interviewed professional fishers (interview 6 and 7) were not able to sign the consent forms, as they were interviewed during their activity on the fishers market and had to leave soon after the interview in a rush. However, they were verbally informed about the purpose and objectives of the study, have agreed to answer to the questions and will be kept anonymous for the sake of their personal data protection.

Interviews were designed in a semi-structured way, with open questions that were all asked to each interviewee. The questions followed the conceptual framework of social equity in MNTZs created for this study, Table 3. Additionally, questions on the perception of participation were added. These were always adapted to the answers of the interviewees, e.g. 'What has been done to make you feel this way?', or 'What would you change to feel more respected?', see Annex B - C.

When it comes to sampling, interviews were conducted until saturation of insights has been reached, meaning, new interviews within the same stakeholder group did not provide new insights on interview questions. The most interviews were conducted with the stakeholder group of fishers, as each interview brought valuable new insights and also as the fishers are the only stakeholder group performing extractive activities and thus, the only one, whose activities are directly restricted by the MNTZs, presenting an interesting case to study social equity. Furthermore, in sampling for the other stakeholder groups, it was made sure, that at least one representative of each important stakeholder sub-groups is being interviewed- for the tourism sector, for example, it was a diving club, hiking guide, president of a kayak association, president of a recreational boat association, etc. Altogether, 19 interviews have been conducted and all have been used for the analysis. However, the interview with the Park Management has been used not to study their perceptions of social equity, but to serve as a source of information about the governance process, the Park Management's approaches, and additional insights.

3.4. Adapted Social Equity Framework for MNTZs used in this Study

For the purpose of this study, the framework for social equity perceptions in MPAs (Bennett et al., 2020) has been adapted. This framework draws on widely recognized literature on equity in nature conservation (Pascual et al., 2014; Schreckenberg et al., 2016) and has been chosen for this study as it specifically focuses on studying equity perceptions in MPAs. Bennett et al. (2020)'s framework has been further adapted based on recognized literature on equity (Pascual et al., 2014; Saunders et al., 2020; Schreckenberg et al., 2016) to suit the aim and scope of this study.

As semi-structured interviews with open questions might be time-consuming and potential interviewees might be only able to commit a limited amount of time for the interviews, the study summarized the

framework to ensure the interview time can be used as efficiently as possible to best cover all dimensions of equity. Therefore, the framework has been made more concise by joining some attributes to ultimately lower the amount of questions, see Table 2. The attributes were categorized based on the topics they cover and those overlapping were joined into one category. Each category was represented in the questions formulated in the semi-structures interviews.

Table 2 Adaptation of Framework of Social Equity in MPAs by Bennett et al (2020)

Conceptual Framework of Social Equity in MNTZs *inspired by Bennet et al (2020)*					
Recognitional Equity		**Procedural Equity**		**Distributional Equity**	
Bennet et al (2020)	**This study**	**Bennet et al (2020)**	**This study**	**Bennet et al (2020)**	**This study**
Rights	Needs & Rights	Informed	Information	Impacts on income, livelihoods and food security	Impacts on economic security
Livelihoods		Transparency		Impacts on community social well-being	Impacts on community social well-being
Traditional Knowledge	Knowledge & Values	Participation	Participation	Impacts on knowledge and education	Impact on education & connection to nature
Culture	Culture & Tradition	Consultation & Consent		Impacts on cultural connection to nature	
		Accountability	Access to Conflict Resolution	Impacts on fish abundance	Impacts on ecosystems
		Access to Justice			
		Trust	Trust & Legitimacy		
		Legitimacy			

To show an example for the thought-process used to adapt (Bennett et al., 2020)'s framework, the attributes 'informed' and 'transparency' were summarized into one category 'Information', as they both deal with access to information. The attribute 'Informed' deals with stakeholders' access to information on the status of the marine environment (Bennett et al., 2020) as well as ensuring stakeholders are sufficiently informed about their participatory roles in the process (Schreckenberg et al., 2016). Furthermore, 'Transparency' takes into account whether there is sufficient access to information on the progress and decisions of the MPA process for stakeholders (Bennett et al., 2020). As both deal with access to information, they were put into one category that has been then addressed in the semi-structured interview. The adapted Conceptual Framework of Social Equity in MNTZs used in this study, including the definitions of each category based on previously described frameworks on social equity, is presented in Table 3.

Table 3: Conceptual Framework of Social Equity in MNTZs used in this study

Dimension of Equity	**Categories** adapted from (Bennett et al., 2020)	**Definition**	**Literature used for definition**
Recognitional Equity	**Needs & Rights**	MPA management aligns with the rights and needs of stakeholders	(Bennett et al., 2020; Schreckenberg et al., 2016)
	Knowledge and values	Local knowledge systems and values are recognized	(Bennett et al., 2020; Saunders et al., 2020; Schreckenberg et al., 2016)
	Culture & Tradition	The MPA acknowledges local culture and traditional practices of stakeholders	(Bennett et al., 2020; Schreckenberg et al., 2016)
Procedural Equity	**Information**	Access to information on stakeholder's roles, MPA decisions and status of the marine environment	(Bennett et al., 2020; Schreckenberg et al., 2016)
	Participation	Sufficient and effective participation of stakeholders in MPA	(Bennett et al., 2020; Saunders et al., 2020; Schreckenberg et al., 2016)
	Access to Conflict Resolution	Access to contact persons and mechanisms to resolve conflicts	(Bennett et al., 2020)
	Trust & Legitimacy	General trust in the MPA management and in the positive value of the decisions made/ measures taken	(Bennett et al., 2020; Dehens & Fanning, 2018)
Distributional Equity	**Impacts on economic security**	Economic security is ensured by mitigating impacts on income and livelihoods	(Bennett et al., 2020; Schreckenberg et al., 2016)
	Impacts on community & social well-being	Relates to impacts on the activities and relationships within the community of the stakeholder group	(Bennett et al., 2020)
	Impact on education & connection to nature	Relates to the knowledge of and perceived connection to the marine environment	(Bennett et al., 2020)
	Impacts on ecosystems	Relates to the impacts on the ecosystems protected or surrounded by the MNTZs	(Bennett et al., 2020; Pascual et al., 2014)

3.5. Analysis

The study uses the 'Atlas.ti' software to aid in conducting a thematic analysis of the interviews by coding interview transcripts. "Thematic analysis is the process of identifying patterns or themes within qualitative data" (Maguire and Delahunt, 2017, p. 3352). It helps to organize, describe and make sense of qualitative data, in a sense, that conclusions can be drawn. "A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set" (Braun & Clarke, 2006). Formulating themes allows to comprehend qualitative data, which is often very large and extensive, by illustrating outcomes most relevant to the research question (Maguire & Delahunt, 2017). In the case of this study, themes were defined as most often occurring responses

within a stakeholder group or across all stakeholder groups. The themes were used to group responses of interviewees based on their content.

Moreover, as the thematic analysis is a very flexible method, this study uses the well-recognized Guidelines for a thematic analysis of qualitative data by (Braun & Clarke, 2006), to ensure a systematic approach: Step 1) Become familiar with the data; Step 2) Generate initial codes; Step 3) search for themes; Step 4) Review Themes; Step 5) Define themes; Step 6) Write-up.

Following this framework, the study got familiar with the data through transcribing interviews and translating them from French to English, which required reading and reviewing each transcript multiple times (Step 1). Next, it created an initial code-book which will be further explained in the next paragraph (Step 2). Furthermore, to search for themes, the codes were applied to the transcripts and text segments assigned to suiting codes (Step 3). As the process was a combination of both deductive and inductive analysis, the themes were constantly reviewed based on their relevance to the research questions and to ensure all important themes are properly covered (Step 4). Next, main themes were defined based on the coding and overlaps in the content of statements said by interviewees (Step 5). Finally, the themes were classified and described using the quotations identified through coding to represent stakeholders perceptions (Step 6).

To conduct the thematic analysis, the study uses both inductive and deductive coding. Deductive coding is performed based on pre-set codes to which segments of transcripts are assigned, thus, applying a pre-set code system to the data. On the other hand, inductive coding begins with the data, identifying relevant segment of transcripts to assign categories and generate relevant codes (Bihu, 2023).

To analyse the social equity perception, a codebook has been created deductively, based on the pre-defined framework of the three dimensions of social equity. For each equity dimension, sub-categories have been created, aligned with the categories of the conceptual framework of social equity, see Table 3, followed by sub-codes evaluating these sub-categories (negative, positive, or another category derived inductively, if relevant, e.g. Eq1.1T_TradImportant in Table 4). Additionally, if new important aspects arose during the analysis of the interviews, the code has been adapted inductively to cover all relevant factors through sub-codes. Table 4 illustrates the used code on the example of Recognitional Equity. This principle has been used for each dimension of social equity. Stakeholder groups were divided by grouping transcripts into different document groups in 'Atlas.ti'.

Table 4: An example of code categories used for the Recognitional Dimension of Social Equity in Atlas.ti

Folder	Group	Sub-categories	Sub-codes	Meaning
Social Equity Perceptions	**Eq1. Recognitional Equity**	**Eq1.1 Culture & Tradition**	**Eq1.1n_Negative**	No
		'do you feel your unique culture, values and needs have been respected?'	**Eq1.1p_Positive**	yes
			Eq1.1T_TradImportant	I regard the local traditions and/or the tradition of my practices/ livelihood as important, e.g. fishing, hiking, etc.
		Eq1.2 Knowledge & Values	**Eq1.1n_Negative**	no
		'do you feel your knowledge has been recognized?'	**Eq1.1p_Positive**	yes
		Eq1.3 Needs & Rights	**Eq1.1n_Negative**	no
		'do you feel your needs and rights have been respected?'	**Eq1.1p_Positive**	yes

To examine the perceptions of the participatory process by stakeholders, participatory instances in the establishment and management process of the MNTZs within the MPA) have been pre-identified, deductively based on the re-construction of the MPA process, *see chapter 4.1.* Recreating the MNTZ Process: Identifying Participatory Instances, and inductively throughout the interviews. Next, they were put into sub-codes to collect the perceptions of interviewees. These sub-codes were completed inductively through insights from interviews on levels of engagement. To analyse differences between stakeholder groups, the Code-Document analysis tool in 'Atlas.ti' has been used, selecting the desired code and document group.

Interview data related to themes outside of the pre-set categories of equity, such as perceived conflicts and challenges, as well as recommendations for improvement, have been coded inductively during the analysis process by identifying dominant themes throughout transcripts, categorizing them and grouping them accordingly into codes. The most dominant code-categories, meaning most frequently mentioned throughout different stakeholder groups, were then selected for the analysis. See an example of codes created inductively for the main identified conflicts, Table 5.

Table 5 An example of inductive coding illustrated on the example of the code for most mentioned conflicts

Codes in code-group - Con_Conflicts (Atlas.ti) Name	Meaning	Example Quotation
Con2_KNOW	Conflict of different knowledge systems and perceptions	"Ecologists just restrict, they do not create. They do not know the environment as well as locals or local fishers do" (interview 10)
Con1_REC&PROF_FISH	The conflict of interests between Recreational and Professional Fishers	"The main conflict is that the recreational fisherman is going to catch the fish of the professional and the professional fisherman [...] has his nets everywhere and we can't fish where we want. And so, it's a conflict for space but especially for the resource." (Interview 19)
Con5_RedMud	The conflict related to the 'Red Mud' - disposal of a waste stream from a local aluminium factory	"So, [it's the factory] who dumps [their] waste [...] in the middle of the sea. It normally had to be stopped but apparently there it is, it continues. And people are a little bit disappointed, not to have anything concrete changed about it. [...] It's heartbreaking. " (interview 16)
Con_New_Conflicts	New conflicts that were mentioned by interviewees but not categorized yet	[When the Park regulated access] for everyone without perhaps favouring these actors [who took part in the consultations, these actors who have reflected [...]. We were not more advantaged than others in fact, who are perhaps more impactful in particular. (interview 15)

4. Findings: Thematic Analysis of Stakeholders' Perceptions of the Participatory Governance Process

This chapter provides the main findings of the thematic analysis when it comes to stakeholders' perceptions of the participatory processes identified. First the chapter introduces the reconstruction of the participatory instances in the governance of the NP Calanques MNTZs, to offer a better understanding of the process. Following, it directly links the participatory instances to the stakeholders' perceptions, identifying main themes linked to the sub-categories of the social equity framework. Further, a summary of perceptions of the participatory processes is presented.

4.1. Recreating the MNTZ Process: Identifying Participatory Instances

This sub-chapter focuses on identifying the participatory instances of the establishment and governance process of the Calanques marine no-take zones by reconstructing the timeline of events from year 1999 till 2024, including known prospections in the near future. Participatory instances are instances in the process which created participatory opportunities for stakeholders to engage and participate in the decision-making process, such as information, consultation, collaboration, co-decison or empowerment, as based on the framework by (Luyet et al., 2012). These participatory instances present important tools for the Park to not only communicate with stakeholders, but also to bridge possible conflicts of interests between stakeholders, make well-informed decisions and find general acceptance for its regulations and policies among affected stakeholders (interview 1). Throughout the Calanques NP process there have been several participatory instances representing a variety of participatory tools that have been used by the Calanques NP to engage stakeholders, see Figure 5. These instances will be further described in the following chapter, including an analysis of how stakeholders perceived their experience of these instances to discuss whether participatory objectives have been met.

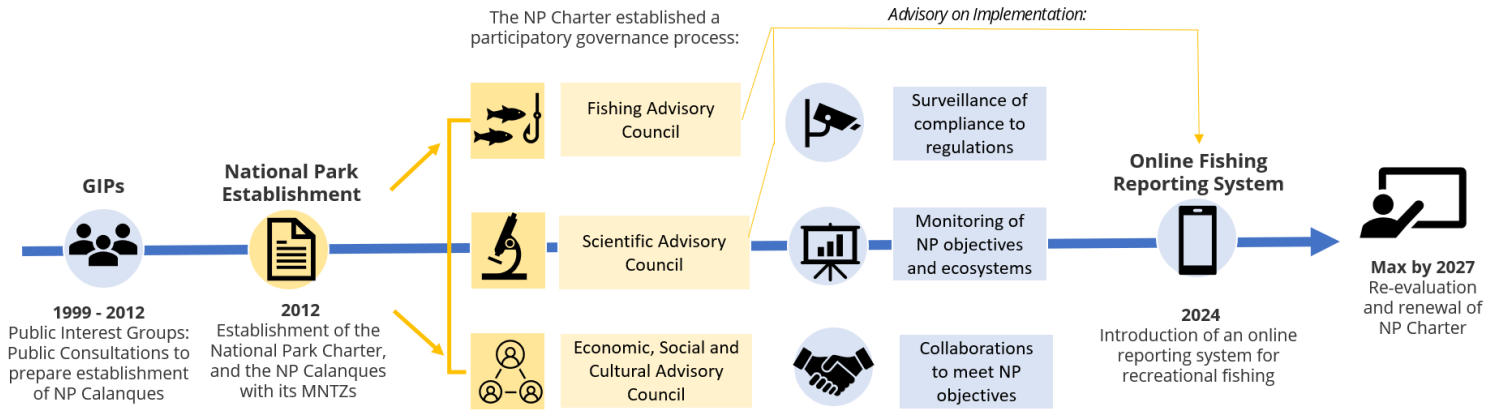


Figure 5: From Establishment to the Present: Participatory Instances in the Governance Process of the MNTZs of the NP Calanques, Source: own reconstruction based on interviews and literature research

Figure 5 is portraying the establishment and governance process of National Park Calanques, highlighting participatory instances of the MNTZ process. The Calanques National Park (NP Calanques) has been created in 2012 with the establishment of a National Park Charter (NP Charter), as is prescribed by French National Park Law. The NP Charter established the spatial expansion of the NP Calanques, including the MPA and the MNTZs, its governance as well as objectives. The charter defines objectives for the core zones and nature protection, as well as local partnerships and stakeholder engagement and sustainable development goals for the 'adjacent maritime zones'. As by French National Park Law, the engagement of local stakeholders and communities should be in the forefront. (Parc National des Calanques, n.d.d). Thus, the NP Charter also established three participatory governance bodies to advice the NP Management in decision-making. The members of these Advisory Councils have been chosen to represent various affected stakeholder groups and have a guaranteed place in the Council, with their participation being on a volunatry basis (interview 19).

The Advisory Councils are meant to give affected local stakeholders a guaranteed place it the decision-making process, by giving them an advisory and deliberative role (interview 1). The Fishing Advisory Council (FAC) consists of recreational and professional fishers and is mostly occupied with issues related to fishing, such as the MNTZs, and fishing regulations in adjacent maritime areas (interview 3). The Scientific Advisory Council (SAC) consists of scientists of various backgrounds, comprising both terrestrial, marine and social sciences from important regional research institutions (interview 19). The Economic, Social and Cultural Advisory Council (ESCAC) brings together a variety of stakeholders from diverese backgrounds meant to represent the economic, social and cultural landscape of the region and especially involved communes as defined by the Charter, (Conseil Economique Social et Culturel, 2019). Further on in the process, several occassions for participation of stakeholders have been created. For the Surveillance of compliance to regulations, local stakeholders are encouraged to actively report incidents of rule breaching or poaching to local authorities (interview 14). In the Monitoring process of the NP objectives and the ecosystems development in the MNTZs, local stakeholders, such as scientists, diving clubs or professional fishers, are involved to contribute to scientific surveys and a sound evaluation of the ecosystem developments.

Moreover, several collaborations with local stakeholders have been established to help support NP objectives, for example local organizations collaborating with the NP Calanques on environmental education activities or waste clean ups (interview 17,18). The latest regulation passed in 2024 has been a new reporting system for recreational fishing, where recreational fishers have to fill in their catches into an online system, a measure that is supposed to increase compliance with quota and collect extra data directly from recreational fishers to stregthen the monitoring of fish populations (interview 1). While this measure itself is obligatory and not per-se a participatory instance, its preparation and implementation has been subject to advise from the Advsiory Councils, especially the FAC, thus offering participatory opportunities in its creation and implementation process (interview 12, 13). As, per French National Law, National Park Charters last for a maximum of 15 years until they are renewed. At the latest by 2027, the NP Calanques Charter will have to be re-evaluated, with a new Charter put in place (Parc National des Calanques, n.d.d).

4.2. Thematic Analysis: Perceptions of Participatory Instances by Stakeholders

This chapter describes each participatory instance more in-depth, explaining the context and ways of stakeholder engagement, followed by a thematic analysis of perceptions relevant interviewees have towards these participatory instances.

4.2.1. Public Interest Groups: GIPs

The Public Interest Group, 'Groupement d'Intérêt public des Calanques' (GIP de Calanques) has been established in 1999 . As a local initiative to protect the Calanques area from multiple environmental pressures of its proximity to Marseille, France's second largest city, it brought together a variety of stakeholders from different sectors, including local and national authorities, to work out a plan for the creation of a National Park in that area, including the decree of the creation and Charter of the NP Calanques (interview 1). The last drafts have been presented and approved in 2011, following the creation of the National Park in 2012 (Parc National des Calanques, n.d.e). Bringing together stakeholders from different sectors, the GIP meetings experienced various conflicts of interests between its participants, having to balance conservation goals with the practical needs and perspectives of stakeholders, requiring compromises to move the park project forward. The GIP aimed to reach a consensus on the objectives, expansion and governance of the National Park, including the establishment of MNTZs (interview 1).

Perceptions of GIPs by interviewed stakeholders

All interviewed stakeholders expressed the importance of stakeholder engagement prior to the creation of the NP Calanques. A wide range of stakeholders from different sectors were invited and given the chance to participate, according to the Park Management (interview 1): "And there were, hundreds and hundreds of meetings with divers, climbers, fishers, hunters, all the different stakeholders including the tourist activities which are so numerous in the territory and also with regard to the marine-no take zones, therefore fishing. There were meetings with professional and recreational fishers, both recreational anglers, fishing boats and spear fishers." Despite the Park Management stating that both professional and recreational fishers from the affected communes of Marseille, Cassis and La Ciotat were invited (interview 1), 4 of the 5 interviewed professional fishers and 5 of the 7 interviewed recreational fishers were either not invited or did not feel involved enough in the GIP and preparation of the National Park.

The interviews, thus, point towards a gap between the GIP objectives of inviting local fishers and the negative perception of fishers who did not feel involved. This gap has been strongly visible throughout the interviews and the most re-occurring reasoning explaining this gap has been the perceived lack of representation by the Prûdhommes of Marseille. 3 of the 4 interviewed Fishers from Marseille said that they did not feel represented by their Prûdhommes. According to them, the Prûdhommes do not care or show interest, nor sufficiently talk to the fishers to understand their needs, interests or possible conflicts, (interview 9) (interview 7) (interview 8). The Prûdhommes, which are between 1-5 representatives, according to the professional fishers, cannot be representative of the large number of professional fishers present in Marseille, (interview 9), INTPF1, INTPF4. During the GIPs, the Prûdhommes from Marseille,

Cassis and La Ciotat, were invited to represent fishers' needs and perspectives in the creation of the Park, including the MNTZs. The Prûdhommes of Cassis and La Ciotat were participating in the meetings and seem to also have a positive image among the fishing communities they represent, as Fishers in La Ciotat feel well represented by their Prûdhomme (interview 11). However, the Prûdhommes of Marseille chose to ''play, in quotation marks, a so-called politics of an empty chair'' (interview 1), choosing to not attend GIP meetings with authorities despite their invitation, and thus, hoping, that through their absence, the creation of the National Park will not proceed. However, Prûdhommes of Cassis and La Ciotat participated in the meeting, thus leaving the voice of fishers of Marseille underrepresented in the GIP process (interview 1). As a result, the expansion of the MNTZs is more dominant on the side of Marseille, which has been causing increased conflict between the professional fishers of Marseille and the Park Management.

The historical role of the Prûdhommes has been one advocating for collective management and participatory governance representing their communities, and still, they have failed to fulfill the role given to them, according to the perception of most fishermen interviewed. When investigating the reasons for this lack of trust and the absence of the Prûdhommes of Marseille in the initial GIP meetings, the study found several main perceptions made by interviewed stakeholders:

1) **Lack of Perceived Impact and Feeling Unheard.** The Prûdhommes did not feel heard in the meetings or that their participation mattered. (interview 9), the wife of one of the Prûdhommes at the time of the GIPs said, that the Prûdhommes did not feel heard during the meetings. The GIPs were perceived by them as something that has already been decided (the creation of the National Park) and that they cannot impact anymore through their insights. This point demonstrated a gap barrier for recognitional equity, as the Representatives attending the meeting did not feel their traditions, knowledge or livelihoods were respected or taken into account sufficiently in the process.

2) **Representational Challenges**: **A few representatives cannot sufficiently represent all fishers.** (interview 9)said, that she and her husband, Prûdhomme at the time of the GIP, attended as representatives of fishers in Marseille. When asked about their opinions on the expansions of the National Park, she said that she did not feel she had the ability to represent the fishing community of Marseille due to its vast diversity. Interview 9 explained, that Marseille did not only have a large fishing community, every fisher does also specialize on a different area, fishing style, fish species, etc. She did not feel that a few representatives could thoroughly represent the whole fishing community, making sure that all these views and needs are represented in the planning of the MNTZs expansions. And thus, interview 9 stressed that in order to represent the Fishers Community, a larger number and variety of fishers should be invited. This point shows a weakness in procedural equity, as fishers did not feel sufficiently involved or represented in the process.

3) **A political strategy of the 'empty chair'.** As Bonhomme described, the absence of the Prûdhommes of Marseille at the GIP meetings might be also due to their neglection or unawareness of the GIP's importance or a political strategy to halt the process by not being present. This argument demonstrates the importance of procedural equity and the communication about the distribution of impacts. A weak communication or lack of access to understandable information about the process can lead to stakeholders not understanding its

importance or possible impacts on them. Without fully understanding their role as invited stakeholders and possible consequences of the decisions made in the process, they might be more prone to neglecting the importance of their participation and choosing to not participate as a political strategy to show protest.

4) **'Fishers are a bit rough!' (interview 6) - Fishers' Resistance to Change.** When asked why the Prûdhommes of Marseille, or more fishers in general, did not participate in the GIP meetings, many interviewees from different stakeholder groups stated: 'Well that is just how fishers are'. Many stakeholders, view fishers as traditional, close-minded, not willing to change and not being open to participate in activities that might impact them. Interview 10, the current president at MACT, as well as Interview 10, a recreational Fisher from Marseille and member of MACT, explained that their president at the time was trying his best to motivate fishers to participate in the GIP meetings, but said that fishers are hard to change in their traditional views and could not understand fully how the outcomes of the GIP might impact them. Designing a participatory process in a way that is encouraging stakeholders to participate is a challenge when it comes to procedural equity. Procedural equity stresses the importance of designing a process that involves enough incentives for all relevant participants to participate voluntarily.

5) **'It's a zero, the Prûdhommes!' (interview 10) - Lost Trust and Representatives.** 3 of the 5 professional fishers said that they do not feel represented by their Prûdhommes. Professional Fishers have lost trust in their community representatives as they say the Prûdhommes do not show interest in the need, conflicts and perspectives of the fishers, do not engage in any dialogue with them and just appoint themselves among each other to keep positions of power (INTProfFishMar1, (interview 9), INTFish4). The lost trust in their representatives might be also a reasoning why professional fishers stopped participating at the Prûdhommes elections, (interview 9). After further investigation, the study found that the roles of the Prûdhommes in Marseille, which have existed since centuries, have ceased to exist since the last few years, with no Prûdhomme currently being active in Marseille (interview 10) (interview 19). The failure of the Prûdhommes structure in Marseille show a challenging situation for procedural equity, as the fishing community lost its representatives and the means to be sufficiently engaged at decision-making tables.

Summary: Public Interest Groups

Main themes in the stakeholders' perceptions of their engagement in the GIPs

Despite the GIPs objective of bringing a variety of stakeholder groups together, with a special focus on fishers in the context of planning the expansion of the MNTZs, 9 of the 11 fisher interviewed were either not invited or did not feel sufficiently involved in the GIPs. A dominant theme throughout the interviews with fishers from Marseille has been their perceived lack of representation by their Prûdhommes. The Prûdhommes of Marseille were invited to represent Fishers at the GIPs, however, did not participate. Possible explanations as perceived by interviewed stakeholders point towards challenges to both recognitional and procedural equity:

Challenges to Recognitional Equity.

The attending Prûdhommes and fishers did not feel heard in the process, as they felt that the decisions were pre-set and their knowledge would not be recognized in the process. (interview 9, 7)

Challenges to Procedural Equity.

Representatives not representative enough. A few representatives do not feel they can sufficiently represent the needs of their very diverse fishing community. (interview 9)

Not informed enough. Prûdhommes might not have been informed enough about their role in the process, and the possible consequences of the final decisions for their communities. (interview 1)

Lack of incentives to encourage participation of traditionally-minded stakeholders. (interview 3, 10)

Fishers lost trust in the Prûdhommes of Marseille feeling the Prûdhommes do not show interest in understanding their needs. The Prûdhommes ceased to exist in Marseile. (interview 7, 8, 9, 10, 19)

4.2.2. Fishing Advisory Council

The Fishing Advisory Council (FAC) of the NP Calanques has been created at the moment of establishment of the National Park. It's purpose is to involve fishers in the governance process of the NP Calanques and the management of the well-being of marine resources, by giving them a consulting, advisory role to the Park Management (interview 1) (interview 12). The FAC consists of representatives of both professional and recreational fishers. Recreational Fishers are represented by presidents of federations and associations for recreational fishers in the communes of La Ciotat, Cassis and Marseille. The professional Fishers are mostly represented by their Prûdhommes (interview 12) (interview 1). The FAC can suggest

topics to be discussed and give an advice on decisions related to fishing, including the management and regulation of the marine areas of the NP Calanques, such as the MNTZs (interview 1) (interview 12).

Perceptions of FAC by interviewed stakeholders

Although the objective of the FAC was to represent fishers voices within the Park's governance, 4 of 5 interviewed professional fishers and most recreational fishers who were not part of the FAC, said that they did not feel the Park Management was involving fishers sufficiently after its establishment. There has been a clear difference in the perceptions of professional and recreational fishers, which is why they will be looked at separately.

The main themes in the perception of the FAC by professional fishers has been their perceived lack of representation. Despite the FAC's objective to represent fishers in the decision-making of the NP Calanques, 4 out of 5 professional fishers stated they did not feel represented enough, (interview 7, 8, 9). This points back to the issue of the previous paragraphs, concerning the Prûdhommes of Marseille. The professional fishers do not feel represented by them and in the last years, their positions have ceased to exist (interview 7, 8, 10, 19). Moreover, while the FAC tries to bring together a variety of fishers, interviewees felt that it is mostly attended by representatives of recreational fishers and only few professional ones (interview 12). The professional fishers in the FAC remained the same since its establishment (interview 1). Interviewed professional fishers expressed that the needs of such a diverse community of fishers, as it is in Marseille, cannot be sufficiently represented by only a few representatives. As each fisher has their own specialization in terms of fish species, target area, method of fishing etc., they cannot be expected to know to represent the needs of all fishers with different specializations in the area. This issue represents a barrier for procedural and recognitional equity, as stakeholders feel they have not been sufficiently involved in the process and thus their needs could not be recognized. A way to address this challenge could be a rotating mechanism, where professional fishers in the FAC rotate over time, to ensure the representation of the diversity of professional fishers' needs and perspectives in the governance process of the Park (interview 9).

Furthermore, many fishers feel they are being neglected and disproportionally targeted by restrictions not only by the Park, but also nationally and within society, leading to a sense of demoralization among the artisanal fishermen. They face the fading tradition and representation of their profession in the current French society, with many fishers looking for different economic sources to secure livelihoods (interview 9). Their work is further degraded by various factors, including demanding European and national regulations, as well as the disruptive effects of climate change. Climate change impacts fish population structures as well as extreme weather conditions. The fishing profession has become increasingly challenging, especially this year, due to adverse weather conditions such as persistent winds making fishing challenging, resulting in poor catches (interview 19).

The main themes in the perception of the FAC by recreational fishers have been challenges in communication with stakeholders and ensuring recognitional equity in the advisory processes of the FAC.

1) **Communication with stakeholders.**

Recreational fishers are represented in the FAC by presidents of associations for recreational fishers. It is their responsibility to communicate progress and outcomes of the discussed topics and decisions to the members of their associations. Vice-versa, members can speak up about issues and their needs can be represented at the FAC by the presidents of their associations. An issue arises with recreational fishers who are not registered in any associations and thus, do not have direct access to the up-to-date decisions of the NP Calanques, concerning regulations of recreational fishing (interview 13) (interview 12). Ensuring affected stakeholders are informed is an important part of procedural equity. This challenge in keeping unregistered recreational fishers informed about the Park's and FAC's decisions, might lead to a lack of knowledge on regulations and thus a lower compliance with them.

2) **The new reporting system and recognitional equity in the advisory processes of FAC.**

A major theme that has been addressed by a majority of recreational fishers and scientists too, has been the perceived lack of recognitional equity in the design and implementation process of the new reporting system for recreational fishing, that has been introduced by state authorities in February 2024 (interview 12). The French Maritime Prefect has recently signed a decree to regulate fishing activities within the park, obliging fishers to do a declaration of activity and capture on the Park's territory. This is being done through a Smart Phone Application (interview 1). Recreational fishermen now have the obligation to register themselves in the online system and declare their catch directly into the application. To declare the catch, all important details, such as but not limited to the fish species, the size and weight, the date, the GPS coordinates of the catch, etc., have to be directly logged into the app (interview 13) (interview 1) (interview 2). The Park Management hopes to gain more concrete and up-to-date data on the development of local fish populations and can in this way involve recreational fishers in the data collection. The system has been set up as a pilot project and is to be evaluated after a year of operation (interview 1).

While the recreational fishers see the benefits of the new reporting system, they say the implementation is just "truly annoying for fishers" (interview 2). While the regulation has come from above, the FAC has been given space to discuss the concrete implementation in the NP Calanques (interview 13). While many recreational fishers where addressing their concerns and coming up with suggestions for an effective implementation that would be acknowledging their needs, they did not feel heard enough (interview 13), (interview 3). Interviewees felt the decision and implementation plan have been made disregarding their inputs and suggestions, thus expressing a negative perception of recognitional equity in this context. As a result, the new reporting system has been implemented, however, is already now prone to fail, (interview 5), (interview 4), as the system is inefficient and too complicated for the recreational fishers to use (interview 2), (interview 5), (interview 4) (interview 13), negatively impacting the recreational fishers' trust in the decision-making process and perceptions of legitimacy. "Most recreational fishers are not against it in principle, but our needs have not been understood and respected enough in its implementation," (interview 13).

The issue is that a smartphone is required to download the mandatory application, however, many old recreational fishers either do not have a smartphone or do not know how to use it. And even if fishers do have a smartphone, in many parts of the NP Calanques, there is a poor or non-existent internet signal, so a declaration in the application is not possible. Moreover, the application requires many details to be filled in for each catch right on spot, which is often not feasible and too complicated. Many recreational fishers feel that the new system is only discouraging their fishing activities: 'They are doing it to disgust

everyone," (interview 3). Moreover, they feel that if their insights would have been taken into account during the process of implementation, the system could have been working more efficiently (interview 3, 5, 13) and they would have been more motivated to comply with it. For example, instead of having to fill in all details right on spot, it could be more efficient to let the fisher fish, declare the main data, and fill in the rest in detail from the comfort of home and with a stable internet connection (interview 13).

However, since the implementation by state authorities in February 2024, following dissatisfaction by local recreational fishers, the Park Management has made positive efforts to "to find a compromise and satisfy the recreational fishermen" (interview 12). Convening the FAC on 3 occasions to consult recreational fishers, the Park aims to propose a modification to the decree which would take into consideration the consultations with recreational fishers (interview 12). According to interviewee 12, recreational fishers are satisfied, as following FAC consultations, an agreement has been reached between the park management and the FAC that will allow the state representatives to modify the decree. The new director of the NP Calanques is showing good efforts and motivation to improve communication between Park Management and recreational fishers to reach better consensus. This new path open to dialogue between the park management and recreational fishermen makes some interviewed recreational fishers feel more heard and recognized in the process (interview 12, 13).

Summary: Fishing Advisory Council

Main Themes in stakeholders' perceptions of their engagement in FAC

The FAC brings together fishers and advises on fishing-related decisions, including fishing regulations and the MNTZs. Professional fishers are mostly represented by Prûdhommes, recreational fishers by presidents of recreational fishing associations. There has been a clear difference in the perceptions of professional and recreational fishers, however, both fisher groups felt that the NP Calanques has not been involving fishers enough in the governance process after the establishment of the NP Calanques. The following are the main themes relating to social equity that resulted from the thematic analysis.

Professional Fishers

A perceived lack of representation of professional fishers in the FAC. Interviewees feel that the static and limited number of professional fisher representatives in the FAC fails to represent the diversity of the fishing community's needs and specializations, thus hindering procedural and recognitional equity. Professional fishers also feel demoralized by a perceived neglect of their profession by society, perceived disproportionality of restrictions, as well as the disruptive effects of climate change. ***Suggestion:*** Rotation of the professional fisher representatives at FAC over time, (interview 9)

Recreational Fishers

1) **The communication gap between the FAC and unregistered recreational fishers**, who are not part of fishing associations represented in FAC. They lack direct access to information on decisions of the FAC, which may lead to lower compliance due to insufficient knowledge. This is challenging procedural equity which states all stakeholders should be sufficiently informed.

   Challenges to recognitional and procedural equity: the New Fishing Reporting System Although recreational fishers recognize the objectives of the new reporting system, they feel their input has been disregarded in its design and implementation, leading to an overly complex and inefficient system, triggering a negative reception by recreational fishers. This has demonstrated the importance of the recognition of stakeholders' inputs in processes. The fact that many recreational fishers did not feel heard, negatively impacted their trust in the decision-making process, their perceptions of legitimacy and motivation to comply. The Park Management is showing positive efforts to consult recreational fishers through the FAC in order to modify the decree and satisfy the fishers.

4.2.3. Scientific Advisory Council

The Scientific Advisory Council (SAC) of the Calanques National Park brings together 25 scientists representing various specialties covering a variety of relevant domains from both natural and social sciences (interview 19). Their role is to provide advise through objective scientific opinions on regulations to be implemented and matters that may impact biodiversity and the development of the park. They conduct about 150 reviews annually on topics ranging from hunting authorizations to urban planning projects, offering recommendations to minimize impacts. The SAC Bureau, which consists of seven members, offers expert opinions in their field of expertise, reviews all requests and directs them to other SAC members if necessary (interview 19). The Council collaborates with stakeholders like fishermen and government officials to address conservation and management issues, also in the context of MNTZs and is, thus, see as a participatory instance, also as scientist themselves are considered stakeholders in this study. The SAC has also been a supporter of stricter measures in the MNTZs, with the aim to protect and improve biodiversity in marine ecosystems of the NP Calanques (interview 1).

Perceptions of SAC by interviewed stakeholders

The SAC is generally perceived positively as a means to give scientists an opportunity to apply their expertise and contribute to the development of the Park. It is also seen as a participatory instance as it gives scientists the opportunity to engage in the governance process through their expertise and knowledge. At the same time, the SAC is perceived as an integral part of the Park Management, as its objective scientific expert opinions are valued and respected by most stakeholders. However, thematic analysis has highlighted several challenges perceived by stakeholders.

1) **Conflicts of knowledge and making compromises.**

The scientists and thus the SAC as well, are seen as the objective advisors to stakeholders. Often, the scientists, however, feel a clash between their scientific knowledge, the outcomes of their research and the common perceptions of other stakeholders, mainly fishers or divers. An example is the common perception of fishers that due to protective regulations, the groupers (a fish species) are overpopulated and, therefore, over-consume octopuses in the area, leading to a decrease in octopus populations which are a popular species for many fishers and divers. However (interview 19), member of the SAC Bureau and responsible for the monitoring of grouper populations, has stressed, that there is no scientific evidence proving this. According to her, studies show that in fact the grouper do not have a negative impact on marine biodiversity and that “the biggest predator of octopuses is humans” (interview 19), both recreational and professional fishers, for who octopuses are a favourite target species. Scientific knowledge seems to be not accessible enough to fishers and other stakeholders and SAC members often find it hard to change the perceptions of stakeholders and communicate science. Moreover, in the context of the MNTZs, SAC is often advocating for a more ambitious protection level based on scientific findings, however often has to compromise with the needs of stakeholders. For example, when it comes to quota for recreational fishers, SAC has been advocating for a limit of 5 kg per fisher, aligning with the regulations in other MPAs. However, due to strong resistance by fishers, the quota has been set to 7kg per fisher (interview 19). Compromises seem to be inevitable. The interview analysis shows the important role of interactions of different knowledge systems, knowledge perceptions and beliefs in the participatory processes. When these different knowledge perceptions clash, conflicts of interests arise which might be

challenging to overcome. For example: scientists claiming that there is no harming over-population of certain fish species (interview 19), while recreational fishers claim that the over-population of certain species due to their protection diminishes the target species they fish, (interview 3). Therefore, often, stakeholders choose a strategic role in the process, to ensure their needs are being met. “We are not here to be an environmental activist but to be objective based on scientific results, because if we choose to have a militant approach, et cetera, we won't be listened to,” (interview 19) says about the role of scientists in the process to ensure thorough communication of science to stakeholders with differing beliefs in order to ensure that marine protection objectives are science-based.

In the case of the MNTZS in NP Calanques, it has become clear that conflicts of interests and knowledges as well as the need to make compromises are a common part of participatory MPA processes. stakeholders.

2) Challenges of communicating science and the Park’s objectives to public.

Besides the discussions between the different Advisory Councils, there is the need of communicating science to the wider public. According to (interview 19), the wide public, including fishers, do not usually read scientific papers. It is the Park’s responsibility of choosing the right communication channels. The Park is putting effort into increasing communication online, “but [many] fishers do not really go to social networks” (interview 19), and especially older fishers often do not have smartphones or access to social media, (interview 3) (interview 13). It is clear that finding ways to communicate scientific knowledge to public is essential to improve the education of stakeholder on the local marine environment (which is one of the impacts of MNTZs described in distributional equity), public awareness on the Park’s objectives as well as knowledge of decisions/regulations made (procedural equity) and compliance with regulations. Within the Park itself, there is not enough presence of the Park staff and rangers to inform visitors (interview 2), as rangers are mostly hired in high seasons only (interview 19), resulting in visitors and the wider public not being informed enough about the National Park’s objectives and regulations.

3) Keeping scientists engaged.

While the SAC Bureau, consisting of 7 representative SAC members is regularly involved in actively working on reviews and expert advisory opinions, the other members of SAC are only involved once in a while. Thus, members might lose touch with the SAC’s activities (interview 19), loose the overview over SAC’s progress and experience uncertainty about their level of involvement (as several SAC members contacted for this study responded that they have not been active in SAC in the recent years and thus do not know whether they are still involved.

Summary: Scientific Advisory Council

Main themes in the stakeholders' perceptions of their engagement in the SAC

The SAC is seen as a participatory instance as it offers scientists to engage in the decision-making process, such as the FAC involves fishers. It also engages scientists in consultations with other stakeholder groups on relevant topics. While the SAC is perceived by stakeholders and other Advisory Councils as an important provider of expert opinions and thus an integral part of the Park's Management, several challenges have been identified in the thematic analysis, mostly relating to the role of scientific knowledge in the participatory processes of the MPA and NP governance.

Conflicts of knowledge and inevitability of compromises. The SAC faces challenges in reconciling scientific knowledge with the perceptions of other stakeholders, to meet their needs while ensuring ambitious nature protection objectives. While knowledge reconciliation is the Park managements responsibility, the SAC members play an important role of communicating science to other stakeholders and addressing issues. It demonstrates the complex interactions of different perceptions of knowledge by stakeholders, as well as different roles stakeholders take-on in participatory processes.

Communicating science and the Park's objectives to the public is crucial and a recognized challenge that points to the need of the Park Management to increase its effort in finding effective and accessible communication channels with the public to support SAC members in communicating scientific knowledge. This is essential to improve stakeholders' environmental education (distributional equity), awareness about the Park's objectives as well as knowledge of its decisions (procedural equity) and compliance with regulations.

Maintaining engagement of scientists with SAC members outside of the Bureau has been a challenge due to their irregular involvement.

4.2.4. Economic, Social and Cultural Advisory Council

The original Economic, Social and Cultural Advisory Council (ESCAC) has been established in 2014 by deliberation of the Board of Directors of the NP Calanques. It consists of 30 members from different sectors of civil society who are involve in the life and usage of the Calanques territory. The council members were chosen in a way to ensure a balanced representation of all key areas of civil society related to national parks (economy, society, and culture). Their diverse backgrounds allow for a comprehensive strategic vision integrating practical knowledge of the park's territory and heritage, by involving important local actors, both historic and new. Legally established by article R 331-33 of the environmental code, the

ESCAC assists the board of directors and the director in matters related to contractual policy, charter implementation, and local coordination. ESCAC's responsibilities include proposing strategic visions evaluating and revising the NP charter, acting as an Park-stakeholder interface contributing to the park's life, engaging the ESCAC network, and providing opinions on various matters related to regulations and decisions. When it comes to the marine resources of the NP Calanques, they have given opinions on recreational fishing, passenger maritime transport, rental of ships and boats, the NP action plan and strategy, underwater landscape plans, risk prevention in terms of discharges into the sea, and with some ESCAC members also being part of the 'fishing' commission of the Park. (Parc National des Calanques, n.d.b).

Perceptions of ESCAC by interviewed stakeholders

Generally, interviewed ESCAC members stated that on topics of marine protected areas and MNTZs, the ESCAC has not been consulted sufficiently. The main themes identified in the interviews with ESCAC members (interview 15, interview 16, interview 17, interview 18) showed the following main challenges to their participation in the process:

1) **Demotivation of actors due to lack of recognition and slow processes.**

ESCAC actors were disappointed with the way their inputs have been processed, as they felt that "the measures taken by the Park often did not follow the recommendations of the actors" (interview 15). Actors felt frustrated that despite an invitation to contribute their inputs were not recognized. They felt that their inputs were not taken int consideration in the reports of the public consultations that the park then relied on to implement regulations and make decisions. (interview 15). As actor's involvement is voluntary, their engagement is a time-consuming effort, and thus, not seeing their perspectives recognized, might cause frustration (interview 15) (interview 16). (interview 15) stated that they even had to put their company on hold in order to defend their needs in the contexts of a new regulation restricting access of actors to certain coastal areas in the Park. Interviewees felt that often they were invited to participate in the very late stages of the decision-making process, feeling like there were only there to sit in the meeting and sign a paper, without actually having the possibility to contribute meaningfully to the decisions to be made (interview 16).

Actors also feel that the process is very lengthy and the long time needed to see the actor's inputs implemented is discouraging actors to even participate in public consultations in first place. "I know that most of my friends are actually fellow guides, so they don't want to get involved because, that's it, it's a bit of a waste of time," (interview 16), as there are a lot of consultations conducted but the perceived impact is low as decisions take a long time to be validated and recommendations to be implemented.

The analyses has, thus, found that if actors feel their inputs are not being integrated into final decisions (recognitional equity), as well as a lengthy process where actors do not see direct outcomes of their participation (procedural equity), leads to a demotivation of actors to participate in the process.

2) The procedural structure is not sufficiently considering stakeholder's preferences

The ESCAC members meet 2 to 4 times a year and the invitation to the meeting, together with the agenda, are provided 15 days prior, (Parc National des Calanques, n.d.b). Interviewees have stated that this short-hand notice, which is done without consulting their personal preferences, poses a challenge to their participation as often they struggle to integrate the meeting into their often full agendas. Getting invitation to meetings earlier, taking into consideration the availability of the actors, or even having the option to join online, would help actors to plan in advance and prioritize their participation in the meeting, especially given the low number and irregularity of meetings every year (interview 16). Interviewees would also like to see more channels of communication established to stay informed on updates from decisions of the Park Management that are concerning them, as they feel the 2-4 meetings a year are not sufficient to keep them informed. Such communication channels might be easily accessible social media platforms. Additionally, according to interviewees, the Park should find more opportunities to gather stakeholders' perspectives also outside of the official meetings, providing them with a contact person in their field (interview 16). For stakeholder participation to be effective, the structure of the participatory process needs to be adapted to the stakeholder's needs to create meaningful opportunities of engagement, encourage participation and keep stakeholders informed.

"Recently, the Park asked us to get together on a topic related to sports activities, but she asked us to do this 15 days before, like what? Well, as I was not available, I passed it on to some colleagues to represent me, there are about fifteen of us and no one answered, even though the topic would have been important to us Because no one was available, especially during periods of high season where we have an increase in our professional activities." (interview 16)

3) Support and incentives for actors to participate.

As the participation in the ESCAC is voluntary, and many actors have several initiatives they are engaged in, their participation might be very time-consuming for them. Linking to the short-notice of the meetings invitation, they might be required to travel to the Calanques to be present in person. All these efforts are not being compensated and thus interviewees stressed that a renumeration for their work or travel expenses would be a helpful incentive to increase participation of stakeholders (interview 16). In order to ensure procedural equity, a sufficient participation of stakeholders in the consultations is necessary. To reach a high participation, incentives, such as financial compensations, are valuable tools.

Summary: Economic, Social and Cultural Advisory Council

Main themes in the stakeholders' perceptions of their engagement in the ESCAC

Generally, interviewed ESCAC members stated that on topics of marine protected areas and MNTZs, the ESCAC has not been consulted sufficiently. The main themes identified in the interviews with ESCAC member showed the following main challenges to their participation in the process:

Demotivation of actors due to lack of recognition and slow processes. If actors feel their inputs are not being integrated into final decisions (recognitional equity), as well as a lengthy process where actors do not see direct outcomes of their participation (procedural equity), leads to a demotivation of actors to participate in the process.

The procedural structure is not sufficiently considering stakeholder's preferences, as actors receive invitations to meetings on short-notice, and lack accessible communication with the Park Management, discouraging their participation. A participatory process structure adapted to the needs of stakeholders, meaningful engagement opportunities, and effective communication channels to ensure all stakeholders are informed about decisions affecting them, is key to an effective stakeholder engagement.

Support and incentives for actors to participate, such as renumeration or financial compensation, are important means to encourage high participation and improve procedural equity, as a voluntary participation might pose time and financial burdens on involved stakeholders.

4.2.5 Additional Participatory Instances

A) Monitoring

To monitor the developments of MNTZs there is a scientific monitoring scheme set up by the Park. There are 2 different types of monitoring that offer opportunities of stakeholder involvement (interview 1).

1) **Monitoring done by scientists in collaboration with members of the SAC**, or research institutes or organizations. There are scientific schemes set up to ensure regular monitoring, for example visual diving counts of fish on depth up until 28 meter which are repeated every 3 years on the same places to see the evolution of fish populations. Additionally, diving clubs using the area are encouraged to check on monitoring devices set up during their dives (interview 14), which might be seen as a form of citizen science.
2) **The second monitoring method called standardized scientific fishing is involving 56 local professional fishers** spread over the territory to carry out fishing and the same place and the same period every 3 years. The Park has bought standardized fishing nets that are only being used for this purpose.

Perceptions of Involvement in Monitoring by Stakeholders

Generally, interviewed stakeholders, including fishers, scientists and diving club, perceive the involvement of stakeholders in monitoring as crucial to also gain trust in the monitoring results. While the Park has created a scheme inviting professional fishers to participate in the monitoring, most of the fishers interviewed said that they did not feel involved. A major theme has also been the lack of trust in the monitoring methods as fishers said that it is them who understand the sea the best and monitoring once every 3 years does not create a comprehensive enough picture as fish populations are dynamic. Additionally, fishers mentioned that if they are not involved in the monitoring process or are not allowed to fish in the Park, they cannot compare whether the situation in the MNTZs has improved or not(interview 9). So there is a clear perceived lack of trust from the side of fishers, due to their perception of scientific methods not being hollistic enough and the fishers knowledge of the sea and dynamics of fish populations not being recognized enough (recognitional equity). However, there is a clear conflict between the Park creating opportunities to involve fishers and the fishers either not feeling involved enough or refusing to enagage. The thematic analysis shows that this might be due to their perceived roles and strategic positions within the process which are linked to values and roles each stakeholder group represents. In some cases, especially when it comes to participatory monitoring, initial resistance towards the creation of the National Park translated into the fishers resistance to Park initiatives as a form of protests or sense of standing up for the fisher community (INTSandrine, (interview 9)), causing a challenge to ensuring procedural equity. Notably, this dynamic is particularly pronounced in the Marseille region, which was also the fisher community that participated the least in the initial meetings of the GIP (interview 19).

„ Because there are conflicts and fishers have been against the park since it was created because the park has taken away their fishing territory, et cetera. And so there are many who, even if they get paid, they don't want to contribute, because of this positionality. And then between them, in fact, if one of them does scientific fishing, for example, he is afraid of being frowned upon by others” (interview 19).

B) Collaborations with Civil Society on concrete projects

The Park has created opportunities for local NGOs to support the Park’s objectives by collaborating on different activities or programs. An example is MerTerre, a NGO based in Marseille, which is focusing on nature protection. They have been working with the National Park on activities related to waste clean-ups and nature protection education. When it comes to waste management, MerTerre has helped with the classification of waste left in the territory of the Park as well as with organizing clean-ups and raising awareness, including waste in marine areas. Furthermore, they have also established a collaboration with the National Park by establishing a program of Eco Guards. Eco Guards are there to raise awareness about different relevant topics related to environmental and nature protection, including the marine environment. MerTerre has been responsible for the education of the Eco Guards. Generally, collaborations are perceived as very positive from both sides, allowing to exchange knowledge, create opportunities of engagement and strengthen outreach, no challenges have been identified.

C) Surveillance

Several stakeholders, including fishers, emphasize the need to enhance surveillance to ensure compliance with regulations and limit poaching, (interview 5)3, (interview 3) (interview 13). The guards themselves—sometimes former fishers—are professionally trained, often part of the police, (interview 1). The involvement of stakeholders' in surveillance, mainly fishers and users of the sea (e.g. divers, kayakers, etc.) is done by the Park encouraging them to actively report incidents. In this way, stakeholders using the sea are encouraged to report illegal boat activity at sea they might encounter during their activities (interview 14). While there's a general consensus on the importance of control systems to prevent poaching, some recreational fishers advocate for more holistic approaches, (interview 3, 13). No perceived challenges have been identified.

Summary: Additional Participatory Instances

Main themes in the stakeholders' perceptions of Collaboration Opportunities

Generally, collaboration opportunities for stakeholders are perceived positively and as important by both stakeholders and Park Management. They offer good opportunities for stakeholder engagement of which both patries benefit and supoport eachother.

Monitoring schemes of the Park involved scientists and professional fishers every 3 years, however many fishers either refused to participate, did not feel involved or did not trust the monitoring set up by the Park. The lack of trust might be due to their perception that the fishers' knwoledge on the sea and dynamics of fish populations is better than the Park's scientific methods and has not been recognized enough (recognitional equity). The fishers' initial resistance towards the creation of the National Park might translate into the fishers' resistance to Park initiatives by refusing to participate as a form of protests or sense of standing up for their fisher community, causing a challenge to procedural equity.

Collaborations create opportunities for local NGOs to support the Park's objectives by collaborating on different activities or programs. Both parties involved view this exchange of knowledge as a positive impact creating new opportunities. and no perceived challenges have been identified.

Surveillance of compliance of sea users to the Park's regulations is done by professional guards and does not offer direct opportunities of involvement. However, the Park encourages sea users to actively report incidents. No perceived challenges have been identified.

4.2.6. Re-evaluation of the National Park Charter

The National Park Charter has a validity of 15 years and after that needs to be re-evaluated and a new one written. The 15 years are approaching and a re-evaluation will need to be performed soon (interview 1) (interview 19). The re-evaluation offers an opportunity for stakeholder involvement, especially the

involvement of existing Advisory Councils. A main theme in interviews with fishers was a rethinking of the current MNTZs to a more flexible structure, allowing for temporary and rotating re-opening of certain protected zones to fishing at certain times and to a certain number of fishers. The Park Management concluded that such an approach, with seasonally opening certain areas to professional fishing while prohibiting recreational fishing, could foster better consensus between the park and the fishermen. However, it is not possible with the current NP Charter, which assigns strict regulations to the MNTZs and a permanent closure. Therefore, it is hard to change these regulations, and if this would happen, it would have to be included in the New Charter after re-evaluation, maybe even re-evaluation of the Park's establishing decree. However, scientists stress that this would decrease the biodiversity protection that the MNTZs have been created for. (interview 19) stated, that to see significant positive effects on the development of marine ecosystems, fish populations and biodiversity, the reserve effects take time to set in. According to that, MNTZs have to be fully protected for at least 10 years to see effects. Hence, a flexible scheme with temporary rotational re-opening of areas to fishing would not be effective and diminish the protection objectives. It is clear, that the re-evaluation of the NP Charter offers an opportunity to engage stakeholders, re-assess the Park's objectives and improve consensus between stakeholders and the Park by addressing conflicts of interests and incorporating stakeholder's needs (interview 1).

4.3. Summary of Stakeholders' perceptions of Participatory Instances

Table 6, visualizes a summary of main lessoned learned from the participatory process of the NP Calanques, derived from the previous chapter's analysis of perceptions of participatory instances in the NP Calanques by interviewed stakeholders.

Table 6 Summary of main themes in the thematic analysis of the participatory instances in the establishment and governance process of MNTZs in the Calanques National Park

	Dimensions of Social Equity		
Participatory Instances	**Recognitional**	**Procedural**	**Distributional**
GIP	Stakeholders not seeing their inputs integrated in final decisions, made them feel unheard in the process	Fishers in Marseille lost trust in their representatives (Prudhommes) as they felt they were not able to represent the variety of needs in their community. The Prudhommes of Marseille did not sufficiently participate in GIP meetings	/
FAC	Stakeholders did not feel heard enough in the implementation of the new reporting system	Stakeholders not feeling heard negatively impacted their trust towards the Park's decisions and their perceptions of teh legitimacy of the newonline reporting system.	/
SAC	Conflict of different knowledge percpetions and interests posed challenges in finding compromises while keeping high marien protection goals	Communication on the decisions of the Park management, as well as the status of teh marien ecosystems was seen as not sufficiently accessible and effective	Effective and accessible communication has been identified important to improve stakeholder's education on nature conservation
ESCAC	Slow processes, feeling unheard and not seeing the impacts of their engagement, stakeholders were discouraged in their participation	stakeholders felt that the insufficient adaptation of the pocedural structure to their needs and availabilities discouraged their participation: e.g. meeting schedules not reflecting the availabilities of stakeholders , receiving meeting invitations last-minute, etc.	Stakeholders pointe out the financial and timely burden of participation in consultations, and the lack of renumeration or financial compensation.
Additional Participtory Processes	Recognition of different knowledge systems when planning processes in the MNTZs has been seen as crucial by multiple stakeholder groups	Collaborations on concrete projects are perceived as positive ways of stakeholder engagement by both park management and stakeholders Due to a low trust of soem fishers in the Park's good intention, resistance of soem fishers towards the park's decisions became persistant and limited their participation	/

5. Findings: Main Themes in Social Equity Perceptions of Stakeholder Groups

This section presents the findings of the thematic analysis of social equity perceptions of stakeholder groups. The chapter is divided into sub-chapters, examining each stakeholder groups' perceptions of all dimensions of social equity: 1) recognitional, 2) procedural and 3) distributional.

Main findings show both varying and overlapping perceptions among stakeholder groups. Most variations in equity perceptions among stakeholder groups were in the categories of a) percieved impact of MNTZs on economic security, b) the perceived trust and legitimacy towards the MNTZ management and c) perceived stakeholder engagement: whether they felt sufficiently involved in the process. On the other hand, main overlapping themes stakeholder groups had in common were a) positive impact of MNTZs on marine ecosystems and b) awareness and education on marine conservation, c) the perceived insufficient recognition of stakeholders needs & rights and knowledge, as well as d) insufficient access to information both on the marien ecosystems but also decisions made in the governance process.

The order of analysed stakeholder groups is as follows: 1) Fishers, 2) Tourism, 3) Civil Society, 4) Scientists. Furthermore, main identified conflicts which were a dominnat theme throughout the interviews will be investigated. Lastly, a summary of the chapter will be provided.

5. 1. Fishers

A) Professional Fishers

Recognitional Equity

All interviewed professional fishers stated that fishing is an important tradition in the region, their communities and for them personally. For many fishers, fishing is a profession that has been passed through several generations and it is part of their own personal or family identity, which is why, losing their rights to fish feels like losing their identity (interview 9). Most fishers, however, did not feel that their culture, knowledge and the importance of their tradition has been taken into account sufficiently in the processes of the Park's establishment and governance (interview 7, 8, 9). Only one fisher from Marseille, the only one involved in FAC and other processes in the NP Calanques, said, that she felt their culture, values and livelihoods have been respected (interview 6). While the other fishers did acknowledge the fact that the Park initiated meetings, most of them did not see a point in participating as they felt decisions have been pre-made and they did not feel a real interest from the Park to recognize their inputs, culture or knowledge (interview 9). A dominant theme throughout the interviews has been the knowledge conflict between the Park and the fishers, where professional fishers perceive themselves as more knowledgeable on the local environment due to their profession, leading to eroding of trust in the Park's operations of the MNTZs. This conflict will be elaborated further below in the chapter. It is thus clear, that fishers'

perception of not having their inputs recognized, discourages their further participation in meetings as well as erodes their trust towards authorities.

Procedural Equity

Most interviewed professional fishers felt insufficiently involved in the Park. The only fisher who felt involved also had a positive experience during the public consultations before the Park's establishment and thus gained trust in its governance (interview 6). Those who did not feel sufficiently heard or recognized before the establishment of the Park, refused to further participate in consultations after the Park's establishment as they lost trust in the process, the national Park and being able to influence the decision-making, (interview 9) (interview 7). Thus, ensuring recognition equity, for stakeholders to feel that their knowledge and inputs are being recognized, seems to be a pre-requisite for ensuring stakeholder participation by increasing their trust in the process and, thus, improving procedural equity. Professional fishers felt that the "National Park was not working with [them] but against [them]," (interview 9), as they "took away a lot of their fishing areas" (interview 8), to create the MNTZs. When it comes to access to information, most of the fishers are aware of the webpage as an access to information on the NP Calanques decisions and updates, however they lack direct contact to the National Park (interview 7, 8, 9). Thus, some were pleading for a more direct communication between them, fishers and the National Park, for example with the Park sending direct emails to local fishers to announce updates in regulations or directly ask them for input and advice on decisions to be made via email (interview 11). When it comes to access to conflict resolving mechanisms, none of the fishers were aware whether there were mechanisms to resolve conflicts between them and the National Park, nor who to contact in case of conflicts or complaints, (interview 7, 8, 9).

Distributional Equity

When it comes to the economic impacts on professional fishers, all, except of one fisher who had good experiences with the Pak's participatory process, perceived negative economic impacts on their stakeholder group. Dominant themes related to negative economic impacts on fishers were 1) the sudden implementation of restrictions not allowing them to adapt quickly enough, 2) the over-concentration of fishers in other non-restricted areas as a result of a decrease in areas they are allowed to fish in, leading to pressure on fish populations, (interview 7, 8, 9) (interview 11). As each fisher specializes in a different fish species, area, method or even sea-bottom, the short adaptation period to the implementation of the MNTZs meant that many struggled to adapt and transition to other specializations. This transition takes time and can be financially burdening. An example was described by (interview 9), saying that fishers who specialized in rock-bottom fish in the current zones of the MPA, had to change their fishing specialization as they moved to other areas, where the terrain was different, for example more sandy. And thus, they had to change the gear, which represents big investments for fishers. As a result, many fishers stopped their professions and the number of professional fishers kept decreasing over the past years, according to interviewees (interview 11).

Furthermore, when it comes to impacts on community and well-being, professional fishes did not see an impact. Most interviewees however stated, that the MNTZs helped raised awareness on sustainability and the importance of marine conservation (interview 8), (interview 6).

Lastly, 3 out of 5 professional fishers stated that they did not see any impacts on the marine ecosystems as an effect of the MNTZs. Two of the 5 interviewees, however, perceived the MNTZs positively, stating that they feel the biodiversity and number of fish have increased since their implementation. One of the interviewed fishers mentioned that the protection of species leads to their overpopulation and thus overconsumption of certain species attractive to fishers and this an imbalance in the ecosystem (interview 11).

B) Recreational Fishers

Recognitional Equity

The interviewed recreational fishers feel that the importance of the tradition of recreational fishing in the region is not being recognized by decision-makers, (interview 3), (interview 5),3. When it comes to the recognition of their knowledge, recreational fishers not involved in FAC felt their knowledge has not been recognized, while those involved in FAC felt that their knowledge has been recognized in cases were their inputs have been incorporated into decisions. A major conflict dominating throughout all interviews has been the implementation of the new reporting system, as described in the previous chapter 5.3.2., which interviewees feel is failing because of not taking their suggestions and knowledge into account when preparing and implementing the measure, (interview 3, 4, 5, 13). The new management of the NP Calanques however, shows positive efforts to consult recreational fishers through the FAC on relevant regulations and reach satisfactory compromise, which makes fishers feel more recognized in the process increasing their satisfaction (interview 12).

Procedural Equity

Recreational fishers who were not part of the GIPs or the FAC, did not feel sufficiently involved neither prior nor after the establishment of the NP Calanques and its MNTZs, (interview 3, 4, 5). Those participating in the process felt sufficiently involved, however felt their involvement was decreasing as there were less topics to discuss. They did feel sufficient opportunities to involve were given by the Park but their inputs were not sufficiently heard out (interview 13) (interview 12). While most recreational fishers know where to find general information, they feel there is an insufficient access to information directly affecting them. Those involved in the FAC, feel that the Park is putting efforts in mitigation of conflicts (interview 13, interview 12), however, uninvolved interviewees stated they are not aware of any mechanisms to resolve conflicts and do not know who to approach (interview 3, 4, 5).

Distributional Equity

While recreational fishers stated that the regulations and restrictions are impacting their fishing abilities, they do not see a negative economic impact, as fishing for them is a leisure activity. However, the

interviewees perceive the regulations are targeting them disproportionally, discouraging them from continuing with their activities and thus decreasing their enjoyment of their leisure activity (interview 3, 4, 5). The only impact on the community as a whole are increased conflicts among them due to a perceived over-concentration of recreational fishers on the few areas around the NP Calanques which are still allowed to fish in (interview 13), (interview 3). Generally, all recreational fishers perceive that the MNTZs have a positive impact on raising awareness on marine conservation and sustainability of fishing. All 7 interviewed recreational fishers perceive a positive impact of the MNTZs on the marine ecosystems, in form of increased number of fish and their dispersal into surrounding areas, 5 interviewees also perceiving improvement in biodiversity. However, 4 out of 7 recreational fishers feel that regulations protecting few species cause their increase in numbers, such as tuna or groupers, leading to them over-predating on prey fish, such as octopuses or sardines, which are attractive to fishers, causing an imbalance in the fish populations. Moreover, the creation of the National Park increased the number of visitors to the area and thus also the pressures on the local nature (interview 13).

C) Main Conflict of interests between recreational and professional Fishers: Competing for the resource

Throughout the interviews, dominant conflicts were identified, which illustrate main themes in the interviews with fishers.

Throughout interviews with fishers, but also stakeholders from the science and tourism sector, the main conflict of interests addressed was the one between recreational and professional fishers. Three out of 5 interviewed professional fishers accused recreational fishers of being the issue in the process of marine conservation, saying they are not wanting to get involved in the process, are fishing more than is allowed and illegally selling caught fish without a license, (interview 9), (interview 6). Professional fishers perceive their profession as a higher priority to recreational fishing, as it only is a leisure and not a livelihood, (interview 9) (interview 19). Additionally, professional fishers perceive their profession as their identity, perceiving themselves as the ones who know the sea better and use sustainable practices, while accusing the recreational fishers of irresponsible fishing, (interview 9), (interview 6). On the other hand, 3 out of 7 recreational fishers accuse the professional fishers of putting too much pressure on fish populations, as their practices are perceived unsustainable, polluting the sea with excess fishing nets (interview 13), and taking up space and fishing out too many numbers of fish. It is, thus, a clear conflict of knowledge perceptions as well as distribution of the impacts on these different stakeholder groups.

The interviewed member of SAC (interview 19), stated that the “the pressure of recreational fishing is enormous and often underestimated. And it's just leisure. And next to that, there is a profession, professional fishermen who have a hard time making a living and I think that we should rebalance things a little bit in certain places, for example some places open up to professional fishing and prohibit recreational fishing for example. And that would allow for a better consensus between the park and the fishermen.”

What is visible is that there is a conflict of interest, and knowledge, where each stakeholder group perceives their knowledge of the sea and resources as the superior one, and their practices as the more

sustainable. This is a challenge that needs to be addressed through mechanisms of conflict mitigation to prevent it from limiting the ability of participatory processes to reach a consensus.

5.2. Tourism

Recognitional Equity

Outdoor activities in the Calanques, such as hiking, kayaking or diving, are regarded as activities with a historic importance, as they were being performed since decades before the establishment of the NP Calanques and hold an important local significance. They are relevant to the MNTZs, as kayaking and diving are performed at sea and require access to the sea that might be restricted by MNTZ regulations. Furthermore, hiking guides relate to the MNTZs when teaching visitors about marine biodiversity or when hiking along the coast which might have restricted access in some areas due to the MNTZs. on the Most stakeholders felt that the Park did show efforts in engaging historic actors and recognized the cultural significance of these activities by guaranteeing their representation in the Advisory Councils (interview 16) (interview 14). However, stakeholders perceived challenges when it comes to the recognition of their knowledge, often, they did not feel their inputs were taken into account sufficiently (interview 16) (interview 15). They were "still quite disappointed in the end with the way in which public consultations were carried out, " (interview 15), saying that the reports of the ESCAC's consultation did not reflect all stakeholders' perspectives and final decisions did not follow the recommendations of stakeholders. This lacking recognition of their inputs led to a demotivation to participate in further meetings, as it is time-consuming as often stakeholders do not see the impacts of their contributions on decisions (interview 16).

"So that's what we had hoped for in meetings [- access to the sea behind the barriers], because there are stakeholders who still have access behind the barriers set up. But we had to bang our fists on the table a little bit to say but wait, you promised us that if you put up a barrier, we can still have access and we thought it was quite legitimate that not everyone would be able to go there. But we did not think that we would be stuck behind the fence and no longer be able to work. […] That is to say, we were far from the promises of the consultations. […] We signed the papers, yes don't worry, you will be able to work properly, don't worry, you are local actors, historical, and so on. Then, in the end, in fact, we almost had to go to court to get access to the coastline as we discussed. So that's it, it's not just on the access part, then other things happened to us when it comes to quotas, restrictions, etc., understand? […] , " (interview 15), President of a local Kayak Organisation.

Procedural Equity

Generally interviewees felt sufficiently involved. However, the way meetings were organized, stakeholders felt were not adapted to their needs, as described in chapter 4.2.4. Economic, Social and Cultural Advisory Council. Meetings were irregular, too formal, not renumerated, not taking the stakeholders' availability into account and stakeholders were notified about them very short-notice (interview 16). Often stakeholders felt the decisions were already pre-made and they were only consulted

in a very late stage of the decision-making process, without their inputs actually being implemented (interview 16) (interview 15). While 3 out of 4 stakeholders feel they know where to access information on the Park's decision, all stated that the communication is insufficient, leaving the public and many stakeholders in uncertainty or uninformed about new regulations (interview 15). When it comes to resolving conflicts, interviewees were not aware about any conflict resolving mechanisms nor contact persons (interview 10), other than discussions within the Advisory Council (interview 15) (interview 16), or the possibility to file an appeal in front of the court (interview 15). There has been an initial trust and appreciation for the Park's effort to engage stakeholders in decision-making, followed by a motivation of the stakeholders to actively participate (interview 16) (interview 15). However, after feeling that the Park did not fully integrate the stakeholders needs, the trust is being disrupted (interview 15).

"We thought we had a partner, a national park of our own, we were, we're always going to be willing to work with them, to prepare things, et cetera. Then, in fact, the regulations that come out behind them are, they are not at all adapted to our activities. They have, they have the obligation to hold public consultations, they put a little bit of what they want into it. The result of the public consultation? Frankly, it's debatable and on top of that, well, we find ourselves a bit in the water in Ah. To fight against it after a while, " (interview 15).

Distributional Equity

Interviewees stated that the establishment of the MNTZs does not impact them, and if so, than it is rather a positive impact as fish populations and biodiversity grows, adds value to the territory and attracts more tourists and locals, e.g. for diving (interview 14) (interview 15). The MNTZs did not really impact the communities and social well-being of the stakeholders, and had a positive effect on raising environmental awareness and education. All stakeholders perceive positive impacts of the MNTZs on the marine ecosystems, including fish and corals (interview 14, 15). However, the creation of the National Park increased the number of visitors to the area and thus also pressures on the local nature (interview 16).

5.3. Civil Society

Recognitional Equity

The interviewees felt that the National Park did recognize their knowledge and showed appreciation for the Park's efforts to engage stakeholders and the public. MerTerre felt their knowledge was recognized through the established collaborations with the Park, such as waste clean-ups and the environmental education which also related to the marine environment (interview 17, interview 18).

Procedural Equity

Although the president of the interviewed NGO has been involved in the ESCAC, the interviewed members of the NGO did not seem informed about their participation in the Park's processes and also did not know whether NGOs were sufficiently consulted during the GIPs or afterwards. However, they expressed a wish to be more involved. Thus, there is a visible gap in the communication of the Park with its stakeholders and civil society. Interviewees felt they were not sufficiently informed about the Park's decisions and also identified insufficient communication with civil society as well as public on the Park's objectives and operations (interview 17) (interview 2). The stakeholders felt the Park should take more responsibility in

communication and find attractive channels of communication, such as information banners in the Park itself (interview 2). Additionally, interviewees were not aware of any problem resolving mechanisms or contact persons of the NP Calanques.

Distributional Equity

Civil Society interviewees did not perceive any negative economic impacts of the MNTZs, but rather saw their introduction as an economic advantage, as they see that MNTZs are improving marine ecosystems, attracting visitors and creating opportunities for new activities or livelihoods (interview 2) (interview 17). They did not perceive any impacts on their communities and saw positive impacts of the establishment of MNTZs on environmental awareness, education and the connection of people to nature (interview 2).

5.4. Scientists

Recognitional Equity

Generally, the interviewed scientists felt that their values and knowledge have been well recognized and respected (interview 12) (interview 19). However, the interviewees, who are both recreational fishers and scientists, pointed to the issue of the new reporting system, during whose preparation their inputs did not feel recognized (interview 13) (interview 12). Generally they stated, that they do not always feel heard in the process, and that while during the establishment of the Park it was the case, with time passing they feel less and less recognized or listened to (interview 13) (interview 12). In the beginning, the fact that stakeholders were actually seeing that what they were working on and suggesting is being actually implemented, that's what made them understand that they are being heard, meaning that their arguments are being listened to (interview 13). Interview 19 also pointed towards the conflict of different knowledge perceptions of different stakeholders and the challenge to recognize all to find satisfactory compromises (interview 19).

Procedural Equity

Interviewed scientists feel sufficiently involved. However, they stress the challenge of communicating science and the Park's decisions to stakeholders and public (interview 19) (interview 13). Especially communication of the Park's decisions to important stakeholders who are not linked to any of the Advisory Councils is perceived as insufficient (interview 13). Additionally, communication of science among the Advisory Councils is also perceived challenging, as different perceptions remain and create challenges to reaching consensus (interview 19). When it comes to conflicts, the interviewees recognize the efforts of the Park to mitigate conflicts by leading discussions within the Advisory Councils (interview 19) (interview 13). Generally, there is a good trust in the National Park among this stakeholder group (interview 19) (interview 12).

Distributional Equity

When it comes to impacts of the MNTZs, the interviewed scientists did not perceive any economic impacts (interview 12). However, they did perceive positive contribution to the scientific community, as the establishment of the Park created new research areas and also opportunities to engage scientists, e.g. in

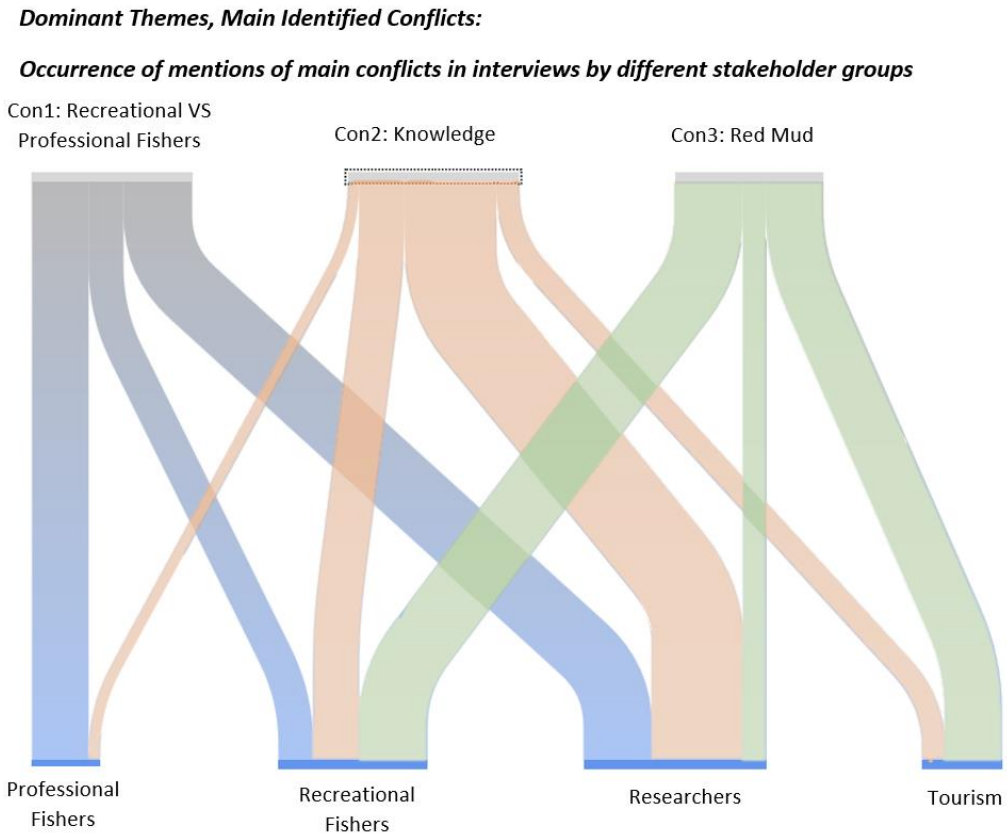
monitoring (interview 19). The MNTZs also, according to them, improved the environmental awareness and education of stakeholders (interview 12). The interviewees have recognized positive impacts of the MNTZs on marine ecosystems in terms of growing fish populations, growing biodiversity, dispersal of species into surrounding areas and the increasing size of fish caught (interview 19) (interview 13) (interview 12).

5.5. Thematic Analysis: Dominant Conflicts

Throughout the interviews, dominant conflicts were identified, which illustrate main themes in the interviews with fishers. Often occurring conflicts were coded deductively with three dominant conflicts identified: 1) The conflict of disproportionality illustrated by the conflict of Red Mud, 2) the conflict between recreational and professional fishers; and 3) the conflict of different knowledges and perceptions thereof.

Figure 6, illustrates the occurrence of the main conflicts throughout interviews among different stakeholder groups. The width of the bar is based on the amount of times the conflict got mentioned by interviewees in the given stakeholder group relatively. There is a visible difference in which conflicts were pre-dominantly mentioned by different stakeholder groups. The issue of the Red Mud has been mainly mentioned by recreational fishers and actors from the tourism sector, hence, actors who use the National Park for recreational purposes, with a small occurrence also among researchers. The conflict of different knowledges and perceptions thereof was identified by all stakeholder groups, however was most dominant among researchers, however played an important role also among recreational fishers. Lastly, the conflict between recreational and professional fishers has been mainly identified by those two stakeholder groups themselves as well as by researchers, this conflict has been described in chapter 5.4.1. C), which is describing the social equity perceptions of fishers, as it mainly concerns that stakeholder group.

Figure 6 Main conflicts by stakeholder group and in general, identified through a thematic analysis of the interviews



In the following chapter the remaining two conflicts will be elaborated in to illustrate their relations with and implications for social equity perceptions.

A) The conflict of knowledge perception: Real Ecologists VS City Ecologists

Throughout all interviews, a dominant conflict has been identified, which addresses the different perceptions of knowledge and positionality of stakeholders. This was especially important in the domain of recognitional equity, as whose knowledge was perceived as recognized in the process, however, also impacted the perceptions of procedural and distributional equity.

Firstly, there is the question of whose knowledge is seen as superior and worthy of recognition in the process, as perceived by stakeholders. This closely ties to the self-perceived identities of the stakeholders, where they see themselves as more knowledgeable than other stakeholders and thus more worthy of being recognized in the process. The perception of their connection to the sea and nature, which is a main driver behind getting engaged in the Park's processes, is seen as a determining factor for the knowledge of the matter. This divides the stakeholders into different perceived positionalities, with each possessing a differently perceived knowledge (labels are derived and adapted from conducted interviews): 1) Fishers, the true knowers of the sea; 2) the knowledgeable locals – true ecologists, 3) The city ecologists and the 4) objective scientists.

1) **Fishers, 'the true knowers of the sea'.** According to this scheme, fishers, both recreational and professional, see themselves as the ones who know the sea the best and understand what's needed for nature protection. They feel strongly connected to nature, as for the professional fishers, the sea is their livelihood (interview 19), (interview 9), (interview 13). Because they perceive other stakeholders do not have such a close connection and experience with the sea, fishers feel that others, including the Park Management, do not understand how the fish work, the dynamics of their populations an different zones, (interview 9) (interview 13). This results in a lack of trust in the approaches and decisions of the Park when it comes to the management or monitoring of MNTZs, as they are perceived as having a narrowminded knowledge of the sea, (interview 9) (interview 13).

2) **The 'knowledgeable locals'.** Similarly as the fishermen, local stakeholders who depend on the Park's territory for their activities and livelihoods, perceive themselves as the most knowledgeable and sustainable. As they have a strong connection to the local nature, and are working with the local environment, they perceive themselves as the true ecologists, who understand the local nature, and know best what is needed to protect it with all its specificalities (interview 13, 4). Because they rely on the natural resources for their activities and livelihoods, they also develop a positive relationship with the natural environment and a wish to protect it as you would protect your home (interview 13). Thus, many local actors and fishers say that their practices are naturally sustainable because they take care of the common nature to protect their livelihoods (interview 13, 5, 9). They claim that people who have never properly engaged with the nature nor the sea and do not really know it, are the ones who are the issue, as they do not have sufficient knowledge on the local environment.

3) **The 'city ecologists'.** Many interviewed local stakeholders, mostly fishers, view the Park Management, as well as policy makers, as 'city ecologists', who do not know the area or natural world, and only rely on theory, passing regulations from a distance in their offices and being disconnected from the real natural world (interview 13), (interview 9). Nature protection NGOs have been perceived as activist and 'fake ecologists', claiming that "they only restrict but don't create" (interview 10). They are being perceived by fishers as not having enough actual understanding of the local nature and being too narrow-minded in their approaches (interview 10) (interview 13).

4) **'Objective scientists'.** Scientists are generally respected by all stakeholders for their objective knowledge (interview 19), (interview 6) (interview 2). However, in terms of monitoring, some fishers expressed a lack of trust in the scientific methods used, as they feel scientists and the Park use generalized methods which are not adapted to local specificities of the marine ecosystems, (interview 9). Generally, the scientists are aware of their positions as the objective experts and make sure to use this positionality when communicating with other stakeholder. They try to make sure to not be seen as 'militant activists', as then they would lose the trust of certain stakeholders, mainly fishers, and not be listened to (interview 19). Scientists expressed that they often face the challenge of keeping the ambition of the Park's marine protection objectives high while recognizing the needs and knowledge of stakeholders (interview 19). Fisher's perceptions are often perceived as clichés that are proven wrong by scientific studies, however, scientists struggle to effectively communicate these findings (interview 19).

These were dominant themes throughout the interviews, and it is clear, that the perception of knowledge and perceived connection to nature are determining factors for the trust stakeholders have towards other stakeholder. The trust determines, how legitimate the Park's, or other stakeholders' approaches, are being perceived and thus, also, the general acceptance of measures. These different knowledge perceptions also pose a challenge to recognitional equity, as it is supposed to ensure that different knowledge perceptions are being recognized in the process. If stakeholders do not feel their perspectives were being heard, they feel that measures do not reflect their needs, leading to loss of trust in the legitimacy of the decisions made. As a result, they might feel more disproportionally impacted, as they do not see the legitimacy of regulations and feel their values and knowledge have been disregarded in the process, becoming neglecting to the objectives of the implemented measures.

B) "They attack the smallest ones, but not the big ones" (interview 10) – The Conflict of Disproportionality illustrated by the case of the Red Mud and Waste Water Discharge:

When asked about the legitimacy of the MNTZs' restrictions as well as their impacts on fishers, the most dominant theme addressed by interviewees has been the disproportionality in restrictions and the example of the Red Mud. The red mud refers to waste streams from a local aluminum factory which are being washed into the sea in direct proximity to the NP Calanques. As sediments settle, the sea bottom is covered by disruptive red mud, which is destroying the local ecosystems. Additionally, on the side of Marseille, there is a municipal waste water outlet In direct proximity of the NP Calanques, discharging waste water into the sea.

These are issues impacting marine ecosystem that are visible to everyone, and yet, little has been done to address them. Interviewees, both professional and recreational fishers as well as stakeholders from the tourism sector have stated that they feel disproportionally targeted and impacted by measures, as most regulations are targeted towards them, while the big polluters, such as the aluminum factory or the municipal waste water outlets, which they perceive have a much more destructive impact on marine ecosystem, stay unbothered. The red mud is being discharged into the sea since decades (interview 16), local stakeholders, such as the previous MACT president, have been mobilizing their communities and locals to speak up on this issue, even opening a court case against the factory (interview 10). In the Advisory Councils of the National Park, members keep addressing these issues but do not feel that anything is being done about it (interview 13). This affects the stakeholders' perception of the legitimacy of the Park's decisions, as they see the Park's inaction on the Red Mud issue as an example of the Park prioritizing political and economic interests over the interests of smaller stakeholders (interview 13) (interview 10).

"We are frustrated,[…] the Red Mud is polluting the sea below the surface, […] and nothing really has been done and that is heartbreaking," (interview 16)

When stakeholders feel disproportionally targeted, they feel disrespected in the process and perceive the process as unjust, resulting in the questioning of the legitimacy of decisions made by the Park Management and a loss of trust in the Park's objectives. This shows how recognitional equity is interlinked with the procedural equity, often being as pre-requisite to the latter one.

5.6. Summary of Main Themes in Stakeholder Groups' Perceptions of Social Equity in the establishment and governance process of the Calanques MNTZs

Table 8, which depicts major themes both within and across stakeholder groups, was prepared as a summary of the thematic analysis of all stakeholder groups that were interviewed. The dominating themes are indicated by colours; each prominent theme in a row is highlighted with the same colour to show how it is distributed across the various stakeholder groups (read per row).

In recognitional equity, dominant themes demonstrated 1) that stakeholders view the tradition of their activities as important and 2) that most did not feel sufficiently heard in the process. Stakeholders' trust in the Park Management and its decisions was damaged by their belief that their input was not taken into account sufficiently along the process or not taken up in the actual decision.

In procedural equity, generally, interviewed members in Advisory Councils did feel sufficiently involved, while those not affiliated with the Advisory Councils did not feel sufficiently involved. In general, all stakeholders stated that while knowing where to access general information on the Park, communication of the Park's decisions and objectives towards stakeholders and the public needs to improve. Furthermore, most stakeholders were unaware of an existence of any mechanisms specialized in resolving conflicts. When it comes to trust, the perceptions differed, with civil society and scientists having trust and professional fishers and stakeholders from the tourism sectors feeling their trust being disrupted by not feeling that their perspectives are being acknowledged in the Park's decisions.

Table 8: Main Themes in Perceptions of Social Equity by all Stakeholder Groups

Perceptions of Social Equity Dimensions by Stakeholder Groups in the NP Calanques						
PERCEPTIONS		STAKEHOLDER GROUPS:				
Dimensions of Social Equity		**Professional Fishers**	**Recreational Fishers**	**Tourism**	**Civil Society**	**Scientists**
Recognitional Equity	**Tradition & Culture**	Tradition important: not respected	Tradition important: not respected	Tradition important: recognized	feeling recognized	knowledge recognized, but not always feeling heard
	Knowledge & Values	Not feeling heard- negatively impacts trust and further participation	Not feeling heard- example new reporting system	not feeling sufficiently heard		
	Livelihoods & Rights					
Procedural Equity	**Participation**	Insufficiently Involved	FAC members- sufficiently involved, others- insufficiently involved	sufficiently involved, approach needs improvement	wish for more participation	sufficiently involved
	Informed	Access only to general information, not Park's decisions	Access only to general information, not Park's decisions	Access to general information, communication should be improved	Access only to general information, communication should be improved	communication of science and Park's decisions needs to improve
	Access to Justice & Mechanisms to resolve conflicts	unaware of any mechanisms	FAC members: Park forsters discussions, Others- unaware of any mechanisms	unaware of special mechanisms, discussions in ESCAC, court appeal	unaware of any mechanisms	Park leading discussions in Advsiory Councils
	Trust & Legitimacy	loss of trust, due to feeling unheard	neutral	trust under tension, due to feeling unheard	trust	trust
Distributional Equity	**Impact on economic security**	negative economic impacts on livelihoods, adaptation difficulties	no negative economic impact, allthough: they feel disproportionally targeted	positive impact - better ecosystems attract more visitors	rather positive for attracting visitors	no perceived impact
	Impact on community social well-being	no perceived impact	rising conflicts due to over-concentration of fishers in unrestricted areas, regulations diminish the enjoyment of fishing	no perceived impact	no perceived impact	positive- new opportunities
	Impact on connection to nature and education	improving awareness on nature conservation	improving awareness on nature conservation	improving awareness on nature conservation	improving awareness on nature conservation	improving awareness on nature conservation
	Impact on ecosystems	3 see no impact, 2 see positive impact	all see positive impact on ecosystems	all see positive impact on ecosystems	all see positive impact on ecosystems	all see positive impact on ecosystems

In distributional equity, recreational fishers and scientists did not perceive any economic impacts, while stakeholders from civil society and tourism perceive the establishment of MNTZs as economically advantageous, attracting more visitors, due to its increasing natural value. Most stakeholder groups did not perceive any impacts on their communities' social well-being. Moreover, all stakeholder groups did see a positive impact of MNTZs implementation on the connection of people to nature and education on nature conservation, as the MNTZ implementation, including related information campaigns by the Park Management, raised awareness on the importance of marine ecosystem conservation. Additionally, all stakeholder groups perceived the MNTZs as having a positive impact on the local marine ecosystems.

6. Discussion

The purpose of this thesis research was to study perceptions of social equity among different stakeholder groups of the MNTZs of the Calanques NP and how these relate to the stakeholders‘ perceptions of the participative governance process of these MNTZs. Through its thematic analysis, the paper offers an in-depth analysis of social equity perceptions for this case study and found that while social equity perceptions were varying among stakeholder groups, there were many overlapping themes identified. Stakeholder groups' perceptions of recognitional equity have been mainly negative, procedural equity has showed a mixture between positive and negative perceptions, and distributional equity has mostly been seen positively. Main themes shared by multiple stakeholder groups included stakeholders not feeling their inputs were sufficiently recognized or that they are able to influence the decisions of the governance process. Further, insufficient access to information on the Park’s decisions and progress of the MNTZs, as well as a lack of knwoledge of mechanisms to resolve conflicts. On the other hand, most interviewees expressed positive perceptions of the impacts of MNTZs on the awareness and education on nature conservation, as well as a positive impact of MNTZs on the marine ecosystems.

Moreover, the study has shown that there is a clear correlation between stakeholders‘ perceptions of social equity and their perceptions of the participative governance process. This chapter will further elaborate on interpretations of these findings, connect them with current literature and outline limitations as well as strengths of this study and recommendations for further research.

The stakeholder analysis has illustrated a rich landscape of stakeholders around the MNTZs of the NP Calanques shaped by a long history of activities in the territory of the National Park even before its establishment: especially hiking, maritime sports, boats, diving, research, nature protection and fishing, all of which enjoy access to the marine areas. The stakeholder groups, thus, are of cultural significance in the region and have been categorized into: fishers, tourism, scientists, authorities, civil society. Recognition of activities and stakeholder groups with cultural and historical significance to the region of the MNTZs, thus, has proven to be important when identifying which stakeholders to incorporate in the participatory processes of a MNTZ, (Saunders et al., 2020). The results of the thematic analysis demonstrated a clear difference between the perceptions as well as involvement of recreational and professional fishers, mainly related to the difference in impacts, as professional fishers depend on fishing for their livelihoods. This links to other studies that found the more stakeholders are dependedn on the marine resouces, the more negatively they percieve restrictions such as MNTZs, (Bennett et al., 2020)u. Therefore, the results demonstrate the importance to differentiate between professional and recreational fishers when advocating for stakeholder engagement and studying social equity perceptions of different stakeholder groups.

Participatory instances are key for stakeholder engagement in decision-making processes

The study demonstrated, that participatory instances are key platforms and tools for stakeholders to engage and participate in the decision-making process**.** The analysis identified several key participatory instances in the governance process of the MNTZs of the NP Calanques, which played crucial roles in ensuring stakeholder enagement and shaping their social equity perceptions.

The study results brought an important contribution to the research of social equity perceptions in MNTZs and MPAs by expanding current research to multiple stakeholder groups, as the vast majority of current literature on social equity in marine protected areas focuses only on fishers, and mostly on MPAs in general, without a special focus to MNTZs, (Ban et al., 2019). The analysis has shown that professional fishers had the most negative perception of each of the social equity dimensions, whereas civil society members the most positive social equity perception. As derived from the interviews themselves, fishers feel directly impacted by the MNTZs as MNTZs directly restrict their livelihoods and related practices. Meanwhile, civil society member did not feel directly impacted und rather perceived the MNTZs positively. This links to the findings of Bennett et al. (2020), who found that the more dependent the livelihoods of stakeholders are on fishing, the more negatively did interviewed stakeholders, in this case fishers, percieve both recognitional and distributional equity.

Equity Perceptions among stakeholder groups show variations but also overlapping themes

As literature on social equity and impacts of MPAs suggests, (McNeill et al., 2018), the perceptions of social equity by stakeholder groups of the MNTZs in the NP Calanques were not uniform and showed variations. However, the thematic analysis has also identified several dominant themes which overlapped between stakeholder groups. Most stakeholder groups, except for civil society, expressed dissatisfaction about the lack of recognition of their perspectives in the proccess, leading to both recreational and professional fishers feeling unjustly treated and disproportionally impacted. While many stakeholder groups, especially the recreational and professional fishers, as well as tourism actors, have expressed disatisfaction over the governance of the MNTZs, the MNTZs themselves have been perceived as beneficial by all stakeholder groups for both the marine ecosystems and improving awareness on nature conservation. All stakeholder groups, thus, despite an expressed dissatisfaction over other dimensions of social equity, have recognized the importance of MNTZs for marine protection, which is an important finding. However, diving deeper into distributional equity, the perception on the economic impacts of the MNTZs as well as the impact on community well-being varied, with fishers negatively perceiving impacts on economic security while tourism as well as civil society percieved a rather positive economic impact of MNTZs, as the area attracts more visitors due to its improving natural ecosystems. Therefore, these results confirm that MNTZs are neither fully negative nor positive for stakeholders (Gill et al., 2019) – ´and that we need to move beyond over-simplified and polarized narratives and towards more nuanced analyses of the social implications of conservation‘ (Bennett et al., 2020, p. 9). Studying social equity in MPA’s and especially MNTZs can offer a comprehensive way to study these nuances, as it encompasses a richness of important factors impacting the perceptions of participative processes by stakeholders. While there is growing literature on social equity, (Bennett et al., 2020; Crosman et al., 2022; Gill et al., 2019; Hill et al., 2016; Saunders et al., 2020), there is a lack of operationalisation of what exactly social equity encompasses in MPAs and especially MNTZs. Bennett et al. (2020) offer a unique operationalisation of social equity dimensions that is ready to use to study perceptions of stakeholders. While Bennett et al. (2020)‘s framework offers a comprehensive framework to study social equity perceptions in a quantitative way through surveys based on Likert-scales, this study, by adapting the framework, offers a more in-depth approach to better understand not only what perceptions of social equity are but also where they come

from and how they relate to eachother by adapting the framework to serve in semi-structured inetrviews with open questions.

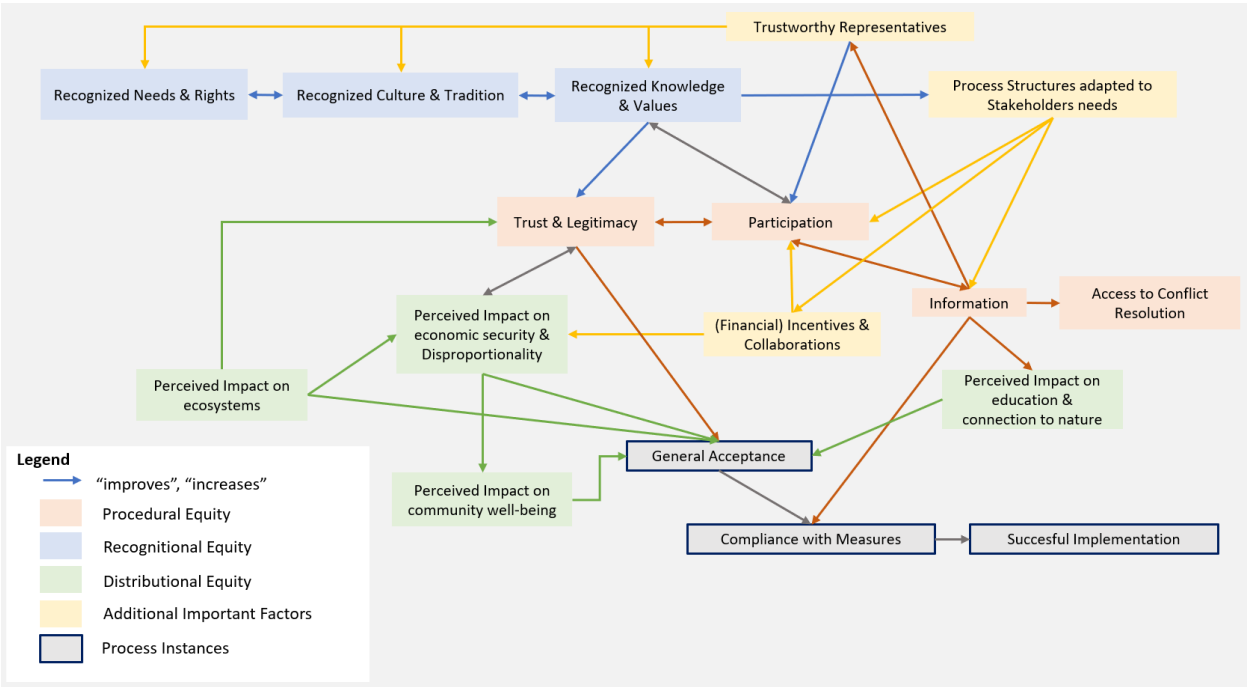
Equity Perceptions influence stakeholders‘ perceived satisfaction with participatory governance

The results of this thesis research demonstrate there is a correlation between the perceptions of social equity and the perceived satisfaction about participatory governance processes by stakeholders. The analysis has shown, that stakeholders themselves stress the importance and need for meaningful stakeholder engagement in MNTZ governance process. In the following paragraph, this correlations will be explored.

Main challenges to recognitional equity were whether stakeholders felt their knowledge was recognized in the process and their perspectives integrated into decisions made. These aspects have shown to be a determining factor for the perceptions stakeholders held towards the participatory instances in the governance process. Stakeholders not feeling heard, negatively impacted their trust towards the process and Park’s decisions, as they did not feel their inputs would have an impact on the Park’s decisions. Furthermore, by not seeing impacts of their engagement, e.g. decisions not following their inputs, stakeholders were discouraged in their participation in the process, especially fishers and tourism actors. The discovered relations between different social equity dimensions and how they affect stakeholder involvement as well as the implementation of measures in MNTZs, is illustrated in Figure 7 **Error! Reference source not found.**, based on the interpretations of this studies’ results, and further described in the following paragraphs.

The different colours in Figure 7 represent different dimensions of social equity, additional factors (yellow) which have been identified through the thematic analysis as important for equitable participatory

Figure 7 Perceived relations between different dimensions of social equity



processes, and process instances which are aspects that have been identified as important for a successful implementation of MNTZs or regulations. The arrows show positive influences, meaning that for example, ensuring 'trustworthy representatives' in the participatory process, increases stakeholders' positive perceptions on the recognition of their knowledge and values, needs and rights as well as culture and tradition.

Categories of recognitional equity have been found to be interconnected and to have a positive impact on the perceived trust & legitimacy. Categories of distributional equity seem to have a major influence on the perceived general acceptance of the MNTZs by the stakeholders. Furthermore, procedural equity categories seem to be influenced by both recognitional and distributional equity categories, as well as the additional important factors identified in the process.

The relations between dimensions of equity and stakeholders' perceptions of participatory instances in the governance process of the Calanques MNTZs, as seen in Figure 7, are an interpretation of the outcomes of the thematic analysis of equity perceptions To illustrate their relevance, they will be applied to the example of the new reporting system for recreational fishing. The measure makes it obligatory for recreational fishers to declare their catches. The analysis has shown that ensuring recognitional equity, meaning, that affected stakeholders feel heard and their knowledge and values are recognized in the process, can increase stakeholders' trust in the process and authorities as well as the general acceptance of the measures implemented, as stakeholders feel that as co-creators, the new measure reflects their needs. This also links to procedural equity in terms of a perceived legitimacy. If stakeholders view their needs are reflected in a measure and their voices heard in the process, they might be more receptive to see the benefits of the measure even if the measure is inhibiting their activities. Therefore, being recognized in the process also helps the stakeholders to recognize the legitimacy of the measure and its implementation as they understand the objectives better and feel acknowledged in the process. If the stakeholders show a generally positive acceptance of the measure and see its legitimacy, their resistance to the measure decreases and compliance increases. Moreover, this also links to distributional equity- if stakeholders feel positive impacts of MNTZs, especially on their economic security and on the marine ecosystems, it increases their level of trust and perception of legitimacy. The link between perceived trust towards governing authorities and perceived legitimacy of measures has been also studied in literature which pointed out their importance in ensuring effective participatory governance of MPAs, (De Vos & Van Tatenhove, 2011; Havard et al., 2015; Röckmann et al., 2017). At the same time, taking the needs of stakeholders into account when planning the implementation and design of a measure can ensure a higher efficacy, as the measure can be well adapted and tailored to its target group. A higher compliance to the measure also means a higher success of implementation and reaching the measure's objectives This links to findings in literature, that positive perceptions of fairness of social impacts and legitimacy of governance can lead to support for conservation and compliance with regulations (Bennett et al., 2019; Pascual et al., 2014).

While, stakeholders recognized the positive objectives of new reporting system, they felt negative about its implementation as they felt the regulations does not reflect their needs, ultimately increasing their resistance. Results have shown that trust in the Park's good intentions is crucial, as otherwise, resistance of stakeholders towards the park's decisions can be persistent and inhibit stakeholders' participation in any participatory instances. This links to McNeill et al. (2018) who have demonstrated, if trust is broken, negative perceptions and feelings aming stakeholders often persist, despite the acknowledgement that MNTZs have a beneficial impact on marine ecosystems. Notably, this dynamic is particularly pronounced

in the Marseille region, who's representatives of the fisher community, when compared to those of Cassis and La Ciotat, had the lowest participation in the initial preparation of the Park establishment during the GIPs.

Moreover, the need for accessible and effective communication channels has been stressed by all stakeholder groups, as access to information on the Park's decisions can raise the stakeholders' awareness about MNTZs objectives and regulations (Bennett et al., 2020; Schreckenberg et al., 2016), thus, ultimately, improving compliance. These results should be taken into account when considering how to design participatory processes for implementation and governance of MNTZs.

Representatives need to be representative

Furthermore, the study found that the participation of invited stakeholders at consultations was often challenging to achieve, especially among fishers. To increase participation, there is a need to ensure that selected representatives are also able to represent the variety of needs in their community. These findings relate to Fraser (2008, p. 282), who wrote there is "no redistribution or recognition without representation". Even in the region of the Calanques National Park, in a context where representatives of fisher communities have been institutionalized since centuries, ensuring sufficient representation of stakeholder groups has shown to be challenging. Trustworthy representatives, especially in the case of fishers, are representatives that stakeholders feel are able to well represent the diversity of interests in their community. In that sense, the perception of recognitional and procedural equity are closely interlinked and impact the overall perceptions of participatory process by stakeholders. Trustworthy representatives can ensure that stakeholders feel represented and recognized, further improving their perception of being involved in the process, positively impacting both recognitional and procedural equity. Therefore, the study findings suggest for the quality of representatives to be involved into the framework on social equity in MPAs (Bennett et al., 2020; Pascual et al., 2014). In terms of fisher communities around MNTZs, the study found that this might be challenging due to the diversity of specialisations among fishers (different method of fishing, fish species or area). Therefore, interviewed fishers felt, that one representative possibly cannot represent all fishers' specific needs in decision making or the planning process of the expansion of MNTZs, such as during the GIPs. Hence, a rotating system with representatives changing over time might offer a solution for fishers to feel more involved and represented in the process. Moreover, representatives should have a well established contact with the community they represent to be able to know their needs and perspectives and gain their trust. Furthermore, to ensure the participation of representatives, and stakeholders in general, the study found that it is crucial to ensure they are well informed about their roles as well as the impacts of their engagement in the process. However, the study also found that the stakeholder group mostly resisting further participation in processes were professional fishers, as they are the most traditional ones for whom change seems the hardest.

Mitigating the incentive gap and burden of participation

Moreover, the thematic analysis has shown that especially for members of the ESCAC, participation in Avdisory Council meetings has been perceived as incovenient, as the procedural structure did not take into account the needs or availabilities of stakeholders, either by sending last-minute invitations to important meetings or not offering any compensation even if stakeholders needed to travel to attend in-person. These findings tie to the theory of the 'incentive gap' as described by Osmani (2008). The incentive gap acknowledges, „the fact that participation in public affairs is not costless and most people would not be keen to participate actively unless they perceive the potential gains to be large enough to outweigh the costs", (Osmani, 2008, p.25). These costs might be for example the time investments without financial compensation, such as in the case of the Calanques MNTZs. Many stakeholders might have several occupations to sustain their livelihoods and if they do not see clear benefits from their participation, the burden of participation might be too high for them to fully participate. Osmani (2008) argues, that even though for some the sole appreciation of their participation might suffice for them to participate, for many other this intrinsic motivation might not be sufficient to override the costs. Hence, to encourage participation, incentives as well as adapting the process to the needs and contexts of participating stakeholders, is crucial.

A dominant theme: the conflict of knowledge perceptions

A dominant theme throughout the thematic analysis has been the conflict of knowledges and how these influenced the stakeholder's trust in the Park's authorities as well as their perceptions of other stakeholder groups. The conflict of knowledge can be simplified as a conflict between scientific knowledge and local knowledge systems. Reed (2008, p. 2426) writes that if both are combined, it "can contribute to a more comprehensive understanding of complex and dynamic natural systems and processes". This aligns with the findings of this study which described the call of several stakeholder groups to recognize different knowledges in the system in order to ensure more effective solutions. The need for scientific knowledge to inform stakeholder deliberation has been described as key in participatory processes by many authors (Fischer & Young, 2007; Reed, 2008; Webler & Tuler, 2006), however, Reed (2008) claims, that if not thoroughly balanced, it can lead to bias. On the other hand, local knowledge is often regarded as the 'pratcical' knowledge offering important insights into the local environment and conditions (Reed, 2008) as well as being highly impactful for the connection stakeholders have to their environment regardless of theur scientific knowledge (Fischer & Young, 2007). This aligns with the findings in literature, which claim that integrating local knwoledge might lead to more robust solutions to problems (Reed et al., 2007) in nature conservation. „However, just as the participatory paradigm questioned the validity of technical approaches, so local knowledge cannot be unquestioningly accepted" (Reed, 2008, p. 2426). The study results have, thus, demonstrated the need to integrate different knowledge systems and perceptions to gain trust of all stakeholder groups and build effective management of MNTZs. This aligns with Reed (2008, p. 2425) who claims that "by hybridising these knowledges [...] it may be possible for researchers and local communities, with their different understandings, to interact in order to produce more relevant and effective environmental policy and practice." This might help empower local stakeholders to take a more active role in teh process of nature conservation (Reed et al., 2007).

To understand where these different knowledge systems come from, Buchan (2021) offers a helpful framework of marine identities linked to Marine Citizenship. The framework claims that stakeholders have different perception of their roles in an MPA process, based on the connection they feel to the sea and the identity they connect with it, which ties to their knowledge of the sea. According to Buchan (2021, p. 15), marine identity is "an identity rooted in the way in which the ocean as a place supports the sense of self." The main drivers of marine identity are the high marine place attachment and dependency, as well as the subjectively perceived connection to the sea. This has also been visible throughout the analysis of the conflict of knowledges. Stakeholders, mainly fishers, perceive themselves as the true ecologists as they have a strong connection to the sea, know it the best because they depend on it for their livelihoods and thus, know best what is needed for its protection. On the other hand, policy-makers or Park authority, as well as some NGO's were either perceived as 'city ecologists' who do not have a true connection to the sea and from behind their computers make policies on its governance which are disconnected from reality, or the 'activists, or fake ecologists' who advocate for marine protection, but, based on the perceptions of the interviewed stakeholders, do not have an understanding of what is best for the ecosystems. Scientists, for example, mentioned that in the face of overcoming conflicts of interests, communication of science has been challenging and in order to be listened to, they did not want to come over as 'too activist'. These different identities, as perceived by interviewed stakeholders themselves, if not recognize might undermine trust and exacerbate conflicts of interests. For example, fishers, who perceive themselves as the ones knowing the sea best showed mis-trust towards the Park' authorities', who they perceived as 'city ecologists'. This has meant, that for example, professional fishers showed a lack of trust in the monitoring methods of the MNTZs, as they felt they did not recognize fishers' knowledge sufficiently.

As Buchan (2021) writes, marine citizens often feel a stronger connection to the local environment than their local community, explaining why marine idenities might be fueling conflicts among communities, if not properly recognized. Better integrating both scientific and local knwoledge in decision-making can help recognize these different marine identities, perceived knowledges and help mitigate conflicts of interests, producing better marine governance outcomes, (Buchan et al., 2023). Moreover, there was the question of what is seen as sustainable. Most stakeholders expressed that their close attachment with the local sea makes them behave more sustainable as they want to care for the place they feel so connected to. On the other hand, they believed, that people from outside the region do not have this connection and thus show more destructive behaviours in the marine areas of the National Park. Marine identities might thus play a role as motivators for stakeholders to engage in marine protection, (Buchan, 2021). The concept of identities seems to be helpful to understand the identified conflicts and stakeholders' position in them. Moreover, percieved identities seem to be important shapers of social equity perceptions and can either lower perceptions of social equity if not recognized, by decreasing trust and chaneling conflicts of intrests, or improve perceptions of social equity as they serve as motivators for stakeholders to participate in marine protection. There is, however, currently a gap in literature on further conceptualisation of marine identities as well as a lacking understanding of their roles in participatory governance processes of MNTZs and in shaping social equity perceptions. Avenues for further research thus include understanding how to recognize marine identities of different stakeholder groups in participatory processes in order to mitigate conflict of interest and ensure equitable MPA governance processes.

Limitations

Allthough the study aimed to analyze the social equity perceptions of different stakeholder groups, due to low response rates of some identified stakeholders, the stakeholder groups of civil society and scientists were represented by less interviews than the other stakeholder groups. This might have caused a limitation in the representativeness of the results for these stakeholder groups, as each stakeholder group was only represented by two stakeholders. However, the study still presents valuable results, as the interviewees from the scientists themselves were involved in the Advisory Councils and had a good overview over perceptions of their own stakeholder groups. When it comes to civil society, the researcher only managed to get interviews with an NGO and a local Marseille citizen who is a regular visitor to the Calanques. Moreover, as some interviews were conducted in person while the interviewees were occupied with their activities, e.g. selling fish at the market, recording of the interview has not always been possible. This meant that the transcription for some interviews has been done manually by hand-writing, which might be inclined to bias, as it does not directly quote the interviewees but summarizes the researcher's main take-aways from the inetrview and might include possible subjective interpretations by the researcher. Moreover, to thoroughly represent all relevant stakeholder groups, interviews with stakeholder groups of all affected communes (Marseille, La Ciotat and Cassis) should be conducted. However, due to the difficulty of reaching stakeholders in La Ciotat and Cassis as well as the restricted time available during the field work, only two interviews were conducted in La Ciotat and none in Cassis, with most stakeholders being from Marseille. However, as fishers are not stationary and move in the region for their fishing trips, many fishers stated that they also fish around Cassis and La Ciotat. For better representativeness and to be able to better investigate differences between stakeholders from these different locations, the sample size of interviews from Cassis and La Ciotat should be increased. Lastly, a personal bias, connected to the identity of the researcher, might have influence on study approaches or outcomes. Being a young female researcher from abroad might impact the how stakeholders' perceive the approachability of the researcher when approaching them for interviews. Furthermore, the researchers' gaps in language skills might affect the understanding and interpretation of stakeholders, as well as their ability to express themsleves freely. This is due to the fact that all interviews were conducted in French, which is not the researchers mother tongue.

Strengths and Recommendations for Further Research

Despite some limitations, the study contributes to a clearer understanding of social equity among different stakeholder groups in MNTZs and how these relate to their percaptions of participatory instances. Being aware of possible biases which might influence the relevance of qualitative research outcomes, the study followed (Noble & Smith, 2015) framework addressing issues of validity and reliability in qualitative research, to ensure the creibility of the studies' findings. Following the framework, the researcher acknowledged possible personal bias and critically reflected on chosen approaches to data collections and analysis. Additionally, the researcher kept a record of the decision trail behind the research process to transparently describe the thought process behind the analysis interpretation of data. Furthermore, the study aimed to ensure representativeness of different stakeholder groups to ensure the variety of perspectives is being represented. Moreover, respondent validation has been performed with multiple stakeholders, to ensure their perceptions are accurately covered. Lastly, when recreating the MNTZ process and participatory instances, data triangulation has been ensured, using data from grey literature, the interview with the park manager responsible in the participatory processes and interviews

with stakeholders as participants of the processes. The study, thus, fulfilled multiple criteria for ensuring the credibility of the study findings (Noble & Smith, 2015).

The study has shown that understanding equity perceptions is crucial to be able to ackowledge them when designing participatory processes in MPAs. Furthermore, the study added valuable insights to the current gap in liteature on what equitable governance means for affected stakeholders in MNTZs, as well as further insights into their resistance to restrictive measures. The study's strength lies in its the in-depth analyses through open questions, as well as the representation of different stakeholder groups and the high number of conducted interviews. The high relevance of the study has also been demonstrated by the interviewees themselves supporting the publishing of this study in order to advocate for improvement of stakeholder involvement in the MNTZ governance in the NP Calanques.

The interview questions and format were well received by approached stakeholders, who veryfied their relevance. Further research would be necessary to expand the scope and include more case studies, in order to study how patterns and dominant themes as well as perceptions vary among different MPAs and MNTZs. Moreover, further research could build on the findings of this study in terms of the stakeholders' perceptions of participatory processes in MNTZs to establish a policy framework for participatory and equitable governance of MNTZs. Such a framework could provide valuable policy recommendations for decision-makers to increase the implementation and coverage of MNTZs in the context of the 30 by 2030 goals of the CBD, (Convention on Biological Diversity, n.d.). Moreover, studying how different factors, such as socio-economic or demographic, shape social equity perceptions of different stakeholder groups, could be a valuable area for further studies. As cultural context might affect equity in MNTZs, for example by women being less represented in decision-making (Schreckenberg et al., 2016), the connection between social equity perceptions and gender equality in MNTZs and MPAs would offer a valuable avenue for further research. Furthermore, this study outlined the importance marine identities are playing in how stakeholders perceive social equity, other stakeholder groups, MNTZ governance as well as the participatory instances within. It seems to be an important, yet under-studied, avenue, which further research on participative governance and stakeholder engagement in MPAs and MNTZs should take into account. Finally, as this study focused on the case of the NP Calanques and outlines many crucial topics and findings, the upcoming re-evaluation of the National Park Charter offers an important opportunity to study how to implement findings of this study into the writing of the new charter and the related stakeholder engagement.

7. Conclusions

Social equity perceptions by stakeholders have shown to be an important indicator for ensuring equity and effectiveness of participatory governance processes in MNTZs. Moreover, there is the need to take into account the perceptions of social equity by different stakeholder groups. Based on the findings of this study, these are main conclusions that can be translated into recommendations for increasing stakeholder participation and supporting social equity for different stakeholder groups in participative governance processes in MNTZs:

When identifying stakeholders to involve in the governance process, the cultural significance of stakeholder groups should be taken into account. Moreover, the recognition of different knowledge perception as well as identities of stakeholder groups should be ensured to mitigate conflicts of interests and gain trust of stakeholders. Additionally, the importance of thorough representation- ensuring that representatives gain the trust of their community, are able to represent the variety of teh community‘s needs and are sufficiently informed about their role in the participatory process and possible implications.

Furthermore, the participation of stakeholders in consultations is influenced by: 1) whether process structures are adapted to stakeholders’ needs; 2) whether stakeholders are sufficiently informed about participation opportunities and their role in the process; 3) Incentives- such as financial compensation or collaborations; 4) whether stakeholders feel that their participation has an impact (their inputs are being integrated); and 5) whether representatives are trustworthy – meaning, the diverse community they represent feels represented by them.

Ensuring that stakeholders have access to information on the MNTZ procedures, objectives and regulations, has a major positive impact on 1) education and awareness on marine protection – as knowledge is shared, 2) the access to resolution of conflicts as stakeholders are informed about mechanisms to resolve conflicts; 3) the participation of stakeholders in consultations; 4) the trustworthiness of representatives as they are informed about their role in the process and its possible implications on the community they represent; and 5) the compliance with measures as stakeholders are kept up-to-date about the MNTZ’s regulations.

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List of cited interviews with details can be found in Annex A – List of Interviewees.

Table of Figures

Annex

Annex A – List of Interviewees

Classification	Stakeholder group	Organization	Position	Name	Advisory Council	Date & Mode
Interview 1	Park Management	NP Calanques	Director of the Managemengt of Fishing and Marine Biodiversity	Patrick Bonhomme	Main responsible	20.02.2024, online via 'Teams'
Interview 2	Civil Society Fisher (Recreational)	Marseille	Recreational Fisher, Nature Enthusiast	Romain Semperez	/	28.02.2024, phone call
Interview 3	Fisher (Recreational)	MACT	Recreational Fisher	anonymous	/	03.03.2024, in-person
Interview 4	Fisher (Recreational)	Marseille	Recreational Fisher	anonymous	/	03.03.2024, in-person
Interview 5	Fisher (Recreational)	Marseille	Recreational Fisher	anonymous	/	03.03.2024, in-person
Interview 6	Fisher (Professional)	Marseille	Professional Fisher	anonymous	FAC	02.03.2024, in-person
Interview 7	Fisher (Professional)	Marseille	Professional Fisher	anonymous	/	02.03.2024, in-person
Interview 8	Fisher (Professional)	Marseille	Professional Fisher	anonymous	/	02.03.2024, in-person
Interview 9	Fisher (Professional)	Marseille	Professional Fisher	anonymous	/	04.03.2024, in-person
Interview 10	Tourism Fisher (Recreational)	MACT- local acossiation for the culture or recreational fishing and boats	president	Stéphane Kazarian	/	05.03.2024, in-person
Interview 11	Fisher (Professional)	La Ciotat	Professional Fisher	anonymous	/	05.03.2024, in-person
Interview 12	scientist Fisher (Recreational)	Recreational Fishing association FNPP, research laboratory CNRS	Director at CNRS, Vice président of FNPP and main responsible for PACA region	Gérard Giordano	FAC	13.03.202, phone call
Interview 13	Tourism Fisher (Recreational)	Fishing asscociation, Yachting Club YPCR	Recreational Fisher, Manager of Fishing section at YCPR	Yves Tambon	FAC	14.03.202, phone call
Interview 14	Tourism	Diving Club Anaya Plongee, La Ciotat	Diving Teacher, Manager	Patrick Zygmanowsky	/	05.03.2024, in-person
Interview 15	Tourism	Raskas Kayak	President	Jérémie Metzger	ESCAC	27.2.2024, online via 'Teams'
Interview 16	Tourism	ADAM13	Nature Guide	Alexandre Caramello	ESCAC	11.03.2024, online via 'Teams'
Interview 17	Civil Society	MerTerre	Coordinator	Océane Niemann-Fery	MerTerre in ESCAC	04.03.202, in-person
Interview 18	Civil Society	MerTerre	Coordinator	Teo Juričev		04.03.202, in-person
Interview 19	Scientist	Mediterrenean Institute for Oceanography	Marine Ecologist	Sandrine Ruitton	SAC administration	29.04.2024, online via 'Teams'

Annex B – Interview Questions in English

Interview

What is your role in the governance process of the Calanques National Park? How were you involved before the establishment of the Park? And after?

General Acceptance:

1. How do you generally rate the **contribution or impacts** of the established no-take zones on ecosystems and your community?

Recognitional equity

2. In the process of the Marine No-take Zones, how do you feel were your personal **values, needs, your own knowledge and unique culture** respected?

3. What has been done to make you feel this way? What would you change to make you feel more respected?

Procedural Equity:

4. Do you feel you were **sufficiently involved** in the process and what **information** do you have **access to**?

5. Do you feel you know who to approach and how to proceed if **issues or conflicts** arise between stakeholders and management?

6. Do you trust the management process of the MNTZs and do you see the legitimacy of its decisions?

7. What has been done to make you feel this way? What would you change to make you feel more involved?

Distributional equity:

8. How did the marine no-take zones impact your **economic security, livelihood and life in your community**?

9. How did the marine no-take zones affect your **connection to nature and education** about marine conservation and issues?

10. What has been done to make you feel this way or to prevent negative impacts? What would you change?

Annex C – Interview Questions in French– The version used for interviews

Entretien

Quelle est votre rôle dans le processus du parc ? Comment est-ce que vous étiez impliqué avant l'établissement du parc ? Et après l'établissement du parc ?

Acceptation générale :

1. Comment évaluez-vous généralement la contribution ou les impacts des zones marine de non-prélèvement sur les écosystèmes et votre communauté ?

Équité de reconnaissance :

2. Dans le processus de création des zones marines de non-prélèvement, comment avez-vous ressenti que **vos propre valeurs, vos besoins, vos connaissances personnelles et votre culture unique** ont été respectés ?

3. Que – ce qu'était fait pour vous faire ressentir cela? Du côté de la gestion du parc. Qu'est ce que vous avez besoin pour vous sentir plus écouter ?

Équité procédurale :

4. Pensez-vous avoir été **suffisamment impliqué** dans le processus et À quelles informations sur les aires marines protégées avez-vous accès ?

5. Pensez-vous savoir comment procéder en cas de problèmes ou de conflits entre les parties prenantes et la gestion ? Est-ce que vous sentait que des conflits d'intérêts entre des parties prenants sont était suffisamment gérés ?

1. Faites-vous confiance au processus de gestion des MNTZ et voyez-vous la légitimité de ses décisions ?

6. Que – ce qu'était fait pour vous faire ressentir cela? Du côté de la gestion du parc.
   Qu'est-ce que vous changerait pour améliorer vôtre engagement dans le processus ?

Équité distributionnelle :

7. Comment est-ce que les zones marines de non-prélèvement ont impacté votre sécurité économique, vos moyens de subsistance et votre vie dans votre communauté ?

8. Comment est-ce que les zones marines de non-prélèvements ont affecté votre lien avec la nature et votre éducation sur la conservation marine?

9. Que – ce qu'était fait pour vous faire ressentir cela ou pour éviter des impacts négatifs ? … Du côté de la gestion du parc ?

Annex D – Consent Forms provided to interviewees in English

WAGENINGEN
UNIVERSITY & RESEARCH

Statement of Informed Consent

Research Study Title:	**'No Ocean, No Us' – Stakeholders' Perceptions of Social Equity in Marine No-take Zones, the Case of the Calanques National Park**
Researcher Name:	Kristina Smieskova
Supervisors Name:	Eira Carballo, Environmental Policy Chair Group

Description of the study

You are being asked to take part in a study. This is a study about understanding the social equity perceptions of stakeholders affected by or involved in the process of marine no-take zones in the National Park of the Calanques. Further on, the study analysis the participative governance process implemented in he case of the marine no-take zones of the Calanques National Park.

You are being asked to participate because of your knowledge of the management process of the Marine Protected Areas in the Calanques National Park.

You will be asked to [participate in an interview. It will take about 45 minutes to complete. Before signing, please read this form and ask any questions.

Risks and Benefits of Being in the Study

This study poses little risk to you. You may stop participating and answering the questions at any time. Your input will be important to research projects and publications by improving our knowledge of the implementation and effects of marine no-take zones. If desired, you can request for the information from this project to be shared with you via e-mail.

Confidentiality

The data derived from this study may be used in education, student projects and published in academic journal article(s) but you will not personally be identified without your consent.

Voluntary Nature of the Study

We thank you very much for your participation. Your decision to participate is completely voluntary. You may choose not to answer any part of the study or stop taking part at any time without any penalty to you.

Right to Erasure:

I understand that I am entitled to have the above-mentioned information destroyed at my request, both during the research and while in storage, in line with the GDPR's right to erasure provision.

Contacts and Questions

If you have any questions, concerns please contact Kristina Smieskova, Kristina.smieskova@wur.nl. If you have additional questions regarding your rights as a research participant, please contact the Wageningen University and Research Scientific Integrity Committee at cwi@wur.nl .

_____ Yes, I would like to take part in the research.

Please choose one option:

_____ I would like to remain anonymous

_____ I am okay with my name and position mentioned in the publication.

Please write your name: _____

Date: _____

Your Signature: _____

Recording Permission

I have been told that audio/video/transcript recording may be taken during my participation but that these recordings **are not for publication in any format**. The transcripts will be only used for the researcher to analyse the content of the interview for further usage in the study. I have been informed that I can ask that the recording be turned off at any time.

I agree to be audio/video taped under the above stated conditions.

☐ Yes

☐ No

Your SIGNATURE _____

To be filled in by the researcher registering consent:

Date: *15.02.2024*

Signature : 

Annex E – Consent Forms provided to interviewees in French

Déclaration de Consentement Éclairé

Titre de l'étude de recherche : **« Pas d'océan, pas de nous » – Perceptions des parties prenantes sur l'équité sociale dans les zones marines de non prélèvement, le cas des Parc National des Calanques**

Nom du chercheur : Kristina Smieskova

Nom du superviseur: Eira Carballo, Environmental Policy Chair Group

Description de l'étude

On vous demande de participer à une étude. Il s'agit d'une étude visant à comprendre les perceptions d'équité sociale des parties prenantes affectées par ou impliquées dans le processus de zones marines de non prélèvement le Parc National des Calanques. De plus, l'étude analyse le processus de gouvernance participative mis en œuvre dans le cas des zones marines de non prélèvement du Parc National des Calanques.

On vous demande de participer en raison de vos connaissances du processus de gestion des Aires Marines Protégées dans le Parc National des Calanques.

On vous demandera de participer à une interview. Cela prendra environ 45 minutes à compléter. Avant de signer, veuillez lire ce document et poser toutes les questions nécessaires.

Risques et avantages de la participation à l'étude

Cette étude présente peu de risques pour vous. Vous pouvez arrêter de participer et de répondre aux questions à tout moment. Votre contribution sera importante pour les projets de recherche et les publications en améliorant nos connaissances sur mis en œuvre des zones marines de non prélèvement. Si vous le souhaitez, vous pouvez demander que les informations de ce projet vous soient partagées par e-mail.

Confidentialité

Les données dérivées de cette étude peuvent être utilisées dans l'éducation, les projets étudiants et publiées dans des articles académiques, mais vous ne serez pas personnellement identifié sans votre consentement.

Caractère volontaire de l'étude

Nous vous remercions beaucoup de votre participation. Votre décision de participer est totalement volontaire. Vous pouvez choisir de ne pas répondre à une partie de l'étude ou d'arrêter de participer à tout moment sans aucune pénalité pour vous.

Droit à l'effacement :

Je comprends que j'ai le droit de faire détruire les informations susmentionnées à ma demande, à la fois pendant la recherche et pendant leur stockage, conformément à la disposition du droit à l'effacement du RGPD.

Contacts et questions

Si vous avez des questions, des préoccupations, veuillez contacter Kristina Smieskova, kristina.smieskova@wur.nl. Si vous avez des questions supplémentaires concernant vos droits en tant que participant à la recherche, veuillez contacter le Comité d'intégrité scientifique de l'Université et de la Recherche de Wageningen à cwi@wur.nl.

_____ Oui, je souhaite participer à la recherche.

Veuillez choisir une option :

_____ Je souhaite rester anonyme

_____ Je suis d'accord pour que mon nom et ma position soient mentionnés dans la publication.

Veuillez écrire votre nom : _____

Date : _____

Votre Signature : _____

Permission d'enregistrement

On m'a informé que des enregistrements audio/vidéo pourraient être réalisés pendant ma participation, mais que ces enregistrements ne seront pas publiés sous quelque forme que ce soit. Les transcriptions seront uniquement utilisées par le chercheur pour analyser le contenu de l'entrevue en vue d'une utilisation ultérieure dans l'étude. On m'a informé que je peux demander que l'enregistrement soit arrêté à tout moment.

J'accepte d'être enregistré(e) sur audio/vidéo dans les conditions mentionnées ci-dessus.

_____ Oui

_____ Non

Votre SIGNATURE : _____

À remplir par le chercheur enregistrant le consentement :

Date :

Signature: