We're Just Fishing:

Analysing Environmental Justice in the Governance of The Wash Cockle Fishery

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Abstract

The addition of the Marine and Coastal Access Act (2009) has come to the detriment of inshore fishermen. This thesis combines Kooiman's et al (2008) interactive governance (IG) framework and Walker's (2012) environmental justice framework, to explore interactions on the ground that lead to experiences of (in)justice. The combined IG with EJ framework is innovative in the examination of natural resource governance in the developed Global North. The research focusses on UK Wash Cockle fishery and the local inshore fisheries governance organisation known as the Eastern Inshore Fisheries and Conservation Authority (Eastern-IFCA) as a case study to investigate these (in)justices. The combined framework is used to investigate the questions 1] How has the management regime in The Wash changed over time, and what have been the implications for inshore fishermen? 2] How do inshore fishermen perceive their fishing rights? 3] How are inshore fishermen being constrained by other marine activities? Interview data and draw from secondary sources: government minutes, policy documents, official datasets to understand experiences of (in)justice. The results illustrate that the introduction of the Marine and Coastal Access Act (MCAA 2009), to include more stakeholders in decision-making, has led to a growing gap in decision-making between the Eastern-IFCA, DEFRA and EU level, and fishermen. On the ground, decisions have largely come at the expense of the fishermen for example, more stakeholders in marine spatial planning decisions, has meant some fishing sectors are often marginalised in decision-making and in having access to marine space. The IG and EJ frameworks reveal that, in the eyes of fishermen, the Eastern-IFCA is not functioning justly at protecting fishermen interests. Although this research is context specific, this framework is flexible and applicable to the wider world of natural resource governance, as almost all natural resources require balancing exploitation (use) against conservation and the societal needs. The research supports using IG to improve the understanding of EJ in natural resource governance and highlights that governance structures and policies should inform good governance of natural resources. In doing so, this helps ensure that societal needs and environmental conservation goals are balanced and just.

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Acronyms

ACM	Adaptive Co-management
CCRF	Code for Responsible Fisheries
CFP	Common Fisheries Policy
CVM	Community Voice Project
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
Eastern-IFCA	Eastern-Inshore Fisheries and Conservation Authority
EBM	Ecosystem-based management
EC	European Commission
EEZ	Exclusive Economic Zone
EJ	Environmental Justice
EJSFC	Eastern Joint Sea Fisheries Committee
EMFF	European Maritime and Fisheries Fund
EMP	Eastern Marine Plan
EU	European Union
FA	Fisheries Associations
FAO	Food and Agriculture Organisation
GES	Good Environmental Status
GIS	Geographic Information Systems
IFCA	Inshore Fisheries and Conservation Authority
IG	Interactive Governance
IVMS	Inshore Vessel Monitoring System
LCM	Land Cover Map
MCA	Marine and Coastguard Agency
MCAA	Marine and Coastal Access Act 2009
MCZ	Marine Conservation Zone
MMO	Marine Management Organisation
MPA	Marine Protected Areas
MSC	Marine Stewardship Council
MSFD	Marine Strategy Framework Directive
MSP	Marine Spatial Plan
MSY	Maximally Sustainable Yield
NE	Natural England
NERC	Natural Environment Research Council
NM	Nautical Miles

NRG	Natural Resource Governance
NRM	Natural Resource Management
PO	Producer Organisation
RIA	Regulatory Impact Assessment
SDG	Sustainable Development Goals
SSF	Small-scale Fisheries
TAC	Total Allowable Catch
TURFs	Territorial User Right Fisheries
UEA	University of East Anglia
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
WFD	Water Framework Directive
WFO	Wash Fishery Order
WNNMP	The Wash and North Norfolk Marine partnership
WNNR	The Wash National Nature Reserve

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Chapter 1. Introduction

> *"The coming years will be a vital period to save the planet and to achieve sustainable, inclusive human development."* (Guterres 2019:62)

As the above quote suggests, our action in the next few years will determine the fate of the planet and our future. To this end, any action taken in the name of human development and resource use must be sustainable and inclusive. For the fishing community, this requires sustainable and well-maintained inshore coastal waters, which are critical for the social functioning and well-being of fishing communities (Costanza et al. 1997, Symes and Phillipson 2010). At the same time, as the rate of species extinction increases, and the threat of climate change to the fishing industries becomes more evident, we are slowly realising that the actions of our past have failed to address both the social and environmental complexities that underpin issues we are facing today. As such, developing a knowledge base to deal with such complexities (Syme 2011, Dimick 2014) becomes a primary concern. In fact, this complex and overlapping interaction of social and environmental issues highlights several environmental justice (EJ) concerns that are a vital consideration for inshore fisheries governance within coastal waters. Therefore, in a bid towards an inclusive and sustainable fishing industry, EJ will become the central theme throughout this research.

A sustainable management of natural resources is critical to achieving the goals set out in the 2030 Agenda for Sustainable Development (UN SDG Report 2019). Resource conservation for small-scale fisheries (SSF) is discussed in Sustainable Development Goal 14 (SDG 14), which states the need to "conserve and sustainably use the oceans, seas and marine resources for sustainable development" alongside the need to "support and provide access for small-scale artisanal [or nomadic, ed] fishers to marine resources and markets" (SDG 14b). In addition, SDG 16 includes the need to "promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels of sustainable development". This latter goal addresses justice from the perspective of laws that provide peace, security, and prosperity from within legal institutions (UN SDG Report 2019). In looking at both sustainable development goals together, it is apparent that not only is good governance of natural resources an important aspect of the fisheries industry, but a just system of governance is also equally critical in order to attain long-term sustainability of natural resources.

Elaborating on the overall theme of justice and marine resources, this study focuses on *fishermen*: those actively engaged in fishing activity in The Wash, north-west Norfolk and east Lincolnshire, UK, and what they consider as environmental (in)justice in fishing. Exploring EJ from the perspectives of fishermen is important because they perform a vital part in marine resource management and therefore should be seen as the solution for more suitable management measures – with EJ at the heart of those solutions. This chapter makes the case for examining EJ in the

context of inshore fisheries in the global north specifically The Wash cockle inshore shellfisheries in the United Kingdom (UK). Therefore, throughout this chapter, the issue of sustainable inshore fisheries is discussed in the context of highlighting the aims and questions pertinent to this research, before explaining the thesis structure.

1.1. Sustainable fisheries: an oxymoron?

For years, the neoliberal commodification of so-called sustainable fisheries has resulted in many fishermen being marginalised from resource allocation and decision-making processes. A reduction of fish populations has led to a deepening of the divide between the different fishing sectors and decision-making. "Since 1961, the annual global growth in fish consumption has been twice as high as population growth, demonstrating that the fisheries and aquaculture sector is crucial in FAO's [Food and Agriculture Organisation] goals of a world without hunger and malnutrition" (Jose Graziano da Silva, FAO Director-General, July 2018).

FAO figures indicate that in 1974, 10 per cent of the world's fisheries were overfished, and this proportion rose to 33.1 per cent in 2015 (Worm 2016), with the most significant increase occurring in the late 1970s and 1980s. Global fish production peaked at around 171 million tonnes in 2016, but by 2030, the combined production from capture fisheries and aquaculture[1] is expected to grow to 201 million tonnes (FAO 2018). That is an 18 per cent increase over current production.

Figure 1.1 illustrates the global downward trend in the world's marine fisheries. Only a fraction of marine fish stocks are fished at biologically sustainable levels, with a decrease from 90.0 per cent in 1974 to 66.9 per cent in 2015. In 2015, maximally sustainably fished stocks[2] (previously defined as fully fished stocks) accounted for 59.9 per cent and underfished stocks for 7.0 per cent of the total assessed stocks (FAO 2018).

[1] Capture fisheries are defined as those harvesting naturally occurring marine and freshwater living resources; aquaculture is defined as the farming of fish, shellfish, or other organisms. Both can be classified as industrial/commercial, small-scale/artisanal/nomadic, or recreational.
[2] Maximum Sustainable Yield (MSY) the highest possible annual catch that can be sustained over time. Underfished means the long-term yield is less than the maximum possible. Overfished means no sustainability.

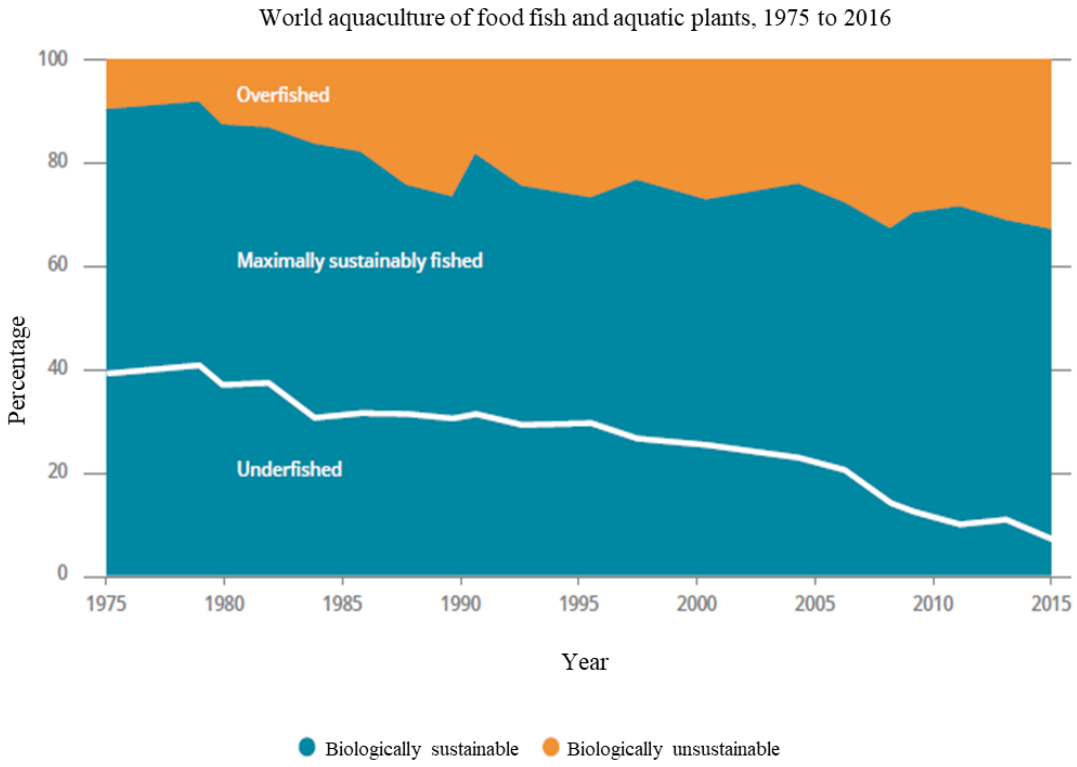


Figure 1.1: World production of food fish and aquatic plants. 1975 to 2015 (source: FAO 2018. State of World Fisheries: Meeting the Sustainable Development Goals).

FAO figures show that globally, the UK ranked 24th in 2016 as the world's largest marine capture producer (FAO 2018). In the global north, the UK ranked 6th largest producer with just over 700,000 tonnes. To put this into context, the FAO found that the top 25 marine capture countries processed 80.7 per cent of the world's marine capture fisheries. At the heart of these figures are increasing human population numbers, where marine production is attributed to increasing demands of the developed global north.

The role of fishermen is critical for sustainable fisheries and for just fisheries governance processes. For instance, most of the destruction is due to industrialised fisheries such as those in the coastal waters of the global north (Hoekstra 2010). Figure 1.2 maps the destruction caused by fishing pressure. While the map and a paper by Worm et al. (2006) sparked alarm about the impact of fishing on the sustainability of global fisheries, or lack thereof (Stokstad 2009, Worm 2016), it also ignited discussions about possible solutions. Where appropriate, governments, environmental non-governmental organisations, and researchers have collaborated to find answers to this on-going global crisis. However, the people absent from these discussions are those actively involved in fishing – the fishermen. This situation is in paradox to the core tenets of sustainability, in which all stakeholders are required to participate. Not only that, Hilborn (cited in Norse and Crowder 2005) points out that sustainability is more about species extinction rather

than economic growth. Therefore, the combined effects of scientific, societal, economic, and institutional factors are becoming increasingly significant.

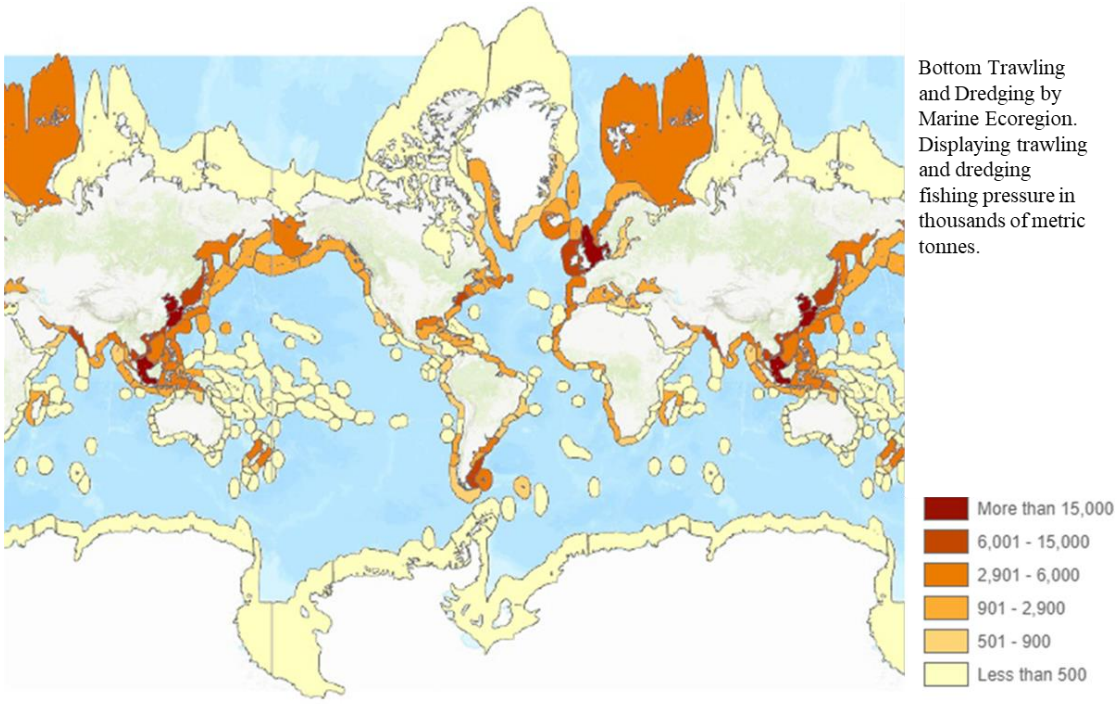


Figure 1.2: Amount of fish and shellfish caught using bottom trawling and dredging (marine fish and shellfish catch data from 1955–2004), by marine ecoregion (source: Hoekstra et al. 2010. Not drawn to scale).

Hilborn, (2015) a pioneer of fisheries research, acknowledges the importance of human dimensions in sustainable fisheries and pins hope on the strength of governing institutions to ensure the long-term economic benefits to fishermen. He strongly suggests societal benefits are entrenched in economic benefits. Moreover, Hilborn implies that stakeholders within a governing system are agents responsible for ensuring long-term sustainability but neglects to define sustainability within this context. However, my study highlights that relying on the strength of governing institutions for parity in participatory processes alone does not miraculously lead to sustainable fisheries due the simple fact that not all relevant actors are involved in steering decisions, leaving many fishing groups often marginalised. This issue is essentially the core argument of this thesis. Utilising a combined environmental justice and interactive governance framework, my work aims to highlight the inadequacies of the current system of inshore fisheries governance in England.

Like many resource management issues, overfishing is a global problem, with industrialisation having accelerated in the second half of the twentieth century, leading to stock depletion. Figure 1.2 suggests that the global north especially European waters are subject to heavy dredging.

Fishermen who traditionally fished close to shore using nomadic gears depleted stocks and then began to look further afield for more fertile fishing ground (see, for example, Telesetsky 2016). The collapse of the Grand Banks cod fishery[3] (Hutchins and Myers 1994) illustrates the tragic consequences of 'race to fish' and mechanisation. However, to tackle overfishing in the European Union (EU), the Common Fisheries Policy (CFP) sets Total Allowable Catches (TAC)[4] and technical conservation measures (i.e. gears, mesh sizes, minimum landing sizes). Whether inshore or offshore, the CFP rules manage Member State fishing fleets in their entirety. The CFP gives all fishing fleet, whether large or small, "equal access to EU waters and fishing grounds and allows fishermen to compete fairly" using policies and regulatory tools to manage the fishing fleet in a sustainable way (European Commission [EC] website, accessed August 2019).

A review by the UK's Department for Environment, Food and Rural Affairs (DEFRA July 2014) criticises the CFP for a number of reasons, including the centralised nature of the CFP, with over-regulation but minimal enforcement. The review also states that for inshore fisheries the main issue is the status of the 6 to 12 nautical mile (nm) zone. Table 1.1 shows the different zones of waters around the UK; and sharing the 6 to 12 nm zone with Member States has caused conflict on a number of occasions, for example, between France and the UK over scallops (BBC News 2019a).

Table 1.1: Jurisdiction over regional waters. (source: DEFRA 2014a).

	0-6 nautical miles	**6- 12 nautical miles**	**12-200 nautical miles**
	Inshore Zone		
Access	• UK vessels only.	• UK vessels • Vessels from Member States with historical access.	• Free access principle for all Member States. • Agreed access for third countries such as Norway.
Who has the powers to enact	• UK Fisheries Administrations and, in England, IFCAs.	• Member States through a rolling derogation under the CFP.	

[3] The Grand Banks commercial cod fishery collapsed in 1992 to a point where a moratorium was declared by the Canadian government on fushing for north-east Atlantic cod.
[4] TAC are EU Member State allocated fishing quotas, based on the principle of relative stability, which is a permanenet share decided according to historical catch records of the EU Member State.

Inshore fisheries also include the 0 to 6 nm zone, where the CFP still applies (particularly if fishing against quotas). However, not only do British fishermen need to comply with the CFP but they are also committed to operating within EU Directives (for conservation and sustainably undertaking marine activities[5]). In addition, within the 0 to 6 nm zone (see Table 1.1) British fishermen are further restricted by local bylaws and permit systems that tend to reduce fishing effort and capacity for either farmed or regulated shellfish such as molluscan fisheries. In the example mentioned in Table 1.1, the Inshore Fisheries and Conservation Authorities (IFCAs) manage marine and conservation responsibilities in the 0 to 6 nm zone of England and also collects fishing rents for the Crown Estate.

1.2. The global importance of small-scale fisheries

> *"Fishing households [as opposed to commercial companies], using relatively small amount of capital and energy, relatively small fishing vessels [if any], making short fishing trips, close to shore." (FAO, 2012. Definition of small-scale fisheries.)*

Seventy-five per cent of marine fish is landed by small-scale operations, mainly in the global south, but some exist in the global north (Cross 2015). This thesis uses the Seafish (Lawrence et al., 2017) description of fishing fleet sizes and activities for small scale fisheries (hereafter SSF). These inshore fisheries are sometimes referred to as 'nomadics' by IFCA officers. Here, nomadics use vessels 10m or under in size, with less intensive gears such as hand rakes, pots, traps for shellfish and less intensive trawls and seines for finfish. Commercial-independent businesses are family-run commercial operations using a mixture of methods, with vessels that tend to be approximately 10m in size and which sell products to the processors. The commercial-industrial sector operates in the catching, processing, and trading of fish products, and uses more mechanised methods to fish; their vessels are much larger and can range from 12m to 24m depending on local and national regulations. This sector uses more intensive methods to fish. Globally, SSF employ 25 times more workers than their industrial counterparts, who use fewer workers because of advanced mechanisation (Pauly 2006). In the global south, more than one hundred million people are thought to depend directly upon SSF and post-harvest activities (fish processing and fish trading) for at least part of their income (Béné 2006, Béné et al. 2010a). While no universal definition of small-scale fisheries and inshore fisheries exist, in the UK, this sector offers employment to some 22,000 people in fishing and fish processing and associated industries across fish processing, administrating, trading and transporting, as well as crew and fishermen themselves (Seafarers, 2018). Our understanding of SSF and inshore fisheries is relatively weak (see, for example, the works of Symes and Phillipson and McClanahan et al. 2009, Carvalho et al.

[5] Natura 2000 and Marine Strategy Framework Directives.

2011, Ratner and Allison 2012), partly because fishing activities classified in the 0-6 nautical mile range are rather heterogeneous in terms of culture, technology, targeted fishing grounds, and sector groups (Cross 2015).

This thesis is based on the premise that sustainable fisheries governance and EJ are not just interrelated but expands on the normative understanding of justice and the environmental degradation literature by investigating the governance measures that cause the (in)justice and consequences for fishermen. Normative prescriptions of (in)justice in SSF of the global south have generally established a nexus between human rights and poverty (see, for example, Allison and Ellis 2001 on human rights; Anbleyth-Evans 2018 on inshore allocation of fishing quotas; Host 2015 on securing access rights; and Paavola 2007 for EU environmental governance), health and well-being (Coulthard 2011, Urquhart et al. 2013, Urquhart and Acott 2014), and unsustainable livelihoods in the global south (Allison and Ellis 2001, Bene 2003a, Bene 2003b, Coulthard et al. 2011, Weeratunge et al. 2014, Bene 2016). While shedding light on some strands on justice issues related to fisheries, my research argues that environmental justice is at the heart of any discussion where resource governance and access rights, decision-making, human rights, well-being and livelihoods are concerned.

1.3. The importance of UK inshore fisheries

Inshore fishing is an important industry for many UK coastal communities; contributing significantly to regional economies and cultural heritage. However, the sector is diverse and includes trawlers, dredgers, netters, potters, and divers who support mostly shellfisheries – aquaculture or capture. Many management measures take the form of restrictions or standards: gear restrictions, spatial or temporal closures, and effort reduction schemes. Moreover, financial incentives such as the European Maritime Fish Fund are used to encourage fishermen to adopt more environmentally sensitive fishing practices. However, several critics of governance have argued that measures are unjust. For example: 1] The National Under Ten Fishermen's Association argue that the ~2 per cent quota share of the UK's Total Allowable Catch (TAC) is unfair, since the inshore fleet represents 78 per cent of the workforce (Anbleyth-Evans 2018); and 2] an inequitable distribution of quotas among the under 10m and over 10m sectors fishing in inshore water. The claim is that the current regime supports the pelagic sectors fishing in offshore waters at the expense of smaller, lower-impact inshore vessels (BBC 2017b). Attempts to redistribute quotas to the lower impact vessels were legally challenged in July 2013 by the UK Association of Fish Producer Organisations, which represents large operations. The redistribution through top-slicing has met short-term objectives, but for the longer-term this poses problems as

the UK prepares to leave the EU[6] in January 2021 and the further consequences of quota redistribution faced by inshore fishermen.

Fisheries policy has narrowly focused on achieving sustainable fisheries through obtaining short-term (annual) economically viable yields for commercial fleets but has jeopardised the livelihoods of inshore fishermen in the process (Symes and Phillipson 2009, White 2015). Broader criticisms of fisheries management policies are based on allocated property rights that assume all fishermen are driven by economic incentives. The assumption is that conservation goals and economic prosperity are assured through regulating common property rights, and in turn this also creates a market (Reed 2013). This 'trickle-down' economics effect of neoliberal thinking claims that conservation and sustainable livelihoods (and subsequent poverty alleviation) will automatically be achieved by the 'freeing' up of fishing markets accompanied by government-led strong sanctions for those not compliant. However, this thinking has come at a significant social cost (Symes and Phillipson 2009, Urquhart and Acott 2013a, b, and c).

Some techniques used to understand the behaviour of inshore fishing fleets have utilised marine mapping tools to record fishermen's use of marine resources. For instance, Rodwell et al (2014) uses MAREMAP to record nearshore activities, Breen et al. (2015) employ aerial, land, and vessel-based sighting information, and Campbell et al (2014) cites vessel monitoring systems for recording fishing activity for marine renewable energy installation. Important policy decisions are made using such information. Several researchers state that monitoring fishing activity for conservation and marine renewable initiatives is restricting or displacing fishermen or certain gear types during the operational or implementation phases (Inger et al. 2009, Campbell 2014). However, given the rate of expansion in marine spatial planning the availability and analyses of data needs to be robust and reliable as the findings underpin marine and fisheries policy decisions.

Many UK based social science researchers have attempted to reframe inshore fisheries governance and justice in terms of supporting SDGs, particularly SDG 14. For example, food security (Urquhart and Acott 2013a, b, and c), coastal identities, community (Ross 2015, White 2015) and social resilience (Folke 2006, Coulthard 2012). Ambleyth-Evans (2018) has progressed some elements of justice by reporting inequality in terms of the impacts of re-apportioning and re-allocating the UK's TAC to the inshore fishing fleet. Despite their well-founded arguments, these studies depend on having detailed insight into justice and the governing institutions that plan on 'who gets what'.

[6] In June 2016, the UK held a referendum on whether the UK should remain a member of the EU; the outcome was to leave the EU.

1.4. Theoretical contribution and research questions

During the course and timeframe of this study, many researchers have published a wealth of information on small-scale fisheries and inshore fisheries management. This includes growing body of literature on multi-layered governance systems explaining the interactions within and across the different layers (Kooiman 1993, Bache and Flinders 2005, Torfing et al 2013). Some researchers have published material on social justice concerning SSF in the global south (see publications by Bavinck, Chuenpagdee and Jentoft). Despite IG and some social justice considerations provided by Bavinck and others, theoretical and empirical evidence aligning interactive governance to an environmental justice framework is limited. Aligning these perspectives to ecosystem based or collaborative forms of inshore fisheries co-management has also received little attention.

As with many other natural resource co-management approaches, inshore fisheries co-management is seen to increase legitimacy and effectiveness, so democratising fisheries governance (Cardwell 2014, Pieraccini 2016). Fisheries co-management is in many ways the archetypal co-management case study (Pieraccini 2016). This is because the overexploitation of fisheries resources is often linked to the character of the sea, to unclear property rights regimes, to governments' finite resources, and to monitoring and enforcement challenges (Pieraccini 2016). To balance diverging interests, many countries adopt co-management-based solutions, particularly regarding small-scale fisheries. The IFCA, established in 2011, is one such example and presents a unique and novel solution designed to apply ecosystem-based co-management to inshore fisheries in England and Wales. The Association of IFCAs are mandated to bring local actors into fisheries management, explicitly including wider ecosystem conservation in the groups' management duties and aims (see Section 153 of the MCCA 2009). The remit largely determined by local authority is seen as more open to new participants as members of the local authority are democratically elected councillors who are then assigned to the IFCA by the council(s). An aim of the IFCA is therefore to harness local knowledge and increase buy-in from local resource users. In doing so, the IFCA utilises the right tools to empower otherwise marginalised voices, rebalancing unequal power relationships by broadening the interests concerned with local inshore fisheries.

This research brings inshore fishermen, particularly the nomadic sector, into the research frame by investigating their experiences of justice in relations to other fishing sectors. The study investigates The Wash cockle fishery because it presents a microcosm of issues connected to sustainable resource management in many parts of the UK. The Wash is a unique situation because EU and national legislation created for food production and resource conservation have affected the management of The Wash cockle fishery to critical levels. For local fishermen based in Boston, Lincolnshire, and Kings Lynn, north-west Norfolk, multi layered inshore fisheries

governance and management has accentuated EJ concerns. While the above context presents many possible avenues worth exploring, this study is limited to investigating the likely causes and consequences of decision-making on EJ at a local level.

In summary, this study contributes to the better understanding of the challenges faced by inshore fishermen. It also brings a new perspective between IG and EJ by emphasising the four elements of justice (procedural, distributive, recognition as justice and capabilities). Although co-management research is not unique, in light of the impending Fisheries Bill, research into the IFCA approach to co-management is needed due to the current challenges faced by the inshore fisheries sector. The research therefore aimed to better inform policy and support fisheries managers to understand the challenges faced by inshore fishermen. It also sought to promote recognition of the diverse nature of the inshore sector within the governance and management process. In doing so, this investigation seeks to address the following research questions:

1] How has the management regime changed over time, and what have been the implications for inshore fishermen?

2] How do inshore fishermen perceive their fishing rights?

3] How are inshore fishermen being constrained by other marine activities?

Currently, inshore fisheries comprise the largest segment of fishing activity in UK waters yet are subject to greater levels of management controls than their offshore (or industrial) counterparts. The Fisheries Bill is expected to set out the framework legislation and foundations for future UK wide fisheries as an alternative to the EU Common Fisheries Policy by 31st December 2020 and this needs to include processes for inshore fisheries management.

After several failed attempts to complete its passage through Parliament, the Fisheries Bill is currently in its third reading. In line with DEFRA's 25 Year Environment Plan (2018), any plans for inshore fisheries should aim to recognise their value as well as protect and develop inshore fisheries in a sustainable manner. On this basis, it should be a requirement of the Bill to consider social, economic and environmental benefits in the future.

1.5. Thesis structure

Chapter 2 sets out the literature surveyed and the conceptual framework for this research. Further, the nature of this research poses methodological and epistemological challenges and as such requires a strong theoretical base on which to rest. Chapter 3 establishes the epistemological and ontological footing and the methods used for this study. It also sets out the case study location: The Wash cockle fishery lies adjacent to the towns of Kings Lynn and Boston. Chapter 4 discusses the governance and legislative framework required to understand the operation of The

Wash cockle fishery. The three empirical chapters that follow (Chapters 5, 6, and 7) are intended to answer the specific research questions in order. Chapter 5 answers Question 1, Chapter 6 addresses Question 2, and Chapter 7 Question 3. These chapters investigate the importance of EJ through trade-offs in governance objectives, perceptions of management tools, and access to marine resources and decision-making mechanisms. Chapter 5 outlines the policy discourses pertinent to the study location and the trade-offs that contribute to the understanding of EJ in inshore fisheries. Chapter 6 highlights issues associated with the perceptions of administering rights in terms of management tools (licences, permits, and entitlements) through which inshore fisheries management and conservation objectives are achieved. Chapter 7 addresses the issue of access to cockle beds in terms of spatial and conservation policies as well as the broader implications of government policies on inshore fisheries. In light of this study, the final chapter uses an interactive governance approach to reflect on the findings and present the conclusions and broader impact of future inshore fisheries research and governance arrangements.

Chapter 2 now presents the literature reviewed and the theoretical and conceptual framework that investigates EJ in the governance of The Wash cockle fishery.

Chapter 2. Literature Review and Conceptual Framework

Introduction

Concerns surrounding fisheries governance of small-scale fisheries (SSF) are well-documented. Furthermore, research into the justice implications of fisheries governance is widely examined in the global south, but is lagging in the north; clearly justice is a global issue. Proclamations concern marginalisation in decision-making (including trust with decision-making processes and among resource users), conflict over natural resources, as well as many other areas. Relying on the logic of economics, fisheries governance in the global north rarely looks at the social and cultural aspects of fisheries management in any tangible way, leaving issues of justice rarely discussed in natural resource management (NRM) discourses (Cardwell 2014). However, there are important justice implications that affect inshore fisheries in the global north.

This chapter reviews the literature that provides the theoretical basis for the conceptual framework. There are two theoretical underpinnings to this research: interactive governance (IG) and environmental justice (EJ). The initial section reviews good governance in relation to IG discussions, which provide context and insight into the empirical chapters (Sections 2.1 and 2.2). Section 2.3 provides an overview of the contemporary discussion on EJ, leading to the four elements of EJ. Sections 2.4 to 2.7 discuss EJ in the context of rights-based management (i.e. property rights), stakeholder engagement and perceptions, and access to marine resource 'space'. Using a combined IG and EJ framework, the final section (Section 2.7) focuses on the issues of justice experienced by action on the ground.

2.1. Good governance of natural resources

Governance is a normative term that broadly has positive connotations to which high expectations are attached (Fukuyama 2013). Good governance is defined in terms of interactions among structures and traditions regarding exercise of power and decision-making (Mkulama, 2018). Questions related to the long-term sustainability of natural resources concern governance, a broad concept that generally refers to the various processes, interactions, and mechanisms by which we seek to solve shared problems, create shared opportunities, or otherwise influence actions and outcomes of shared interest (Lemos and Agrawal 2006, Berkes 2010, Carlisle 2018). Governance theory related to common natural resource governance (NRG) has a long and varied history and has attracted a number of definitions and discussions over the years (for example, see work on IG from Kooiman 1994, multi-level governance from Bache and Flinders 2004, and polycentric governance from Ostrom et al. 1961, Ostrom 2005, Ostrom 2010). Configurations of multi-level forms of governance where "the dispersion of government authority both vertically to actors

located at other territorial levels and horizontally to non-state actors" characterises overlapping and multiple jurisdictions evident in the European Union (EU) (Bache and Flinder 2004). Another configuration is polycentricity, described as multiple centres of semi-autonomous decision-making exhibiting a balance between central and decentralised governance (Andersson and Ostrom 2008, Carlisle 2018). Both approaches look at the complexities of incorporating stakeholders within governance systems. However, a further step is Kooiman's (1994) explanation of IG, which describes governance as a way of steering and managing the processes of society in response to emerging societal problems. While the latter two approaches appear to understand NRG issues from central-decentral contexts, IG explores NRG through a 'bottom–up' or 'action on the ground' approach where interactions of individuals and groups of actors influence governance processes. Also, IG is valuable in uncovering inconsistencies regarding interactive mechanisms, in particular by drawing attention to the interaction between the governing system and the subject-matter of governance (Voorberg et al. 2014).

Good governance encourages fair representation of public-private enterprises, moving away from traditional top–down, command and control forms of governance (Fukuyama 2013, Rhodes 1996). Through mechanisms such as representative participation, The World Summit on Sustainable Development, Food and Agricultural Organisation and European Commission launched a new wave of governance processes. They claimed that cooperative approaches are instrumental to achieving ambitious sustainable development targets in the governance of natural resources while simultaneously achieving justice, a societal concern (UNDP 1997, European Commission 2001, Kaufmann et al. 2003). Details of good governance are in their respective policy documents, and describe accountability, effectiveness, efficiency, equity, transparency, consensus orientation, and rule of law as the principles underpinning justice. Bavinck (2005) claims that good governance includes collaborative forms of governance, where government ultimately retains overall control. In this way, Fukuyama (2013) implies that injustice and poverty are eliminated by dissolving state controlled norms and recognising societal ambitions, and therefore sustainability goals are achieved. How these perspectives align with expectations of good environmental governance intersecting the three dimensions political, ecological and environmental policies (as Mkulama, 2018 describes) are difficult to evaluate thoroughly.

2.1.1. Adaptive co-management

Traditional top–down NRM was unsustainable in social and ecological terms. More inclusionary approaches such as community-based management (Berkes 2004), co-management (Carlsson and Berkes 2005, Berkes 2009), and adaptive co-management (Armitage 2009, Plummer et al. 2012) have been suggested to understand complex social-ecological problems. Ideally, systems should be adaptive across time and space in light of depleting biodiversity (Berkes 2017). Adaptive co-management (ACM) addresses resource complexities whereby "a governance system involving

networks of multiple heterogeneous actors across various scales which solve problems, make decisions and initiate actions" (Fennell 2008:68). In surveying ACM literature, Plummer et al. (2012) state that rather than joining learning and linking functions of ACM, literature is more concerned with statements referring to adaptive capacity or to collaboration. In terms of inclusivity of multiple actors, knowledge and power sharing are assumed to pave the way to build resilience into systems and resolve conflicts (Carlsson and Berkes 2005, Berkes et al. 2007:19-38, Plummer et al. 2012, Butler 2015). Despite the growing literature on ACM, strengthening the understanding of causal links between collaboration and actors in social-ecological systems requires stronger empirical comparisons.

Ecosystem-based management (EBM) is an integrated approach to management "that considers the entire ecosystem and humans" and the interactions within the integrated approach (De Santo 2011). EBM is applied to land-based resource management and marine resource management. In the marine environment, EBM is challenging because fish are migratory, and anthropogenic factors have changed marine habitats quite significantly. Proponents of EBM argue that fisheries should extend beyond the biological aspects of species protection and consider anthropogenic factors and other environmental variables such as climate change (Atkins et al. 2011).

Long et al. (2015) identified 26 principles for effective EBM in the marine environment that include ACM, integrated management, and stakeholder involvement. The common denominator between these three components is that they confront trade-offs (Link 2010, Brown 2014) and highlight the importance of the human dimension of EBM (Charles and Wilson 2008). Long (2015) states that effective EBM requires an understanding of motives, interests, and values of resource users and stakeholders, but not by averaging their positions through a 'tick box' exercise. In EBM, stakeholders involved in an integrated and adaptive management process require decisions to reflect societal choice. Furthermore, ensuring "clean, healthy, safe, productive and biologically diverse oceans and seas" (HM Government 2011) requires strengthened links between EBM and stakeholder interactions.

According to Cavanagh et al. (2016), stakeholder perspectives on EBM matter because, although viewpoints and opinions differ, there is generally a common purpose in achieving the end goal. For example, 'sustainability' can mean different things to different people and provides little information about the nature of the issue or ways to resolve it; the main concern among stakeholders is often the long-term future of marine resources. Therefore, diverse groups of stakeholders can hold multiple viewpoints as well as broadly complementary positions. A detailed understanding of these additional positions can provide a stronger basis for developing practical management solutions.

2.1.2. Stakeholder participation in adaptive co-management

Stakeholder participation in governance is said to be the cornerstone of democracy (Arnstein 1969) and good governance (Lockwood 2010). Stakeholders are those who are affected by the decisions and actions they take, and those with the power to influence their outcomes (Freeman 1984, Gray and Hatchard 2008, Reed 2013). Within "marine spatial planning they deliberate which and whose concerns are important, and what the operating goals should be" (Jentoft 2017:270). The role of participatory processes in NRM has taken centre stage over the last two decades, with considerations ranging from contextualisation (Burgess and Chilvers 2006, Johnson et al. 2018, Azmi 2019) to theoretical understanding (Ansell 2008, Lockwood et al 2012). Both contribute to the broader studies of co-governance of natural resources (Berkes and Folke 1998). Participation typically includes the involvement of collective decision-making, whereby in the social sciences it is closely connected to citizen involvement (Newig and Kvarda, cited in Hogl et al. 2012:30).

Traditional consultative arrangements involve single sector parties, concerning single-species management for an entire geographic area, and bear a top–down configuration (Pinkerton et al 2019). For example, one fishing sector may represent commercial fishing and another recreational, but both groups fish the same species, albeit from different perspectives. Also, decisions are made on a coast-wide basis, when sometimes ecological and societal circumstances within a specific locality may differ. Pinkerton et al (2019) argues that taking a broad brush application to stakeholder consultation is unproductive, and if it results in abating conflict within one sector, the process often opens up conflicts between other interest groups. Realistically, the viability of including multiple stakeholders within smaller units of resource management is too resource-intensive, without guaranteed resolution. However, there is consensus (Charles 2012, Islam et al 2016, Pinkerton et al 2019) that smaller geographical and human-scale interactions enable more meaningful dialogue across many sectors, particularly in light of ACM.

There are pragmatic attempts to understand stakeholder processes in complex marine social-ecological systems (Schult et al. 2011), where some (see, for example, Berkes and Folke 1998, Holling 2001) propose ACM as the way forward in dealing with complex social-ecological systems. Walker et al. (2002, p. 11) provide an approach to involve stakeholders, stating that "the chances of success are increased if the full range of stakeholders is engaged with" (Schultz 2011:662). Despite criticism that it slows down decision-making processes and erodes social capital (Brody 2003, Conley and Moore 2003), stakeholder participation in ACM resolves conflicts, removes elite capture, and underpins legitimacy (Turner 2016, Cleaver 2017:iiix; Johnson et al. 2018). ACM provides outlines for two approaches to stakeholder participation: the participation of actors with different types of ecosystem knowledge (both scientific knowledge and experiential, for example, local knowledge) and the participation of actors working at

different ecological scales and levels of decision-making (for example, managers of certain habitats and policy makers at local and national levels) (Olsson et al 2004, Charles 2007). Recent studies of ACM have highlighted "the need for bridging organisations that can coordinate and facilitate such adaptive collaboration across organisational levels and knowledge systems" (Schultz 2011:662; Hahn et al 2006, Berkes 2009). Given the amount of attention on stakeholder participation in ACM, the relevance to marine natural resource management is significant.

2.2. Interactive governance of natural resources

IG is a powerful tool for good governance, used to understand and solve problems associated with the complexities surrounding synergies, interactions, and conflicts in stakeholder-led NRG. IG defines "the complex process through which the plurality of actors with diverging interests interact in order to formulate, promote and achieve common objectives by means of mobilising, exchanging and deploying a range of ideas, rules and resources" (Torfing 2014:2). It encompasses "the whole of interactions taken to solve societal problems and to create societal opportunities; including the formulation and application of principles guiding those interactions and care for institutions that enable and control them" (Kooiman et al 2008:2). Also, IG is "seen as a specific dimension of governance networks as it specifically focuses on the way societal and private actors are engaged in complex decision-making processes and networks and how this engagement relates to (inter)governmental processes" (Edelenbos et al 2016:2).

All approaches focus on the way participants and stakeholders address so-called "wicked societal problems" that relate to the long-term sustainability of natural resources (Rittel and Webber 1973:155-169, Koppenjan and Klijn 2004). The IG approach is illustrated in Figure 2.1, featuring three characteristics to help understand informal processes, in quasi-markets, partnerships, and network types as observed in the EU (Torfing 2012). Kooiman (1993, Kooiman et al. 2008) describes three distinct features that characterise IG: 1] *complex* and process-based rather than linear and grounded in existing institutions; 2] communicating the pursuit of common objectives in the face of *divergent* interests and preferences; and 3] fundamentally decentred in that no individual is in charge or in control, inducing actors to engage in multi-actor, often cross-cutting, conversations and negotiations (*dynamic*) (Kooiman et al. 2008). IG helps to understand informal governance systems and relates to societal *interactions*. Proponents of IG argue that it is only when these three features of IG are channelled in a constructive way that things can start to change action on the ground (Torfing 2012, Edelenbos et al. 2016).

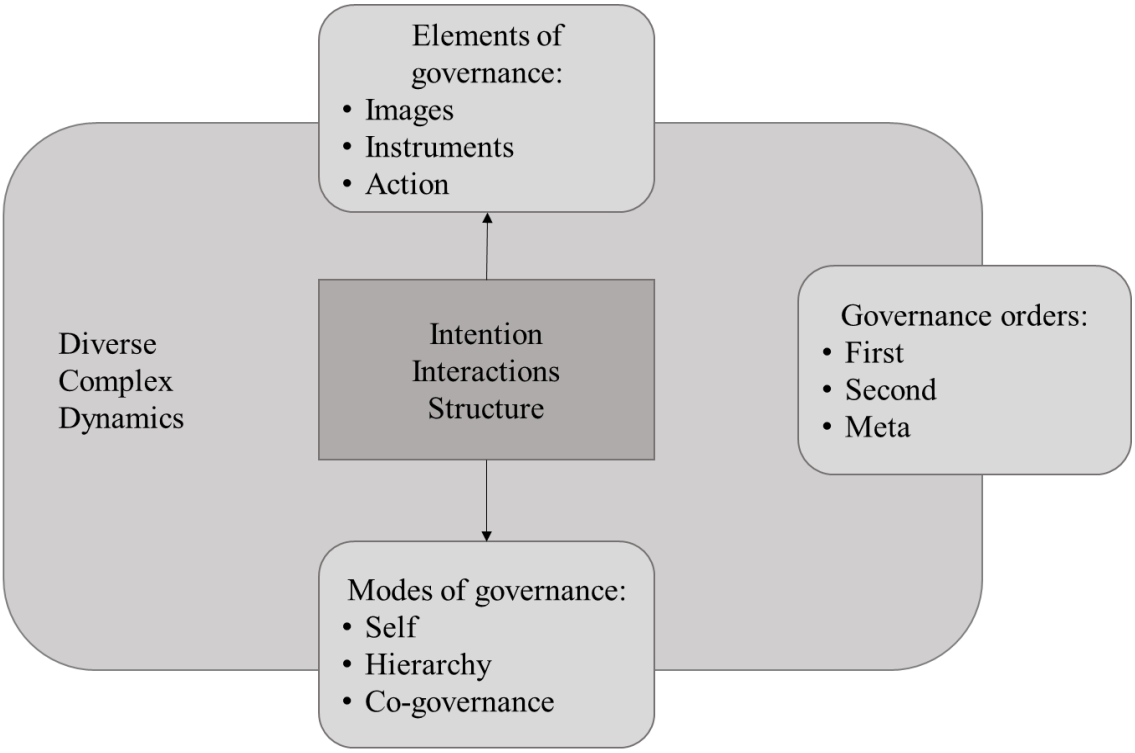


Figure 2.1: Kooiman's Interactive Governance Framework (Kooiman et al. 2008).

In Figure 2.1 Kooiman et al. (2008) show that interactions between natural and human systems are diverse, complex, and dynamic in first, second, and meta-governance. First-order governance is where and when people interact to solve day-to-day problems (i.e. administering permits or licences). The second-order parameterises the design and maintenance of institutions to solve problems (broad rules, frameworks, or statutes to enable fishing or conserving stocks and for stakeholder engagement processes). Meta-governance refers to the normative principles and values that guide the first and second-orders of governance. For example, where the ethical or political motivations originate from and the standards and policies that underpin the values of 'good' governance. In considering Figure 2.1 observing the interactions seen at first-order is where issues of justice become explicit.

The other elements of IG to consider are images, instruments, and actions. Images are the 'hows' and 'whys' of governance, and can be visions, aspirations, knowledge, facts, judgements, presuppositions, hypotheses, convictions, ends, and goals (Kooiman et al. 2005). Instruments link images to actions. These can be soft (i.e. website information) or hard tools (i.e. enforcement). The modes of governance are hierarchical, self-, or co-governance. Hierarchical is the classical top–down model, which expresses itself in laws and policies. Self- refers to a situation where actors take care of their resources. Co-governance involves societal actors coming together for a

common purpose and staking their identity in the process. Also, co-governance implies that no single actors are in control as horizontal interactions are balanced (Torfing et al. 2012).

The multiple demands of the UK coastal and fisheries marine environment demonstrate that a 'one size fits all' governance does not suit 21st century demands. These demands are at a critical point in terms of international, national, and local negotiation, requiring urgent forms of good NRG. Government and international organisations serving public interests are held accountable for transparently and fairly making provisions for the movement of goods and services (Berkes 1985, Gardner et al. 1990). Furthermore, public sector governance that includes eliminating poverty and injustice should recognise processes, accessibility to procedures, and distribution of goods and services to all sections of society (Peters 2012). Whether serving private or public interests, good and interactive fisheries governance offers the opportunity to get things done and to have services delivered – fairly, openly, and democratically (Fukuyama 2013).

A number of scholars (see, for example, Bavinck and Chuenpagdee 2005:245, Pullin and Sumaila 2005, Kooiman et al. 2008, Mahon et al. 2009, Kooiman and Bavinck 2013, Chuenpagdee and Jentoft 2015, Jentoft and Chuenpagdee 2015) have previously considered these features in terms of fisheries, SSF, and justice in the global south. Therefore, in linking SSF and inshore fisheries in the UK as explained in Chapter 1, the same approach can be applied to the considerations of justice in inshore fisheries in the global north.

2.3. Contemporary framing of environmental justice

EJ theory emerged from the 1980-1990s United States' environmental movement (Schlosberg 2004, Walker 2012). The EJ movement sought to overcome injustices by ensuring equal distribution of benefits and burdens across the population, irrespective of social and economic differences. The struggles were often framed as opposing 'environmental racism' – as environmental injustices were more frequently linked to oppressed or marginalised groups in society – and particularly concentrated among people of colour (Shrader-Frechette 2002). Similar movements in the developing world were framed as 'environmentalism of poor' – movements oriented against the disproportionate use of environmental resources by the rich and powerful (Martinez Alier 2002). Soon the EJ movement shifted beyond issues of allocation of environmental goods and bads to consider recognition and participation (Chaudhary et al. 2018).

The common elements framing EJ are 'distribution', 'procedural' (or 'participatory'), and 'recognition' (Walker 2012), with arguably a fourth dimension, 'capabilities' (Schlosberg 2007). Three of the four justice elements are illustrated in Figure 2.2. Capabilities was convincingly promoted by Schlosberg (2004, 2017) and Walker (2012), and assumes a relationship between all four justice elements (Schlosberg 2004, Young 2011, Walker 2012). This research follows

Walker's (2012) framework on EJ in terms of: distributive justice is equity in the distribution of natural resources; procedural justice is participation in the political processes which create and manage natural resource policy; and recognition justice is respect for the diversity of the participants and their experiences in their locality. Walker's framework is expanded the original works by Sen (1980, 2005) and Nussbaum's (1997, 2003) 'capabilities' approach which has two normative claims. First, the claim that the freedom to achieve well-being is of primary moral importance, and second, that freedom to achieve well-being is to be understood in terms of people's capabilities, that is, their real opportunities to do and be what they have reason to value (Robeyns 2011). Some scholars (Miller cited in Lamont 2017, Bell 2004, Brighouse 2004) believe capabilities, procedural, and recognition are entrenched in the core understanding of distributive justice, because the distribution of goods and burdens automatically encompasses well-being and how we function; while others firmly separate distributive and procedural justice as mutually exclusive (Paavola 2007) or approach capabilities with justice as recognition (Schlosberg and Carruthers 2010, Martin et al 2016). Although there are merits in combining some elements of EJ, the strength of considering all four individually helps to explain conservation and resource management trade-offs, rights-based management, co-management procedural processes within NRG, and access to property rights.

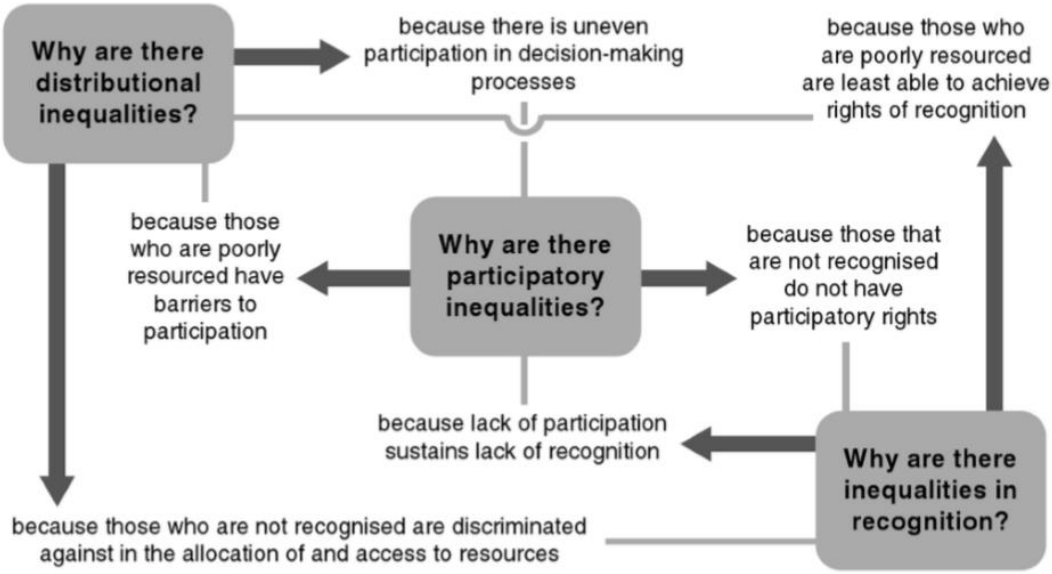


Figure 2.2: The relationship between three out of the four pillars of justice (discounting capabilities) with a dominance of participatory processes leading to potentially unjust outcomes (Walker 2012).

According to Miller (cited in Lamont 2017), distributive justice is the key EJ element as it is concerned with the fair distribution of environmental benefits and burdens among the human

population, implying that there is a material good to be distributed. Moving away from the neoliberal factions of EJ, Fraser (2005) provides insight from feminist literature, defining EJ as maldistribution and misrepresentation (in other words, injustices) as a result of social organisation, explaining shifts in perspectives on justice depend on how social organisation has changed over time. Fraser (2005) finds that there is no absolute perspective on justice, but perspectives can be influenced by political thought or movements in any period. Bryant's definition of EJ includes "cultural norms, values, rules, regulations, behaviours, policies and decisions to support sustainable communities, where people can interact with confidence that their environment is safe" Bryant's (1995:6). Foley (2004) uses the term 'social justice' as it offers political appeal, because it provides environmental linkages to the community, implying that the environment is a social justice issue. This definition can be applied to recent additions to EJ discourses in the UK, where environmental non-governmental organisations use the concept to illustrate a movement, or activism, often in response to outcomes of public policy, where people come together to protect their communities (Bullard and Johnson 2000, Stein R 2004, Walker 2012). Walker (2012) and Schlosberg (2007, 2013) state that defining EJ involves taking into account a number of perspectives, not just one. Ultimately, all the perspectives offer a common ground: EJ is a prerequisite for a secure and stable society. Therefore the elements of justice are explored in the context of marine resource management and fisheries, where the links between EJ and marine resource management are explicit.

2.3.1. Distributive justice and resource management

The Rawlsian concept of distributive justice is broadly about the 'fair' distribution of 'benefits and burdens', or 'goods and bads', among the human population (Miller 1976, 1999, Foley 2004). Miller (1976, 1999) refers to three principles of distributive justice that are essential for justice: 'need', 'desert', and 'entitlement' (Miller 1999). Need refers to "from each according to his ability, to each according to his needs", desert is what "the individual producer receives back from society", and entitlement is historical, based on Nozick's assumption where "distribution is just depending upon how it came about" (Dobson 1998:77). These principles are valid and offer a good starting point to understanding EJ globally (Gabriel et al 2019); yet, they lack the societal contribution to discussions on justice, which are still underrepresented in distributive justice literature.

Traditional discussions underline two principles of distributive justice: "First Principle: Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all. Second Principle: Social and economic inequalities are to be arranged so that they are both: (a) to the greatest benefit of the least advantaged, consistent with the just savings principle, and (b) attached to offices and positions open to all under conditions of fair equality of opportunity" (Rawls 1971:266, Miller 1992,

Lamont and Favor 1996). Despite criticisms that libertarian rights-based systems have created unequal distributive injustices and struggled to capture societal heterogeneity (Gustavsson et al. 2014), these approaches continue to shape the understanding of the distribution of goods and services (Loomis, 1993, Peters 2009, Cardwell 2014, Gustavsson 2014).

Contemporary approaches used to understand the spread of distributive goods involve tools for spatial analysis, such as Geographic Information Systems (GIS). GIS and similar methods are extensively used to understand issues of equitable allocation of environmental "goods and bads" (Walker 2012:57, Mukherjee 2015). Harris and Weiner (1998) claim there is a paradox in the use of GIS to understand societal impacts. For example, does GIS empower or marginalise stakeholder participants? Harris and Weiner claim that depending on the context, GIS tends to do both. For example, empowering local communities to seek greater access to spatial data in their area, while simultaneously increasing capacity for greater surveillance used to carry out enforcement. Despite being complex, GIS and society research focusing on social implications of how people, space, and environment interact (Mukherjee 2015), and historic distributional patterns (Walker 2012) and outcomes (Graham et al 2017) is becoming increasingly popular in policy formation (Walker 2012), a point particularly pertinent to the evaluation of natural resources.

2.3.2. Procedural justice and resource management

Arguably, to fully benefit from understanding distributive justice, procedural justice has become a necessary second step (Walker 2012). Procedural (or participatory) justice concerns the process by which justice decisions are undertaken. The Aarhus Convention establishes a number of rights of the public (individuals and their associations) about the environment (UNECE 2001), committed all Member State signatories to provide procedural justice by ensuring access to information, participation in decision-making, and access to justice on environmental matters.[7] Shrader-Frechette (2002), among others, argues that a combined conceptualisation of distributive and procedural justice is needed, because "purely distributive paradigms tend to ignore the institutional contexts that influence and determine the distributions" (Walker 2012:47; for the links, see Figure 2.2). This is important because aside from explaining the causes of distributive injustices, procedural justice is seen as a concept in its own right.

Numerous articles exist citing conflict over poor procedural processes in NRM. Procedural justice provides important insight into potential conflicts and distrust that arise by placing people near sites facing environmental uncertainties that can be applied to NRM contexts (Walker 2012, Kennedy et al. 2017). Turner (2012) and Prell (2006) show that trust, social relations, and resources strongly correlate. Integrating biodiversity goals and development goals in policy

[7] Aarhus Convention (UNECE 2001), http://ec.europa.eu/environment/aarhus/index.htm

discourses often results in conflict, since trade-offs between societal demands may not have been explicitly addressed (Brown and Mumby 2014). Stakeholder participation legitimises some trade-offs (i.e. well-being) over others (Dawson 2017). Paavola (2003, 2004, 2007) argues that procedural justice allows for power to be distributed among some groups and actors so they can defend their own interests. Sometimes these power dynamics can lead to reconciliation and sometimes they have the opposite effect (Kellert et al 2000). Ideally, securing biological diversity, conservation, the sustainable development goals, and EJ should be integrated openly and fairly through ordered channels for effective resource management.

2.3.3. Justice as recognition and resource management

Defining recognition as justice is critical for cementing the understanding of EJ. Walker (2012) defines recognition as "justice [which] is conceived in terms of who is given respect and who is and isn't valued". Walker (2012:10) and Schlosberg (2004) argue that the three elements of justice closely overlap, although Walker tends to align recognition as justice more strongly to procedural justice. Recognition as justice has been shaped by many theoretical perspectives (Taylor 1994, Fraser 1997, Honneth 2002, Young 2001, Honneth 2004), and broadly describes recognition as the "social and political realms demonstrated by various forms of insults, degradation and devaluation at both the individual and cultural level, which inflicts damage to oppressed individuals and communities" (Schlosberg 2007:14). Rawls Theory of Justice describes fairness as "a society of free citizens holding equal basic rights and cooperating within an egalitarian economic system" (Wenar 2017:1). Proponents of Rawls state that recognition and respect are subsumed in distributive justice, and are a feature of fair and equitable institutional processes and are not a distinct category of justice itself (Miller 1998, 2003). Fraser (1997), Young (2001), Honneth (2001), and Taylor (2000) argue about the subtle theoretical nuances of recognition and respect, with the former three insisting on an integrated understanding of justice (Schlosberg 2007). The differences argued about among scholars are important for understanding how recognition as justice relates to institutional-structural processes of governance.

Martin et al.'s (2016) recent considerations of recognition as justice in natural resource governance state that conservation policy should reduce the likelihood of conflict and improve participation in procedural processes, yet recognition is poorly understood. Martin et al. define recognition as "relational, indivisible and multi-layered… because it is produced and reproduced through the everyday cultural practices of the population at large, but also through formal institutional channels which include laws and policies" (Martin et al 2017:89). Martin et al provide three main reasons linking reduced conflict and improved participation: 1] protected areas are spatially associated with cultural diversity, and environmental governance institutions are vulnerable to being marginalised; 2] conventional 'western' conservation management strategies

rely on evidence of what works; 3] conventional evidence models of conservation misrepresent and misrecognise people as harmful to nature conservation. The justice as recognition dimension offered by Martin et al highlights the importance of this misrepresentation and misrecognition of the research participants involved in natural resource decision-making processes.

2.3.4. Capabilities and resource management

Moving away from the equity-based notion of justice, Amartya Sen and Martha Nussbaum developed the capabilities approach in focusing on capacities necessary for people to function fully in the lives they choose for themselves (Schlosberg and Carruthers 2010). Sen states "focus has to be, in this analysis, on the freedoms generated by commodities, rather than on the commodities seen on their own" (Schlosberg and Carruthers 2010:15). Nussbaum expands on this thinking and states that the central question is "what she is actually able to do and be… we ask not just about the resources that are sitting around, but about how those do or do not go to work, enabling [her] to function in a fully human way" (Schlosberg and Carruthers 2010:15). Essentially, they assert the potential for people to live fully functioning lives depends on the underlying conditions: political liberation, freedom of association, economic facilities, social opportunities, transparency, guarantees, security, and a variety of economic and social rights (Schlosberg and Carruthers 2010).

Ballet (2013) applies capabilities to the notion of space in which well-being is achieved. Martins states "while utilitarianism provides a space in which to assess well-being (the space of utility) and a criterion to choose between possible scenarios (the maximization of the sum of individual utilities), the capability approach focuses only on the space. That is, it focuses on the descriptive element (the space in which well-being is assessed) rather than on the prescriptive element (the criterion)" (Martins, cited in Ballet 2013:28). Space should be considered in discussions on capabilities because aside from being a causal power for well-being, capabilities propose that because the future is uncertain, the capability space for future generations must be broad. For example, to understand the concept of protected areas, capabilities rejects preservationism because preservationists are firm about protecting nature, while conservationists stress that decisions that affect the future of natural resources need to involve people. ACM or other modes of collective decision-making can ensure well-being and conservation of natural resources (Ballet 2013). Ballet et al. (2013) state that the capabilities approach is precisely what makes it possible to demonstrate the importance of the relationship between human well-being and protection of the environment.

Access to knowledge and authority generates power and enhances capabilities (Ballet 2013, Myers 2018). Sikor and Sikor et al. (2009, 2014), among others, highlight the importance of individual capabilities in accessing natural resources and the decision-making infrastructure that

supports justice in environmental governance. Yet, understanding the processes that are involved in socio-cultural capabilities and access to natural resources appear to need further empirical reflection, particularly as Ballet (2013) points out that there is no significant link between socio-cultural heterogeneity and natural resource sustainability.

Capability extends beyond a person's innate ability to benefit from things. Ribot and Peluso (2003) draw on MacPherson's (1978) characterisation of property and Berry's work on access control (1989), and distinguish 'right' by stating that "a right in the sense of an enforceable claim to some use or benefit of something" (Ribot and Peluso 2003:155), and distinguish it from access by saying that the difference from access lies between ability and right. The focus on ability is about all the possible ways a person (or actors) can benefit from things, rather than a political-economic perspective on property as a right or claim over things where rights holders and legal custodians of the property can enjoy a degree of power (Ribot and Peluso 2003, Sikor 2013). With ability being the focus of access, without legally allocating rights per se, discursive manipulations, ideologies and production, and exchanges of property rights can shape the patterns of distribution of a benefit.

The addition of Sen and Nussbaum's capability approach to Walker's (2012:65) diagram puts capabilities on an equal footing with the three other elements of justice. Figure 2.3 expands on the original Walker diagram and advances the EJ framework by adding capabilities. Figure 2.3 provides a complete picture of EJ, where all four elements of EJ are considered together.

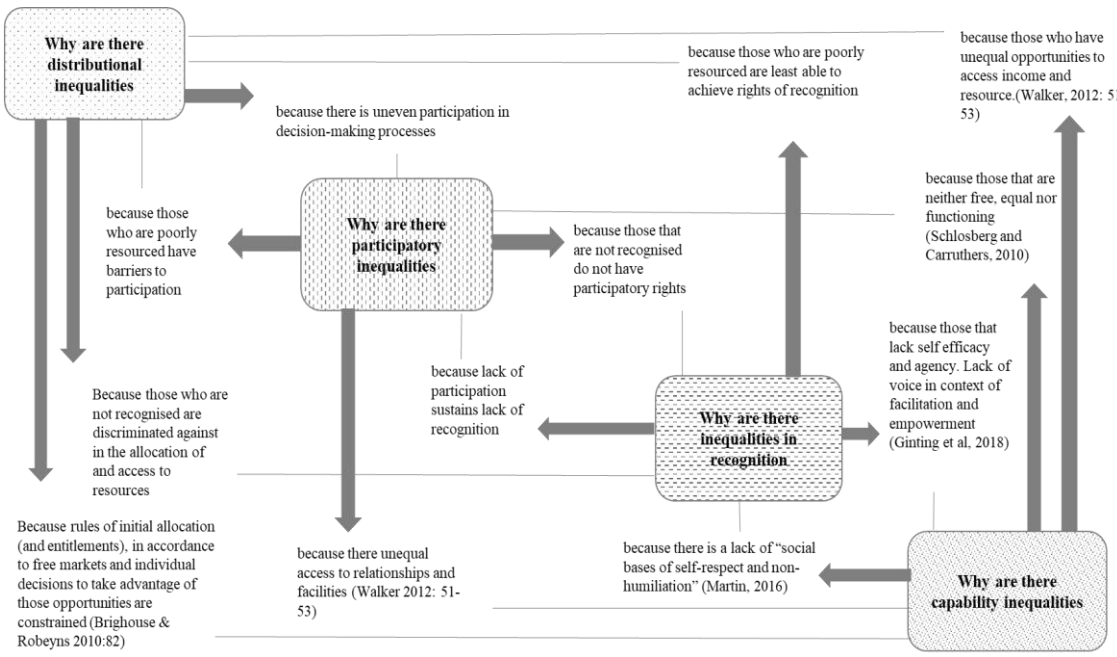


Figure 2.3: Expanding on Walker's environmental justice framework to include Sen (1985) and Nussbaum's (2000) capabilities approach.

2.4. Rights-based resource management

> *"One author teaches that property is a civil right, based on occupation and sanctioned by law; another holds that it is a natural right, arising from labor; and these doctrines, though they seem opposed, are both encouraged and applauded. I contend that neither occupation nor labor nor law can create property, which is rather an effect without a cause."*
>
> *What is Property?* (Proudhon 1849, cited in Ribot and Peluso 2003:155)

The politics of fishing rights surround issues of distributive justice (Raymond 2014, Chhotray 2016). A central concern for distributive justice is the initial allocation of property rights (Raymond 2014). As explained in Chapter 1, 'access' to common-pool resources is the right to a specified physical property or a 'thing' (Schlager and Ostrom 1992). A significant body of literature exists on common property and resource tenure in economics and law (environmental economics: Cox et al. 2010, Ostrom 2010, Fennell 2011, Agrawal 2014; geography and law: Locke 1978, Soreng 2013, Bavinck 2005, Jentoft and Bavinck 2014, von Benda-Beckman 2016, Myers 2018). The idea of property is relatively abstract, where some claim that "property is a right, not a thing" (Raymond 2014:41). Raymond states that the norms of fairness have meant that political theorists and philosophers have struggled to pin down the normative principles of fairness and linkages to property. For example, restrictions by private property owners to preserve protected species are frequently challenged and contested based on distributive justice. Therefore, the underlying principles are important to flesh out to understand conflicting views between property rights and resource conservation.

There are four loose theories proposed on property rights: possessory, intrinsic, extrinsic, and egalitarian (see, for example, MacPherson 2013, Raymond 2014). The theories state that the type of right can vary according to either political (government maintained) or pre-political (a natural right). Also, property can be justified in terms of property entitlements, in terms of protecting individual interests or serving collective goals. Some theories justify significant redistribution and ownership rights from the status quo, while others state that property is something that should not be distributed. For market-based environmental policies based on economic principles, understanding the licensing of quasi-property is important, where resource scarcity means reconciling environmental policy, property, and equity issues.

Rather than equality per se, Martin et al (2015) states that people have minimum thresholds that serve as a benchmark for justice. For example, Sen sees these minimum thresholds as capabilities 'to do or be'. Leach et al.'s (1999) environmental entitlement framework in Figure 2.4 explores legally and socially sanctioned institutions (see legal pluralism, von benda Beckmann 1981) that tie into minimum levels of entitlement (or threshold, that are seen as rights). Figure 2.4 illustrates:

1] environmental entitlement refers to "alternative sets of utilities derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving wellbeing" (Leach 1999:2); 2] endowments are "the rights and resources people have", through a process of mapping defined as a person's initial ownership (i.e. their own skills, land, labour); and 3] the dynamic nature of endowments, entitlements, and capabilities of a given social actor at a specific time are mediated by various forms of institutions. The explanation is that, similar to communities, the natural environment is dynamic and ought to be considered in such a way. These dynamics have important implications for linking society to nature, raising questions such as how do different actors gain access to and control resources? How does natural resource use by different social actors transform different components of the environment? These questions pose important concerns for the distribution of resources.

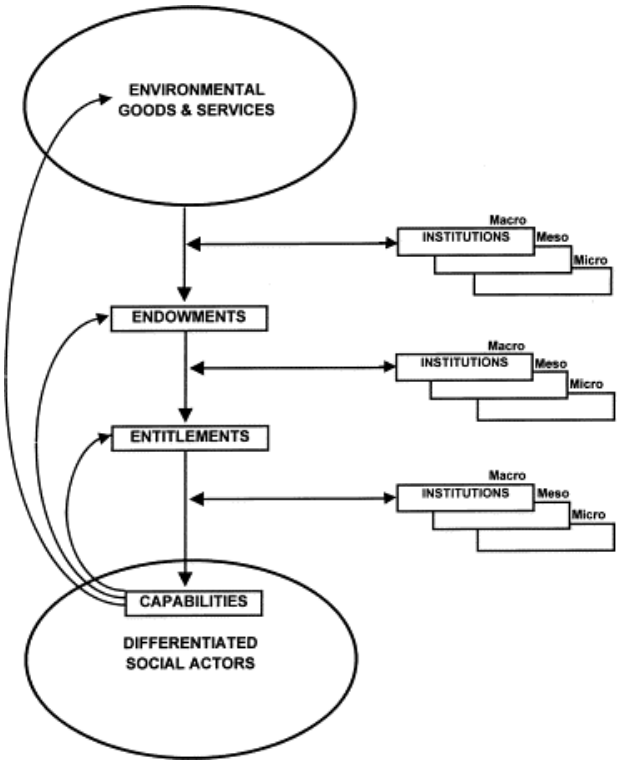


Figure 2.4: Environment entitlement framework proposed by Leach et al. (1999) used to investigate the linkages between entitlement, access, and capabilities in natural resource management.

Combining rights-based resource management and ecosystem-based management reveals a number of complexities for common pool resources. Licensing of property rights aims to improve the behaviour of resource users by giving them more of a sense of ownership of the resource and hence to exploit it in a more responsible manner (Prellezo and Curtin 2015). As with land and forest rights-based management (Fujita and Phanvilay 2008, Bawa et al. 2010), marine natural resource management is also based on the logic of economics (see Chapter 1, Cardwell 2014). However, definitions have not been corrected in light of ecosystem-based resource management,

and this has led to overexploitation (Prellezo and Curtin 2015). The main purpose of rights-based management is to control and manage the open-access system visible in common-pool resource management. Prellezo and Curtin (2015) and Ostrom (1999) identified several binary principles of effective common property rights instances where government retain overall control. These are: restrict access, create incentives, clearly define boundaries, congruence between resource governance and structures and rules, participation of users in decision-making, monitor rules, sanctions for infringement, low-cost conflict resolution mechanisms, minimal recognition from government of rights to organise, and nested enterprises within large-scale common pool resources. The use of binary measures highlights the challenges in discerning causal connections between ecosystem-based resource management approaches and the role of stakeholder participation. However, since the role of stakeholders is increasing (Brody 2003), there is a need for greater empirical understanding of stakeholder interactions.

Property rights lie at the intersection of law, economy, the state, and culture, where the influence of the latter is significantly neglected (Carruthers and Ariovich 2004). One complexity is that "ownership involves socially recognised economic rights. Property is that over which such rights obtain, and owners are those who possess the rights" (Carruthers and Ariovich 2004:23). What separates property from ownership is the recognition of ownership rights, either directly or through legal structures. A stronger empirical basis identifying the intersection between property and *ownership* is critical because a lack of ownership over property "constitutes one of the most enduring dimensions of inequality" (Carruthers and Ariovich 2004:24, and see for example, Ross et al. 2011).

2.4.1. Access, entitlement and space

Many property rights theorists focus on rights rather than ability when investigating access. Ribot and Peluso (2003) suggest that property is only a subset of access, and that access has not been adequately theorised to provide a meaningful understanding of the concept. They propose that access should focus on "the issues of who does (and who does not) get to use what, in what ways, and when (that is, in what circumstances)" (Ribot and Peluso 2003:154). Moving beyond notions of power and property rights, they suggest that locating powers with social and political-economic contexts shapes people's ability to benefit from things. They also identify access to technology, labour, capital markets, knowledge, authority, identity, and social relations as heuristic entities affecting rights-based mechanisms. The perspective offered by Ribot and Peluso moves beyond property and other forms of rights and is focused on contextualising NRM as it highlights who benefits from changes in natural resources and how, factors that affect use, efficiency, equity, and sustainability, and how these have consequences for well-being, justice, conflict, and co-operation.

Academics commenting on access have spoken about a grey area between "what people have rights over and what they merely have access to" (Sikor and Lund 2009:2). Ribot and Peluso (2003) state that access is best conceptualised by focusing on ability rather than rights, as rights suggest issues of ownership. However, they also state rights are about all the possible ways a person is able to benefit from things, which can take a variety of different meanings including space (Carolan 2018).

Building on Ribot and Peluso's theory and exploring ownership of rights-based, structural, and relational mechanisms that influence access, Ginger et al. (2012) found that access is also influenced by biophysical factors, such as spatial proximity and environmental conditions, and these are important concepts for NRM. For example, environmental conditions or location of sedentary shellfish beds may influence where fishermen can fish. Since NRM is complex, factors such as capital, ownership, shifting institutional arrangements, stewardship, labour opportunities, capacity to negotiate access agreements, and social identity all play a role in access. For a broader understanding of access to natural resources, including the decision-making process, factors that include the tools used to examine natural resource distribution are required.

Command over space is a fundamental source of social power; and conversely, limited access to certain spaces relatively disempowers groups of people (McCall 2004). Conceptually and intuitively, rights-based management is supposed to ensure the equal distribution of marine resources and alleviate any concerns about the maldistribution of marine resources. In access to marine space, however, rights-based management has meant that issues around Marine Spatial Plans (MSPs) and ocean or 'blue grabbing' has contributed to multiple, cumulative, and conflicting uses of the sea (Boyes et al 2012, Ounanian et al 2012). Conflict for marine space is becoming increasingly important as there is competition for marine resources and marine space, while others are after a geographical area within which they could develop activities such as aquaculture, energy production, and conservation (Said 2017). This type of 'blue grabbing' creates political and geographical marginalisation of resource users, with some nomadic fishing groups often lacking the socio-political agency to influence decision-making (Said 2017), resulting in them being displaced or spatially squeezed out (Jentoft 2017).

MSPs address issues related to multiple, cumulative, and conflicting uses of the sea and thereby facilitate sustainable development (Boyes et al 2007, Ounanian et al 2012). In processes involved in allocating marine resources, regulated scarcity, defined as a "political decision which limits the citizen's access to a good", can lead to distributional conflicts (Gezelius 2002:64). The key elements of conflict are the stakeholders, a geographic location, and the perceived consequences, often negative, of alternative land (or marine) use (Brown 2017).

In the EU, MSP involve "a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process" (Qiu et al. 2013:182). An issue in implementing MSP is that, unlike land planning which falls under local authority jurisdiction, marine planning is essentially embedded in top–down controls (Qiu et al. 2013). A consequence is that the impact on local users may be considered a low priority, particularly in the presence of powerful sectors such as marine renewables. Designations of offshore windfarms and Natura 2000 sites have displaced fishing efforts to other areas (Jones 2009). Furthermore, because of a lack of property rights in many marine fisheries, fishermen lack the position to negotiate their position. Discriminating against fishermen in favour of other activities involved in MSP in the decision-making process is an unintended consequence of MSP (Jones 2009, Qiu et al. 2013). These kinds of power relations, conflict, and justice in the race for marine space in European seas are pertinent and growing problems that require urgent consideration.

2.5. Stakeholder perceptions of natural resources

Fraser states that generalising the psychological effects of being misrecognised "is to be thought ill of, looked down on, or devalued in others' conscious attitudes or mental beliefs" (Fraser 2001:27). In other words, misrecognition effects respect, esteem, and trust which are important values in recognition as justice (Lukasiewicz et al 2017). Honneth explains that fairness is often something that is 'felt' rather than rationally explained. These judgements depend on moral values and beliefs that, if violated, lead to perceptions of unfairness, regardless of how fair the participatory process is perceived to be. Also, Coolsaet (2015) and Bustos (2017) state that irrespective of equal participation in processes knowledge systems and ideas that can also influence justice as recognition. Furthermore, Fraser (2001) states that institutional patterns and cultural values identify individuals as unworthy of respect or esteem (and other values explored by Lukasiewicz et al 2013, 2017). Fraser explains that when such patterns of disrespect and disesteem are institutionalised, they impede parity of participation, just as distributive inequities do.

Unlike social psychology, where theories define perception as representation of a thing or property seen (Kelly, cited in Nanay 2010), the use of the term perception in conservation is often associated with short-hand negative or positive evaluations of some aspects of conservation (such as costs and benefits, impacts of management regimes) (Bennett 2016). In addition, though the perception of governance and management tools quality differ according to socio-demographic traits and in different contexts (McClanahan et al. 2005a, Gelcich et al. 2009, Pita et al. 2010), few empirical studies of NRG have investigated how perceptions of legitimacy are socially differentiated within an institutional regime. Appealing to the broader social sciences, Bennett

(2016) proposes a definition for perception referring to “the way in which an individual observes, understands, interprets, and evaluates a referent object, experience, individual, policy or outcome” (Bennett 2016:4). This definition offers a holistic view of justice, fully incorporating perceptions research in existing research techniques on natural and conservation sciences.

McClanahan et al. (2005a, 2005b), Pita et al. (2010), and Leleu (2012) quantify attitudes such as trust, confidence, and legitimacy as measures of meaningful participation in and the successful implementation of co-management measures in NRG. Turner et al. (2016) recommend that the framework in Figure 2.5 is helpful in top–down forms of governance. Turner et al. (2016) state that trust and procedural justice are preconditions of legitimate NRM governance. Preconditions of value-based legitimacy (or the willingness to obey rules) are trustworthiness, and distributive and procedural justice. Trustworthiness is determined by public perceptions of performance, confidence, and goodwill directed towards governing institutions, and the information shared with stakeholders. Therefore, governance that fosters trust among particular groups elicits compliance. According to Turner et al., procedural fairness is a measure of how well a governing body enforces regulations. Procedural legitimacy may be undermined if enforcement is perceived as unfair. Governing bodies can adhere to principles of distributive justice by considering the distribution of costs and benefits arising from management decisions, the claims of different groups, and providing justification or compensation when inequitable outcomes occur. The findings demonstrate a link between procedural justice and trust, with minimal influence from distributive justice. Also, resource users’ heterogeneous perceptions complicates engagement and governance strategies that view user groups as homogenous entities. Hierarchical institutional policies may facilitate efficiency and control to achieve successful outcomes, but they may be more challenging if attempting to enable participation and build trust in top–down forms of governance. Although the conceptual framework is limited to value-based (and behavioural) perceptions, and did not consider influential factors such as the effects of stewardship accreditation schemes, it stated that meta-order governance strategies could be used to shape meaningful participation.

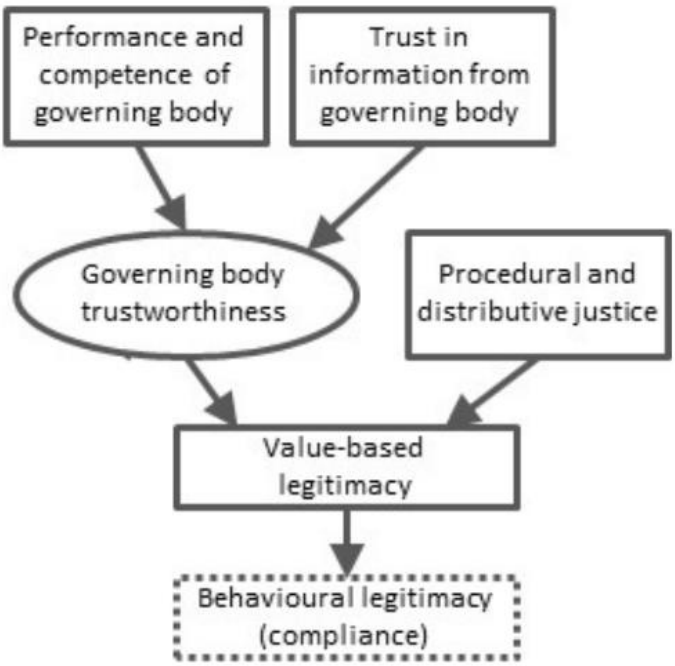


Figure 2.5: Conceptual framework illustrating preconditions for legitimacy (Turner et al. 2016).

Levi et al. (2009) explain that values and behaviours shape whether people are willing to engage and comply with governance measures. Further, Levi et al. emphasise factors such as trustworthiness of a governing body, and procedural and distributive justice that feed into legitimate decision-making (Figure 2.5; Levi et al. 2009, Hard et al. 2012). In addition, public perceptions determine the trust of performance and competence of government agencies. Therefore, trust reflects the degree of confidence and willingness directed toward governing institutions (Lai et al. 2010) and the information shared with stakeholders (Gilmour et al. 2015). Moreover, the perception of trust is vital for eliciting community compliance on the co-management of natural resources (Pretty 2003, Armitage et al. 2009). Trust is, therefore, a key precondition for legitimacy within environmental governance contexts.

Stakeholder perceptions are relevant to all dimension of justice. However, in highlighting the importance of recognising 'feelings' associated with cultural identity, perceptions that distinguish cultural identity and attitudes to NRM are important. According to Whiteman (2009), the 'hows' and 'whys' of justice are explained when perceptions are considered. However, surprisingly few studies exist linking justice as recognition and perceptions which can seek to answer such questions. Whiteman (2009) examines cultural understandings of indigenous people who seek justice because of development in their land. Indigenous communities do not think sustainable (or natural resource) development provides this, and decisions do not reflect their culture. The finding provides two important results: 1] when relations are perceived as unjust, responses such

as social withdrawal and active resistance will arise; and 2] the cross-cultural difference that develops encounter when they enter indigenous territories. Like indigenous communities, local people are the primary stakeholder groups (a group of people bound by place).

In framing EJ in the context of environmental conservation and the politics of fishing rights, Chhotray (2018) anchors EJ within justice as recognition. In focusing on the construction of discourses, with interest in disparate voices that lack any unified position or politics, Chhotray elucidates questions around who is speaking for which cause, which constituency they support, and what the consequences are for framing a particular conflict in a particular manner. These framings and contexts all matter in conservation policy.

2.6. Stakeholder involvement in the co-management of marine resources

Good governance of marine resources tends to invoke accountability, legitimacy, responsibility, representation, transparency, policy coherence, participation, social justice, and democracy (Jentoft 2017). MSPs should, therefore, include distributive justice and processes as mechansims for resolving conflicts (Jentoft 2017), noting that not all conflicts are necessarily 'bad' as they can trigger positive and constructive dialogue. Within MSPs, despite the large contribution that SSF make to coastal communities, they ted to be the "underdog [participants] and have the odds stacked against them in demarcation, access, and distribution of resources" (Jentoft 2017:270). To 'level the playing field', Jentoft lists three benchmarks for effective stakeholder engagement in MSPs. These are that stakeholders "should be distinguished by (i) the urgency of their needs, (ii) the legitimacy of their concerns, and (iii) the power they hold. Those who score highly on all three criteria are qualified as 'definitive stakeholders'" (Jentoft 2017:271). Although identifying that power relations and identifying the 'definitive stakeholders' is complex, MSPs involve multiple stakeholders so as to deal with opposing views and stakeholder conflicts, to comply with the principles of good governance.

Jones (2016) explores the 'reality' of twelve case studies to understand the 'reality' of MSP. The case studies explored: (a) how different approaches to marine spatial planning have developed to achieve different aims in different contexts, (b) how these realities diverge from theoretical ideals and constructs of MSP'ing, and (c) how they illustrate some of the synergies and tensions in the emerging policy landscape for MSP'ing in Europe (Jones 2016). Jones explores the themes of: 1] strategic sectoral planning, 2] ad hoc processes, 3] top–down approaches, and 4] blue growth priorities. He found that MSP prioritised mostly specific policies surrounding national strategic objectives on renewables, for example, rather than focusing on a diversity of objectives. Stakeholder processes were tokenistic and limited in their actual influence on executive decisions,

leading to frustrations among stakeholders. He stated that in reality "MSPs were about political expedience on strategic sectoral planning on ad hoc MSP'ing processes in which sectoral conflicts remain, and on top-down decision-making approaches from which participative platforms are disconnected" (Jones 2016:263). A complexity stated by Smith (2018) was identifying whose role it is to understand and implement MSPs. Further, Smith (2018) points out that public perceptions of MSP is that they are too technical and best left to marine experts to manage the expectations of communities. Jones (2016) and Smith (2018) scrutinise the role of participation in marine resource governance, and state that disaggregated decision-making to different sectors and ineffective criteria for participation within ecosystem-based management and in MSP are failing to meet the expectations of good governance.

Attempts for inclusive procedural processes in co-management include mediation between conflicting interest groups in NRM and multi-stakeholder procedural processes. Participation is a popular term in NRM, but it is inadequately defined, although it still implies some fundamental principles of procedural justice. The difficulties are that the relative participation of different actors determine which interests are served best. The process of 'elite capture' is where local elites within decentralised institutions are able to access and distribute funding and projects to benefit themselves (Gustavsson et al. 2014). Consideration of power distribution is an important part of fair and representative participation (Gustavsson et al. 2014). Participation is explained in Pretty's participatory typology (Pretty 1995). The characteristics are manipulation, passive, consultation, material incentivisation, functional, interactive, and self. These traits seek to distinguish motivations across different levels, from participants and implementing agencies. Gustavsson et al.'s (2014) application of stakeholder participation in the implementation of Marine Protected Areas (MPAs) revealed that participation was functional rather than meaningful. Gall (2016) and Gustavvson claim that interactive participation at every stage of implementing marine protected areas can determine the success of the MPAs, for example.

Widening participation in NRM has been welcomed as a central requirement for taking account of diverse views of actors involved in decision-making (see Section 2.1.2 and Birnbaum et al. 2015). Deliberation, association, reflexivity, and discussion are components of democratic theory that allow for transparency, accountability, public input, and involvement (Holg 2012), which in participatory processes are said to facilitate legitimacy (Newig 2012:46-68, Birnbaum et al. 2015, Richards and Gastil 2015). Policy rationale has shifted from emancipatory motives to the 'instrumental claim' that participation will promote governance effectiveness (Hogl 2012) by bridging across horizontal and vertical boundaries (Hogl and Nordbeck 2012). Like other proponents of participatory processes, Hogl presents positive empirical evidence on good participatory practices, and highlights that outcomes can be blocked by hierarchical decision-making and instead serve specific lobbied sectoral interests – or 'power' is centred around a few

influential actors. Further, evident impracticalities of fulfilling the wishes of all participants mean some, less prominent, actors are marginalised.

2.7. Relating interactive governance to environmental justice

Bringing the concepts of EJ and IG together through suggested pathways of stakeholder dynamics (Sections 2.1.2 and 2.6), perceptions of fishing rights (Section 2.5), and rights-based management (Section 2.4) moves someway forward to grappling with the justice issues concerning inshore fisheries management in the UK.

Using IG is a way of understanding the scale of societal interactions (i.e. the contribution that society makes) to tackle diverse, complex, and dynamic problems and opportunities in an era of 'big society' (Kooiman et al. 2008, Bavinck, 2013, Edelenbos and Meerkerk 2016). IG states that stakeholder arrangements play an increasing role in the formulation and implementation of policy, and so legitimises deliberative democracy (Boedeltje and Cornips 2004). Boedeletje and Cornips (2004) provide a strong account of how fairness and competence legitimise deliberative IG processes. However, despite its potential, Koppenjan and Klijn (2004) and Torfing, et al. (2013) argue that some assertions proposed by the theory require tighter definition. For example, societal interactions at meta-order governance require further theoretical and empirical unpacking before any solid conclusions can be made on the scale of its applicability. As a starting point to understanding stakeholder interactions, IG can be used to understand whether these processes are legitimate and effectively implemented on the ground.

EJ is an approach that applies to a number of equity and social justice issues in the sustainable NRG paradigm, particularly concerning terrestrial environmental matters. Literature by Schlosberg (2007, 2013) and Walker (2012) link distributive, procedural, recognition, and capabilities as avenues worth exploring. With particular reference to advancing EJ contributions to the understanding of Sustainable Development Goals 14 and 16 (SDG 14 and 16), theoretical and empirical conceptions linking EJ to marine environmental resources are vastly understated. 'Blue Justice', as it is increasingly becoming known, is a relatively new concept with minimal entries found in Google Scholar (checked 23 July 2019). However, concerted efforts by Chuenpagdee and Jentoft (MARE conference, June 2019) present potential opportunities to embed this concept firmly into discussions on EJ going forward.

There are evident overlaps and distinctions concerning the two frameworks. For instance, IG has more of a theoretical focus and EJ has more of an empirical focus. Both frameworks explore the contribution that multi-stakeholders make to decision-making, using perceptions and access to property rights as elements to investigate. While featuring in both frameworks, IG explains the theoretical basis of involving civil society in the organisation of governance and the potential

trade-offs made in order to build consensus among stakeholders. In contrast, EJ provides stronger empirical evidence of the experiences of stakeholders within decision-making. Similarly, perspectives on fisheries as property rights feature in the IG literature, while EJ provides a better angle for exploring perceptions of property rights, equitable access to space and property rights, and equal access to the decision-making infrastructure supporting those property rights.

2.7.1. The environmental justice framework to include capabilities

Step one, Figure 2.6: The overlapped conceptual framework linking EJ and IG.

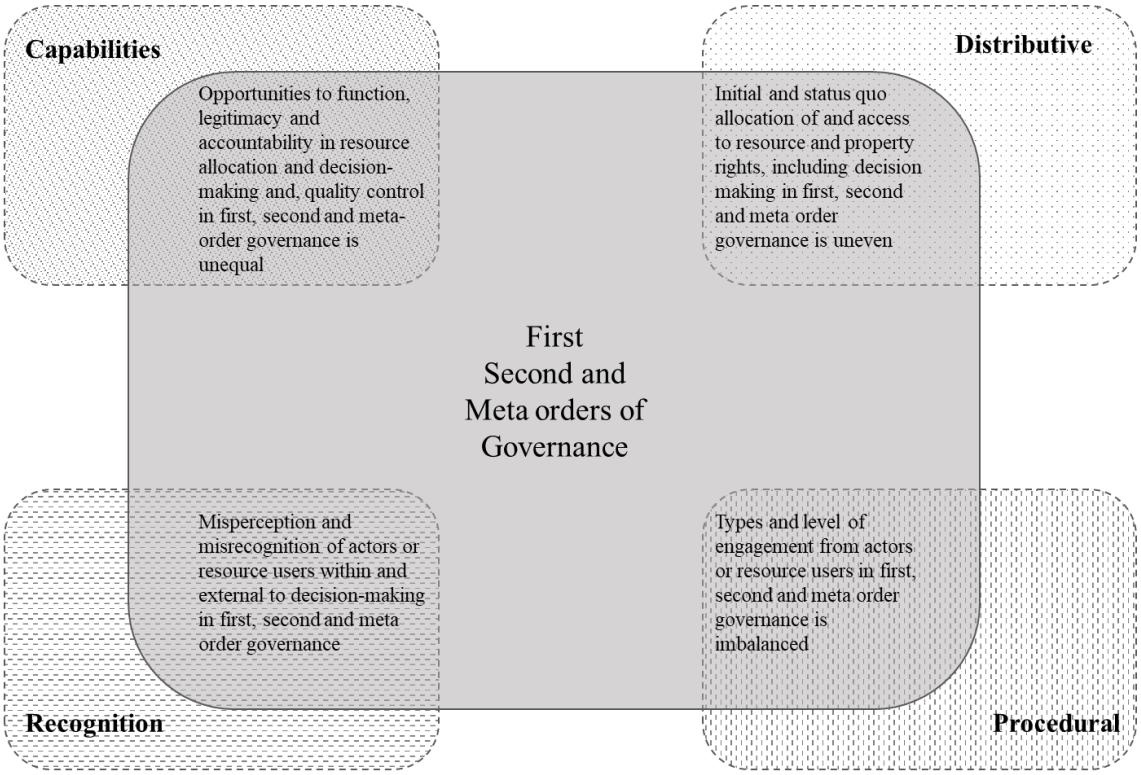


Figure 2.6: Conceptual framework overlapping interactive governance and environmental justice frameworks.

The next three diagrams break the revised conceptual framework in Figure 2.6 into three components: first, second and meta-orders of governance, with a view to exploring the four elements of EJ.

2.7.2. First-order of governance and environmental justice

Figure 2.7 shows the overlap between first-order of governance and EJ. This is where and when (for example, date/time and location) stakeholders and organisations come together to solve societal problems (Bavinck et al. 2005). Inshore fisheries require addressing problems such as

'who are the problem makers – large or small scale fishermen?' or 'what are the context specific problems faced in fisheries?' To answer such questions an approach that takes into account technological, economic, social, and political factors is necessary. This may involve mobilising and channelling actors into uncharted territory. Inshore fisheries management is devolved to local Inshore Fisheries and Conservation Authority (IFCA), therefore the role of actors and fisheries organisations will matter more so as the role of markets and civil society increases (Bavinck et al. 2005).

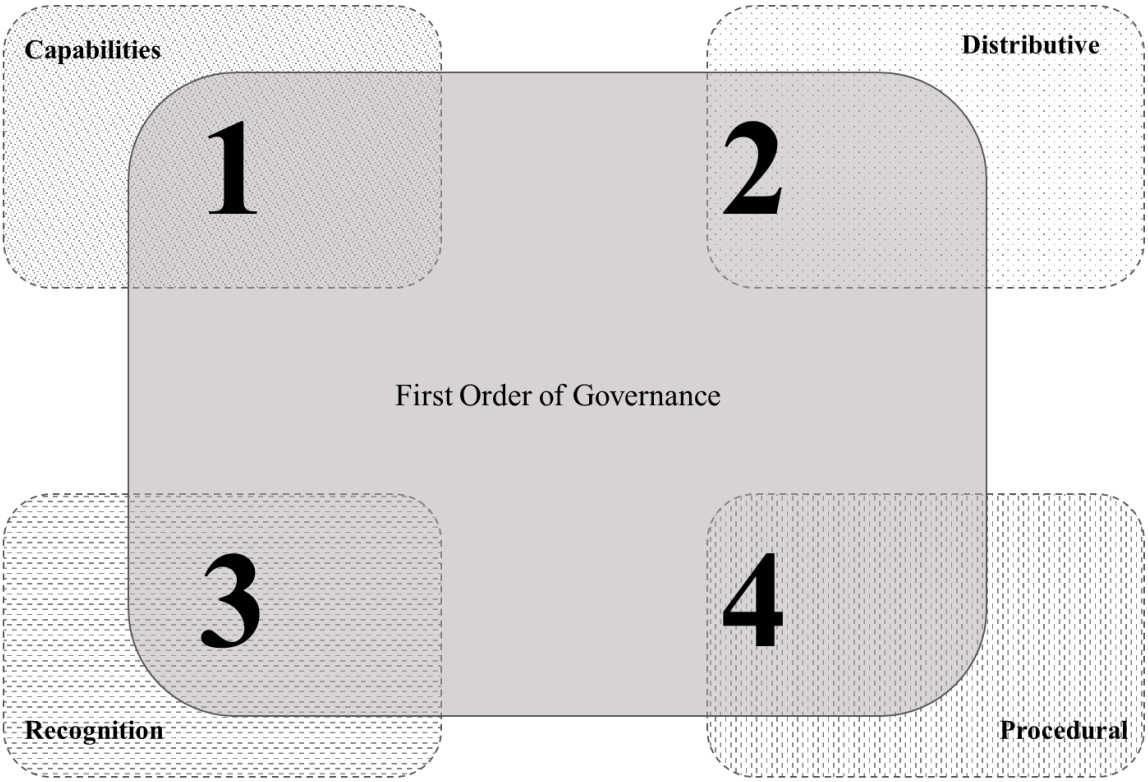


Figure 2.7: Conceptual framework overlaying the first-order of governance onto the environmental justice framework.

Figure 2.7, 1: The link between the first-order and capabilities is how functional the adoption of visions, instruments, and action are at local level. For example, the extent to which organisations and institutions are informed, the level of membership in the organisation, the organisational strength of the group, leadership skills, problem-solving capability, and the will to participate in delivering "clean, healthy, safe, productive and biologically diverse oceans and seas across" (HM Government 2011).

Figure 2.7, 2: The link between the first-order and distributive justice is where the initial problematic is framed. Using evidence, what is the availability of information to make decisions

surrounding broad problems of too many boats targeting too few fish? This element investigates the initial allocation of property rights in relation to access to resources.

Figure 2.7, 3: The link between the first-order and recognition as justice is the interplay between ethics and perception of actors to address the broad problematic. The process by which decision makers perceive and roll out images (mission statements, guidance), instruments (tools), and action (implementation process).

Figure 2.7, 4: The link between the first-order and procedural justice is where enforcement of rules, resolution of conflicts, and dealing with shifting externalities takes place.

2.7.3. Second-order of governance and environmental justice

Figure 2.8 shows the overlap between second-order of governance and EJ. This element deals with the maintenance and design of institutions to solve societal problems, including developing capacity to undertake first-order governance by providing rules (Bavinck et al. 2005). An important second-order governance activity is to design, maintain, and change governing institutions to provide a framework for first-order governing interactions. An interesting aspect is where over time, institutional arrangements are unfit for purpose and cannot adapt fast enough for new or changing circumstances. This aspect of fisheries governance is important because the institutional framework that manages fisheries may evolve, but the regulatory framework can appear draconian, especially if the underlying and fundamental basis for the framework is historic. Therefore, when institutions or organisations are poorly matched to the problems that they are intended to address, they may exacerbate rather than benefit societal problems (or problems faced by fishermen) (Bavinck et al. 2005).

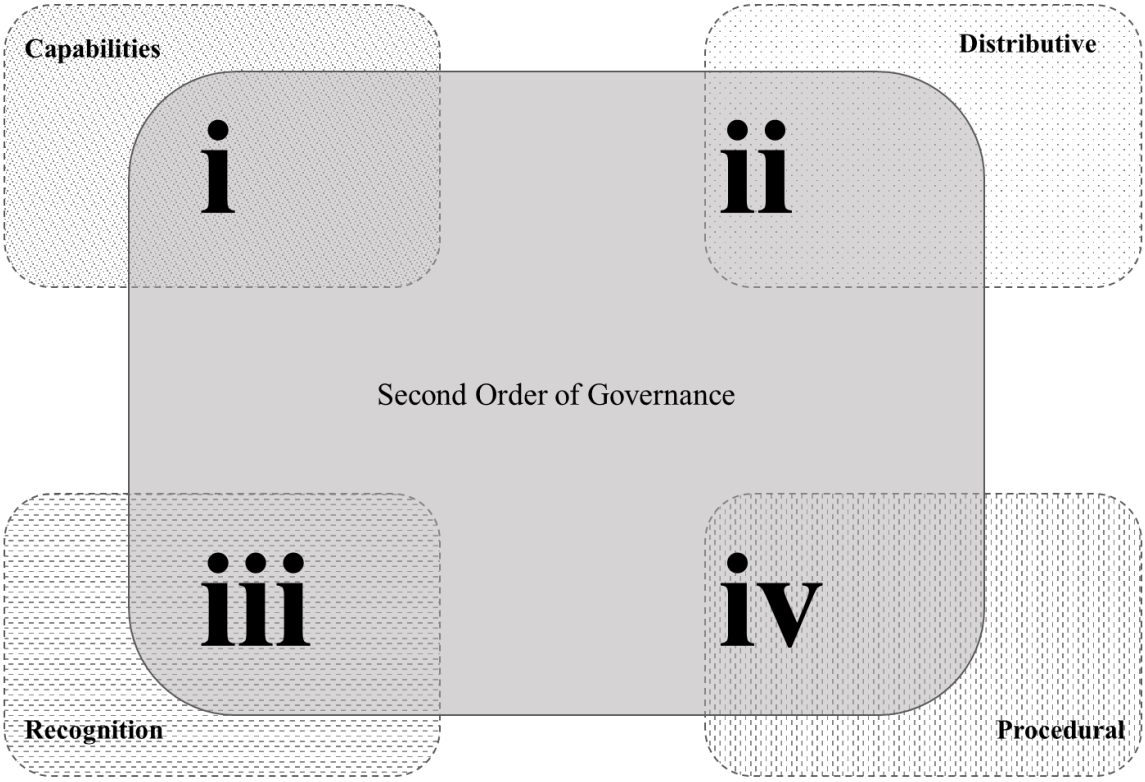


Figure 2.8: Conceptual framework overlaying second-order of governance onto the environmental justice framework.

Figure 2.8, i: The link between the second-order and capabilities is where the framework explores whether the building blocks for institutional visions and rules shape and give direction to the process of solving problems and create fishing opportunities. In other words, how closely aligned are the instruments and problematic.

Figure 2.8, ii: The link between second-order and distributive justice explores whether the governing institutions are adapting fast enough to main equitable resource management.

Figure 2.8, iii: The link between second-order and justice as recognition is whether actors have equal opportunity to adapt, change, and influence regulatory processes.

Figure 2.8, iv: The link between second-order and procedural justice explores whether the designs of the participatory process within regulatory frameworks are fit for purpose.

2.7.4. Meta-order governance and environmental justice

Figure 2.9 shows the overlay between meta-order governance and EJ is where transparent decision-making is evaluated in accordance with the guiding principles, values and ethics, and criteria. In fisheries governance, these principles encompass: 1] explicit analytical, ethical, or political drivers; 2] assessed and standardised values; and 3] consistent and fair application by

governing agents or institutions, depending on the fisheries problems addressed Bavinck et al. (2005). When applying these elements to EJ, the guiding principles and their application to changes in governance can result in tension and conflict. These tensions and conflicts may be inflated depending on the moral principles of the governing agents. In the case of conservation, for example, wide ranges of worldviews shape the ethical considerations of environmental ethics (Bavinck et al. 2005).

Figure 2.9, a: The link between meta-order and capabilities is the extent to which resource users are able to function as fishermen in space and time.

Figure 2.9, b: The link between meta-order and distributive is whether the underlying principles of resource allocation and access to resource and space are equitable.

Figure 2.9, c: The link between meta-order and justice as recognition examines the extent and range of the fishing views represented in decision-making.

Figure 2.9, d: The link between meta-order and procedural examines the efforts made to ensure that all sections of society are informed and engaged, and conflict mitigation processes are considered.

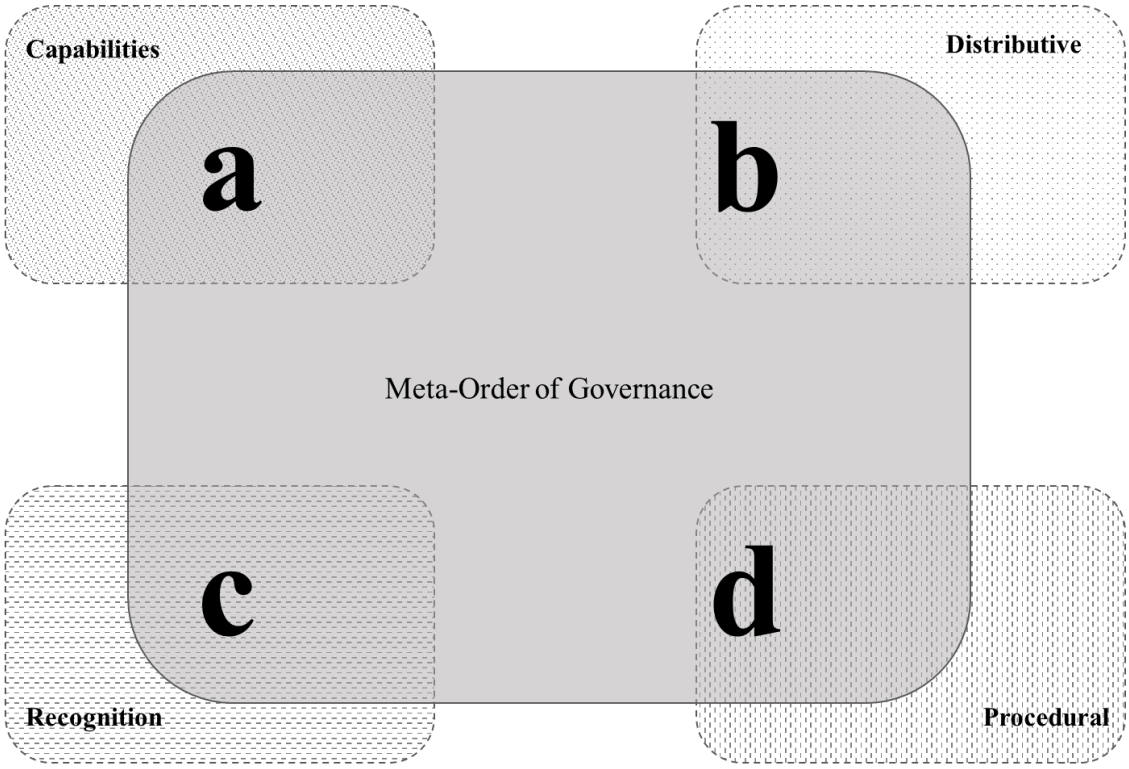


Figure 2.9: Conceptual framework overlaying meta-order of governance onto the environmental justice framework.

2.7.5. Combining interactive governance and environmental justice

When combining the EJ and IG framework into the conceptual framework in Figure 2.6 (including the steps taken in Figure 2.6, 2.7 and 2.9), the approach investigates the extent to which the role of multi-stakeholders in participatory processes provide transparent, legitimate, accountable, and coherent governance. In addition, IG explores how the allocation process of natural resource property rights affects the ability of fishermen to spatially access these resources and the decision-making processes that support these allocations. Woven into the analysis is the extent to which perceptual pre-conditions of property rights and entitlement can legitimise the level of engagement of resource users.

This research focuses on the action and experiences of fishermen on the ground, at local inshore fisheries level. EJ elements to consider here are: 1] whether one fishing sector has distributive, procedural, recognition, or capability advantages (or disadvantages) at the expense of another, and what are the contributing factors to these advantages (or disadvantages); 2] whether the extent to which inshore fishermen are recognised in processes and procedures set out for stakeholder engagement are fair and representative; 3] whether the perceptions of property rights shape how those rights are seen; and 4] whether access to property rights pose geographic or decision-making challenges. Rather than replacing any existing ways of looking at inshore fisheries in the global north, the revised framework in Figure 2.6 offers a strengthened and enhanced way to understand issues of justice in the governance of inshore fisheries in the global north. Investigating EJ in inshore fisheries governance provides an opportunity to investigate societal interactions in the orders of governance.

Having explored each concept separately, the three-step approach to the conceptual framework in Figure 2.6 shows how the EJ framework is expanded to include capabilities, and then how the IG approach is used to explore EJ. Chapter 3 outlines the methods used to investigate the relationships linking the concepts in the broad theories of EJ and IG. In addition, Chapter 3 also describes the research case study location. Chapter 4 describes the institutional and legislative framework supporting fisheries in the case study. Chapters 5 to 7 present the empirical findings of the case study, and Chapter 8 discusses the issues raised by this case study by revisiting the framework outlined in this chapter.

Chapter 3. Research Methodology and Case Study

Introduction

The previous chapter reviewed the literature and set out the gaps in fisheries and justice in global north research. This chapter outlines a variety of methods to investigate the research questions set out in Chapter 1. Semi-structured interviews were conducted with a wide range of fishermen from Kings Lynn and Boston. Also, interviews with officials within the Inshore Fisheries Conservation Authority (IFCA) and email correspondence with Eastern-IFCA Marine Science Officers were used to understand justice decisions affecting processes and interactions at the first-order, focusing on The Wash cockle fishery. An analysis of government reports and policy documents, as well as Commons and Lords debates, was used to support the interview material and understand meta and second-order policies. Finally, spatial analyses of fishing vessel sighting data gathered by the Eastern-IFCA were used to add a further analytical dimension to the fishermen's experiences. These methods deepen understanding into the justice concerns expressed by fishermen.

Section 3.1 sets out my ontological and epistemological positions within the scope of other research paradigms. Section 3.2 applies my research position to my approach to the case study selection and justification. Section 3.3 'the rationale for case study approach', defines the units of study and sampling criteria. In Sections 3.4 and 3.5, I explore the methods best suited to carry out this research. Section 3.6 describes the case study region, and in Section 3.7 I discuss the ethical considerations. Finally, in 3.8, I reflect on the process of conducting the research.

3.1. Epistemological and ontological positioning

This research is embedded in the social and political sciences. Bryman (2016) broadly explains that epistemology relates to the study of knowledge, where it is derived from the belief system that shapes it. Ontology refers to the contribution that methodological concepts make to the study of reality.

Bryman (2016) summarises three epistemological considerations usually adopted in the social sciences: positivism, interpretivism, and critical realism. Positivism concerns the application of natural science methods to the study of social reality and can be achieved deductively through testing laws through hypothesis, for example, inductively through a process of gathering facts that provide a basis for regulations. It also assumes that the investigation must be value-free and objective. Proponents of interpretivism argue that the social realm cannot be studied with the scientific method of investigation applied to nature, and that investigation of the social domain requires an epistemology where the concepts and language that researchers use in their research

shape their perception of the social world. Arguably, this approach picks up nuances and variability found in human interactions, because the researcher fully engages with social interactions. Emerging from positivism is Bhaskar's (Bhasker 2008) and Harre's (1986) theory of critical realism. Critical realism is difficult to define (Archer et al. 2016) but is broadly described by Bryman (2016) as acknowledging that our understanding of the structures of society and the biophysical world is partial and depends on social and political framings that influence research approaches.

Constructionism, as an ontological consideration, asserts that "social phenomena and their meanings are continually being accomplished by social actors" (Bryman 2016:29), implying that they are in a constant state of revision through social actors' interactions. Clement's (2010, see also, Bhasker 2008) insight into social-ecological systems and critical realism explains that subcomponents of the actor (perceptions, etc.) distinguish the information and the perception actors have of the situation. She asserts that there is no unique way of looking at the world, and actors' decisions depend on their perception of the world rather than on actual characteristics of the social-ecological world. Clement acknowledges there are shortcomings of merging the constructionism and the social-ecological world; for instance, knowing how belief systems emerge or change or are sustained. I wanted to gauge fishermen's perceptions of environmental justice (EJ), for example, in rights-based management (pertinent for Chapter 6). Therefore, social constructionism offered insightful methodological approaches to evaluate natural resource governance.

In light of these considerations, my position in researching the EJ issues faced by fishermen evolved from critical realism to social constructivism as it provided a logical ontological and epistemological basis for the application of my conceptual framework. The methods chosen rely on both realist and constructivist approaches, using biophysical data to assess environmental change while at the same time critically evaluating how the latter is socially constructed through discursive analysis (Clement 2010, Bryman 2016, Levenda 2019). Drawing from in-depth perspectives provided by fishermen and cross-referencing these with views from government representatives, government collated biophysical data, and/or policy documents works well in addressing the research questions in this investigation.

3.2. Research design

Overall, I adopted a mixed-methods approach because this enabled the use of quantitative and qualitative data within the same study area (Creswell 2011). Chapters 5 and 6 used qualitative data, while Chapter 7 used both qualitative and quantitative as I was able to triangulate the spatial data used for the findings in Chapter 6 with the interview data.

A mixed-methods approach as a methodology involves collecting, analysing, and integrating quantitative and qualitative research methods and data into a single study (Cresswell and Plano-Clark 2017). Essentially, there are two mixed-methods typologies. These are a] parallel, with a design in which two types of data are collected concurrently, and b] sequential, where one kind of data provides a basis for collection of another kind. I used a sequential design for this research because thematic analysis directed me to specific Eastern-IFCA minutes and government policy documents. For example, in Chapter 7, I regularly triangulated between Eastern-IFCA minutes, policy documents, spatial data, and interview data. In addition, studies where one paradigm and method are dominant, while a small component of the study is drawn from alternative design, are termed 'less dominant/dominant' (Tashakkori and Teddlie 2010). I used this approach because the qualitative element steered the quantitative part of the analysis thus providing a deeper understanding of resource allocation to different fishing groups. The rationale for conducting semi-structured interviews first was that research participants could elaborate on which areas of governance and justice affected them, I was then able to identify the key issues of justice and analyse them thematically. Once the themes were identified, this guided the topic areas that would benefit from a quantitative dimension. The process for data collection is summarised in Figure 3.1. I triangulated my findings regularly through the latter stages of my data analysis.

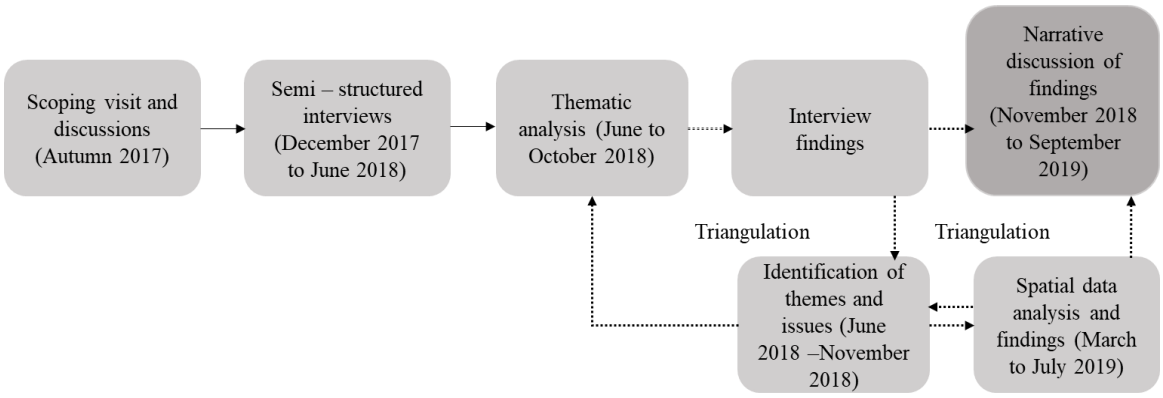


Figure 3.1: Research flow diagram.

Being open to conducting mixed-methods research to address the research questions was important to reach the research question set out in Chapter 1.

The steps below present an overview of the research process which took place between December 2017 and June 2018.

1] Prepare scoping interview questions.

2] Scoping visit to familiarise myself with the case study.

3] Additional informal field visits to kick-start the process of snowballing for research participants in Kings Lynn.

4] Revise and confirm interview questions and prepare interview guide.

5] Informal conversations with IFCA Officers.

6] Observe Eastern-IFCA Committee meeting and familiarise myself with Boston representatives to start the snowballing process in Boston.

7] Interviews with two IFCA Officers.

8] Scheduling and interviewing research participants in Kings Lynn.

9] Revise interview questions for Boston.

10] Scheduling and interviewing research participants in Boston.

11] Thematic analysis (including document and spatial) approach suggested by Ritchie and Lewis (2003).

Since the social and political climate has significantly affected UK fisheries, semi-structured interviews enabled me to gain greater insight into current circumstances that may have shaped certain perceptions and experiences. I was then able to apply the interactive governance lens within the context of The Wash while accounting for the political climate that may have shaped certain questions and answers related to the multiple layers of governance.

After and including Step 11, I adopted the approach suggested by Ritchie and Lewis (2003:220-225): I applied thematic analysis in NVIVO version 10 to classify and organise the data according to key themes, concepts, and emerging categories. This was achieved by inductively identifying and subdividing a series of subtopics and arranging them thematically into the main themes. Guided by my conceptual framework, I then processed the data deductively, followed by another inductive sense-check of the main themes and sub-themes that emerged. The analysis of quantitative data was undertaken using fishing vessel siting data and cockle landings data. These were used to investigate the efficacy of Eastern-IFCA collected spatial data to address the interactive governance element and elements of EJ.

I initially considered the phenomenological approach because I wanted to shed light on the individual experiences of fishermen, which would deepen the understanding of EJ in inshore fisheries (Mooney 2012). This approach was discounted as I wanted to explore a rounded picture that also allowed for the location of research participants' experiences in the context of interactions at various levels of decision-making processes from European Union (EU) to local level.

Shaping my research were my experiences of working within the fisheries decision-making cycle: science and evidence formulation, fishing quota enforcement and management, and sea fisheries policy. As my experience shaped my research focus, it was difficult to eliminate my preconceptions effectively. What was needed was a focus that directed me away from the main fishing ports in the UK that I was familiar with (such as in the south-west and Scotland) and to ascertain a local focus where the justice issues were understood at ground-level. Focusing on The Wash moved me away from the direct influence of those I was familiar with while retaining my interest in researching the issues that most affected the inshore fishing fleet.

A mixed-methods approach was attractive as it allowed me to use both qualitative and quantitative data. The information drawn from quantitative data was minimal compared with the rich depth of the material provided by the interviews. I was able to interview fishermen and IFCA Officers, triangulate and examine these responses with policy documents, and use numerical data which was useful for showing the cause and effect of emerging policy changes or fishing patterns.

3.3. Rationale for case study and subject centred approach

This research is grounded in critical realism because the positioning is relatively flexible regarding other research approaches taken, such as the case study (Easton 2010). Unlike positivism and interpretivism, critical realism suggests that the particular choice of method should depend on the nature of the object being studied and what one wants to learn about it (Easton 2010). Within critical realism, Sayer (2000) points out that extensive methods can utilise statistical analysis or questionnaires to understand emerging patterns. Conversely, intensive methods use interviews and qualitative techniques to ask questions about change. These methods are used in single case studies or multiple case study locations. Using critical realism and case studies, Avenier and Thomas (2015) conclude that case study quality is based on generic notions of reliability and inference quality, and constructs of quality and generalisation, which are fundamental principles for conducting any research. Applying critical realism in case studies means 1] reliably encompassing truthfulness and trustworthiness, 2] inference quality and constructs include research rigour and data quality logically connecting data collection and phenomena, and 3] generalisation "concerns the degree of abstraction of the explanatory model elaborated" (Avenier and Thomas 2015:76) as it uncovers the underlying essence of things from surface level to in-depth understanding.

While case study as a methodology is often criticised or held in low regard within academia (Flyvberg 2011), it includes numerous benefits, and has proven to be particularly well suited for this study Case studies explore causal relationships and enable us to clearly identify processes and interactions at stake Starman (2013). Flyvberg (2011) also highlights that a case study allows us to place these processes in a specific context and therefore to reach a depth of analysis that

would be difficult to achieve with another method. Within a single case it is possible to look at a large number of intervening variables and inductively observe any unexpected aspects of the operation of a causal mechanism, while quantitative studies lack such clarity (Starman 2013). Understanding causal mechanisms is a key component of interactive governance when considering environmental justice (EJ) and it was therefore a key requirement of the methodological approach that it could handle such considerations. In using case studies to investigate The Wash, there are revealing dynamics and interrelationships between the Marine and Coastal Access Act, 2009, local bylaws and actors at first level. Therefore, rather than analysing systems or organisational structures alone, this thesis took on a subject-centered approach, focusing on EJ issues that centered on one actor group (fishermen). The focus on this actor group allowed the exploration of EJ issues that emerged from the interactions of fishermen with other actors involved in the management of inshore fisheries.

Eisenhardt (1989:534) points out that "case study is a research strategy which focuses on understanding dynamics present in single settings", and this is why using a case study approach was the most appropriate for this research. I wanted to understand the extent to which interactive governance can provide a lens to understanding environmental justice in two fishing communities in the global north. Specifically, how changes in governance arrangements affected The Wash cockle fishermen based in both Boston and Kings Lynn. The Wash case study was chosen because in my role as an inshore fisheries manager I was already familiar with issues concerning The Wash. For example, it is one of two regions (the other being Dart Estuary) in the UK that uniquely hosts a microcosm of influences resulting from national orders, byelaws and international legislation and agreements. I decided to compare two places, Boston and Kings Lynn, because the ports are located on either side of The Wash and could offer a unique perspective related to fishing in The Wash and the dynamics resulting from fisheries governance and management. On a practical and personal level, The Wash was also within daily commuting range to from my base in Norwich and family commitments.

To address criticisms that case studies can pose problems of validity and reliability, and sometimes employ non-systematic procedures such as in-depth interviews, I designed a research protocol with key interview questions that were established and answered at each interview location. The interviews were also conducted at similar venues at both locations and all took place during a working day and often during unsuitable weather conditions for fishing. By embedding the two locations, Kings Lynn and Boston, into the single case study, The Wash, I could explore the range of effects of the decisions made at the different governance scales on fishermen in both towns. Identifying differences and comparing perceptions and experiences across the two fishing groups enabled this perspective.

Yin (2017) states single case study sites are often used in exceptional cases as they can enrich the data quality for a single case. This can be justified for testing and finding critical, unusual, common, revelatory, or longitudinal information in a single case study. There is limited information on fishermen from both Kings Lynn and Boston fishing in The Wash to be able to identify whether Kings Lynn or Boston should be a single focus for the research. Moreover, the time and cost of travelling between the two towns was minimal, thus addressing the criticism by Yin (2017) that a researcher's lack of capacity is a significant constraint. Embedding the two units, Kings Lynn and Boston, into one case study location represented a balance between resources and achieving the desired outcome for this research.

3.4. Primary data sources

3.4.1. Semi-structured interviews

Interviewing is a core research method used across all social sciences and should be considered as a "conversation… in which one person has the role of researcher" (Gray cited in Reed 2009:1944). According to Yin (2017), interviews can help suggest explanations to the 'how's and why's' of a key event. These facets of semi-structured interviewing were critical to conducting this research, because the participants were able to steer the conversation in the direction they felt appropriate to articulate their point.

Interviews involve a face-to-face, interpersonal role situation, in which an interviewer asks research participants questions designed to elicit answers pertinent to research questions (Frankfort-Nachmias and Nachmias 2007). The interview method has advantages and disadvantages (see Hoggart 2002, Patton 2002, Nachmias and Frankfort-Nachmias 2007), as set out below.

Advantages

1. Flexibility in the questioning process: interviews can range from highly structured to non-structured depending on the research problem under investigation. The interviewer can clarify questions and ask for additional information.
2. Easy administration: interviews do not require respondents to have the ability to read or to handle complex documents or long questionnaires.
3. Interviews require 'participation', not just a hasty 'response'. Participation involves the researcher interacting with participants to complete the interview. Hence, interviewing is often perceived as an obliging endeavour rather than a one-sided exercise.
4. Opportunity to observe non-verbal behaviour: such opportunities are obviously not available when questionnaires or indirect methods are used.

5. Opportunity to record spontaneous answers: the respondent does not have as much time available to answer questions when questionnaires are employed; when spontaneity is important, interviews offer a real advantage over other methods.
6. Capacity for correcting misunderstandings by respondents and the interviewer: such an option is very important and not available in other forms of data collection, such as remotely organised questionnaires.
7. Control of the interview situation: interviewers determine who answers questions, where the interview is conducted, and the order in which questions are answered.
8. Fuller information: interviewers are able to collect supplementary information from respondents. If collected, personal characteristics and their environment can aid the researcher in interpreting the results.

Disadvantages

1. Higher cost: interviews are more costly and time-consuming than some other methods such as questionnaires, especially when respondents are widely dispersed geographically.
2. Interviewer bias: innate characteristics of interviewers and differences in interviewer techniques may affect respondents' answers.
3. Lack of anonymity: the presence of the interviewer may make the respondent feel self-conscious.
4. Respondent recruitment: the fear that the research will exacerbate difficulties for research participants.

In an exploratory study, face-to-face interviews can be very helpful to "find out what is happening [and] to seek new insights" (Robson 1993:42). Exploratory studies can be prepared ahead of time with lists of questions and topics that need to be covered during the conversation. It also helps to develop an understanding of the subject of interest, necessary for developing relevant and meaningful conclusions. Open-ended questions tend to present a fuller picture of the issue, but they can also lead to little control over interviewees' responses.

In this study, face-to-face interviews were conducted with fishermen and managers involved with Eastern-IFCA policy and practice. Face-to-face interviews with fishermen were designed to give insight into the relationship between inshore fisheries policy, inshore fisheries practices, potential improvements at an institutional level, decision-makers' attitudes and views of changes in the decision-making process, and interaction between stakeholders. They also helped to identify some problems that might affect this interaction.

During a scoping visit, a gatekeeper was able to provide me with an initial group of fishermen to contact. This technique snowballed, with 26 fishermen being contacted to undertake an interview.

The sample covered a broad spectrum of views on fishing across Kings Lynn and Boston. Except for two, who explained that interviews were unimportant to their work, the 24 fishermen who participated in the interview process provided depth to the issues of governance and justice I needed to cover. Table 3.1 lists the research participants interviewed to gather data to support this research.

The flexible nature of the semi-structured interviews meant that the interviews ranged from between thirty minutes to four and a half hours. The research participants were gently steered towards issues of justice and governance if they were committed to making a particular point. However, in general, the timings were entirely guided by the research participants. I was allowing the research participants to lead the conversation and this approach added depth where the research needed it.

Table 3.1: Research participants: Fishermen and IFCA Officers interviewed for the research. (The terms nomadic, independent, industrial and skipper are explained in Section 3.7.1.).

Location	Code	Sector
Boston	**F1**	Independent
Boston	**F2**	Nomadic
Boston	**F3**	Independent
Boston	**F4**	Independent
Boston	**F5**	Independent
Boston	**F6**	Nomadic
Boston	**F7**	Independent
Boston	**F8**	Independent
Boston	**F9**	Independent
Kings Lynn	**F10**	Nomadic
Kings Lynn	**F11**	Nomadic
Kings Lynn	**F12**	Independent
Kings Lynn	**F13**	Independent
Kings Lynn	**F14**	Independent
Kings Lynn	**F15**	Skipper
Kings Lynn	**F16**	Industrial
Kings Lynn	**F17**	Industrial
Kings Lynn	**F18**	Independent
Kings Lynn	**F19**	Nomadic
Kings Lynn	**F20**	Skipper
Kings Lynn	**F21**	Industrial
Kings Lynn	**F22**	Nomadic
Kings Lynn	**F23**	Independent
Elsewhere	**F24**	Nomadic
N/A	**A2**	IFCA Officer
N/A	**A1**	IFCA Officer

Two IFCA Officers familiar with The Wash cockle fishery were interviewed. I initially emailed the Officers; I then followed up with a telephone call. I sent an interview protocol that also outlined the purpose of my research. These participants are senior figures within the IFCA, and reflected the views of the Eastern-IFCA and the policy process. All participants gave written consent, attached in Appendix 1. There was also email correspondence with several Eastern-IFCA Officers who were able to clarify detail in the policy documents or fishing vessel sitings and cockle stock assessment data used to present the findings in Chapter 5.

3.4.2. Snowballing

Snowballing is an important method, complementing and facilitating the use of other methods in the research. Valentine (2005), for example, argued that "the snowballing method describes using one contact to help you recruit another contact, who in turn can put you in touch with someone else. The initial contact may be a friend, relative, neighbour, or someone from a social group or formal organisation". As the term implies, through this method, snowballing gains momentum, or 'snowballs', as the researcher builds up layers of contact.

Snowballing may be considered one of the best approaches in cases where the researcher comes from a different area or has different values (Valentine 2005). Valentine (2005) outlined the advantages of this technique. First, it helps the researcher to overcome one of the main barriers to recruiting participants: gaining their trust. Second, it allows the researcher to seek out, more efficiently, participants with particular experiences or backgrounds. However, snowballing – where respondents tell the researcher about others they know with the same specified characteristics – has

disadvantages. As potential respondents often know each other, the difficulty of snowballing is that a contact network created using this method alone may be prone to bias (Valentine 2005). Bias can occur because those who know each other may have similar behaviours and attitudes or may influence each other concerning the research. Those not involved in the study may have quite different characteristics.

3.5. Secondary data sources

The extensive use of secondary data listed in Table 3.2 and Table 3.3 was analysed using NVIVO version 10. The Eastern-IFCA minutes were used to understand the potential causes of (in)justice at ground level, establish the decision-making processes, and identify the mechanisms used for implementing policies in The Wash cockle fishery. DEFRA and House and Lords debates (meta-order) were used to understand causes of (in)justice from meta-order decision-making (e.g. policy and practice – government reports on environmental justice and regulations). The documents were analysed thematically to complement the interviews in order to present a fuller picture (i.e. through triangulation and understanding causal linkages) of the issues surrounding EJ in the governance of The Wash.

In terms of the investigation, the role of government in fisheries management in the UK, particularly DEFRA and the Eastern-IFCA, provided useful information about the interplay between marine spatial planning and the Marine and Coastal Access Act, 2009, especially the relationship between conservation and resource extraction. For this research, fishing vessel sightings data was sourced from the Eastern-IFCA patrol vessels during ad-hoc patrols around the

district between 2006 and 2016. Likewise, cockle density data was sourced from Eastern-IFCA scientists, covering the period between 2015 and 2016. In Chapter 7, I cross-examine the dataset and interview dataset to establish where similarities and differences exist. Chapter 7 also highlights the caveats of using this dataset.

ESRI Geographic Information System software (GIS) was used to investigate spatial marginalisation. As with Kyem (cited in Nygeres et al 2011) I use geographical (or spatial) accessibility to explore spatial marginalisation as a potential concern in The Wash. I partially adopted Ribot and Peluso's interpretation of the theory of access as the ability to physically access and benefit from cockle fishing. Kyem, though, uses GIS for understanding the spatial effects of natural resource policy. A proponent of GIS, Kyem states that it is a powerful tool when used to evidence spatial marginalisation and unfair spatial distribution. GIS then can be used to inform intervention between disputants. In its application, I used fishing vessel sightings to indicate where and what type of fishing activity takes place. Coupled with the use of GIS, I demonstrate elements of distributive justice. Thompson (2016) argues that the 'container approach', which is simply a count of the fishing vessel sightings (Kyem 2011, cited in Nyegres 2011) used in Chapter 7, presents a snapshot of time only. There are several drawbacks to relying on the GIS component alone to provide an understanding of justice. To triangulate data, and analyse justice, a researcher requires an in-depth account of personal experiences that the GIS function alone is unable to provide.

I investigated policy discourses at meta and second-order. Discourse analysis is defined as "a specific ensemble of ideas, concepts, and categorisations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" (Hajer, 2006:67). Analysing change in discourses helps to clarify divergent views on fisheries governance at national and local level.

Coded and analysed in NVIVO version 10, Table 3.1, Table 3.2, and Table 3.3 list the Eastern-IFCA minutes and government policy documents as well as the Lords and Parliamentary discussions that took place between 2006 and 2016.

Table 3.2: Eastern IFCA minutes analysed in NVIVO.

EIFCA Minutes coded and supplimentary material
33rd EIFCA Meeting 18th July 2018
32nd EIFCA Meeting 25th April 2018
31st EIFCA Meeting 31st January 2018
30th EIFCA Meeting 25th October 2017
29th EIFCA Meeting 7th June 2017
28th EIFCA meeting – Extraordinary 22nd March 2017
27th EIFCA meeting 15th February 2017
26th EIFCA meeting 2nd November 2016
25th EIFCA meeting 27th July 2016
24th EIFCA meeting 1st June 2016
23rd EIFCA meeting 27th April 2016
22nd EIFCA meeting 27th January 2016
21st EIFCA meeting 28th October 2015
20th EIFCA meeting - Extraordinary 21st August 2015
19th EIFCA meeting 3rd June 2015
18th EIFCA meeting 29th April 2015
17th EIFCA meeting 28th January 2015
16th EIFCA meeting 29th October 2014
15th EIFCA meeting 30th July 2014
14th EIFCA meeting 4th June 2014
13th EIFCA meeting 23rd April 2014
12th EIFCA meeting 29th January 2014
11th EIFCA meeting 30th October 2013
10th EIFCA meeting 31st July 2013
9th EIFCA meeting 5th June 2013
8th EIFCA meeting 30th January 2013
7th EIFCA meeting 31st October 2012
6th EIFCA meeting 25th July 2012
5th EIFCA meeting 25th April 2012
4th EIFCA meeting 26th January 2012
3rd EIFCA meeting 26th October 2011
2nd EIFCA meeting 27th July 2011
1st EIFCA meeting – 1st April 2011
Reference: http://www.eastern-ifca.gov.uk/authority-meeting-papers/

Table 3.3: Additional Eastern IFCA and Defra policy documents used in the investigation.

EIFCA policy documents coded
Strategic Assessment from 2018 - 2019
Business Plan from 2018 - 2023
Code of Conduct for Officers 2009
Constitution and standing order 2009
Data Strategy 2009
Enforcement policy 2009
28th EIFCA extraordinary meeting: 2017 DRAFT Cockle Long Term HRA
28th EIFCA extraordinary meeting:2017 proposed WFO Cockle fishery management plan draft

Defra policy documents coded that provide guidance to IFCAs
Evidence based Marine Management 2009
Monitoring and Evaluation, and Measuring Performance 2009
Sustainable Development 2009
Common Enforcement Framework 2009
Planning and Reporting 2009
Byelaw Guidance 2009
Marine and Coastal Access Act 2009. Part 5, Nature Conservation and Part 6, Inshore Fisheries Management.
Part 6 of the Marine and Coastal Access Act 2009 - Explanatory Notes
2006 - 2016 Hansard Parliamentary on Marine Conservation, cockle fisheries and Eastern England
2006 - 2016 Lords Debates on Marine Conservation, cockle fisheries and Eastern England
Wash Fishery Order 1992

3.6. Ethical considerations and consent

Having described the data collection process, here I briefly consider the issue of research ethics in relation to this investigation. This research has followed the ethical policy laid out by the Natural Environment Research Council (NERC website, accessed July 2019) and the University of East Anglia (UEA). The General Research Ethic Committee granted ethical clearance in August 2017 (see Appendix 2).

While the study was carried out in the context of the ethical policies, my approach went beyond some ethical guidelines, and I was concerned that this permeated all aspects of my behaviour in the field. Schwandt (1995) points out that ethics should go beyond methodological and pragmatic issues to consider the whole person. The research was carried out during a period when government and environmental-non-government organisations and research institutes had carried out similar research for their enquiries. This meant that many fishermen were either guarded or reported that many other researchers had gathered information they needed and then left, and sometimes the interview data was used ‘against’ them. The very nature of this research meant that

I needed to build a rapport and trust among those participating to collect the data because the fishermen appeared to be suspicious. After the initial interview, I realised that I needed to create a rapport with the research participants. I demonstrated that my professional work experience shaped my research interest. In addition, I had a friendly dialogue with some fishermen – sometimes talking about family and sometimes talking about former colleagues from the Marine and Fisheries Agency. I found that these techniques were helpful to break the ice. Laine (2000) states that this type of research throws up ethical and moral issues that have to be dealt with in the field and cannot be planned for. Therefore, as ethical issues inevitably arose, I called upon my own values, intuition, and feelings in collaboration with the ethical policies outlined by NERC and UEA to inform my behaviour in the field.

Before interviewing, all participants were made aware of the ethical considerations and were given the choice to take part in the research based on their informed consent. Research participants were also made fully aware of the research aims and objectives and were subsequently asked to participate voluntarily by signing an interview consent form before each interview commenced (see Appendix 1 for sample of consent form). To ensure confidentiality and anonymity, fishermen and IFCA Officer names were replaced with F1 to F24 and A1 and A2, respectively, to ensure information or responses could not be linked to interviewees or officers.

A final point on why I chose to use the term ‘fishermen’ rather than ‘fishers’. I intentionally used the term ‘fishermen’ throughout this research as I felt it was important to make that clarification within the context of UK fisheries, because the people actively engaging in fishing in The Wash are men. Historically, superstition prevented women from boarding fishing boats as fishermen perceived that this resulted in a poor catch. In my experience, women ‘fishers’ in the UK tend to be engaged in land-based activities such as administration, processing, policy, or research-related fields. While the tide is shifting towards bringing more women into fishing, it is important to note that for my research on EJ, recognising the dominant role of men in fishing was important. This recognition ensured effective engagement, particularly on the justice element, with the research and presented rich results.

3.7. Case study description

Having described how the case study research participants of Boston, Kings Lynn, and IFCA were selected, I now describe The Wash in more detail in order to give the reader a picture of the site. This includes details of the location, a description of The Wash fishery, and other socio-economic characteristics relevant to the research.

3.7.1. Location

As already mentioned, The Wash is located in north-west Norfolk, sharing its parliamentary constituency boundary with south-west Norfolk, Boston and Skegness, and South Holland and The Deepings. The fishermen interviewed were located in Boston and Kings Lynn. The port of Boston is situated to the west of The Wash, in Boston and Skegness, east Lincolnshire, and the port of Kings Lynn is situated to the east, in north-west Norfolk. Both towns dominate fishing activity within The Wash.

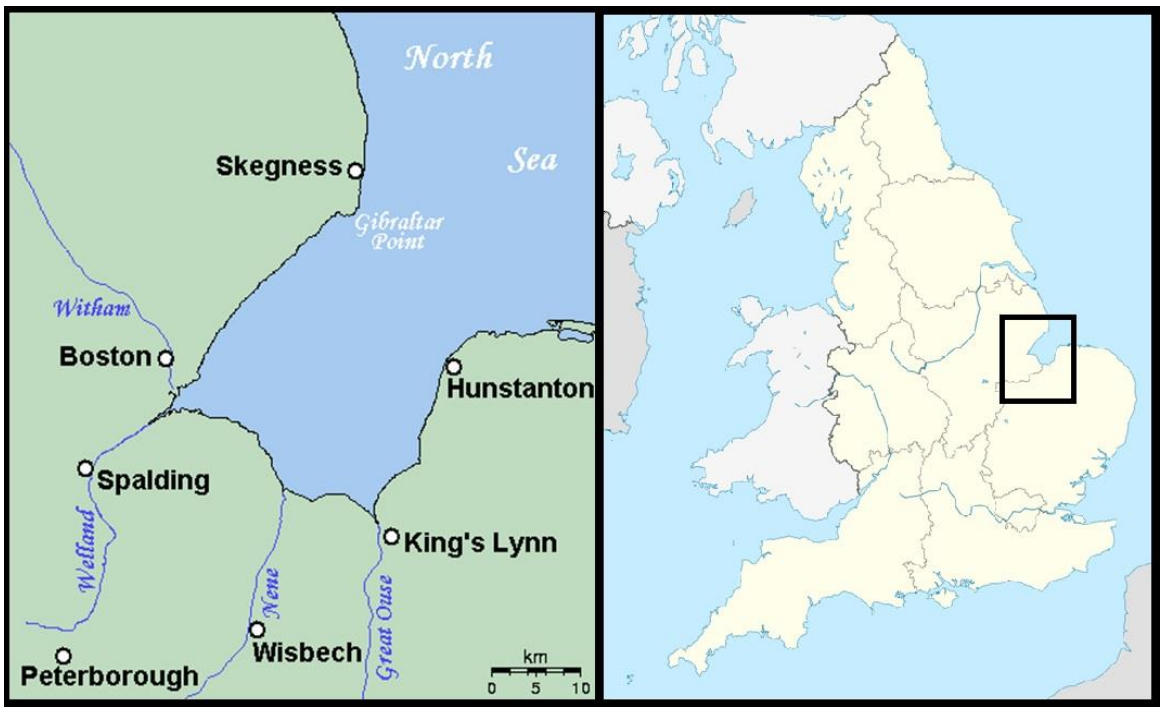


Figure 3.2: Map of The Wash case study site. Kings Lynn in north-west Norfolk and Boston in Boston and Skegness parliamentary constituencies (source: Have Bag, Will Travel, accessed July 2019).

The Wash is a unique feature within the EU, with EU Birds and Habitats Directive and Water Framework Directive highlighting the national and international importance of The Wash. The key designations within it are Site of Special Scientific Interest, National Nature Reserve, Ramsar site, Special Area of Conservation, and a Special Protected Area. It is in the Norfolk Coast Area of Outstanding Natural Beauty, and part of it is the Snettisham Royal Society for the Protection of Birds nature reserve. The policy and conservation objectives under which The Wash is enshrined are described in Chapter 4.

Processing plants

Three processing plants exist in the region. In Kings Lynn, Lynn Shellfisheries has a history of fishing, buying, and processing shellfish. The Williamson family are at the forefront of the business, with a long history of fishing, going on for over 40 years. The other processing company, John Lake Shellfisheries, is also family run. While these two operate a fleet of fishing vessels as well as buying and selling cockles, Coles of Kings Lynn buy and process cockles only. There are no processing plants in Boston. The main market for The Wash cockles is the Dutch export market.

Fishermen typology

Using Berkes' (2001) descriptors were viable options to categorise the different types of fishing activity that are pertinent to The Wash. In applying the same categorisations to the terms introduced earlier in Table 3.1 (column three) inshore cockle fishing in The Wash, fishermen generally displayed distinct dimensions that differed in Boston and Kings Lynn. Also, in line with distinctions made by those interviewed, Kings Lynn accommodated nomadic, independent-commercial. Industrial-commercial were fishing groups with a mixture of family run or independent or commercial operations. Boston, on the other hand, tended to accommodate independent-commercial, predominantly from family run operations. Chapter 6 uses these distinctions in the findings. The Wash fishermen were defined based on size of vessel and gear usage. In the context of The Wash cockle fishery, vessels were restricted to a maximum 12m in length. These were:

- Nomadic vessels (as characterised by Seafish 2017) are least impactful, 10m or less in length and use nomadic gears such as hand working cockles. This group identifies as single fishermen who may lease a cockle entitlement but generally rely on shrimp fishing. They are seasonal or part-time fishermen because they do not have a cockle entitlement. This group sells to the processing plants.
- Commercial-independent vessels are 10-12m in size. Small family run commercial operations use hand working methods. They have a family heritage in cockle fishing and have a few cockle entitlements for the family run business. As full-time fishermen, they may employ self-employed crew or skippers on a full-time or part-time basis. This group sells to the processing plants.
- Commercial-industrial operations are 12m in size. Although cockle fishing is restricted to hand worked methods, they typically use suction dredges to fish. They have family heritage in fishing and have several entitlements that they lease to other fishermen for commercial purposes. They have a fishing fleet of about 12 fishing boats and employ self-employed crew or skippers and full-time administrative staff. This group own or run two of the three processing plants and buy cockles and shrimp from the nomadic and commercial-independent sector.

3.7.2. Marine activity in The Wash

The Wash is also host to a number of anthropogenic activities. These are:

Offshore renewables (see Figure 3.3): The Greater Wash Approaches is fast becoming attractive to offshore renewable energy. The Lynn and Inner Dowsing windfarm referred to in Chapters 5 and 7 was in 2009 the largest offshore wind farm in the UK. Fishermen complain that their livelihood activity is marginalised in favour of renewable energy, and this is investigated in Chapters 5 and 7.

Figure 3.3: Wind turbines in The Wash (source: Norfolk Boat Trips, July 2019).

Figure 3.4: Cockle fishing process (photos courtesy of Roger Hamblyn, with permission granted in January 2016).

Fishing (see Figure 3.4): Although the CFP does not directly affect molluscan (cockle and mussel) fisheries, in some cases having the opportunity to diversify into other fisheries when molluscs are not viable is prohibited. In The Wash, for example, technical measures (embedded in the CFP) affect shrimp fishing during the winter months. Spring/summer present a viable cockle fishery and the autumn/winter months present a viable brown shrimp fishery. Therefore, shrimp are an important fishery for full-time fishermen in The Wash.

Atkinson et al. (2003, 2005, 2010) describe the state of the cockle and mussel shellfisheries and Catchpole et al. (2008) discuss brown shrimp. The Wash is an intertidal estuary embayment, with the targeted species of brown shrimp, mussels, and cockles. Pink shrimp are no longer targeted in the region, because the stocks are no longer viable for fishing, or have declined in The Wash, while whelks have recently started to emerge (Poseidon Aquatic Resource Management Ltd 2017). Mussels no longer naturally occur, and so are cultivated on plots of seabed leased from a landowner or the Crown Estate. Mussel seed is transported from other areas around the UK where mussel aquaculture exists (e.g. Conwy, North Wales). Cockles are currently fished using a hand raking (or hand working) method. During an ebb current, a process of 'prop washing' – where fishermen spin their vessels into tight circles in order to wash the cockles out of the sediment – makes hand gathering easier; the fishing vessel is positioned in situ, referred to as 'laying on'. During the tidal current, the fishing vessel is 'lifted' off the sand and sails back into port.

3.7.3. Cockle stock, landings, and management

The majority of the fishery is managed under The Wash Fishery Order (expiring in 2022). Management measures implemented in the fishery generally include licences, closed areas to protect spat (juvenile cockles), monthly quotas, anchor requirements to reduce the impact to the seabed when prop-washing, and a Code of Best Practice requiring minimal damage to habitats and vulnerable species such as seals.

Cockles are assessed in the spring months, and the monthly catch limits are calculated to enable a cockle fishery for that year. The quota can vary according to the population estimated. There is no minimum landing size. This is because it is difficult to determine an appropriate minimum landing size as their size does not just depend on age of the individual cockle. The Eastern-IFCA cockle stock assessment (Eastern-IFCA 2019) in Figure 3.5 shows that since 2008, cockle populations have sometimes been buoyant and sometimes negatively impacted by unknown mass mortality events. The mass mortality events have predominantly impacted larger, faster-growing cockles and resulted in few cockles surviving their initial spawning events. Therefore, management in recent years has focused on protecting the most vulnerable cockle populations.

The Eastern-IFCA reported (Eastern-IFCA, 2019 cockle stock assessment) that the cockle stocks on the regulated beds have declined for the third successive year, since their peak in 2016. In addition, Figure 3.5 also shows the state of cockle stocks since 2000; this is part of a cyclic pattern of recovery and decline driven by successful spatfalls, fisheries, and natural mortality (Eastern-IFCA cockle stock assessment, 2019).

The Marine Management Organisation (MMO) provided landing and value data of cockles from 2006 to 2016. Figure 3.6 suggests that fewer marketable cockles increased the market value of cockles. Cockles in the Eastern-IFCA district were valued at £4.25 million in 2016-2017 – and they provide an essential food source for overwintering birds. As such, a third of the estimated cockle stocks provide for predating overwintering birds (Eastern IFCA Annual Report 2017-2018).

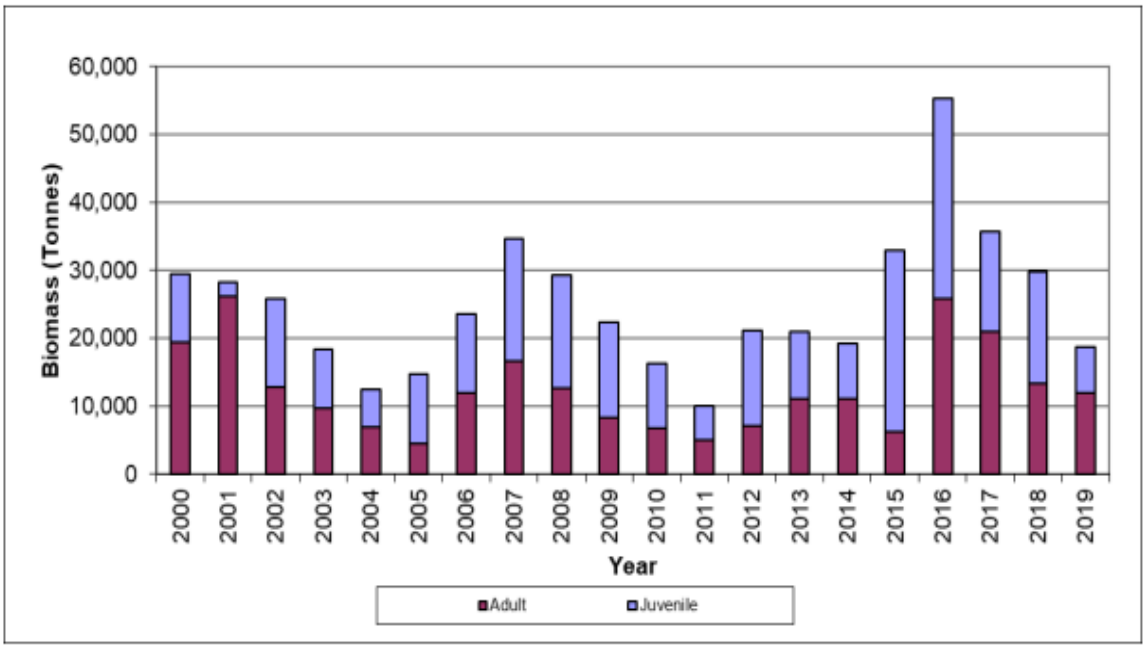


Figure 3.5: Adult and juvenile cockle stock levels between 2000 and 2019 on The Wash Fishery Order 1992 regulated beds. There is significant inter-annual variability in cockle populations, mirroring the boom and bust suction dredge fishery that **A2** refers to in Chapters 5 and 6 (source: Eastern-IFCA, annual spring survey, from 20 March to 7 May 2019).

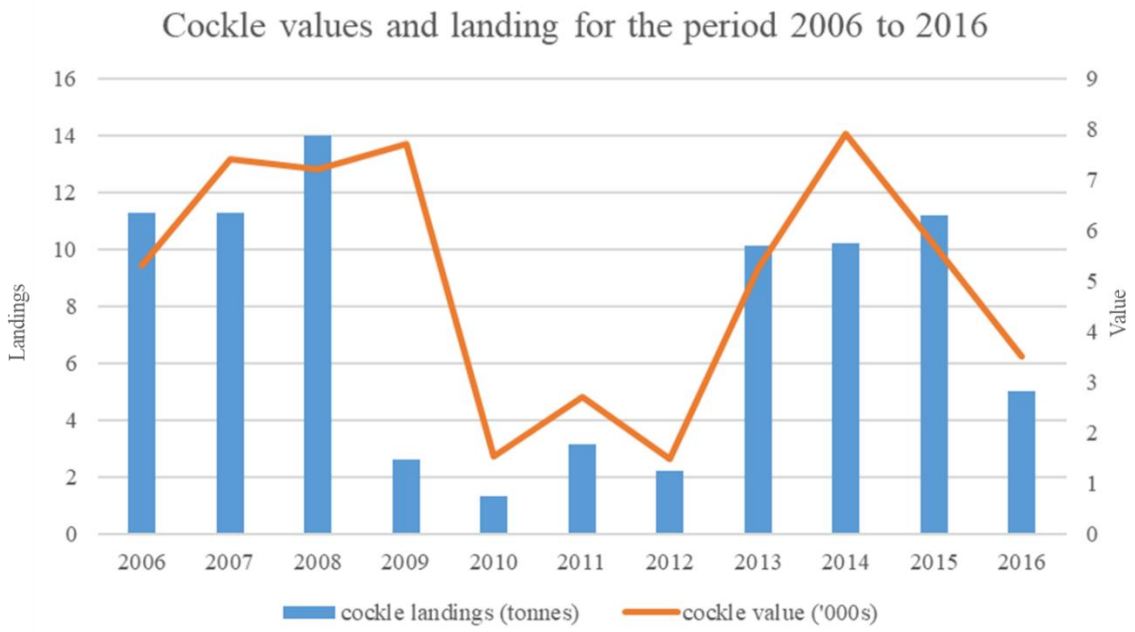


Figure 3.6: The landings and value of cockles from the period 2006 to 2016, approximately five years either side of the Eastern-IFCA being established under the Marine and Coastal Access Act, 2009 (source: MMO seafisheries statistics).

3.8. Reflections

Being a female minority ethnic researcher coming to research fisheries in Kings Lynn, north-west Norfolk, and Boston, Lincolnshire, shaped my approach to the research. Kings Lynn has a rich maritime heritage, and upon researching fisheries I was surprised by how immediately nostalgic I felt about finally being able to connect my work experience, research interest, and issues of social justice that have resonated with me on a personal level. I recall a reconnaissance visit to Kings Lynn with my children – with me describing the different types of boats and gears on display. Then, on subsequent visits to the Trues Yard Fisherfolk Museum, I rummaged through historical documents in the archives. Sadly, Boston presented a starkly contrasting experience where inequality was obvious. I was immediately struck by the degree of social deprivation and the number of empty shops. Highlighting social deprivation, research participant **F7** explained that in his view his son had two career options available to him in Boston, fishing or dealing illegal drugs.

As interviews progressed, the local tensions with the east European community that The Independent (Gallagher 2016) and The Guardian (Jack 2019) reported became evident, where I observed a clear sense of ‘them’ and ‘us’. In an informal conversation at the bar, the hotel manager alluded to the differences in employment status by stating that the hotel occupants were mostly of east European descent, working as labourers in farming or on building sites. Capturing EJ in the context of fisheries alone in Boston presented a number of difficulties because justice

affected people in so many different ways. In addition, my research started just over a year after the June 2016 EU Referendum vote was cast, where the UK voted to leave the EU. The outcome of the referendum labelled Boston as Britain's most Eurosceptic town (Martin 2019), at the epicentre of the Brexit vote (France 24 2019). Fishermen around the UK, particularly in Boston, heavily supported the Vote Leave campaign. One of the key campaign locations was the hotel in which I stayed. I wanted to get a measure of how the fishermen voted, and as predicted, every fisherman interviewed in Boston confirmed this perception. The general feeling I experienced was that this cohort of fishermen were looking forward to less overall control from the EU.

In addition, my background was as a natural scientist, fisheries manager, and policymaker, but I have changed and developed during conducting this research. For example, I have learned a great deal about doing social science research and the importance of quantitative and qualitative inquiry in bridging the gap between the natural and social sciences. While engaged in my PhD study, writing this research narrative consolidated and extended that learning. According to Valentine (2005:113), when a researcher is thinking about qualitative research, "it is important to reflect on who you are and how your own identity will shape the interactions that you have with others". That, in turn, was described as recognising the researcher's 'positionality' and being 'reflexive' (Valentine 2005). Furthermore, Schoenberger (1992) suggests that issues such as gender, nationality, history, and experience might affect the relationship between the researcher and the researched. In this way, I was aware that my positioning as a stranger, a British-Asian woman, would affect my research in some way.

My concern for governance of the inshore sector became particularly apparent to me while employed at DEFRA, where I was asked to roll out a licence capping and decommissioning policy package in 2008. Many inshore fishermen reported feeling powerless during the appeals process, which rendered fishing an unviable livelihood option for some. I recall an incident involving a fisherman from the south-coast who was caring for his wife throughout her cancer treatment. Unfortunately, he was unable to provide a three-year track record to keep his licence and so failed to meet the basic criteria that enabled him to continue fishing. The standard decision was to revoke the licence of fishermen if they were unable to provide all of the required paperwork. This example, among others, supports the argument that governance arrangements concerning this sector are inflexible and narrow in scope; that is, there was a lack of consideration for social and community factors or for influential feedback.

Likewise, issues of managing inshore fisheries quota concerned me greatly while I was working at the former Marine and Fisheries Agency. My experience and exposure emphasised some alarming elements concerning justice 1] the inshore fishing sector does not necessarily receive its fair share of quotas; 2] fishermen in this sector have lacked a voice in having a real impact on decision-making; 3] there was also a push by the government to steer the 10m and under sector,

that make up much of the inshore fishing fleet, towards joining the industrial-scale producer organisations, which resulted in the loss of independence in the sector; and 4] the impact assessments produced by policy advisors tend to have an economic basis rather than societal information. In order to ensure fishermen could viably and legally fish against quota, there were a number of convoluted steps to take resulting from complicated governance arrangements. These steps usually entailed bargaining and quid pro quo arrangements resulting in short-term gains for the inshore fishing industry.

Another important methodological consideration I encountered is the difficulty in overcoming participatory fatigue. Many research participants voiced their frustrations with researchers from universities, non-government organisations, and government who tended to conduct similar types of interviews that do not benefit the fishermen. There was a general concern that the level of engagement from the researcher was short-term. Participatory fatigue has potentially severe consequences for participatory research. First, the apparent frustration may have shaped the answer given. Second, whether research involving stakeholder participation has shelf life. For this particular research, I felt the need to demonstrate my experience within inshore fisheries governance to build the trust required to encourage involvement. Also, I assured participants that I would take the time to visit and present my findings to the fishermen and the Eastern-IFCA.

What surprises me most about this experience is how receptive all fishermen were to my research. When I approached the research participants, they mostly agreed to participate in the interview process. While seeking consent, I was clear that this project was independent research funded by the NERC. The Eastern-IFCA was enthusiastic about participating in the research to understand issues of fairness.

As I finished the fieldwork, I realised, first, how much this experience affected my understanding of doing research and, second, and most importantly for me, how fishermen perceived my research in the broader context of environmental justice and fisheries governance.

Chapter 4. Institutional and Legislative Framework for Inshore Fisheries in The Wash

Introduction

In order to discuss the relationship between interactive governance (IG) and environmental justice (EJ) in The Wash, it is important to understand policies supporting fisheries management and nature conservation decisions related to The Wash. That is, the institutional and legislative framework affecting the governance and the management of inshore cockle fisheries in The Wash.

As discussed in Chapters 1 and 2, globally small-scale fisheries (SSF) are complex and research spans across livelihoods, well-being, and human rights. In the global north research recognises this complexity by, for example, investigating Sami and Inuit fishing communities. Similarly, research in the UK recognises inshore fisheries governance as heterogenous and fragmented. Chapter 4 focuses on explaining the relevance of the institutional and legislative framework to complex inshore fisheries structures.

Section 4.1 explains European fisheries and conservation legislation influencing inshore fisheries in the UK. Section 4.2 presents the England and Wales inshore fisheries scene historically. Section 4.3 provides the background to the current inshore fisheries governance mechanism in England and Wales and contextualises the Eastern District and The Wash. Section 4.4 describes the Inshore Fisheries and Conservation Authorities (IFCA) and positions the Eastern district (Eastern-IFCA). Sections 4.5 describes the management and governance of acquiring the right to fish for cockles.

4.1. European Inshore Fisheries Management and Conservation

All European fishing and marine activities are managed by the European Union (EU). For fishing, Member State' historical fishing patterns are recorded, and quotas are set accordingly. For conservation, several monitoring and reporting requirements ensure Member States are within precautionary limits. Other activities (such as renewable energy) are also regulated by Marine Spatial Planning (MSPs). Figure 4.1 illustrates the legislative framework influencing inshore fisheries governance of The Wash.

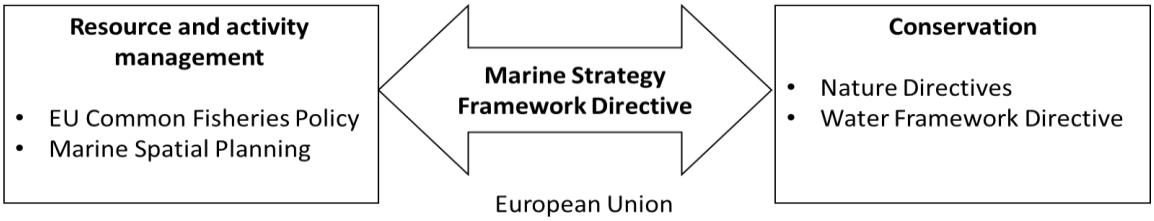


Figure 4.1: The European legislative framework influencing The Wash cockle fishery.

The main fisheries legislation that governs fishing rights is the EU Common Fisheries Policy with the mandate to:

1] adopt an Exclusive Economic Zone (EEZ);

2] agree the entry of new Member States to the fishing grounds;

3] tackle specific fisheries problems such as access to resources, stock conservation, and structural measures for the fishing fleet; and

4] improve international relations (Symes 1997, European Commission 2003, European Commission 2013).

The Common Fisheries Policy regulates fishing activity. Several revisions of the CFP have established and modified regulatory measures to restrict fishing. The latest 2013 reform introduced ecosystem-based fisheries management, balancing both society and nature by imbedding environmental sustainability in management measures, sharing knowledge and information on fleet behaviour, and bringing decisions-making closer to the fishing grounds to improve the status of fish stocks.

Overall, CFP 2013 (reinforced by European Council Directives 85/337/EEC and 96/61/EC policies on access to justice and participation) involved a better integration of stakeholder and marine conservation into the management of fisheries.

In terms of conservation, measures are implemented by the following pieces of legislation:

- EU Birds and Habitats Directives (or Nature Directives 2000) aim to reduce biodiversity loss by 2020 (European Commission 2010a,b). Upholding ‘Favourable Conservation Status’ is required where Member States must consider social, cultural, and economic requirements.
- Water Framework Directive (WFD 2003) uses management plans protecting shorelines and geographical formations sensitive to anthropogenic processes (such as The Wash Shoreline Management Plan). The Water Framework Directive (WFD 2003) incorporates

transparency into decision making processes in ensuring a balance between social-ecological systems.

- Marine Strategy Framework Directive (MSFD 2008) aims to achieve or maintain Good Environmental Status in the marine environment by 2020[8], The MSFD supports: 1] the idea that management should take into account ecosystem boundaries and complex, multi-level connections (at spatial scales); 2] the principle that ecosystem-based management builds on social-ecological interactions, stakeholder participation, and transparency; 3] the incorporation of adaptive co-management in that Member States must regularly update their marine environment assessments and their targets for GES (Aquacross 2016).

Overlaps between the WFD and MSFD improve and protect the chemical and biological status of surface waters out to 3 nm in transitional waters such as estuaries (i.e. The Wash Estuary Embayment), and 1 nm in other coastal waters (Aquacross 2016). The MSFD applies after the 1 or 3 nm zone outlined by the WFD. For estuaries, the geographical boundary between the two directives is 'the mouth' of the estuary. The overlap between MSFD and the Nature Directives is that measures implemented under the Nature Directives can make an important contribution to achieving the wider objectives of the MSFD through their specific management mechanisms (e.g. provisions under Articles 6 and 12 of Habitats Directive). Similarly, the MSFD can help to ensure that Natura 2000 sites are not compromised because of degradation outside of the protected sites.

MSPs provide the 'vision' and framework for managing multiple activities under sustainable development. They originally started as an EU response to address issues concerning the increased demand for marine space and associated problems of balancing those demands with conservation (i.e. from extractive activities and marine conservation). MSPs contribute to sustainable development by: 1] achieving integration between different objectives; 2] recognising that the demand for the use of our seas and the resulting pressures on them will continue to increase; 3] managing competing demands on the marine area, taking an ecosystem-based approach; 4] enabling the co-existence of compatible activities wherever possible; and 5] integrating with terrestrial planning processes in coastal areas (HM Government 2011).

Under MSPs, there is no legal requirement to take into account the views expressed during consultation or manage conflicting interests and advance collective action at local level. The degree of inclusivity is dependent upon Member States' appetite to include local views and these are further complicated by circumstances of devolution. Within the context of inshore fisheries in England, the competent authorities are the IFCA. The IFCA manage national waters in England up to 6 nm offshore.

[8] To note, the UK has not achieved all GES targets by 2020.

4.2. Sea Fisheries Committees

This section sets the historical scene for inshore fisheries governance in England and Wales. Sea fisheries management has a long history where the exact duties of marine management have often been unclear. Broadly, the first undertaking of fisheries management was by the Sea Fisheries Committees (SFC) under the Sea Fisheries Act 1888 (Steins and Edwards 1997). Under the Sea Fisheries Regulation Act 1888, coastal fisheries in England and Wales were divided into 12 Sea Fisheries Districts, solely managing fisheries. In later years the remit encompassed fisheries regulation, stock enhancement, monitoring, and enforcement (Phillipson and Symes (2010). Phillipson (2001) provides a summary of the SFC functions. The SFCs used two regulatory instruments to carry out responsibilities: 1] Bylaws were used to limit vessel size (up to 12m in The Wash), minimise landing sizes, and manage the gear used (suction or hand working in The Wash); 2] Orders that limited or controlled the public right to fish.

During the second half of the 20th Century, more recognition of the complex compositions of coastal ecosystems became apparent. For instance, The Sea Fisheries Regulations Act 1966 redefined responsibilities to include powers to conserve and enhance coastal environments; the management of fisheries from the mainland to 6 nm was delegated to the SFCs. However, jurisdiction for estuarine and riparian responsibilities fell to the National Rivers Authority (subsequently the Environment Agency). SFCs' broad objectives were to ensure the well-being of the coastal fishing industry through a range of enforcement, management, and fisheries enhancement functions (Eno and Amos 1996, Symes and Phillipson 1997, Phillipson 2001). However, the manner in which the well-being of coastal fishing industries was to be assured remained unclear.

Fisheries management under SFC had several problems (Steins and Edwards 1997, Phillipson and Symes 2010). These were: 1] the legal process of making bylaws was cumbersome; 2] monitoring and enforcement during periods of economic downturn was difficult; 3] committee members were often influenced by industry representatives; 4] committee powers were undermined by powerful actors higher up the legislative ladder; and 5] new environmental duties could limit their importance in dealing with the fishing industry (Steins and Edwards 1997, Phillipson 2010).

4.3. Inshore fisheries and conservation in the UK

The Department for the Environment, Food and Rural Affairs (DEFRA), the authoritative power in England and Wales, has overall jurisdiction on UK decision-making powers. In this capacity, DEFRA enacted the MCAA 2009 and assigned marine and fisheries management decisions for all UK territorial waters to the Marine Management Organisation (MMO). The MCAA is concerned with marine activities up to 12 nm. For fisheries, they range from pelagic, demersal and

shellfisheries; passage and protection of migratory fisheries, notably salmon, shore based and offshore aquaculture for fish and shellfish; recreational fishing and seaweed harvesting.

However, (and as illustrated by Figure 4.2) although inshore fisheries management is a devolved matter, on quota-related matters legislation states: "Under the agreement, the UK, Scottish and Welsh Government, and the Northern Ireland Executive will each be allocated shares, agreed annually, of UK fish quotas for distribution to their fleets. These will be based on the number of boats in each area and the quota they already receive. However, there is no permanent split of UK quota; fishing vessels are free to move their operations to other parts of the UK" (Source: DEFRA, 2012).

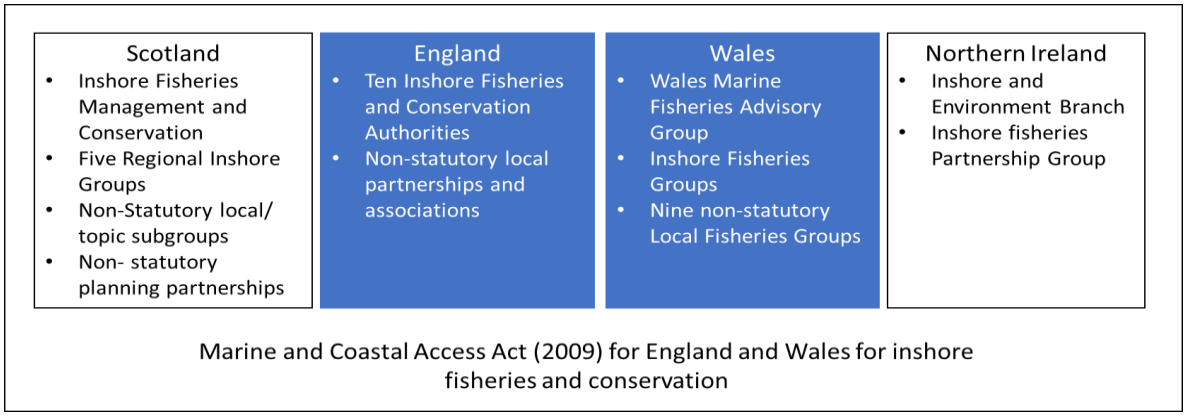


Figure 4.2: The relationship between the Marine Strategy Framework Directive, UK Devolved States (Marine (Scotland) Act 2010, Northern Ireland Marine Act 2013). and The Marine and Coastal Access Act 2009 (for England and Wales).

Inshore fisheries management in the UK is complex and subject to devolution, therefore the umbrella term 'Marine Bill' is often used to refer to implementation in a UK context. Figure 4.2 illustrates the relationship between the MSFD and MCAA. In consultation with the MMO, in England, the relevant Inshore Fisheries and Conservation Authority (IFCA), manages and regulates fishing activity within the district up to 6 nautical miles. The IFCA ensure a balance between fisheries and conservation by including a diverse group of stakeholders including environmental interest groups, recreational users, and fishermen.

DEFRA's high-level marine objectives (HM Government 2009) outline the principles under which sustainable development and good governance for the marine environment is achieved and this is through participatory decision-making approaches via MSPs and/or IFCAs. Processes need to be participative by stakeholders, because "the involvement of stakeholders and local communities in the marine planning process will help to maximise adherence to plan-led proposals, identify opportunities for compatible uses and minimise potential conflicts" (HM

Government 2011:13). By engaging with stakeholders with an interest in marine activity, the intention was that the process would: improve relationships, ensure that future planning for the wide variety of goods and services delivered by the UK's territorial waters is environmentally sustainable, and benefit coastal communities both socially and economically.

UK shellfisheries are complex and comprise of smaller boats, typically operating within 6 nm, and offshore trawlers or dredgers. Shellfisheries management involve nephrops, molluscan and crustacean fisheries, where growth in the 1990s, accounted for a third of the value of landings into UK ports (Symes and Phillipson 2001). Molluscan shellfisheries support many UK coastal communities but are not studied to the same intensity as industrial-scale fisheries (Lloret et al. 2018). Also, they are not subject to the same EU quota system as industrial fisheries. Instead, the Marine and Coastal Access Act 2009 by consolidating European Directives, MSPs and bylaws was expected to meet sustainable development goals related to EJ while meeting environmental objectives.

4.4. Inshore Fisheries Conservation Authority

IFCAs were established under the MCAA (2009) with the vision to "lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry" (DEFRA 2018:5). IFCAs are a novel way of working with a varied group of local stakeholders to achieve common goals for managing fisheries and environmental legislation equally (Phillipson and Symes 2010). Note 3 of the MCAA states that IFCAs embody a significant change that "introduces a new [modern] system of marine management. This includes a new marine planning system, which makes provision for a statement of the Government's general policies, and the general policies of each of the devolved administrations, for the marine environment, and also for marine plans which will set out in more detail what is to happen in the different parts of the areas to which they relate. The Act includes provision changing the system for licensing the carrying on of activities in the marine environment. It also provides for the designation of conservation zones. It changes the way marine fisheries are managed at a national and a local level and modifies the way licensing, conservation and fisheries rules are enforced. It allows for designation of an Exclusive Economic Zone for the UK, and the creation of a Welsh Zone in the sea adjacent to Wales. The Act also amends the system for managing migratory and freshwater fish, and enables recreational access to the English and Welsh coast" (DEFRA 2009:44).

The main formal change from SFCs was in committee membership. IFCA committee members include representatives from the constituent local authorities "acquainted with the needs and opinions of the fishing community of the district and with knowledge of or expertise in marine

environmental matters" (DEFRA 2009:151, Phillipson and Symes 2010). The intention was that there should be the right level of representation, experience, and knowledge across all relevant sectors deemed appropriate by the MMO in implementing the Nolan principles that set out the requirements and expectations of public representatives. A significant informal change was that autonomous and unregulated decision-making was positioned firmly within a management governance framework.

Each IFCA operates independently with decisions made on management and bylaws at the IFCA district level. There is interaction between IFCAs at the national level with various IFCA staff and authority members meeting through organisations such as the Association of IFCAs, the chief officers' group (COG), Technical Advisory Group (TAG) and National Inshore Marine Enforcement Group (NIMEG). Where decisions are made at such meetings, individual IFCA can decide whether or how any decision is implemented at the district level (RPA 2021).

Composition of authorities

Each IFCA has their own structure dependent on individual circumstances (e.g. size of district, staff numbers). IFCAs are composed of members appointed by constituent local authorities, statutory appointees which include Environment Agency, MMO and Natural England and general members appointed by the MMO from the recreational angling sector, commercial fisheries sector, conservation, science and research fields. The general members (sometimes referred to as MMO appointees) consist of people from the local community who are familiar with their local marine and fishing community and with knowledge or expertise in marine environmental matters. The role of the members is to guide the IFCA to deliver its mandate under the MCAA and in line with Defra guidance (MCAA 2009, MMO 2018). The aim is to have a balanced membership across various interest groups, covering commercial, recreational and environmental interests. Members are appointed for between three and five years and, although they can be reappointed for a second or third term, they can only serve for a maximum of ten years (RPA 2021).

The total number of authority members and membership for each of the ten IFCAs is summarised in Table 4.2. The total number of members ranges from seven in the Isles of Scilly to 30 in Devon and Severn, North Eastern and North Western IFCAs.

Table 4.2: Comparison of IFCAs based on number of authority members, geography and fisheries (source: Risk & Policy Analysts, 2021)

Criteria	IFCAs									
	Group 1			Group 2			Group 3		Group 4	
	Cornwall	Isles of Scilly	Northumberland	Eastern	Kent and Essex	Sussex	Devon and Severn	Southern	North Eastern	North Western
Number of Authority Members										
Total number	21	7	21	21	21	20	30	21	30	30
Local authority members	7	4	7	7	9	7	12	9	13	10
General members (MMO appointees)	11	1	11	11	9	10	15	9	14	17
Natural England statutory members	1	1	1	1	1	1	1	1	1	1
Environment Agency statutory members	1	0	1	1	1	1	1	1	1	1
MMO statutory members	1	1	1	1	1	1	1	1	1	1
Geography										
North			●						●	●
East			●	●	●				●	
South	●	●			●	●	●	●		
West	●	●					●			●
Species categories										
Demersal	M	M	M	L	L	M	M	M	M	L
Pelagic	L	L	L	L	L	L	L	L	L	L
Shellfish	H	H	H	H	H	H	M	H	H	H

Notes: Species categories based on MMO (2018): UK Sea Fisheries Statistics 2017 based on quantity of landings by ICES rectangle; Low (L) is less than or equal to 25% of value of landings, Moderate (M) is less than or equal to 60% by value of landings and High (H) is more than 60% by value of landings
Authority breakdown from: IFCAs (2018): Inshore Fisheries and Conservation Authorities: Conduct and Operation 2014-18

Table 4.3: Comparison of IFCAs based on key management duties (source: Risk & Policy Analysts 2021)

Metric		IFCAs									
		Cornwall	**Devon and Severn**	**Eastern**	**Isles of Scilly**	**Kent and Essex**	**North Eastern**	**North Western**	**Northumberland**	**Southern**	**Sussex**
Size, budget	Total budget	H	M	H	L	M	H	H	M	M	H
	Capital expenditure	L	M	H	L	M	M	H	M	L	M
	Revenue expenditure	H	M	H	L	M	M	M	M	M	M
	Total number of staff	H	M	H	L	M	M	H	M	M	M
	Total marine area	H	H	H	L	H	M	M	L	M	M
	Length of coastline	M	H	H	L	M	L	H	L	M	L
Environ-ment	Number of European Marine Sites	M	M	H	L	M	L	H	L	M	L
	Area of European Marine Sites	H	L	M	L	N.d	L	N.d	L	M	L
	MPA strategies, interactions and assessments	H	L	M	H	M	M	H	M	H	M
Fisheries	Value of fisheries landed into District	H	H	L	L	M	M	L	H	L	L
	Number of registered vessels	H	H	L	L	L	M	L	L	M	M
Bylaws	Bylaws introduced	H	M	L	M	H	M	M	M	L	L
Inspect-ions	Inspections at sea (patrols)	M	L	H	L	H	H	L	H	M	M
	Inspections at sea (boardings, gear inspections)	H	L	L	H	M	M	M	H	M	L
	Inspections ashore (patrols, port visits)	M	L	M	M	H	M	H	M	M	L
Investigation outcomes: verbal or written warnings, case files		L	M	M	L	L	L	H	L	M	L
Investigation outcomes: cautions and financial administration penalties (FAPs)		M	H	L	L	L	H	H	L	M	L
Investigation outcomes: prosecutions		L	H	L	L	L	M	L	L	H	M
Engagement activities (meetings, working groups, education campaigns)		M	M	H	L	H	H	H	M	H	H

Low (L), Moderate (M) and High (H) ratings are based on difference from the maximum across all IFCAs: low relates to IFCAs with 35% or less of the maximum, moderate 75% or less and high 76% or greater. Data were not identified for all IFCAs, these are shown as N.d. (no data).
Source data based on IFCA, and Defra accounts for 2017/18, and Inshore Fisheries Conservation Authorities: Conduct and Operation 2014-18. The ratings are assigned based on percentage of expenditure rather than magnitude to allow for a comparison between IFCAs given the variation in budgets.

Management pressures

The approach to IFCA management, in terms of the type of activities carried out, is summarised in Table 4.3. Those IFCAs with the largest budgets (Cornwall, Eastern, North Eastern, North Western and Sussex) generally also have high levels of engagement activities (Eastern, Kent and Essex, North Eastern, North Western, Southern and Sussex). High levels of inspections at sea via patrols (Eastern, Kent and Essex, North Eastern, Northumberland), boardings and gear inspections (Cornwall, Isles of Scilly, Northumberland) or ashore (Kent and Essex, North Western) are not limited to those with the highest budgets.

Activities undertaken by various IFCAs to improve management duties include:

- Targeting approaches to enforcement using a risk-based approach, risk register and intelligence;
- Bringing in experience, e.g. from the police, to improve questioning, case file building and statement writing;
- Undertaking an annual strategic assessment based on all available evidence to identify a wish list of issues. A risk-based approach is then used to identify which issues will feed into their five-year business plan; and
- Levying additional funds through permits.

4.4.1. Eastern Inshore Fisheries Conservation Authority

In the context of The Wash fisheries, the Eastern-IFCA has additional responsibilities to manage the local marine environment along with its activities. Figure 4.3 illustrates the geographical boundary of the Eastern-IFCA District.

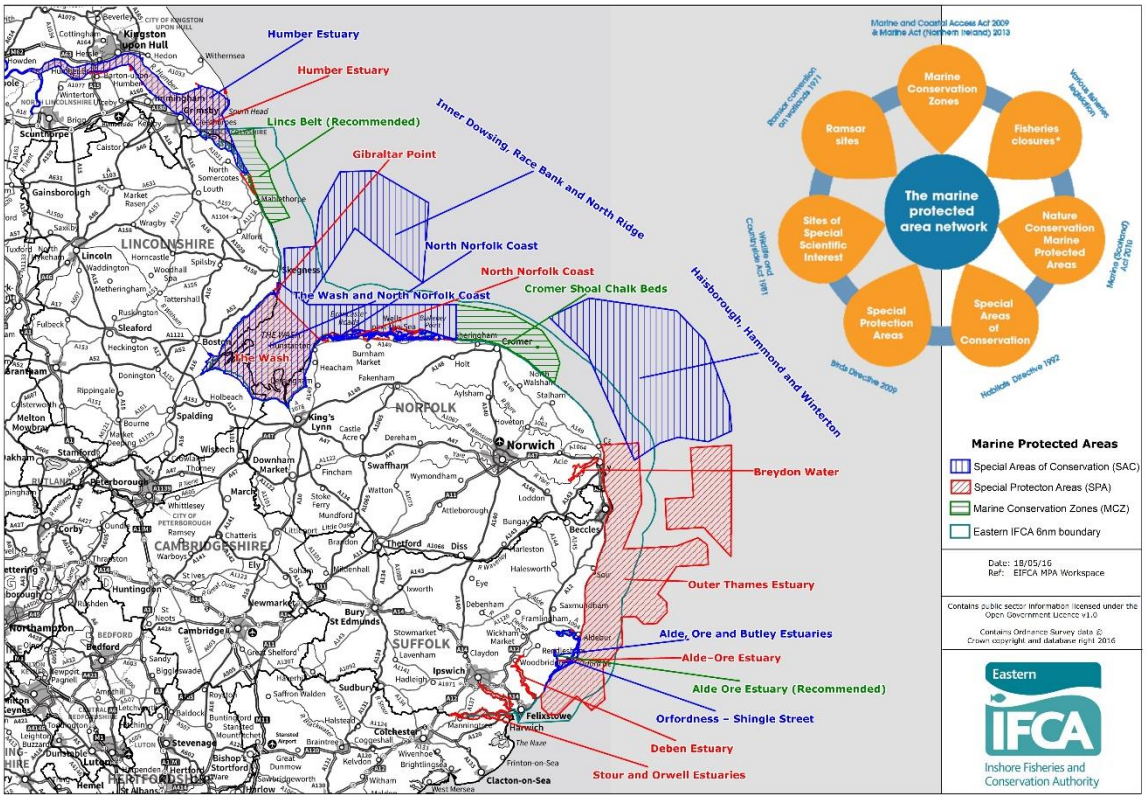


Figure 4.3: MPA designations in the Eastern-IFCA district (source: Eastern-IFCA, 2018).

As illustrated in Figure 4.3, the Eastern-IFCA district has a complex range of MPAs designations. There are approximately 20 Natura 2000 sites, 15 of which are entirely within the district, 5 partially in the district, and 1 Marine and Coastal Zone (MCZ). Three of the heavily designated Natura 2000 sites have dedicated management schemes (Eastern-IFCA 2015). The Eastern-IFCA states that "these schemes involve the coordination of joint-working between regulatory authorities, site and nature reserve managers, stakeholders and local communities to ensure that the duties to the sites are delivered. These duties include ensuring that designated features are protected to maintain or restore their condition and that activities that fall under the jurisdiction of relevant authorities are effectively managed to ensure they are conducive to the sustainable use of marine resources" (Eastern-IFCA 2015:4). The Wash is one such site, managed under The Wash and North Norfolk Coast Marine Partnership (WNNMP). WNNMP action plans state that the Eastern-IFCA "benefit from a fruitful exchange with local fishermen who attend to share their experience and knowledge for effective fisheries management" (WNNMP 2018). It is unclear how this exchange takes place and the processes involved.

Using 2018 data, Table 4.4 showed 21 Eastern-IFCA committee members met regularly throughout the year to discuss issues related to the Eastern District, including The Wash. Seven councillors represented three counties. There were 12 'general' members appointed by government through fair and open competition. The Joint Committee is from Lincolnshire,

Norfolk, and Suffolk County Councils. Seven committee members were nominees from the county councils. Alongside councillors, there is representation across MMO, Natural England, and the Environment Agency.

Table 4.4: Eastern-IFCA committee membership and relevance to The Wash (adapted from Eastern-IFCA 2018).

Number of representatives	MMO Appointee	Organisation	Pertinence to The Wash
1	Statutory	Natural England (NE)	In the Wash, NE work with lay holders and managers to ensure SSSI sites maintain 95% of species in a favourable or recoverable site, with a target of 50% of all UK SSSI sites to favourable by 2020. To help facilitate these environmental goals, NE collaborate with other sea users and business and coastal communities through participating in a number of partnerships and local action groups.
1	Statutory	Environment Agency (EA)	In the Wash, the EA can also issue emergency (and non-emergency) byelaws for migratory and freshwater species, water resource management, abstraction of ground water and impounding waterways. NE advise on the EA's environmental remit, and this entails achieving good environmental status.
2	Statutory	Lincolnshire County Council (LCC)	Represents East Lincolnshire, Boston and Fosdyke.
3	Statutory	Norfolk County Council (NCC)	Represents West Norfolk, Kings Lynn
2	Statutory	Suffolk County Council (SCC)	N/A
6	Yes	Fishers (inshore and offshore)	4 fishermen are based in the Wash. (representatives from Boston and Fosdyke fishermen's Association and from Kings Lynn Fishermen's Association)
1	Yes	Wildlife Trust	Conservationist
1	Yes	Seafoodavocet	Food writer
1	Yes	Divers	Interests in conservation objectives that are retained by NE
1	Yes	Retired	Retired EA employee/policy advisor
1	Yes	IFCA CEO	Scientist and Chief Executive of the Association of IFCAs.
1	No	MMO representative	EIFCA Committee Stakeholder

Interestingly in 2018, two representatives were from the MMO, where one was a general member recruited through fair and open competition and also CEO of the IFCA-Association. To reflect fishing interests, six representatives were fishermen. Four fishermen representatives were The Wash fishermen from Boston and Kings Lynn. The Wash fishermen representative were all commercial, with one commercial-industrial and three commercial-independent.

In addition, the one representative from King Lynn was also the Chair of the King Lynn Co-op Fishermen's Association and also commercial-independent, and one represented commercial-industrial interests. From Boston, the two fishermen represented the interests of all Boston fishermen, who are mostly commercial-independent, with a few crew and skippers. The Wash fishermen representatives were all generational fishermen with a family heritage in fishing. They also had entitlements to fish in The Wash.

Specific responsibilities of the Eastern-IFCA are (Eastern-IFCA 2018):

- to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way;

- to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation;
- to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district;
- to take any other steps which in the authority's opinion are necessary or expedient for contributing to the achievement of sustainable development;
- to ensure that the conservation objectives of an Marine Conservation Zones (MCZs) in the district are furthered;
- to ensure the stewardship and management of the Wash shellfish fishery supports the viability of local industry;
- to ensure enforcement of other national and EU fisheries legislation throughout the district;
- to deliver regulation to manage fishing activity in MPAs;
- to support national marine planning and licensing activities as a statutory consultee; and
- to research activity to deliver fishery management functions and to support a continuous review of fisheries

In carrying out these responsibilities, the Eastern-IFCA follows a code of conduct to implement fairness in the management of fisheries and conservation in the Eastern-IFCA district.

4.5. Management of The Wash cockle shellfishery

The Wash uniquely embodies all nature conservation rules in Europe and UK and is a desirable area for renewables energy and fishing (DECC 2009). Consequently, The Wash is heavily regulated by the Eastern-IFCA and the government arms-length bodies MMO, EA and NE.

4.5.1. Acquiring the right to cockle fish in The Wash

The Eastern-IFCA uses a series of 'Good Environmental Status', Favourable Conservation Status' and Good Ecological Status descriptors to ensure MSFD obligations are carried out. These include Maximum Sustainable Yields of fish stocks, water quality, sea floor integrity, protection of coastal features.

Regarding inshore fisheries management perspective, cockles are not directly affected by EU fisheries policies per se as they are sensitive to localised anthropogenic and environmental pressures (see Chapter 1 for explanation). Brown shrimp are also found in The Wash, but are influenced the EU CFP by some technical conservation measures restricting fishing effort. Fishermen adapt fishing practices throughout the year so they can fish for both cockles and shrimp – the main species fished in The Wash. Therefore the Eastern-IFCA use local bylaws and

localised effort restrictions to manage cockle fishing and work with MMO to ensure brown shrimp can be fished against EU obligations. The Eastern-IFCA use a blend of licenses (with input from MMO), permits (in support of local bylaws) and entitlements (informal process – as mentioned in Section 4.4 - to manage cockle fisheries) to manage all fisheries in The Wash embayment.

Molluscan (mussels and cockles) fisheries in The Wash are prescribed by the Wash Fishery Order (1992 and Appendix 3), which is due to expire in 2022. The prescribed fisheries for The Wash under The Wash Fishery Order (WFO 1992, Appendix 3) are mussel, cockle, clams, scallops, and queens, but only mussels and cockles are fished exclusively in The Wash. Several Orders remove the public right to fish for mussels in The Wash by granting rights (as leased lays or plots of beds) to fishermen, where leases secure fishing rights for a period of usually ten years. Lessees (or lay holders) have exclusive rights to deposit, propagate, dredge, fish for, and take shellfish (Symes and Phillipson 2001). Regulating Orders are openly fished for by the public, provided they have valid licences and permits (or entitlement) to do so. There is a waiting list for people wanting to lease an area of The Wash for mussel aquaculture; in August 2016, there were 38 people (Seafish SR695 2016). The WFO expires in 2022.

Within The Wash, there is a complex relationship between mussels, cockles, and brown shrimp fishing activity. Mussels are farmed and so are restricted to many inshore fishermen. Brown shrimp are an autumn/winter fishery and cockle fishing takes place late in the spring and throughout the summer. The latter two species support full time and seasonal inshore fishermen for part or whole of the year. As cockle fishing is managed locally through a system of bylaw permits and informal entitlements, previously implemented by the Eastern Joint Sea Fisheries Committee (EJSFC), the Eastern-IFCA are empowered to introduce charges (or tolls), or close areas as long as consensus is reached among the committee members (Phillipson and Symes 2010). Using such mechanisms the Eastern-IFCA can manage both fisheries management and conservation obligations.

Table 4.5: The process involved in legally fishing for cockles in The Wash Estuary Embayment for a fisher (sources: Wash Fishery Order, 1992, Management Policy Statement and Guidance Notes 1992, Eastern-IFCA 2017).

Steps	Process to a cockle entitlement
Step 1	Consult the Eastern-IFCA for eligibility
Step 2	Buy a vessel. While in continuous dialogue with Eastern-IFCA
Step 3	Obtain Marine and Coastguard Agency (MCA) fishing vessel and seaworthiness certification.
Step 4	A fishermen must apply for a shellfish category A licence to shellfish from the MMO.
Step 5	Consult the Eastern-IFCA and apply for a licence to fish in The Wash under the WFO (WFO, 1992). Having achieved all steps 1-5 the fisherman is entitled to fish for any prescribed fisheries in The Wash.
	The Eastern-IFCA checks eligibility (as per note 14 of the WFO guidance notes) to use an entitlement to fish for cockles in the Wash.
Step 6	WFO permit entitles a fisherman to fish for cockles is renewed annually automatically (as per note 14, 20 and 21 of the WFO guidance notes).

Table 4.5 mainly shows that The Wash cockle fisherman should meet all seaworthiness checks in accordance with the Marine and Coastguard Agency. After which they should meet all fishing requirements set out by the MMO licensing system where they stipulate vessel size, gear types, and species targeted in UK waters for monitoring purposes.

For shellfishing in The Wash, this would be a category A for over 10m (maximum of 14m) or a 10m and under vessel. In The Wash, the WFO states that a maximum 12m vessel can be used to fish (WFO 1992, see Appendix 3 and Appendix 4). Upon receiving an MMO licence, they can apply for a separate permit to fish for any prescribed shellfish in The Wash. In The Wash, the prescribed fisheries are exclusively cockles (because mussels are farmed they are managed differently). This entitlement to a cockle permit (issued via a waiting list to restrict numbers) is what fishermen perceive as their right to fish. Appendix 3 and Appendix 4 show the WFO permit, along with guidance, to a prescribed shellfish, otherwise known as a cockle entitlement. Table 4.5 lists the steps needed to acquire a cockle entitlement in The Wash under the WFO. In addition, as

an addendum the Table is Appendix 5, that illustrates the changes experienced by fishermen to the cockle permit after the Eastern-IFCA.

Previously permits were issued freely provided the fishermen complied with a basic set of rules. The EJSFC introduced a waiting list for permits as a measure to restrict fishing effort to mitigate against struggling cockle populations. As criteria for granting cockle fishing entitlements for The Wash is not actually enshrined in official legislation, the introduction of the waiting list meant that the understanding of licence, permit and entitlement became nuanced and confusing. To support implementation of the revised WFO cockle 'entitlement', the EJSFC introduced a set of WFO guidance notes (see Appendix 4). The Eastern-IFCA is not mandated to implement nuanced versions of licences, permits and entitlements so this opened up further complexities in the management of The Wash. The results of this confusion underpin the findings of Chapter 6 'how have policies affected perceptions of right to fish'?

For the EJSFC, to qualify for a cockle entitlement, permits require: 1] evidence on whether the fishermen were operating for the period before and after the WFO came into effect and for 24 months preceding the application for a licence; 2] a registered person exhibiting his entitlement to a licence under Article 8 of the WFO, providing the EJSFC with evidence of three years' experience for fishing within The Wash; 3] the EJSFC to consult with other affected bodies to determine the level of experience deemed appropriate to qualify for a licence; 4] evidence that the transferability from vessel to vessel is restricted, where a vessel cannot be licenced using any entitlement held by any of the vessel's previous owners; and 5] the EJSFC to consider issuing a licence without an entitlement when the continuation of a business is at risk.

Issuing entitlements has presented the Eastern-IFCA with many problems. These relate to defining cockle entitlements, transferring them, and the institutional framework that supports the management of them.

4.6. Conclusion

Multiple pressures characterise inshore coastal management in the UK. There is the need to balance a conservation remit while benefitting from fishing. Within meta-order governance, the MCAA (2009) codifies governance arrangements from the EU to England and Wales. There are evident problems attributed to governing the marine environment at national and local scale. Problems are magnified on the ground or at local level (or first and second-order governance). The Eastern-IFCA use several mechanisms (bylaw permits, and informal entitlements) to regulate and manage fisheries and conservation in a fair and balanced way, but often these objectives in conflict with one another.

Chapter 5 presents the empirical investigation of applying my conceptual framework to The Wash cockle fishery.

Chapter 5. Justice Implications of the Trade-off between Conservation and Fishing in the Management of The Wash Cockle Fisheries

Introduction

This chapter focuses on how the governance and management regime has changed over time and what the implications have been for fishermen in terms of environmental justice (EJ). This is particularly important in addressing research question 1. How has the management regime changed over time and what have been the implications for fishermen and also establishes the groundwork for addressing research questions 2 (how do inshore fishermen perceive their rights) and 3 (how are inshore fishermen being constrained by other marine activities). The chapter draws from semi-structured interviews with people involved in the management of the process (**A1** and **A2**) and fishermen from Boston and Kings Lynn (**F1** – **F24**) to seek overall experiences of justice. Further, Eastern-IFCA committee minutes, the Marine and Coastal Access Act (MCAA), the Eastern Marine Plan, and Hansard records of parliamentary discussions were important to unpack the interrelationships between governance and procedural, distributive, justice as recognition and capabilities as justice concepts. To structure the discussion, a thematic approach is taken.

In Section 5.1, I look at changes in objectives in the governance and management regime pertinent to The Wash cockle fishery, which includes conservation and renewable energy, stakeholder engagement, governance and management processes, and representation of fishermen. In Section 5.2 to Section 5.4, I investigate the consequences of the changes of those objectives for The Wash cockle fishermen. In Section 5.5, I synthesise and reflect on the findings.

5.1. Changes in objectives, representation, and governance

5.1.1. Change in objectives: Conservation

Drawing from the governance description in Chapter 4, the change in objectives were problematic for fishermen. The conservation objectives were firmly embedded in the MCAA (2009). Documentary information stated that the Eastern Joint Sea Fisheries Committee's (EJSFC) statutory powers ceased to exist in 2010 and were taken over by Eastern Inshore Fisheries and Conservation Authority (Eastern-IFCA) in 2011; Figure 5.1 illustrates the changes in legislation that affected EJSFC's functions. The Acts and Orders in Figure 5.1 appeared enforcement heavy, therefore suggesting a top–down style of governance. By implication, consolidating these Acts into the MCAA (2009) removed this perception while placing the conservation objectives on

stronger ground. According to DEFRA, the MCAA enables conservation to co-exist with fisheries management.

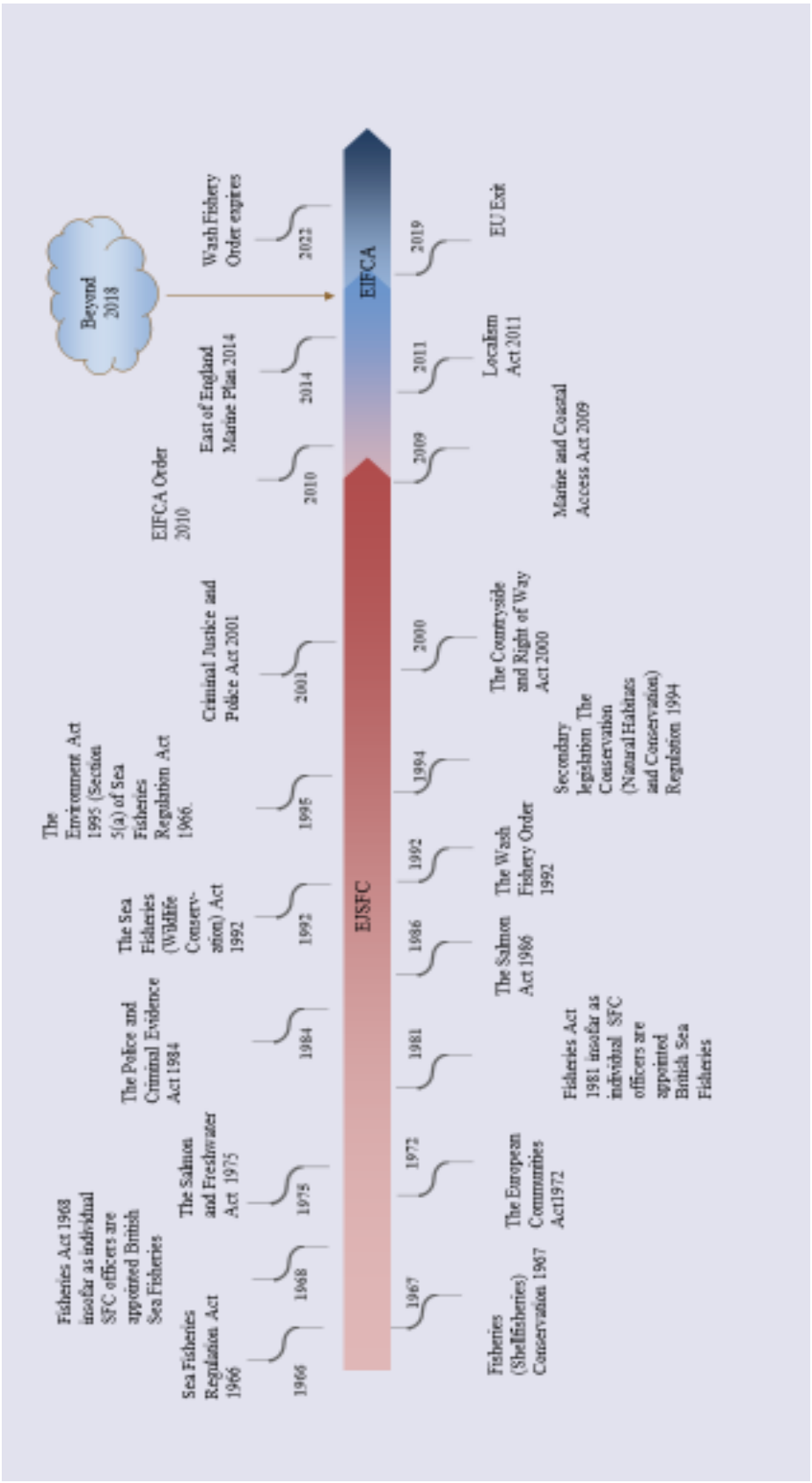


Figure 5.1. The changes in legislation that affect The Wash cockle fisheries management. The number of Acts predating 2009 were amalgamated into the MCAA. The Eastern-IFCA Order issued new responsibilities to Eastern-IFCA (source: legislation.gov.uk).

The constitution and standing orders along with the Localism Act 2011 enabled the Eastern-IFCA Order to take over functions from the EJSFC and deliver the conservation objectives of the MCAA. Decision-making powers were devolved to various locally based stakeholders representing the needs of the east of England.

> *"…strike a fair balance between the interests of the public in having rights of access over land* [in this case The Wash estuary, ed] *and the interests of any person with a relevant interest in the land* [being fishermen or resource users, ed]*."* (Source: MCAA, 2009:191)

Balancing priorities through the introduction of the MCAA was presumed to remove doubt on how conservation and fisheries management processes were balanced. As Chapter 4 stated, Orders manage cockle fisheries, yet the functions of the MCAA was to protect the marine environment ahead of fishing. In the context of The Wash Marine Protected Areas (MPA) and east of England Marine Conservation Zones (MCZ), **A2** explained,

> *"We've got direct responsibility for fishing effort in MCZs/MPAs and furthering our conservation objectives within MCZs/MPAs… we've got a duty to be proactive in that so we need to understand the impact of fishing activity it has in the environment. To make sure that's within appropriate constraints."* (**A2**)

A number of fishermen on the EJSFC board, also continued on to the Eastern-IFCA committee membership and observed several changes. **F23** represented Wash fishermen at committee level explained that the conservation remit had developed significantly at the expense of fishing interests. He recounted the change.

> *"The big transition from the Sea Fisheries Committee to an Eastern-IFCA is that an Eastern-IFCA has this conservation role…There's been this tension between doing the conservation stuff and doing fishing stuff. Then there is a strong push from various green lobbyists saying fishing is bad."* (**F23**)

In the following excerpt, **F23** reported that conservation usurps fishing interests, and that the MCAA stated that conservation would be prioritsed over fishing. **F23** felt he was misled.

> *"I didn't appreciate it until I was shown in print and had explained that a couple of months back, the Marine and Coastal Access Act sets out that Eastern-IFCA said you should do all of this fisheries management stuff and you should do all of the conservation stuff. And because of the way it is worded in the Act, you must do the conservation stuff over the fisheries stuff."* (**F23**)

A consensus of views from fishermen and **A2** confirmed the view that there was a strong push from the MCAA to prioritise conservation ahead of fishing. Both Eastern-IFCA and fishermen claimed that conservation bodies were given a stronger platform. For example, the green lobbyists and environmental law firm Client Earth were holding government accountable for decisions that adversely affected the environment. Client Earth is a non-profit, non-government law organisation ensuring European Union (EU) environmental laws are upheld. In the context of The Wash, environmental protection laws included the EU nature directives. The Client Earth website asserts that they use the power of the law to uphold environmental law, stating clearly that they take government to court and win. Alarming phrases such as this create fear in fishermen and the government alike. Client Earth state:

> *"We use the law to shift the balance in favour of the public good. This approach is innovative, bold and a game-changer in the global fight to protect the environment.*
>
> *We take governments to court – and win. We force polluting industries to shut down. We protect irreplaceable forests and vulnerable species. We empower people and NGOs with the legal rights to bring forward environmental battles of their own. Using the law means that we create real, long-lasting and embedded change."* (Source: https://www.clientearth.org/what-we-do. Accessed November 2018)

A2 acknowledged that there was a lot of legal paperwork that they dealt with in order to avoid judicial reviews.

A1 reported that the Habitats Directive was the first initiative taken by government to introduce conservation to the forefront of sustainably managing marine resources. This view corresponds with the policies illustrated in Figure 5.1, which shows when the Sea Fisheries (Wildlife Conservation) Act was enacted. In the view of **A1**, experiences of EJSFC managers and The Wash fishermen had changed from being fisheries focused and 'informal' to being explicitly conservation minded. The MCAA enabled Eastern-IFCA to carry out their mandated duties transparently, because they were able to refer back to the MCAA to substantiate any action taken. For example, **A1** reported:

> *"Sea fisheries committees were generally interested in the commercial fishing and commercial fisheries. Then belatedly conservation came to the fore, stronger when the Habitats Directive came in, that it introduced significant change in terms of recognizing that conservation was not just about conserving enough stock from a commercial fisheries point of view."* (**A1**)

All research participants described the change in the formalised approach that the MCAA was taking in the transition from EJSFC to Eastern-IFCA.

> *"The big transition from the Sea Fisheries Committee to an Eastern-IFCA is that an Eastern-IFCA has this conservation role, and there's been all the way through the Sea Fisheries becoming an Eastern-IFCA. There's been this tension between doing the conservation stuff and doing fishing stuff."* (**F4**)

F4 described the tension arising because of the compromises required to agree the two agendas. Generally, The Wash fishermen stated that the introduction of MPAs in The Wash in 2014 meant that fishermen were having their fishing grounds and fishing effort restricted. According to **F15**.

> *"We had a SSSI, they* [The Eastern-IFCA, ed] *were still answerable to Natural England… so it's just got harder and harder down... And now there are more closed areas for protection."* (**F15**)

Fishermen broadly asserted that there were more MPA designations that were closing areas to fishermen for conservation purposes. **A1** acknowledged this:

> *"…because managing commercial fishing was paramount to the role and responsibility of the EJSFC is that inevitably they would lose out when conservation and fisheries were to be balanced under the MCAA."* (**A1**)

Although **A1** acknowledged the MCAA meant the balancing of fishing and conservation, in his view the implementation of the MCAA was never going to provide a perfect process to balance the conservation agenda with fisheries management.

5.1.2. Change in objectives: Marine Spatial Planning

An unintended consequence of Marine Spatial Planning (MSP) was the effect of implementing windfarm renewable infrastructure in The Wash. According to the Marine Management Organisation (MMO), MSPs enabled the MMO to manage fishing among other marine activities through licensing. Within The Wash, the Eastern Marine Plan (EMP) was adopted in 2014 and identified important marine activities for the region (MMO 2018). Table 5.1 presents marine activities introduced under the remit of the EMP. The intensity of recent activities in The Wash, including within MPAs, had implications for cockle fishermen in The Wash. It is important to note the limited reference to regulated shellfisheries in the EMP (HM Government 2014). For instance, the EMP refers to mobile shellfish or aquaculture managed under the Common Fisheries Policy (CFP) and Several Order fisheries, but is vague on the management of molluscan (cockles and mussels) shellfish within Regulating Order areas (see Chapter 4, on differences between Several and Regulating Orders).

Table 5.1: East of England Marine Plan within the context of The Wash cockle fishery (source: http://mis.marinemanagement.org.uk).

	Central government objectives	Marine activities directly affecting The Wash fishing community	Marine Policy Statement (MPS)
1	Fisheries and aquaculture	Fisheries and aquaculture should: minimise or mitigate adverse environmental effects of such developments; prevent access to fishing grounds; not adversely impact spawning grounds and habitats	The MPS expresses support for the fishing sector and cites many issues that the industry faces, such as displacement, and identifies possible solutions, such as co-location of activity where appropriate. In the Eastern Marine Plan (EMP) areas, fishing takes many forms, with some types reliant on particular grounds that are fished seasonally and others being nomadic in nature. The MPS is supportive of the aquaculture industry, considering the benefits of encouraging the development of "efficient, competitive and sustainable" aquaculture.
2	Governance	Marine Spatial Plans (MSPs) demonstrate fair and equitable governance	The EMP areas are becoming increasingly busy with more activities. As a result, co-existence (including co-location) and displacement are issues that have arisen frequently in discussions with stakeholders. Within the MPS there is an expectation to "promote compatibility and reduce conflict" and to "reduce real and potential conflict, maximise compatibility between marine activities and encourage co-existence of multiple uses".
3	Social and cultural	MSPs to provide health and well-being; should not harm heritage assets or adversely affect the marine character of the sea	Marine plans have an important role in helping to realise social benefits across the marine plan areas. Opportunities exist to improve people's well-being through promoting activities for healthy lifestyles and helping to reduce deprivation by creating jobs. Ensuring that the natural and historic environment are protected and maintained can help to stimulate investment, support sustainable tourism, engender pride, facilitate a sense of place, and promote health and well-being.
4	Environment	Protect biodiversity, habitats, and species through MPAs	The UK's marine environment is extremely rich and varied, supporting a wide range of species of national and international importance. It provides vital ecosystem goods and services including food provision and climate regulation. A healthy marine ecosystem is fundamental to supporting sustainable development, providing wide social and economic benefits.
5	Energy renewable (wind energy) and associated infrastructure	Secure, sustainable, and affordable supply of UK's energy	The marine environment will make an increasing contribution to the provision of the UK's energy supply and distribution. This contribution includes the oil and gas sectors which supply a major part of our current energy needs, and a growing contribution from renewable energy and from other forms of low carbon energy supply in response to the

			challenges of tackling climate change and energy security.

Many views from fishermen stated that MSPs give more emphasis to the 'Green Agenda'. The Green Agenda is what **F21** refers to as the government schedule to implement national level objectives for renewable energy. **A2** spoke of this in terms of prioritising the high-level objectives ahead of local-level fisheries management and conservation.

> *"It's that debate between national infrastructure stuff which you may say carries high weighting."* (**A2**)

The move towards sourcing renewable energy is highly contentious within The Wash as some groups claimed that achieving those renewable target outcomes negatively impacted fishermen. **F18** explained that locally, national and EU imposed targets, were leading to the loss of cockle beds.

> *"I mean look at the windfarm, we've had to reach this 30 per cent or whatever it is renewable energy to keep up with the rest of Europe, which has had a massive effect on our fishing you know. Cable routes shutting our ground and everything."* (**F18**)

F18 appeared to indicate a trade-off between fisheries management and conservation. The EMP emphasised that co-location, co-existence can offer additional benefits such as increased fishing, and empowered local decision-making through MSPs. Fishermen stated that, for the EMP, the implementation process had not defined what was meant by the cultural and social aspect of the EMP so it was difficult to see the benefits of co-location. Instead, fishermen stated the EMP led them lose fishing ground.

DEFRA (DEFRA 2014b) noted that the EMP inadequately explained how to manage the complexities of governing systems when balancing activity with conservation standards. For example, in the EMP, DEFRA's energy security and 'decarbonisation' climate change objective was mentioned, but the relevance to the social and cultural aspects of the plan were vague. Also, the objective to ensure that health, well-being, and heritage, including those of the fishing communities should, remain unaffected, but processes involved in understanding these objectives were unclear.

5.1.3. Change in stakeholder representation

In order to fulfil conservation and cockle fisheries management objectives in The Wash, Eastern-IFCA relies on the idea of adaptive co-management (ACM). In this case, adaptive co-management includes input from Natural England (NE), Environment Agency (EA), councillors, MMO, and other stakeholders. As Chapter 4 described, within The Wash, ACM involved stakeholder participation from: government advisory bodies – MMO, NE, EA, local authority

councillors, and a number of representatives from Wash fisheries associations (FA), Cromer fishermen, local anglers, or divers. Previously, stakeholders involved under EJSFC were NE representing conservation interests, EA, councillors, and representatives from the fishing industry for the eastern region, designed to support sustainable local fisheries while meeting a conservation brief. However, a change in tack necessitated the inclusion of a diverse range of local stakeholders with a local interest reflected, broader than just commercial fishing. The MCAA implied support for serving multiple interests and activities and mitigating against potential conflicts through transparent dialogue. **A1** explained how the process changed since EJSFC and referred to a positive stakeholder process that the MCAA had introduced.

> *"I think one of the things is that we've got some clear duties that are set out now and those expand on what sea fisheries committees, where sea fisheries committees were generally interested in the commercial fishing and commercial fisheries. Then belatedly conservation came to the fore, stronger when the habitats directive came in that that introduced, you know, significant change in terms of recognising that conservation was not just conserving enough stock from a commercial fisheries point of view. Again, which has always been there and broadening the conservation responsibility. And we've got other stakeholders now. So down here we've done quite a few things that recognises recreational activities in terms of anglers and stuff. Um, I think certainly [in the south] the members that we've got are far more involved and I'm sort of over a broad spectrum of different interests than wherever benefited before Sea Fisheries committees. Yeah, definitely the works certainly become a broader based approach, but we call it the clear directions from the MCCA to help because we can always revert back to them."* (**A1**)

A1 claimed that clear direction from the MCAA offered a broad spectrum of views that benefited the arrangements of Eastern-IFCA over those of EJSFC:

> *"We've got stakeholders on both sides* [reflecting conservation and fisheries interests, ed] *close because of that. We're very very conscious of making sure that we played with a straight bat."(***A2**)

In the context of the Wash, **A2** stated there were two significant changes that the diverse group of stakeholders brought to the Eastern-IFCA committee: 1] preventing those with a pre-judiciary and pecuniary interest to vote on matters that could potentially benefit their commercial interest; and 2] by increasing the number of participants, **A1** claimed that institutional bias was removed from the Eastern-IFCA committee process.

Officers reported the positive of stakeholder engagement in the adaptive co-management of The Wash (**A1** and **A2**). For example, **A2** noted that this has helped to reconcile two extremely conflicting views on conservation and fisheries management.

"Wind farms, they all have commercial fishing's working groups which are intended to de-conflict or to manage a conflict between windfarms and fishing activity, and in Suffolk I'm an independent chair to try and help oil the wheels of process as well." (**A2**)

The diverse range of views represented a fair, democratic and decision-making process (MCAA 2009). However, for fishermen, the number of stakeholders presented problems of implementing a fair and balanced process. There were too many voices to reconcile, leading to suspicion, mistrust and overall inadequate representation. The process had also reduced their input into decisions that affected their fishing.

The 0-6 nautical mile (NM) zone that defined local fisheries (where The Wash extends to 3 NM) meant that issues could be dealt with locally by the Eastern-IFCA. Due to nature of cockles being a local interest, cockle fishermen have not felt the need to represent themselves at national or EU level decision-making processes. Although the research revealed that fishermen were disengaged with national and EU decisions, it was unclear whether DEFRA were adequately engaging with fishermen or vice-versa. Within renewable windfarm energy in the east of England, the Eastern-IFCA were able to represent the views of fishermen and relay concerns back to the MMO or DEFRA, but there was no real issue concerning MSP. **A2** explained:

"We're a consultee as it all goes through marine planning at the MMO. We will raise our points and raise our objections but at the end of the day planning consents are made with things in the round and of course the frustrations with fishermen is that they perceive that, you know, they'd be restricted doing x, y and z and yet 'you build that bloody great windfarm, then come and build this big trench through The Wash and all that stuff' and it's that debate between national infrastructure stuff which you may say carries high weighting, but I don't like saying this but it's not our bread and butter. We feed into it and if we had a significantly serious issue, bizarrely we do have the power to call it in, to also ask the minister to call it in. But we've not encountered anything to give us that level of concern." (**A2**)

This Kings Lynn and Boston based fisheries associations, knew that the Eastern-IFCA could represent fishermen's views, but felt that the issues were understated. In addition, Fishermen were not engaging on matters related to the EMP because their views were not considered.

On the ground, three associations represented the views of Boston and Kings Lynn fishermen to the Eastern-IFCA committee. Kings Lynn Co-op and Boston FA represented the views of independent fishermen, including the nomadic sector (or nomadics). Separately, the Vessel and Skippers Owners (VSO) Association represented skippers, while commercial-industrial fishermen represented themselves. The nomadics felt they were marginalised as a sector because the Kings

Lynn Co-op and Boston FA, had more independent-commercial fishermen, and this group were more vocal at representing their own needs as a sector.

The general view was that the Eastern-IFCA favoured hand working as the preferred fishing method rather than suction dredging. The general perception was that the method had little environmental impact. The method was also favoured by three fishermen in the Eastern-IFCA committee. These were commercial-independent fishermen.[9] Commercial-independent fishermen predominantly used hand working methods. The commercial-industrial fishermen preferred suction dredging because, they stated, that the circling prop-washing motion used by hand working fishermen loosens the cockles off the seabed, and this was more destructive than suction dredging.

Additionally, the Eastern-IFCA issued annual questionnaires to all cockle entitlement-holding fishermen allowing them to express the preferred fishing method for that year. The idea was that this process enabled those fishermen without a voice to present their views to the Eastern-IFCA committee. The results of the cockle survey and the questionnaire were presented to the Eastern-IFCA committee. Some nomadics leased cockle entitlements, but their views were not recognised. Also, with the number of votes available (one member, one vote) commercial-industrial fishermen were usually outnumbered by the commercial-independent fishermen, and other committee members preferring hand working. As **F21** described:

> *We are allowed to talk about the things we don't agree with but we are not allowed to vote because we've got invested interest. So we can try and persuade the people who can vote while we believe that the decision is correct or incorrect, but we are not allowed to vote for it in any other way.* (**F21**)

A2 believed that the questionnaire and survey (continued from the EJSFC) helped the Eastern-IFCA to gather views from the less vocal and marginalised fishermen. **A2** expressed that relying on industry meetings alone only allowed for certain voices to be heard. He added, the addition of a questionnaire ensures transparency for the more passive fishermen.

> *"The difficulty with a public meeting is that the table-thumpers tend to get heard and the majority don't. So we try to have a range of ways to engage."* (**A2**)

Overall, given the change from EJSFC perceived as strong supporters of fisheries to the Eastern-IFCA's greater conservation focus, the impact of the implementation of the MCAA changes on fishermen was summed up in the following way:

> *"For us, everything has changed for the worse"* (**F8**)

[9] To note, four Wash cockle fishermen representative of the Eastern-IFCA committee were also on the EJSFC.

5.1.4. Change in governance and management processes

The purpose of this part of the investigation was to elicit fishermen's views on where in the governance and management decision-making processes EJ was experienced. For example, was the (in)justice occurring from the Eastern-IFCA committee or EU regulations? To do this, I defined management as focusing on the daily administrative tools required to carry out management functions (i.e. fishing effort controls and licences) and governance as embodying all aspects of governance from first-order to meta-order (as defined by Kooiman 1995). However, fishermen tended to cover the same issues for both. Therefore, by artificially separating the interview data to provide different facets of the governance and management process would inadequately represent the breadth of views presented by fishermen.

MCAA (2009) highlighted inshore fisheries governance as benefitting from being more participatory in style. An ACM approach not only includes stakeholders "*acquainted with the needs and opinions of the fishing community*" (MCAA 2009 Section 151/2:101) but also enabled flexibility in the development of management measures and the ability to review measures to respond to the changing habits of fishermen in The Wash. A notable change with the MCAA, and the subsequent activities of Eastern-IFCA, was that bylaw-making powers were strengthened to ensure the focus was to balance conservation and fishing at the local level. Bylaws in The Wash involved creating chargeable cockle permits, fishing effort limiting regimes (such as number of days at sea a licence permits a fisherman to be at sea), and implementing local MPAs. There were also provisions to implement mandatory emergency bylaws for environmental protection (Phillipson and Symes 2001). Eastern-IFCA's were empowered to enforce all national and EU fisheries and environmental legislation within The Wash. However, fishermen reported that the focus that exploitation is carried out in a sustainable way that balanced "*the social and economic benefits…with the need to protect the marine environment*" (MCAA, 2009:103) neglected to consult with fishermen adequately.

In Parliament, the hope was that The Wash management process under EJSFC, perceived as successful, would continue after the MCAA:

> *"Sustainable fisheries management is the Government's overriding policy objective, of course, but that requires high-quality fisheries management and top-class law enforcement procedures. That is currently the role of the Marine and Fisheries Agency, which has a good record. There is high morale, as shown by the Eastern Sea Fisheries Joint Committee in my constituency, and the staff are motivated and committed."* (MP Henry Bellingham for North-West Norfolk. HC Debate 20 November 2007. Accessed November 2018)

The comment related to Henry Bellingham MP constituents' becoming concerned that experience would be lost in the change to Eastern-IFCA. Henry Bellingham MP also recognised the value of EJSFC Officers. Conversely, the experience of **A1** was that there previously power imbalances and bias affected the ability of EJSFC to manage cockle effectively.

> *"One of the criticisms was that it was too much power in the hands of the chief officer that needed addressing."* (**A1**)

A1 perceived the early years of the EJSFC management as too top–down, so the EJSFC sought alternative ways of managing cockles. **A1** also referred to the change in behaviour from the fishermen to more collaborative ways of managing cockle fishing. The EJSFC fisheries management removed *"misconceptions and mistrust on all sides"* through the collaborative way of decision-making (EJSFC 2008:4). **A1** referred to an example where NE pushed for 30 per cent of cockles to be reserved for the protection of over-wintering birds that feed off cockle stocks. Fisheries officers were transparent with the evidence that was produced by NE. Fishermen were then made aware that management of cockle fishing was not dictatorial or top–down, so any constraining factors affecting fishing were accepted because dialogue between officials and fishermen had improved.

In The Wash **A1** observed: 1] this was an opportunity to engage with the fishing community directly; 2] it provided the fishing community with an opportunity to voice their fears about their livelihoods; and 3] it enabled both sides to acknowledge that they all had a shared vision for The Wash.

5.1.4.1. Informal approach to management style

In The Wash fishermen's views, the EJSFC used 'common sense' and local knowledge to manage fisheries which was often needed during times of poor cockle stocks. **A1** stated that this informal style was effective for the fishermen and for the EJSFC at the time, but clarity was needed. For example, implementation of The Wash Fishermen Order 1992 (WFO) became contentious because of the need to meet conservation objectives as well. **A1** recalled that the changes first emerged when EJSFC were controlling fishing efforts as response to the Habitats Directive. **A1** described a process that EJSFC followed to oversee the Habitats Directive was effective.

> *"I'm pretty sure we were the first significant fisheries that sort of respected all responsibilities under the Habitats Directive… So we would then invite representatives of the fishing industry to attend a meeting to hear what we had to say, about stock levels, and we would then sort of tell them where they could go and what fishing opportunities they would have."* (**A1**)

A1 claimed that the informal and flexible nature of the decision-making process allowed for EJSFC to take an adaptive and sustainable approach to managing cockle fisheries. **A1** elaborated

further by stating that EJSFC's fisheries officers relied upon informal relationships to respond to NE's increasing powers to guide on conservation matters.

> *"You know, in the bad old days the beds used to get tainted because there's so much dying cockle on there so just reducing that effort on a daily basis* [first introduced by NE, ed] *was a benefit to the fishermen because they extended the fishery for many more months than they used to have, but they actually did hang it to a degree on how they were helping to support the conservation of the site and they really did. Yeah, it did just seem to change behaviour."* (**A1**)

In recognition of this positive move in favour of cockle fishermen, **A1** stated the EJSFC acted positively to facilitate any decisions made by NE that affected cockle fishermen. For example, NE's insistence on reducing monthly catch quotas made a notable difference to fishing practices, because the move prolonged the cockle fishing season and diverted behaviour away from the race to fish mentality that was previously exhibited by fishermen.

5.2. Consequences of changes in objectives

Changes from meta-order to local level governance to enforce conservation were having negative effects on Boston and Kings Lynn fishermen. **F5** and **F6** summed up the negative effects of conservation for The Wash fishermen.

> *"Eastern-IFCA spend so much time on conservation, on sabilleria reef worm, etc etc. They don't put the time, to cockle surveys, well that's a big thing to us. That's a big part of our yield. It's a valuable fishery. They always seem to be rushed. You don't always get the correct results from the surveys they do. Then they have to do another survey later on in the year because they got it wrong. There's usually more stock than their first estimation. So there's that side of it that spent too much time dealing with the conservation related issues. On the other side of this is staff are not knowledgeable."* (**F5** and **F6**)

The change in objectives from fisheries management to conservation was acknowledged as a struggle in 2007, ahead of the MCAA, when the Secretary of State for the Environment stated.

> *"One of the challenges that we face in planning and managing the marine environment holistically is that we do not know nearly as much about what goes on in that environment as about what happens on land. I assure my Right Hon. Friend, however, that mapping and planning work is already in progress. If we are to have a proper and credible marine spatial plan we must know what is going on in the water and on the sea bed, and what features are where. The Government are firmly committed to that work*."

(Ben Bradshaw, Secretary of State for Environment, HC Debate 19 April 2007 volume 459 column 501. Accessed November 2018)

Some of the challenges revolved around the financial consequences, changes in perception, consequences of marine spatial planning for the industry, and the cultural heritage of The Wash cockle fishery.

5.2.1. New funding burdens fall to the fishermen

In addition to previous enforcement responsibilities, the transition from EJSFC to Eastern-IFCA introduced new costly conservation responsibilities for Eastern-IFCA. Conservation responsibilities included more staff carrying out more processes to meet EU standards, and these were costly. These measures, coupled with local authority austerity measures, led to losses of 25 per cent of funding from their budget. As a result, DEFRA supplemented the shortfall until 2020. In the interim, Eastern-IFCA, in their capacity as WFO custodians, were levying revenues from cockle permits. The fee levied from cockle fishermen to raise the funds were described as 'new burdens' funding.

> *"Questions for the Minister*
>
> *The members offered up their concerns that they wished to ask the Minister through the Chairman. Fairer funding and the DEFRA new burdens monies was a top priority and Tony Tomlinson MBE* [retired skipper, Chair A-IFCA, ed] *was asked to push the Minister hard on this."* (Eastern-IFCA minutes, 33/2012. Accessed November 2018)

The actual entitlement holders passed on the fee to the nomadics. The effect was that more nomadics were making up the financial shortfall because they leased a cockle entitlement.

An additional burden was the inshore vessel monitoring system (iVMS). The iVMS was a Global Positioning System (GPS) that provided the government with GPS locations for inshore fishing vessels. It is a valuable and cost-effective way of enforcing bylaws in MPAs. The independent sectors claimed that installation and maintenance costs would be expensive. For nomadic vessels without security features, fishermen would have to dismantle and securely store the iVMS somewhere else. Some complained that there were no provisions made for this. As **F23** describes.

> *"We've got our iVMS if they are over 12 metres and that's big enough, they've got the power, they've got the space to make the area, they can all be a fixed installations. If you try to put that on a small boats, small open boats on the Norfolk coast for example, you can't leave that kind of gear setup on the boat alone. You have to be able to take it off, take it home, if you don't, it will walk or be vandalized. It is an open boat so you don't have a wheel house to put it in and keep try and you know. And so there's a degree in the kinds of things being tampered I mean."* (**F23**)

The cost would hit the nomadics quite hard. For example, **F22** explained that he spent in excess of ~£30,000 on a basic fishing vessel, then an additional ~ £200-400 on an iVMS. He could then lease a cockle permit in lieu of a percentage of the cockles he landed. In order to comply with WFO terms and conditions, he 'gifted' the majority shareholding of the fishing vessel to a retired fishermen with a cockle permit. There were also a further set of administrative costs attributed to MMO licensing and ensuring the vessel was seaworthy (as Marine and Coastguard Agency conditions). Usually a gentleman's agreement between fishermen enabled these groups to fish for cockles. With implementing the new financial burdens, the costs had indirectly fallen to those who could least afford it. **F10**, **F11,** and **F22** were concerned that they would have to leave the profession. **F19** said a dispute over terms, led him to leave fishing. This scenario presents evidence that there is a certain degree of risk and trust involved in allowing cockle fishing without a permit.

5.2.2. Public perception of fishermen is influencing decision-making

Fishermen felt that the media shaped public perceptions of fishermen which were largely negative, and that they were constantly defending their livelihoods to the public. Some fishermen felt the media shaped the way Eastern-IFCA Officers perceived fishermen. A general Internet search on conservation and the effects of fishing reveal a number of fearmongering statements, such as

> *"Overfishing – emptying our seas"* or *"Uncovered: the Rich List 'Codfathers' dominating the UK's fishing"* (Greenpeace, accessed November 2018).

These and similar statements shape negative perceptions of the UK's fishing fleet . **F20** explained that this is affecting the relationship with Eastern-IFCA, and how Eastern-IFCA relate to conservation bodies such as NE.

> *"The head of the Eastern-IFCA has said it's conservation first and then fisheries…we've always got to try and prove that we're doing nowt wrong. You know, we always seem to be targeted as betrayed traders, swashbuckling pirates and stuff like that. When we're not."* (**F20**)

The same despondency was expressed by **F18**.

> *"I find they are always worried about bird food and all the rest of it, but the birds will move to where the food is. Yeah, we can't move can we? I suppose we can move, but we ain't going to get cockles anywhere now are we? You know. But, I don't know, trendy to be green these days isn't it?"* (**F18**)

Also, according to **F3** and **F4**, was the case where NE were allegedly advising that 30 per cent of cockles should be reserved as food for overwintering birds and on the designation of MPAs for the protection of natural features, such as boulder cobble and *sabillaria spinalosa* reef worm.

Similarly, **F7**, **F14**, and **F20** explained that heavy lobbying from environmental non-government organisations (eNGOs) meant that the Eastern-IFCA were not recognising fishermen as part of the ecosystem. They claimed that their views can add value to the management of cockles and the protection of The Wash. **F4** stated that it was fishermen who brought the sabilleria spinalosa reef to the attention of the Eastern-IFCA Authority and Committee. Further, **F5** claimed that in this case fishermen presented evidence that the reef was present and the evidence is used against them.

F24 elaborates further on the impartiality of committee members:

> *"…bylaw… It's got to affect people's income and their living and you'll get an idiot councillor who says, 'Why are we discussing something about how much they've* [fishermen, ed] *got to earn, it's silly 'cause this is about conservation isn't it'?'"*
>
> (**F24**)

F24 stated that sometimes Eastern-IFCA Officers and the Chair would come to the fishermen's defence when Councillors were biased.

> *"But I will give the chairman and* [Eastern-IFCA, ed] *their due. They normally stand on people like that. They put them right."* (**F24**)

On balance, many fishermen interviewed, especially those on the Eastern-IFCA committee, believed that public perception was shaping Eastern-IFCA's decisions and its desire to fulfil conservation objectives. There is a general consensus among all fishermen interviewed that Eastern-IFCA favours conservation and perceive fishermen as the common obstacle in preventing the conservation objective from being achieved in The Wash.

5.2.3. Marine spatial planning and displacement of cockle fishermen

Research participants explained that the government had taken a broad-brush approach to MSPs. The MMO issue licences for all extractive marine activity in UK waters. However, not all activities were motivated by the same outcomes. Although the Eastern-IFCA could represent the views of fishermen, they tended not to. A consequence of this is what **F5** and **F6** explained regarding the inadequacies of being involved in national decision-making processes.

> *"The Eastern-IFCAs can't do anything. Because it's from above. There's nothing for them to do. They're not going to get… because the windfarm companies are licenced to trench and lay these cables up through The Wash. It's like aggregate dredging. The licence. If you've got a licence…"* (**F5** and **F6**)

Although Eastern-IFCA could represent **F5** and **F6** at national level discussions regarding licensing of marine activities, they claimed the Eastern-IFCA remain powerless to influence a decision.

By integrating the Localism Act and the MCAA, the government emphasises that cooperation with local people is intended to facilitate the process with ease while addressing local concerns. During parliamentary discussions on the Localism Bill, there was a focus on the 'duty to cooperate' with local interest groups, which were seen as crucial to the success of localism and the MCAA.

> *"Our amendments are concerned with the duty to co-operate...my Lords Whitty talked about …climate, biodiversity…I would say, without wanting to bring back difficulties of regional strategies, they did provide a route to resolving these issues strategically..."* (Lord McKenzie of Luton, Hansard Column 653, July 2011. Delegated Powers Committee. Localism Bill)

Lord McKenzie spoke of the Localism Act and the benefits of cooperation to resolve regional disputes by aiding the efficacy of spatial plans. However, as the fishermen broadly stated, sometimes some resource users (i.e. windfarm developers) were better at engaging with the Eastern-IFCA than fishermen.

Regarding proposals for closed areas for shrimp fishing, fishermen were reluctant to collaborate because the information was seen to be used against them. The Eastern-IFCA minutes stated:

> *"…there was concern about the suggested closed areas right across the shrimp grounds, there was already no available mussel fishery meaning opportunities were limited to shrimp and cockle and with so many suggested closed areas there was concern the shrimp fishery would become unviable…questioned whether it was the shrimp or the ground which was being protected. The IFCA, Chief Executive Officer advised it was the ground, which left* [fisherman, ed] *to question whether this meant in future every fishery could be closed as they could all be deemed to damage the ground. The Scientific Marine and Environment Officer advised that assessments take into account the level of interaction between gear and the ground.* [fisherman, ed] *questioned where the additional damage was coming from as the grounds had been trawled for over 200 years. He also advised that since the Netgain project, when the industry had been advised any information they provided would not be used to close the fishing areas, which had not been the case, it was very difficult for the industry to provide information relating to fishing areas when it would potentially put them out of business." (Source: Eastern-IFCA minutes, January 2016).*

Netgain was a collaborative attempt by the government to identify MCZs around UK waters. An independent think tank gathered views and objectively relayed these back to government, but according to **F3**, **F4**, **F8**, and **F9** from Boston the process was considered poor and damaging in terms of encouraging fishermen's involvement in further projects.

5.2.4. Cockle fishing as a cultural heritage

In the context of The Wash, the fishermen reported the EMP was weak at defining cultural and social activities. The EMP describes cultural and social activities as important to promote health and well-being.

> *Marine Plans have an important role in helping to realise social benefits across the marine plan areas. Opportunities exist to improve people's well-being through promoting activities for healthy lifestyles and helping to reduce deprivation by creating jobs. Ensuring that the natural and historic environment are protected and maintained can help to stimulate investment, support sustainable tourism, engender pride, facilitate a sense of place and promote health and well-being."* (Source: MMO website, accessed November 2018)

Many fishermen in The Wash come from a long line of fishermen. There was little attention concerning the longevity of fishing fleets as a significant aspect of sustaining livelihoods. Data revealed that by not acknowledging livelihoods are an integral part of The Wash's cultural and social landscape, the EMP struggled to recognise the value that fishermen bring to local communities. **F21** expressed suspicion, stating that fishermen were losing cockle beds to serve higher-level objectives stated by government. In support of this view, there are degrees of empathy felt by some officials. As **A1** summarises.

> *"The main bugbears that a lot of the industry have, especially the ones that sit on the committee and the committee right now, is that a recreational fishermen and scuba divers and maybe ramblers can get to vote on implementing the bylaw that restricts fishing opportunities for some of the fishermen and they, they feel that actually that's, that's their livelihood and their decision about their livelihood has been taken away from them."* (**A1**)

By contrast, **A2**, stated that a change in perception from fishermen would help them become resilient to national priorities.

> *"In their mind, in their psyche, there is an inalienable right to fish. I can fish, my father fished, so we can just do it. What I say to them is that perhaps, it's helpful if they see it in a different way. That they are privileged to be able to prosecute a fishery…"* (**A2**)

In choosing to describe fishing as 'prosecute', **A2** appeared to attach negative connotations to fishing, implying that the Eastern-IFCA view fishing as constraining. This expression confirmed some views expressed by fishermen.

5.3. Consequences of stakeholder representation

A feature of biodiversity conservation and natural resource management is the involvement of local stakeholders (Sterling et al. 2017). Normative perspectives argued that by adding views from a number of stakeholders in decision-making aides a fair and democratic process (Agne 2015). According to **F18**, however, integrating a recreational angler and a diver only strengthens the role of NE in the Eastern-IFCA committee decision-making process, because they appear to have a conservation focus.

> *"I mean on the Committee… you've got a lot of people who are opposed to the fishermen* [in favour of conservation, ed]. *You know, the sea anglers and divers, yeah all sorts, I mean I've not been to the Eastern-IFCA meetings, and I used to attend a lot but not so much now, you know. I don't feel like I'm ..we don't get representation like we used to. Put it that way."* (**F18**)

The government stated that the change from EJSFC to Eastern-IFCA would facilitate dialogue by opening up discussions in recognition of a broader group of stakeholders from the eastern region. As MP Carmichael explained: *"The way that marine-related policy is made would be changed so that, rather than being developed through compartmentalised dossiers, it would take an integrated form that recognised the relationships and interactions between different activities in the maritime sphere."* (MP Alistair Carmichael, Orkney and Shetland, HC Debate. Hansard. June 2008. Volume 476. Maritime Policy Parliamentary Under Secretary of State for Transport)

In MP Alistair Carmichael's quote, recognition of "the relationships and interactions" integrates views and voices of those with an interest in The Wash. However, not all fishermen in The Wash have their views heard and so perceive the process as secretive. **F10** and **F11** claimed that they were wasting their time because of the secrecy they were experiencing.

> *"Personally, I think I was. But again, the way that it was all going, it was all hush hush, everything was quiet and nobody tells you anything, regardless of being in the fisheries committee or sorry, the fishing committee [I meant co-op] in the AGM. It's pointless. It was all kept quiet and hush hush and you don't get told anything. We are all going to be just as dumbfounded as when I walk out. It's a joke, really."* (**F10** and **F11**)

There were two visible avenues by which fishermen could participate in the decision-making that affected cockle fishing: 1] by applying officially to the MMO to be on the Eastern-IFCA committee where they could demonstrate local knowledge through an open recruitment process,

or 2] unofficially through the Boston Fisheries and Kings Lynn FA. Few fishermen were allegedly active in official and unofficial decision-making processes marked by the presence of four Kings Lynn and Boston fishermen on the Eastern-IFCA committee. The nomadics claimed that personalities were the reasons presented for why they were less engaged in FA and committee decisions.

5.3.1. Allocation of Eastern-IFCA committee votes

Turning to the cockle fisheries management process described in Chapter 4, fishermen reported that the number of votes available at the Eastern-IFCA committee were misallocated. From the views of fishermen on the Eastern-IFCA committee, all five fishermen representatives felt the allocation of votes was unfair because other stakeholders usually voted in favour of conservation. Since the change to Eastern-IFCA, the redistribution of committee votes affected fishermen in three ways: 1] those with an industrial–commercial fishing operation holding several cockle permits only carry one vote, 2] those fishermen with a pecuniary and pre-judiciary interest in marine activity could not vote, and 3] there were a reduced the number of votes available to fishermen after re-allocating them to other stakeholders. **F12** expanded on the issue further, referring to the role of recreational anglers on the committee.

> *"The committee, and the people who sit on the committee, the rod fishermen and all that, they shouldn't be there. They should be took away. Because all they are is a person who sat on a committee there with nothing to do with general fishing – all that is there is the pleasure, but he's having a say on how we earn our living. And that's no good. No good at all."* (**F12**)

As stated earlier, because of the informality experienced within the EJSFC, fishermen seldom felt the need to be part of a formalised process. Government decisions to include local stakeholders coupled with the effects of dwindling cockle quotas (Eastern-IFCA 2017: WFO cockle fisheries management plan) meant that fishermen wanted their interests heard. However, the Boston Fishermen's and the Kings Lynn Co-op FAs were ineffectively engaging with the nomadics. One fisherman represented the Kings Lynn Co-op FA, two represented Boston FA, and one represented the commercial-industrial and VSO Association.

Fishermen on the Eastern-IFCA committee tended to reflect their own views ahead of the organisations they represented. The nomadics and skippers (and crew) had few options to put their views forward. Even through the FAs, the route was inadequate at representing views. **F22** explained.

> *"I'll say I'm on the committee of the Co-op but that still don't mean that I'll get consulted you know."*(**F22**)

F22 explained that the Kings Lynn Co-op FA representative was unsupportive of the nomadics' part-time or seasonal status.

Despite seeing the value of having stakeholders representing local views on local matters, **F16** and **F17** explained that a diver or an angler could vote on decisions that had consequences for fishermen that marginalised them.

> *"It's gotten worse? Why is that? Because in my opinion, that when I was on the EJSFC you had a vote and it was more fisheries minded. Now it is all… conservation minded and the fisheries is a little bit tagged on at the end. And you've got, the committee probably has gotten larger. The MMO appointees, you got the anglers, you've got the Marine Conservation Society, you've got the people on there now. And Natural England was always present to be fair but it's been took over by conservation people and they're the ones who got the votes now."* (**F16** and **F17**)

The allocation of votes had marginalised both the nomadics on the ground and fishermen on the Eastern-IFCA committee, but particularly for the nomadics and the commercial-industrial operators.

5.3.2. Suspicion among fishermen on the process of representation

The consensus of views amongst fishermen was that the lack of inclusivity of all stakeholders at national and local policies affecting cockle fishing was demoting the views and opinions of fishermen.

Commercial-independent fishermen stated that **F23** has a level of literacy that was better suited for committee's work because he was able to convey information clearly. Despite being dissatisfied with some aspects of the FA, they felt that because there was no suitable option available to them, they 'put up' with the status quo. When asked whether they contacted their local councillors, very few independent fishermen did, while industrial-commercial fishermen were in contact with MP Henry Bellingham. **F22** stated:

> *"If we have a committee meeting, go over something which we don't…like I said F23 don't tell you anything. Like if* [KL Co-op representative, ed] *gets a letter, he's calling a committee meeting, we should discuss that. Do the votes. Show of hands like… and agree or disagree. And then go away. But he tends to make his own mind up without us. And we don't get to hear. Till it is too late."* (**F22**)

Some fishermen explained that **F23** is overworked and so has limited time, and therefore tended to push his own agenda which lay with commercial-independent interests holding cockle permits. Sometimes the nomadics struggled to be heard at meetings, and this aroused suspicion on what was being said at the Eastern-IFCA committee. The Eastern-IFCA committee meeting is a public

meeting, so when asked whether the nomadics attended meetings, the common response was either that of surprise or simply that they were unaware of a meeting.

> *"There's nothing you can do to change it. That's just you know, because we don't know anything that is coming, they'll go to him straight away. And if he don't tell you, you won't know it is even there, do you? And he is very secretive. They call him secret squirrel because even to his own family he is secretive."* (**F23**)

Despite enthusiasm to join the Eastern-IFCA committee, there are still undertones of despondency and fatalism amongst the nomadics.

> *"Maybe, yes, I think, no, I mean in fact I would say yes, I would. Because at least then I'll have another chance of finding out information rather than hearing a third or fourth or sixth's hand information and then it is wrong or you go with someone else. [It's like Chinese whispers]. That's silly really. Completely silly. A lot of time here, I can't answer for someone else but the Co-op here I will say is a bit, if you face it you will get told, if you don't you are in the dark. And there is a lot, there is a lot of secrecy and a lot of stuff that's kept quiet and not told in these meetings. For what reason, I don't know."* (**F10** and **F11**)

F10 and **F11** were aware that other nomadics and skippers did not participate in the decision-making process, and were keen to see further provisions made to improve the process of engaging with all sectors.

In separate discussions stating that fishermen could be represented on the Eastern-IFCA committee, it was evident that some fishermen were surprised. **F10** and **F11** were new entrants, and one was a former skipper. The former was voted on to the Kings Lynn Co-op FA and appeared ambitious in attempting to shape decisions affecting The Wash. When asked on whether he preferred to be on the Eastern-IFCA committee, he stated:

> *" At the end of the day why not? … I mean, information is a help. I mean that's better than sitting there in the dark and you are worrying because it is a worry. Why not, yeah why not."* (**F10**)

The fishermen interviewed were keen, asking for details on how to become stakeholders on the committee; these were largely the nomadics.

5.3.3. Representation of fishermen in the eastern region

There were contrasting views on how The Wash was represented on the Eastern-IFCA committee. With only one fishermen representing fishermen's views from outside of The Wash, he explained that there was too much focus on The Wash. Others outside of the Eastern-IFCA committee stated

the opposite. **F10** and **F11** stated that more consideration should be given to The Wash because of its environmental status.

> *"I think The Wash is sort of left out to be fair. In my opinion I think they are more fish than they seem to go after the fish boats and the scallopers and the MPAs out that way and I think The Wash do sort of get left out, sort of on its own maybe."* (**F10** and **F11**)

It appeared clear that the Eastern-IFCA struggled to engage with fishermen from outside of The Wash. To encourage more representation from the various interest groups in the Eastern-IFCA region, the Eastern-IFCA encouraged interested parties to approach the MMO with a 'wish list' of stakeholders that they understand as underrepresented. **A2** stated:

> *"*[Committee appointments, ed] *That's done by the MMO and if you think about it, quite rightly so because you shouldn't be appointing your own members should you? Because otherwise it's corrupt isn't it? You're appointed by an independent organization so we would give a shopping list. So we would say, look, we think we could do some representation from that sector because we haven't got any. Ultimately they run the process about how they appoint people. In an ideal world, I would have commercial fishing from Suffolk, North Norfolk from The Wash, both large scale, processor based, independent. To me, the more even mix of representation you get the better."* (**A2**)

Mindful of not all views being appropriately reflected and the tension caused between the Eastern-IFCA and fishermen, the Eastern-IFCA co-commissioned a project called the 'Community Voice Project' (or CVM). The project was designed to capture a wide variety of stakeholder views in the eastern region, including fishermen.

> "*CVM provides an opportunity to capture the values that diverse stakeholders attach to the marine environment. It is also useful in supporting informed and equitable decision-making that takes account of a broader range of stakeholders and types of value. We will use CVM to support and develop stakeholder-informed decision making regarding fisheries management, including site specific management, and also to capture monetary and non-monetary values*" (Eastern-IFCA website, Accessed November 2018).

The idea was assumed to encourage involvement from marginalised fishermen, repair fragile working relationships with fishermen and to engage with a diverse group of stakeholders hoping that consultation would provide input into fisheries management. **A2** described the benefits of this project.

> *"There are some good hardworking people in the fishing industry. Some of them are table thumpers, some are frustrated that they don't get heard. Which is why we did CVM.*

The overriding thing that came out of CVM, that all the different stakeholders, different people interested actually shared the same values. I thought that was the strength of it. To my mind, I got quite a lot when we'd gone back and analysed. I've got an awful lot from the industry. Probably expressed in a better way (through the CVM)." **(A2)**

In summary, a number of fishermen stated that they were not represented adequately by the FAs. In response, the Eastern-IFCA explored various methods such as the CVM to better engage with a broad group of fishermen within the district. The effects of CVM were not explored by this thesis.

5.3.4. Conflict and the Eastern Marine Plan

The EMP enabled the Eastern-IFCA to legitimately make representation on behalf of fishermen on higher level government objectives concerning MCZs and renewable energy. The MMO delegated local management powers to Eastern-IFCA, so fishermen's interests could be furthered in the plan. **A2** described the conflicting views experienced by fishermen in the plan:

"We're a consultee as it all goes through marine planning at the MMO. We will raise our points and raise our objections, but at the end of the day planning consents are made with things in the round, and of course the frustrations with fishermen is that they perceive that, you know, there'd be restricted doing x, y and z and yet 'you build that bloody great windfarm that you come and build this big trench through The Wash and all that stuff' and it's that debate between national infrastructure stuff which you may say carries high weighting, but I don't like saying this but it's not our bread and butter. We feed into it and if we had a significantly serious issue, bizarrely, we do have the power to call it in – to also ask the Minister to call it in. But we've not encountered anything to give us that level of concern." **(A2)**

In the latter section of the excerpt, **A2** stated a controversy caused in the overlap of functions between MSPs and cockle fishing, leading to cockle beds being lost in favour of windfarm infrastructure and some fishermen financially benefitting instead of others. Despite **A2** stating there was no real concern with MSPs, the experience did not resonate with all fishermen concerned.

An outcome of the EMP was that an independent fishing industry consultant oversaw a compensation scheme in The Wash. There were allegations of corruption where the consultant financially benefitted from the compensation owed to fishermen. Nomadics could not influence the decisions and therefore lost out on compensation. They also reported that legal fees were too expensive. This example is illustrated by the controversial implications of administering windfarm compensation to cockle fishermen. During interviews it became apparent that the net sum of compensation was offered only to a small minority of fishermen who were able to present MMO and Eastern-IFCA endorsed paperwork (i.e. log books, track records, permits to cockle

fish) and those who were connected to the consultant. Those excluded from the compensation scheme were the nomadics. **F22** explained:

> *"About 3 years ago there was the windfarm compensation for being on the corridor on whelks. That wasn't there yet but it was coming up. We was not told but all of a sudden, F23 and his dad stuck a little of whelk pots on the corridor near, we thought what was he doing that for, they've never done it, what's he doing that for, what's he doing? Didn't tell a soul. Didn't even tell his own brother. The next year, lo and behold, there's compensation if you have whelk ports in that corridor, there's compensation. Who gets it? None of us."* (**F22**)

The compensation scheme bears little direct relevance to the governance of The Wash cockle fisheries, though indirectly demonstrated the conflicts between fishermen as a consequence of the EMP implementation process.

5.3.5. Representation in MMO and DEFRA

In addition to the EMP, there was lack of representation and little engagement in the governance process. Some fishermen reported that the number of fishermen in The Wash mean that their views were diluted. **F20** explained the infighting.

> *"The problem with Kings Lynn, there's so many different people battling each other. It's not just Eastern-IFCA, it's the Co-op, you get skipper and owner, you get Lakes then you get Williamson's, then you get the owners of the independent vessels and you get the Boston independents or what seems like a big merry go round. And that's some of the reasons why I don't want to get involved with the WFO. I can't voice my opinion because someone won't go like, and I'll be targeted then 'you should have kept your mouth shut and don't to do that.' That's just how it is heading. That's irrespective of the Eastern-IFCA."* (**F20**)

Large sections of the Kings Lynn Coop and Boston FA with diverging views were separate from decision-making, and this causes conflict and/or scepticism amongst them.

A number of reasons led fishermen to be sceptical on representation at the MMO and DEFRA level. For instance, DEFRA drove decisions underpinning MSPs that was reported to marginalise fishermen Also, Boston fishermen claimed that the Netgain project, as the name implies, would lead to some positive change. Instead, fishermen claimed that evidence provided to DEFRA was used against them. **F4** explained the positioning of MCZs after the Netgain project meant that fishermen lost fishing ground.

> *As part of the Netgain project we participated in the research and later realised that the information was being used against us so the conservation agenda took ground off us. They took 40 per cent of fishing ground in the last 20 years.* (**F4**)

When pressed further, **F4** stated that fishermen's views were overridden by those of environmental pressure groups, and this resulted in a number of closed areas around the coast. Understandably, when Boston fishermen were approached to participate in this research project there was a degree of scepticism.

For the commercial-industrial sectors misrepresentation is illustrated with the reduced number of votes at Eastern-IFCA committee from the EJSFC. The number of votes taken away from the fishermen and transferred to conservationists inaccurately represented the number of employees they supported. **F16** explained:

> *"… keep the factory going, keep the operation going, keep the men at work, keep the crews all at work . We've got an environment where we all work to keep it going."* (**F16**)

Throughout this research it became apparent that fishermen felt disenfranchised – being involved in consultations and research projects for fear of the evidence being misrepresented and used against them.

5.3.6. Relationship between the Eastern-IFCA and fishermen

In discussing the interactions between the Eastern-IFCA and the fishermen, the evidence presented tensions between them. In describing the relationship, **A1** mentioned that despite being highly visible the relationships were sometimes good and bad. During the enforcement of MPAs, fisheries officers were highly visible saying that the officers had 90-98 per cent inspection rates. Also, the enforcement remit of the EJSFC being strong, fishermen claimed that the EJSFC were more visible on the quayside than the Eastern-IFCA, and this helped fishermen resolve any misunderstandings or miscommunications. The presence and positive interaction with the EJSFC fisheries officers appeared to resonate among many fishermen. **F20** explained his relationship with the EJSFC fisheries officers was sociable.

> *"Believe it or not, some of the guys who was on the patrol boat we used to put it a Lowestoft and go for a drink with them. Most of them were ex- fishermen. There's all ex-seamen, so they knew, the score, whereas most of this* [Eastern-IFCA, ed] *lot don't?"* (**F20**)

Within the Eastern-IFCA when describing the interaction between the Eastern-IFCA and the fishing community, a number of fishermen claimed that Eastern-IFCA were not visible.

"The Eastern-IFCA are visible during the cockle season. Yeah. Once per week." (**F5** and **F6**)

Related to the fishermen's perception of the Eastern-IFCA's working habits **F16** and **F17** were suspicious:

"...how can I put this.. I've got an engineer...on [an, ed] *8 hours a day and if I didn't keep an eye on him, he'll have coffee all day because it is easier to do nothing, knowing he is getting paid for anyway.*
And the Eastern-IFCA allowed that. Do as less as possible. And if they can get away with it. That is human nature, why wouldn't they?" (**F16** and **F17**)

Other fishermen, particularly in the commercial-independent sector, were more sympathetic to the Eastern-IFCA's responsibilities. Many in this fishing sector accepted that due to the Eastern-IFCA management remit, they struggled to maintain a relationship with the industry and this prevented them from being visible on the quayside.

"Eastern-IFCA's hands are tied a lot of the time." (**F1** and **F2**)

The nomadics and skippers were largely ambivalent about Eastern-IFCA relationships. **F15** recalled a period when the Eastern-IFCA refused to meet a particular fisherman. It was well-known among Boston and Kings Lynn fishermen that the Eastern-IFCA and this fisherman had a particularly hostile relationship.

It would be nice to have more general meetings with the Eastern-IFCA. The Eastern-IFCA meetings are all a bit of a secret and now they don't have any meetings with the associations at all. There was one meeting a few years ago that I was planning and I think F17 was actually banned from it and that's not very democratic is it? If he's asking questions that they don't want to answer, then they ban him from the meeting. it was one meeting. No one will get banned from the House of Commons if they ask a pointed question. (**F15**)

In another incident **F16** and **F17** claimed that the Eastern-IFCA refused to work with them.

"To use it against you or if you say anything untoward, you will get a letter in the post saying did you speak to my officer or whatever, do you know what I mean. So what happens is you step back, and I don't know what to say here." (**F16** and **F17**)

The relationship between the Eastern-IFCA and fishermen was evidently fraught. During interviews conducted in this research, fishermen reflected on friendships they maintained with EJSFC officers. In some cases the CEO's enforcement background and the Eastern-IFCA fisheries officer's conservation background influenced fishermen's perception of the Eastern-

IFCA staff being biased. This view of the Eastern-IFCA and its officers was portrayed as a barrier to their working relationship.

5.4. Consequences to the governance and management process

This section presents evidence on the consequences fishermen faced in the change in management from EJSFC to Eastern-IFCA. Here, the fishermen interviewed covered a range of governance and management issues together. A central part of the Eastern-IFCA constitution is a bottom–up style of management, allowing everyone to have a say, including all stakeholders. This form of 'co-management' allows many fishermen to have a seat at the Eastern-IFCA committee table. Some fishermen argued that Eastern-IFCA inadequately represented the diverse range of views on fishing presented in Kings Lynn and Boston.

5.4.1. Bureaucratic and enforcement heavy Eastern-IFCA management style

The Wash is dynamic, complex, and unique, and as such a 'one-size fits all' policy is unworkable for all types of cockle fishermen. Decisions made at FA level and the Eastern-IFCA committee were failing to filter down to all fishermen, with some nomadics and crew or skippers relying on informal conversations with peers for Eastern-IFCA committee updates. For many in these sectors, there were concerns that processes and procedures to join and influence the Eastern-IFCA committee were too opaque for all fishermen to have a stake.

Provisions made by the Eastern-IFCA mandate to include fishermen inadequately reflected fleet diversity in The Wash. Some fishermen claimed that this was because the process was too bureaucratic and enforcement heavy. A number of fisherman from the commercial-independent and commercial-industrial sector stated:

> 1. *"Now it is nearly... it is all about conservation minded, and the fisheries is a little bit tagged on at the end."*(**F17**)

> 2. *"Eastern-IFCA go through Natural England and they will set out what they want Eastern-IFCA to do and then work off that, so basically Eastern-IFCA supply Natural England with the information. Whereas I realise things are changing each year, but before we were allowed to fish on our own rules if you know what I mean. Like before, I believe that Eastern-IFCA is a good thing, I've always favoured them and I've got on well with them personally but honestly I believe we need management, because I think it is a good thing so it is not free-for-all for instance, but Natural England is telling Eastern-IFCA what to do and I believe that Eastern-IFCA can do a better job on their own."* (**F13**)

3. *"But there's just too much bureaucracy."* (**F5** and **F6**)

For these groups accountability to conservation bodies created unnecessary bureaucracy. **F5** and **F6** voiced their frustration because Eastern-IFCA were required to seek approval from NE and/or MMO. The new powers of NE and MMO meant that Eastern-IFCA had lost autonomy, and it appeared to fishermen that Eastern-IFCA were directly accountable to NE or MMO. They remarked that decisions impacting fishermen requiring rapid responses were slowed down due to the number of checks implemented by NE and MMO. **F16** and **F17** explained the contrast between the two organisations as being bureaucratic.

> *"Meaningful conversations with officers are impossible, all questions must be referred back to their lawyers, no one will take responsibility for decision-making."* (**F16** and **F17**)

With reference to delays in process, **A2** also expressed his frustrations with the steps required by Eastern-IFCA to get a decision through.

> *"The MMO have a role, the quality assurance from a policy or a legal perspectives, so we've got a lot of to-ing and fro-ing from DEFRA… then the industry and any other stakeholders, so then we try to take all that into account to shape the bylaw we then need to talk to the MMO make sure it's the right shape legally and then it goes to DEFRA and then you get another set of eyes on it. And who sometimes from a different view from the MMO. It's quite bureaucratic. But the process is being reviewed at the moment. The quick and dirty review because it's quite frustrating really. You could argue 'let us talk to one set of lawyers'. It's not helpful that we get different lawyers saying different things."* (**A2**)

The level of bureaucracy meant that the commercial-industrial sector felt business continuity was stalled. The nomadics stated that they relied on others for information, so if the process of receiving information was delayed, the time spent at sea was reduced.

5.4.2. European Maritime and Fisheries Fund and Marine Stewardship Council

The European Maritime and Fisheries Fund (EMFF) was a financial support scheme available to fishermen wanting to transition to sustainable fishing. It sought to support coastal communities and sustainable aquaculture, providing funding for projects that enhance jobs and improve quality of life, while making it easier for applicants to access funding (European Commission website. Accessed November 2018). Some fishermen proposed 'environmentally friendly' gears in The Wash but considered that the Eastern-IFCA caused delays in the evidence gathering needed for applications. Fishermen believed that the Eastern-IFCA were suspicious of fishermen and did not support industry-led initiatives for conservation. **F16** and **F17** explained their interaction with the Eastern-IFCA.

"Holland they've got some gear managed areas [gear managed areas refer a management that control fishing effort in a given area highlighted as needing protection] ....

Heard no more [from the Eastern-IFCA]. *All went quiet. And they said well, the time has passed now, in our application we had to spend so much money at a set period of time do you know what I mean?*

In stages. And we've gone by the times so.. I said well, have you asked for an extension?" (**F16** and **F17**)

The Eastern-IFCA disagreed and claimed that they struggled to find the correct sediment type to carry out the gear trials on behalf of the industry.

Similarly, fishermen claimed the process of applying for Marine Stewardship Council Accreditation (MSC) for the shrimp fishery were delayed by Eastern-IFCA involvement. MSC accreditation meant that the shrimp fishery was sustainable and this would drive the price of shrimp upwards. However, fishermen voiced that Eastern-IFCA's role in verifying some findings for the MSC accreditation process was slowing down the entire accreditation process. As with the EMFF funding process, fishermen appeared to perceive the delay as doubt or suspicion. In contrast, **A2** claimed that process was slow, but argued that they are required to be thorough about procedure.

The EMFF and the MSC process presented fishermen-led initiatives to sustainably fish. However, the Eastern-IFCA were slow at reacting and the delays were frustrating for the fishermen and caused mistrust and suspicion for both the Eastern-IFCA and fishermen.

5.4.3. Eastern-IFCA, NE and environmental pressure groups

NE and environmental pressure groups had significant influence over the Eastern-IFCA's management responsibilities. **F18** explained his experience of the transition and the status NE had in Eastern-IFCA decision-making.

"Well, since they've gone to Eastern-IFCA, a lot of it has gone away from fishing. And it is all conservation. You know, I mean obviously there's always been conservation you have to keep the stocks replenishing all the rest of it but there's…

Yeah they still have the environmental remit, I don't know what they were called then, the predecessors of Natural England you know, I don't know what to call them. It's always been there but their team has stick their oar in a lot more now, you know. I don't know what it is, I just, I mean, I find they are always worried about bird food and all the rest of it but the birds will move to where the food is. Yeah, we can't move can we. I suppose we can move but we ain't going to get cockles anywhere now are we? You know. But, I don't know, trendy to be green isn't it these days?"(**F18**)

A2 acknowledged that the Eastern-IFCA were concerned that they could be open to judicial review from environmental pressure groups if NE's advice was not followed.

> *"The challenge would be for anybody would be by judicial review, so we could be judicially reviewed. Which we're mindful of, so coming back to the point of the MPA bylaw it's because that was at risk of JR* [judicial review, ed]*, so if the challenge was a success then there would be a knock on effect."* (**A2**)

A2 explained that there was tension because they were required to be thorough. **A2** described the tension experienced between fishermen and the Eastern-IFCA.

> *"If your mindset is 'I don't agree with that' all of a sudden, everything becomes wrong then 'they're not doing their job properly, the systems not fair.' None of which is what's correct, but that is what's presented. And that's what people will say and perceive."* (**A2**)

Fishermen were also aware of the effect that environmental pressure groups were having on the daily management tasks undertaken by the Eastern-IFCA. **F23** explains that Client Earth are noted for how thorough the decision-making process was following scientific advice.

> *"One of the things that's come along is that a green lobby group have well-funded lawyers. Client Earth have come along and they've beat DEFRA over their head and said you must do appropriate assessment stuff to manage the fisheries in SPA's and SACs. DEFRA pushed it down to the Eastern-IFCA within the six miles limit and that takes in the whole of The Wash."*(**F23**)

A2 explained that there was a concerted effort by some fishermen to undermine the work of the Eastern-IFCA. This was because in early 2018, the Eastern-IFCA were facing a number of challenges presented by fishermen on a potential shrimp bylaw. The bylaw called for effort restrictions that NE supported. At the time, some Wash fishermen lobbied for support from Henry Bellingham MP to oppose any decisions made by the Eastern-IFCA.

In summary, fishermen felt that the Eastern-IFCA were appeasing environmental pressure groups. Consequently, fishermen perceived that the balance was tipping too far in favour of conservation.

5.4.4. Transparent communications with Eastern-IFCA

The Eastern-IFCA mandate to include additional stakeholders such as divers and recreational anglers was to add transparency. The detailed statutes and policy documents ensured that decisions taken by the Eastern-IFCA were accounted for through a transparent process. Availability and access to information from the Eastern-IFCA was a common obstacle for the fishermen interviewed. Many described the obstacles to getting information from the Eastern-IFCA directly. An overwhelming amount of correspondence was inadequately filtering through to fishermen, leaving nomadics and crew or skippers out of the chain of correspondence. **A2** was

aware of this complaint and stated that the Eastern-IFCA do email or write letters and was confident that this part of the process was auditable.

> *"The number of times* [Eastern-IFCA, ed] *have had to say 'here's the email I sent you', 'here's the letter I sent you'. And they're 'oh, I haven't had time to read that'. Well, there comes to a point where 'if you don't take the time to read that…' well, you can lead a horse but you can't force people to read it. I mean we do try and change the medium. The trouble logistically. If you think about the size of our district. We can't go and personally speak to everybody."* (**A2**)

While the Eastern-IFCA voiced frustration with fishermen not reading letters or emails sent by the Eastern-IFCA, fishermen who did receive letters complained that the time spent on deciphering paper work or emails from Eastern-IFCA, MMO, DEFRA, and Marine and Coastguard Agency prevented them from fishing. In addition, there was little appetite among fishermen to use computers, so any emailed correspondence was largely ignored, with one fisherman asserting that, "it's a fulltime job" (**F4**) to decipher the paperwork.

F8 and **F9** presented 300 pages of the Eastern-IFCA committee papers and stated that understanding them prior to an Eastern-IFCA committee meeting was difficult. This process took longer because the information was relayed back to the FAs. Committee papers were sensitive and restricted to Eastern-IFCA committee members only. **F8** and **F9** pointed out that committee papers left fisheries management issues to the end of the agenda. After a long session of about three hours, councillors were eagerly rushing through the sections that concerned cockle fishermen.

> *"Time isn't what we got a lot of. And because it is* [referring to committee papers, ed] *getting bigger and bigger here. It takes a while to read it. So there ain't no time you see. We now have to jump to the back pages to get to really what the fishing industry does. It must take two days to put that together. There's a lot of work gone into that."* (**F8** and **F9**)

In contrast the commercial-industrial fishermen were able to access management correspondence immediately and communicate information to skippers. It appeared that trust and good relations enabled the process to work effectively between the industrial-commercial owners and skippers. There were, however, occasions where fishermen found that the Eastern-IFCA over-documented communication with fishermen.

> *"You can't talk to them anymore because when they do appear on the quay, there's usually two or three of them and now they have the MMO woman who is with them as well. So there's two of them. And if you tell them… They're asking you questions or your giving your opinion about something you think is going wrong or right or whatever, they will write everything you say down…To use it against you or if you say anything*

untoward, you will get a letter in the post saying did you speak to my officer or whatever do you know what I mean. So what happens is you step back and... I don't know what to say here. (**F16** and **F17**)

Many nomadic fishermen without cockle permits relied on phone calls or face-to-face informal meetings with Eastern-IFCA. Commercial-independent fishermen stated that they used email, letters, or face-to-face meetings to communicate with the Eastern-IFCA. Usually, after many hours at sea, however, all fishermen anticipated difficult conversations with Eastern-IFCA, which they considered to be best avoided.

5.4.5. Loss of fisheries management knowledge

Some fishermen felt that many experienced people from the EJFSC were replaced by the Eastern-IFCA, and among those remaining, were allegedly side-lined. **F14** reported that the Eastern-IFCA should have taken expertise from the EJSFC on understanding fisheries management.

"...staffed by people with relevant knowledge and expertise in fisheries, not conservation." (**F14**)

A1 spoke of an occasion where cockle stocks were struggling and the EJSFC appealed to the fishermen for advice. **A1** found that by being open and transparent about the difficulties that the EJSFC were facing had beneficial effects. **A1** reflected on that period.

"*There's no way to manage this properly. It's just going to be luck of the draw, you know? It was brilliant. Everybody went out of the room in that, in that mindset. So rather than having an opportunity to grumble and put all that energy into legal action and grumbling ... everybody just accepted for the first time that things were difficult. We just moved on as a collective and it... And it really worked well. ...it took a long time to manage it, but it was worth it because it just removes so much of that friction and sort of poor relationship that had been built up for so many years."* (**A1**)

A1 explained that because the EJSFC were transparent about the problems they were facing, the combined effort and knowledge from fishermen produced good dialogue with EJSFC and fishermen.

In contrast, a number of fishermen reported the opposite with the Eastern-IFCA. In 2017, fishermen convened to advise the Eastern-IFCA to open the cockle fishery early in the season because they were ready for harvesting early. Thinning out the top layer of mature cockles enabled juvenile cockles underneath to grow. For this to occur, opening the fishery in May instead of June was beneficial to the cockle fishery for that year. Whereas this knowledge was useful for the EJSFC, the Eastern-IFCA did not act. A significant amount of waste generated poor yields for fishermen in the 2017. **F1** and **F2** reflected on this period.

"So they've lost out on their income.

A month's wages is a lot to lose. Especially if the stuff you go back to last year and that's what's there is dead. And you could've solved that one by opening little bit earlier to get into there to thin them out a bit.

Yeah, it is very disheartening.

Yeah, it has been a big problem for a few years hasn't it."

Interviewee: "So why do think this is that happening?"

I have no idea, this is the Eastern-IFCA fisheries isn't it" (**F1** and **F2**)

F3, **F4**, **F16** and **F17** among many others claimed that their 'wisdom' and knowledge failed to influence the Eastern-IFCA and this was the root cause of their failed relationship.

5.5. Synthesis: institutional changes and implications in the context of environmental justice

The evidence presented in this chapter has been arranged thematically with the aim of addressing the research question 'how has the management regime changed over time and what have been the implications for inshore fishermen'.

Table 5.2 summarises the interactive governance (IG) and EJ interrelationships emerging from the trade-offs between conservation and fisheries management in The Wash. It highlights that the move to the Eastern IFCA, involvement of more actors, as well as the addition of more and tighter regulations, led to livelihood (in)justices faced by fishermen. Further (in)justices were present in the operational activities taken by the Eastern IFCA. For example, in the implementation, regulation and enforcement of EU Directives, UK Acts, local bylaws as compared with the needs of The Wash inshore fishermen.

Table 5.2: Summary of interrelationships between interactive governance and environmental justice resulting from the trade-off between conservation and fisheries management of The Wash.

Thematic (*changes*)	Interactive Governance (*causes*)	Environmental Justice (*consequences*)
Change in objectives from fisheries to balancing fisheries and conservation and Marine Spatial Planning.	Meta order influences from EU Marine Strategy Framework Directive and UK Marine and Coastal Access Act; Marine Spatial Plans and number of local bylaws meant more regulatory	Procedural – fewer 'voting' fishermen on the Eastern IFCA. Regulation and enforcement heavy. Distributive –Fewer opportunities to fish for other fisheries and displacement resulting from the Eastern Marine Plan. Recognition – Marginalisation in the committee and fishermen's associations; threat to cultural

	burden for Eastern IFCA and fishermen at first order.	heritage; lack of trust between fishing sectors; contradictions and vague in Eastern Marine Plan. Capabilities – Less opportunity to diversify to other fisheries. Less able to voice through committee and associations.
Changes to stakeholder representation	More representative groups influencing first order experiences.	Procedural – More representative groups in the eastern region meant limited influence from fishermen. Less representation of fishing groups at MMO and DEFRA. Distributive – Fewer votes allocated to fishermen and fewer quotas among legal and informal fishermen. Recognition – Conflict among fishermen and interest groups and lack of trust. Capabilities – Less able to influence at MMO and DEFRA level.
Changes to governance and management process	Bureaucracy (with more information) and influences at meta order is negatively impacting balancing management responsibilities at first order	Procedural – Influences from pressure groups means less reliance on fishermen experiences and knowledge. Opaque decision-making among Eastern IFCA committee. Enforcement decisions tend to be anti-fishermen. Fisheries agenda is usurped by conservation agenda. Distributive – Funding mechanisms and financial support not reaching all fishermen. Recognition – Loss of knowledge and cultural heritage. Fishermen are broadly viewed as negatively impacting the marine environment. Capabilities – Bureaucracy and media influences mean that fishermen are less able to change perceptions.

The themes identified in Table 5.2 are *changes* to conservation, stakeholder representation and governance and management processes. These changes often stemmed from meta-order governance influences, otherwise identified as the *causes*. The *consequences* were often linked to experiences of EJ at first order of governance (or on the ground).

Throughout this study, interviewees experienced the change from the EJSFC to the Eastern-IFCA as culminating in interlinking (in)justices where no one element (procedural, distributive, recognition and capabilities) appeared to dominate. However, local (first-order) experiences related to feelings of despondency, fatalism, powerlessness, disenfranchisement, and marginalisation were often expressed amongst those least in control of decisions affecting their livelihoods. These experiences link closely to Martin's (2016) view of recognition as justice where respecting identities and cultural differences are critical when considering resource conservation. In considering resource scarcity in The Wash, increasing competition for resources

added pressure on inshore fishermen to 'co-exist' with other resource users involved in the EMP. For example, no provisions were made for fishermen losing fishing ground. The trade-off between EMP, conservation objectives and fisheries management resulted in small amounts of financial compensation being shared amongst all fishermen in The Wash, yet not everyone benefitted. Sometimes this manifested in vandalism of smaller nomadic boats or infighting between the commercial-independents and nomadic sector. This example demonstrates that inshore fisheries are complex and diverse. Here, recognition for environmental and social differences is an importance facet of ecosystem-based and collaborative forms of governance.

Despite ecosystem and collaborative forms of governance taking centre stage in resource management, decisions related to The Wash cockle fishery largely involved top-down forms of governance (Berkes 2006). As Table 5.2 suggests: first, the addition of conservation considerations (including marine spatial planning) to the Eastern-IFCA objectives caused fishermen to be marginalised in decision-making at all levels of governance. For example, the introduction of national renewable energy targets in the EMP, which provide a holistic view of managing the broader interests of The Wash's activities, were perceived by fishermen as reducing the role they play in marine spatial planning. Second, the inclusion of a variety of stakeholders and their interests (each with a vote) in the Eastern-IFCA management meant comparing fishermen livelihoods to needs of recreational anglers or ramblers when the objectives for each are widely different. Third, given that the remit of the Eastern IFCA had broadened, they tended to provide a lot information in order to maintain transparency. Fishermen however, viewed this approach to management as too bureaucratic where experienced fishermen or officers were sidelined when they should be a useful resource. When linking these findings to the combined Kooiman and Walker IG and EJ framework, the desired aims of government to facilitate open and transparent decision-making in ecosystem- based fisheries management were counterproductive.

Also this investigation acknowledged the influence of media and pressure groups such as environmental non-government organisations on decision-making. Sections 5.2.2 and 5.4.3 explored the influences of environmental groups and the media on Eastern-IFCA functions. Fishermen believed that Eastern-IFCA functions were closely monitored by the government due to mounting public pressure. In the views of some fishermen, expressed in Sections 5.4.1 and 5.4.3, this resulted in more bureaucracy and monitoring. Instead of constructive dialogue and transparency in management processes, fishermen reported suspicion, mistrust, and hostility towards the Eastern-IFCA; key traits in recognition as justice for inshore fisheries.

This chapter discussed a range of experiences by fishermen and officers in the change from EJSFC to the Eastern-IFCA and other government priorities. One of these was the acquisition of the 'right' to fish in The Wash, particularly for the nomadics. This concern as well as others are

investigated in Chapter 6 and Chapter 7, where the effect of meta-order policies and second-order practice provide deeper insight into the four elements of justice.

Chapter 6. Perceptions of Fishing Rights

Introduction

The notion of the 'right to fish' is a confusing one for fisheries managers and fishermen alike. This chapter shows that terminology appears rooted within perceptions of 'property rights'. In this Chapter I draw from Chapter 4 (specifically 4.5), and the process of acquiring a fishing permit, and investigate 'how do inshore fishermen perceive their fishing rights'? Sometimes perceptions corresponded to the European Union (EU) term 'entitlement' based on the principle of relative stability, where Member States are issued Total Allowable Catches (TACs) as fishing rights. These rights are based on historical fishing patterns. In contrast, within a local setting, 'entitlement' was also a point of reference to explain a perceived 'right to fish', possibly emanating from ancestral associations. The Wash case study highlights the importance of clarifying 'fishing rights' for fishermen within local settings.

Drawing on interviews with fishermen (**F1** to **F24**) and officers (**A1** and **A2)**, and referring to DEFRA and Eastern-IFCA policy documents, Section 6.1 identifies the right to fish in international waters and national policy relevant to cockle fishing. Section 6.2 examines the difficulties surrounding administering licences, permits, and entitlements. Section 6.3 investigates the effects of this confusion for the different fishing sectors present in The Wash. Section 6.4 presents issues related to The Wash Fishery Order (WFO). Section 6.5 synthesises and reflects on the findings.

6.1. Overview of fishing rights shaping The Wash cockle fisheries

This chapter draws on the Chapter 1.3 and Chapter 3.6.1 definitions of fishing fleet typology in The Wash. Also, recapping on the understanding of cockle licences, permits, and entitlements from Chapter 4 and the licence in Appendix 6:

- *licences* were issued by the Marine Management Organisation (MMO) allowing fishermen to shellfish within United Kingdom (UK) territorial waters; Wash Fishery Order (WFO).
- *permits* were locally administered enabling a MMO fishing licence holder to fish for prescribed species, one of which is cockles. Over time, as cockles became valuable and key to the local economy, fishing pressure on cockle stocks increased, and the Eastern Joint Sea Fisheries Committee (EJSFC) introduced a waiting list for WFO permits to restrict the number of WFO cockle permits in circulation (**A1**).

- Over time the permit was referred to as an *entitlement*[10] by all fishermen in The Wash.

6.1.1. Scope of international legislation on fishing rights

As explained in Chapter 1.2, the United Nations Convention on the Law of the Sea (UNCLOS) grants nations the right to govern their respective Exclusive Economic Zone up to 200 nautical mile (nm); though in recognition of the complexity of managing migratory fish stocks, UNCLOS grants shared responsibility to coastal states. The idea surrounding common ownership of the resource enables the protection of it too. Within that, the nations have:

> *"(a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters suprajacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds;*
>
> *(b) jurisdiction as provided for in the relevant provisions of this Convention with regard to… the protection and preservation of the marine environment."* (UNCLOS 1982, Part V, Article 56, rights, jurisdiction and duties of the coastal state in the Exclusive Economic Zone)

In this context, justice is explained in terms of equal rights of people to the resource. An extract from Section V of the 1982 UNCLOS states:

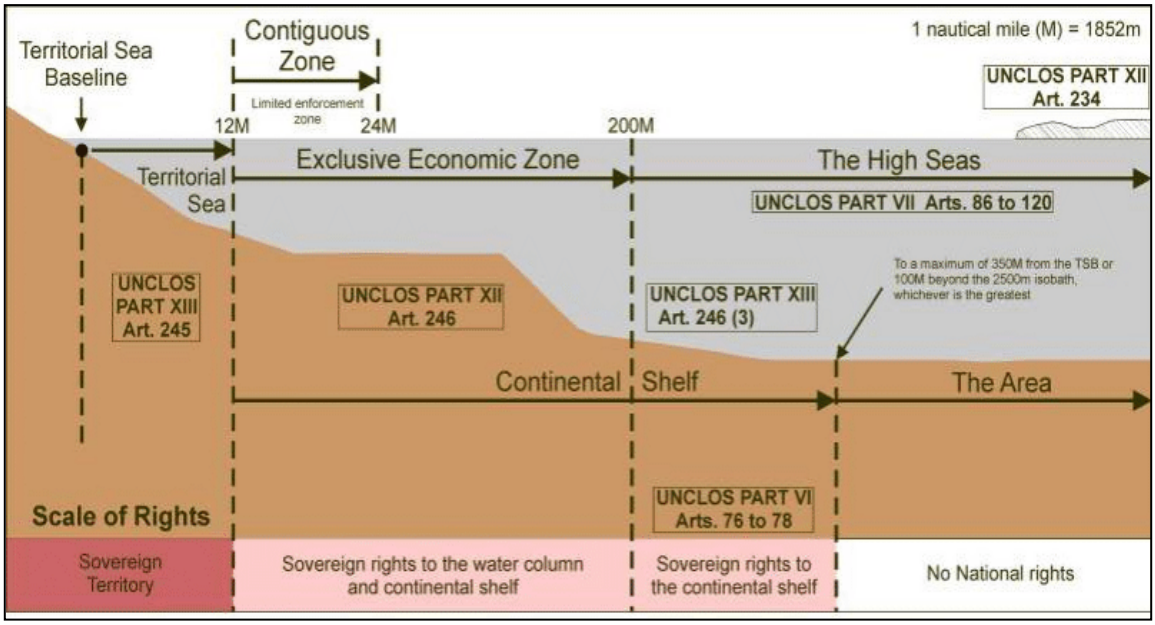
> *"Believing that the codification and progressive development of the law of the sea achieved in this Convention will contribute to the strengthening of peace, security, cooperation and friendly relations among all nations in conformity with the principles of justice and equal rights and will promote the economic and social advancement of all peoples of the world."* (UNCLOS 1982:24)

Codifying the Law of the Sea obliges nations to ensure that the principles of fishing rights and justice are upheld globally. Figure 6.1 marks the zoning from a coastal state extending out to 200 nm, where sovereign states commit to protecting fish stocks and ensure justice and equality in their respective nations.

International agreements on justice, rights, and conservation are also codified in EU legislation. A second environmental law worth noting is the Polluter Pays Principle (PPP), which is set out in the Treaty on the Functioning of the European Union. Its underlying principle orders that persons responsible for negatively affecting the natural environment are legally liable for the destruction and are morally committed to pay for its rehabilitation.

[10] During the interviews, when asking the fishermen to present a cockle entitlement, no fishermen were able to provide a one either in person, by email or post.

Figure 6.1: The coastal maritime zones and the associated articles that form UK national rights over territorial waters (FAO UNCLOS 1982, accessed January 2019).



6.1.2. Scope of UK legislation on fishing rights, licences, permits, and entitlements

Any decisions that relate to cockle fishing from 0–6 nm zone are ultimately overseen by The Crown Estate. Specific governance decisions are taken by DEFRA, MMO, and Inshore Fisheries and Conservation Authority (IFCA), with that latter responsible for the day-to-day management of fisheries. References of specific rights over resources in the UK's waters in the Marine and Coastal Access Act state:

> *"Rights in the continental shelf extend to mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species."* (MCAA 2009: 29)

An important point raised in the MCAA is that fishing rights in The Wash were managed under the WFO, using Several and Regulating Orders (see, for example, Chapter 4.5), with Eastern-IFCA oversight. The legislation states:

> *"Several Orders grant exclusive rights to deposit, propagate, dredge, fish for and take specified shellfish. Grantees may cultivate and manage the fishery by preparing the ground, often by bringing in new seed stocks to grow on the fishery… Parts of the Act extend to private shellfisheries which have been established under Acts of Parliament. Such shellfisheries are normally in respect of oyster fisheries and establish private rights in much the same way as with Several Orders."* (MCAA 2009:201/516)

The excerpt above refers to the private rights of locally based fishermen, which are different to the rights of 'public' Regulating Orders (as explained in Chapter 4). The point of the extract was to highlight the process designed to designate fishing rights. However, Orders could be revoked if other interests (i.e. environmental concerns or Marine Spatial Plans) supersede fishing interests. In such cases, appropriate compensation should take place to offset the loss in income for the fishermen. Within the MCAA, any references made to highlight fair process and due diligence related to enforcement policies and granting access to fair adjudication processes.

6.2. Difficulties of administering The Wash cockle entitlement

Table 4.3 and Appendix 5 highlights controversial causes over the right to fish. This research found that controversies were largely related to 1] perceptions of the WFO permit to a cockle entitlement, 2] the potential increase in toll fees and reduction in catch sizes, 3] transferability of entitlements, and 4] licence capping.

The Eastern-IFCA and EJSFC administer WFO permits to fish for cockles. For the purpose of this chapter, and to simplify the terminology, a WFO permit to fish for prescribed species is referred to as an *entitlement*.

Chapter 4.5 stated that, to reduce transferability of cockle entitlements, fishermen (including skippers, or named representatives) needed to demonstrate, or substantiate, a three-year track record of fishing in The Wash or prove a level of experience to the Eastern-IFCA Committee.

6.2.1. EJSFC and Eastern-IFCA perspectives on the WFO permit to a cockle entitlement

The term 'entitlement' does not feature in the WFO legislation itself (see Appendix 3). However, in the views of the Eastern-IFCA, WFO permit is a licenced fishing right to fish for prescribed fisheries in The Wash (Appendix 6). The original supplementary guidance notes (EJSFC 1998, see Appendix 4) prepared by the EJSFC explicitly state the word 'entitlement'. The supplementary were designed to provide advice to active cockle fishermen at the time. The EJSFC was the first to use the term 'entitlement' for a WFO permit to fish for cockles (see Section 6.1). **A1** stated:

> *"There was the opportunity to restrict the amount of fishing effort through the issuing of licences. Um, and what they did was, right at the beginning was, to save a lot of arguing was, they said, well, everybody that was active at the time, the WFO came in, would get an entitlement to carry on fishing, and that entitlement was an entitlement to take out a licence* [permit, ed] *under the WFO."*(**A1**)

A1 referred to the WFO permit as a licence and the general principle was that a cockle entitlement was an informal way of reducing fishing effort on the amount of fishing undertaken.

In the view of Eastern-IFCA Officers, this notion originated from the view that there should be a historical right to fish. **A2** stated:

> *"Under the WFO, 1992, an entitlement doesn't exist in reality under the regulatory order, it's not a 'thing'... We've got a piece of regulation which creates this word, has become common currency, an entitlement, and all it is an entitlement to an annual licence, so because of the rules, the way that the WFO is worded, only x number of people have an entitlement to have an annual licence. So that's what an entitlement is. It doesn't exist in reality. You just described the situation they find themselves in, that, because you know, when the, when the order was set up they were originally entitled, and then they've maintained that entitlement because they've taken one out at least every two years, whatever the Order says."* (**A2**)

A2 continued to explain the historical associations in relation to the cockle entitlement rules that evolved over time:

> *"To a certain extent people have that entitlement because right at the start – they've been fishing in The Wash... It creates is a situation where no one can get anything, so it is effectively a closed shop. The rules generate a whole set of behaviours of people stretching the rule to see how far they can go to maintain the status quo. You get complaints. So to have an entitlement the vessel must be registered in your name, so you must be the registered owner/ keeper of the vessel. So obviously you have a long standing entitlement."* (**A2**)

The guidance in outlining transferability of cockle entitlements revealed some legal technicalities that allowed Thames fishermen to join The Wash cockle fishery. The Eastern-IFCA were aware of a loophole that existed; the minutes state:

> *"The Staff Officer gave a brief recap of the background to allocation of WFO licences and changes that had taken place since the inception of the Order. The current issue was that a WFO entitlement holder wished to sell his vessel to a pre-qualified skipper and was requesting that the entitlement which was currently attached to this vessel could be passed to the person buying the vessel, under Policy note 12. Whilst this Policy Note had previously been amended, in 2008, the entitlement holder had stated he was not aware of the amendment. Legal interpretation was that the Policy Note was clear and provided a legitimate expectation that the entitlement would be passed to the party buying the vessel."* Eastern-IFCA Minutes June 2017, accessed January 2019)

The Eastern-IFCA Officers documented a number of concerns surrounding entitlements. Fishermen explained some effects of these legal technicalities.

6.2.2. Fishermen's perceptions of the cockle entitlement

When the WFO was implemented, the allocation of cockle entitlements was based on 'open access', therefore free for anyone interested in cockle fishing. However, the number of entitlements in circulation was eventually capped. The problem faced by some nomadics was that they were either newcomers and fished for cockles on an ad hoc basis and often, they were not keeping a log of cockle fishing. At the time, records were not kept because there was no requirement to do so as cockle fishing was considered an "open shop" (**F19**). Over time, however, this uncertainty led to legal difficulties in administering cockle entitlements for the Eastern-IFCA.

While associations with licences, permits, and entitlements evolved over time, fishermen saw cockle entitlements differently to the EJSFC and Eastern-IFCA. Fishermen tended to refer to them as a historical right to fish. **F5** stated that licences were assigned to any cockle fishermen, initially to those merely expressing an interest in cockle fishing. After the WFO came into effect in 1992, the idea of 'entitlements' was floated by the EJSFC, based on cockle fishermen presenting a track record.

> *"When I first started, I first got my first little boat in '86. If you wanted to go cockling or musselling, then you just went up to their office and then you bought a licence for that year which was for 40 pounds I believe, they just wrote it out and you had it. That… entitled you to cockling or musselling whatever, and then in 1992 they changed it forever and they handed out these entitlements."* (**F5**)

In explaining entitlements, **F14**, a commercial-independent fisherman, stated that interpretation of entitlements was causing legal concerns, and that needed addressing:

> *"The whole idea of an entitlement is up in the air. I don't think anyone is clear, including officials, on what an entitlement is. But that is going to be shaped with the review of The Wash fishery order."* (**F14**)

This view was expressed by many fishermen from the independent sector in Boston and Kings Lynn. Industrial-commercial operators also noted the discrepancy. **F21** explained:

> *"It has been suggested, because in the fishing industry we always call them entitlements. Cockle entitlements. But the Eastern-IFCA's said that they are not entitlements. They are licences issued by the Eastern-IFCA and it is up to the Eastern-IFCA on whether they issue them or not… That's not put down in writing, not yet. And I think that there would be quite a lot of trouble if they try to take, whether be it a multiple entitlement holder or a single entitlement holder. These people have invested in that."* (**F21**)

In the extract above, **F21** referred to the WFO permit to a cockle entitlement as a licence, and indicated that the Eastern-IFCA recently acknowledged this to be a concern. The lack of clarify was concerning the industrial-commercial sector because they claimed that their businesses required certainty.

6.2.2.1. Ambiguities in understanding licences, permits, and entitlements

The nomadics used the terminology describing licences, permits, and entitlements a lot more interchangeably than independent and industrial fleets. In asking the nomadic fishermen about their understanding of cockle entitlements, a common theme was that permits and entitlements are the same, but used interchangeably.

Those who understood cockle entitlements were often fishermen with the correct permits, including a small minority of fishermen leasing entitlements. This group were also aware of the widespread confusion entitlements caused. **F8** and **F9** noted the confusion:

> *"Well, the Eastern-IFCA licence, some people see it as an entitlement and the MMO licence so you know, both. You're vessel owners so you'll need a licence."* (**F8** and **F9**)

The industrial-scale operators, **F16**, **F17,** and **F21,** also knew that cockle entitlements were permits and equally aware that the Eastern-IFCA were free to re-allocate them if they needed to. **F21** explained,

> *"We hold multiple cockles' entitlement… Licences... Well, the wording is because we've always called it entitlements because that being said they are not entitlements. They are licences that are free for us to take away. To give and take away from us if they wish."* (**F21**)

Common views shared among all independent cockle fishermen based in Kings Lynn and Boston were that entitlements were designed originally to protect Wash cockle fishermen local to the area from opportunistic fishermen. **F5** and **F6** stated:

> *"There are problems with entitlement, but this ain't Eastern-IFCA's fault. This stemmed from EJSFC because the people in charge then. Before the last CEO of the EJSFC, before him, there were people in charge. When this stemmed from fishermen, wanting entitlements to keep outsiders out from the Thames. So they started to hand out entitlements to the extent it goes. How many entitlements do you want? Some people had 2/3/4. Hang on a minute. I thought this was supposed to keep things local. This is very poor management."* (**F5** and **F6**)

The side effects were that as the EJSFC management changed within the EJSFC and latterly the Eastern-IFCA, so did the legitimacy of the cockle entitlement scheme; at first this appeared as just the frivolous use of the words 'licences', 'permits', and 'entitlements'.

It became clear that the terminology used to define licences, permits, and entitlements varied among those with a cockle entitlement and those without. This led to a common misunderstanding of the right to fish. Those misunderstandings originated largely from cockle fishermen situated at the periphery of decision-making, the non-cockle entitlement holders, and nomadic fishermen and skippers. The interviews with **F10** and **F11** appeared to illustrate the difficulties in the terminology: they described the WFO permits as a licence and the cockle entitlement as the same instrument to manage cockle fishing, when licences and entitlements have a different purpose.

> *"See the licence side of it, that's in The Wash Fishery Act. I mean, you can go get your permit or entitlement same as whelk, when we go whelk fishing you can go and do exactly the same. Obviously if there is no entitlement, there is no entitlements but the problems that we've got, there's no entitlements that are going to come out. The people that do hold the entitlements are not going to hand them in. If they haven't got a boat now, they just rent them out."* (**F10** and **F11**)

Some skippers also appeared to misunderstand entitlements and licences. When asked about cockle fishing permits and entitlements, this group referred to fishing licences issued by the MMO. In this example, **F1** and **F2** voiced frustration about information not being effectively communicated to them.

> *"About them suspending the shellfish licence and in the end they just send me letters to sign and send back and now no-one is wiser and I still got no answer on whether I've got the shellfish entitlement on my licence or vice-versa!"* (**F5** and **F6**)

A common feeling expressed by some nomadic and commercial-independent fishermen, who perceived themselves to be side-lined in the fisheries organisations, was that as the meaning of licences, permits, and entitlements evolved, so did the way in which some cockle fishermen interacted in the decision-making process. Fishermen not on the Eastern-IFCA committee stated that those on the committee had also been on the EJSFC committee, and so maintained the power to influence decisions. This had a bearing on how some groups shaped the meaning of cockle entitlements. Those fishermen on the periphery of decision-making circles, such as nomadic fishermen, skippers, and crew, were often without cockle entitlements and tended to demonstrate misunderstandings the most.

6.2.2.2. The value of a cockle entitlement

The side effects of tightening up the cockle entitlement waiting list was that the market value of a cockle entitlement automatically increased, consequently attracting more fishermen to the cockle fishery and opening up an informal market for the cockle entitlement. **A1** explained that when the WFO was established there was never the intention that the cockle entitlements for fishing had a value.

> *"It was never intended to have a, have a value, but clearly if you can get hold of them, you had one of 68 opportunities to fish for both mussels and cockles in The Wash. So it became, and it still is, a valuable item, so that natural process of fishers handing it down to that too, as sort of a family members."* (**A1**)

A2 explained that he had witnessed a number of problems that appeared to mark the legacy of the WFO. This led to decisions, sometimes perceived as hostile, introduced by the Eastern-IFCA which caused tensions surrounding the understanding of permits and entitlements.

In the initial Eastern-IFCA minutes (Eastern-IFCA 2012), Eastern-IFCA raised the issue of cost needing review. The minutes state:

> *"There was a feeling amongst members that to vastly increase the price of a licence would be unfair on the fishermen. It was noted that no decision on the price of a licence needed to be made immediately, just agreement in principle of the steps to be taken. The CEO suggested stakeholders should be consulted and other IFCAs should be asked how much they charge for licences. Mr Lake felt it should also be ascertained the length of opening time of other fisheries, as well as the number of vessels involved and the daily TAC."* (Eastern-IFCA Minutes, 18 April 2012)

Almost six years later, in Eastern-IFCA Minutes No.33, dated 25 April 2018, the controversy surrounding definitive decisions affecting cockle fishing licences remained unresolved, thus highlighting the significance of the effects of the decision-making process. The Eastern-IFCA Authority were reviewing the licence fees, because the fees attributed to cockle fishing activity were varied among fishermen and the type of cockle fishing activity undertaken. Any decisions affecting cockle fishing were deferred until April 2019 pending further investigation.

> *"At the Full Authority meeting held on 15th February 2017, members agreed to achieving 50% cost recovery from the industry for regulating the WFO cockle and mussel fisheries. At the 31st Authority meeting in January 2018, it was agreed to postpone the increase in fees pending further work to refine the proposal. As there will now be a significant cost to the industry participating in these fisheries, officers propose they conduct a further review of the cockle and mussel surveys to determine if and where costs can be reduced and to identify associated benefits and risks of doing so."* (Eastern-IFCA Minutes 33)

One issue the Eastern-IFCA faced was that they were experiencing increased pressure from environmental non-governmental organisations to reduce fishing efforts by restricting the number of cockle entitlements within The Wash. However, the number of entitlements in circulation were not reduced **F14** explained his views on reducing entitlements down to a manageable amount:

> *"I believe they* [Eastern-IFCA, ed] *are trying to get permits* [entitlements, ed] *from 65 down to 50 which…there was 65, in the last 10 years…it…still 65… To get it down from 65 to 50, it is probably going to take 30 or 40 years. And when you think a lot of the limited companies* [commercial-industrial, ed] *have got them in their names. There's probably 30, 35…that is going to take a long while for anything to come, so they ain't going to get handed back in* [to the Eastern-IFCA, ed] *you see."* (**F14**)

F14 stated that the Eastern-IFCA were not likely to release entitlements even if the fishery was sustainable by Natural England standards. Also, as many fishermen stated, the fewer the number of entitlements in circulation meant that an informal market for entitlements had been created. He stated that market drivers meant that cockle fishermen kept hold of their entitlements and transferred them onto other family members to keep the entitlement active. The idea of the Eastern-IFCA reducing the number of entitlements in circulation could take time.

6.3. Track records, allocating entitlements, and increased fees

Table 4.4 outlined features of entitlements that fishermen felt were affecting their fishing rights. These issues tended to revolve around: 1] demonstrating a track record for a cockle entitlement, 2] allocation of cockle entitlements, and 3] the toll paid to fish for cockles raised by the Eastern-IFCA to support administrative costs. Section 6.3 explores these issues in order of actor involvement.

6.3.1. The nomadic sector

6.3.1.1. Effects of demonstrating a track record

The credibility of the track record system has been called into question by the nomadic and commercial-independent sectors. In reaction to the three-year track record required to demonstrate catch records, a general feeling was that the system tended to attract fishermen from outside of The Wash, particularly the Thames industrial-scale cockle fishermen. **F10** and **F11** elaborated on this perception:

> *"The London boys have got a track record to be here, we ain't. They've got the right, if the shoe was on the other foot, we'd all be down there too*." (**F10** and **F11**)

A consequence of using track records in a competitive market environment for cockle entitlements meant that many locally based fishermen questioned the integrity of the management system as a whole. **F22** explained:

> *"How has a London boat got an entitlement?... He apparently got a London barrister, a proper marine barrister looking at all the things, they found a little loophole… He was taking someone else's entitlement. They found a loophole, the barrister switched the*

entitlement in his name and [the Eastern-IFCA, ed] *can't do a thing. So as soon as I heard I went straight up there and said how, what, why, and they gave me no answers, and they just said oh, that won't ever happen again, we've stopped that loophole. That won't ever happen again. I said, but it's happened!"* (**F22**)

Since the nomadic sector fishermen were either part-time or seasonal, proving a three-year continuous track record was unworkable for many. Moreover, research participants from this sector expressed frustration with a system allowing cockle entitlements to be misused.

6.3.1.2. Effects of allocating cockle entitlements

In response to increased pressure on the cockle fishery, the EJSFC introduced a waiting list to allocate cockle entitlements as a step toward reducing fishing pressure. The waiting list was allegedly continued by the Eastern-IFCA. **F10** and **F11** stated that despite the list no longer being in existence, they preferred to be on a 'so called' superficial list just in case the list was reintroduced.

> *"With the list, we've been…19th on the list…When there's space, you will have your cockle entitlement. Well, that's not how it goes, because we went back to the fisheries, and spoke to* [the officer, ed], *and he told us… that the list was useless…We actually near enough had to… put us on the list."* (**F10** and **F11**)

This view was a continuous theme among the nomadic sector. The nomadics wanted continuity in fishing, but they were prevented by the Eastern-IFCA. The Eastern-IFCA did not recognise the difficulties faced by this group when allocating a cockle entitlement via a waiting list.

6.3.2. Commercial-independent and skippers

6.3.2.1. Effects of demonstrating a track record

Commercially independent fishermen were territorial about their cockle entitlements. They illustrated the process by which entitlements were leased out to Thames skippers by the industrial operators with multiple entitlements. **F7** expressed his discontent and the feeling of not being able to change circumstances.

> *"I do believe that if you are a genuine fishermen who come around the job… I can't feel a problem with younger fishermen getting into the job. And yes, I'm not going to lie, I don't like passing from vessel to vessel and it carrying on in front of my eyes. Well I think it is just wrong you know, why should it all go* [to the Thames fishermen, ed]. *Why should we have 6 or 7 boats from the Thames come in other people's licences."* (**F7**)

In his view transferring a cockle entitlement from one vessel to another vessel every two years presented a loophole allowing for Thames fishermen to validate a track record. For **F7** this meant the process was easy to exploit.

Another issue expressed by research participants from the commercial-independent sector was that the track record system encouraged fishermen to intensively fish. **F23** explained this to the Eastern-IFCA committee, during an Eastern-IFCA meeting.

> *"If individual quotas were going to be issued, it should be done by January to prevent de-stabilising the fisheries, as in the past individual quotas have been based on track record, which makes fishers more active than they have been in the past."* (**F23**)

Here, **F23** implied that many fishermen became deliberately active and that this encouraged the race to fish mentality that was explained in Chapter 5. Frustration towards this particular fishing habit was expressed by several commercial-independent cockle fishermen, and it tended to be directed towards the commercial-industrial and Thames fishermen.

As a response, **F7** doubted the veracity of the waiting list and stated that he would consider passing on the cockle entitlement to a nomadic fisherman to bypass the Eastern-IFCA. Expressing his doubts, **F7** stated:

> *"Look, I've finished fishing now, I'd like to hand my entitlement in, so now that one has gone back in, does that mean the next man on the list gets it?"* (**F7**)

6.3.2.2. Effects of allocating cockle entitlements

Some commercial-independent fishermen from Boston pointed out similar obstacles, such as the challenges faced by the nomadic sector from the Thames fishermen, and expressed sympathy. In response, some nomadic fishermen and commercial-independents paired operations to secure the longevity of the Boston fishing industry, such as **F1** and **F2**, and **F5** and **F6**. This was not always the case from the perspective of the Kings Lynn commercial-independent sector, who felt that those without cockle entitlements (i.e. a leased licence) should not be fishing in The Wash.

Another view from Boston cockle fishermen was about the merits of the cockle entitlement. **F5** and **F6** noted that cockle entitlements do keep outside interest at bay, but equally they stated the difficulties of retaining interest from locally based cockle fishermen.

> *"From my point of view, I think the loophole to stop outsiders coming in, and somehow **F6** mentioned earlier, local fishermen, younger people coming in so they have a change. There's fishermen here, and other lads don't have a licence but should have one. And they're the using the loophole so they can find a way round fishing with a boat that have been West for a few years without a licence, and they should get an entitlement. Whereas others on the list who don't have a boat, but are still on a list. Same problem in the Thames Estuary. That's a closed shop. To a very few boats, but I know a lot fishermen down there, never mind us going down there, but those lads down there should be given a chance. They've been kept out for years. The big money earners are companies that have*

spare cockle entitlement on paper by their boat through Cardiff, and MMO and those boats earn a lot of money quick down there. They come up here to pursue our hand work fishery." (**F5** and **F6**)

Given that the financial value cockle entitlements had accrued over time, it became apparent that cockle fishermen were reluctant to return the entitlements to the Eastern-IFCA, and instead finding novel ways to profiteer by leasing the entitlement to the highest bidder. In seeking to obtain a cockle entitlement, **F15**, a skipper, explained the difficulties he was experiencing:

"There are about 68 entitlements. I have been a fisherman for many years now, I've been fishing full-time since 1976. And if I want to get an entitlement and buy my own boat, I couldn't because it's capped, and that's not really fair on someone like me who's tied to a company boat now. I'd really need to be independent, but I can't because that's not available to me. I can't have a licence, I can't have an entitlement because it's capped, and as I was saying, it's unfair to somebody who's been in the job for so long. Bona fide is the word they use. I'm definitely bona fide. I've been a Wash fisherman for 42 years." (**F15**)

In asking **F15** the reasons for not pursuing an entitlement, he explained that at the time there was little need for him to have an entitlement and now he's too old. These views were shared by some of those who had skippered for some commercial-independents, such as **F5** and **F6**.

Another common theme emerged with the commercial-independent sector feeling cockle entitlements should be retained for family members exclusively. **F8** and **F9** articulated some points in the following statement, explaining that they felt that entitlements were designed to continue a family tradition in cockle fishing by safeguarding their rights.

"When we were at our first meetings, about 1992, when the regulating order came out. It took over 2 years for that to come out because the fishermen wouldn't want it to come out until they had got it safeguarded… every person who was entitled – who had done cockling and had a right to cockling and could prove it – got a licence. There were a 120 something. Now they are down to 63, so it has [been, ed] *coming down but our* [cockle, ed] *fisheries, we have got a lot of people on the waiting list. People who are there, their family, they've got sons coming in, and then they took my place and then he's got sons who are fishing now. So we are doing what we designed the Order to do, to come back to the people who were there in the first place. Because you know, we've got people who say I want the licence now because there's a lot more money in cockles."* (**F8** and **F9**)

This was the general feeling expressed by many generational fishermen from both Boston and Kings Lynn.

The right to manage The Wash cockle fisheries was granted to the Eastern-IFCA by the Crown. Their predecessor, the EJSFC, arranged for entitlements to be passed on to family members, but this was not embedded in the WFO legislation. Over time, the relationship between cockle fishermen and entitlements evolved ensuring that principle was enshrined in cultural associations to cockle entitlements. **F12** observed that the WFO did not explicitly state ownership of cockle entitlements, and:

> *"Like some people believe that this entitlement should be handed down generations… but why should that be the case, was it written down when entitlements were first issued that actually you have the right to hand this down for generations. No!"* (**F12**)

Despite the principle of entitlement making sense to many generational cockle fishermen, in some instances, family rifts emerged because not everybody in the family benefitted from having a cockle entitlement. As **F18** explained:

> *"And my brother* [Anon. ed] *has been on this job for his whole life, 20 years. But you know, haven't got any entitlement and if my father didn't do that for him."*(**F18**)

Some concerns were raised by cockle fishermen regarding fishing rights. These concerns mentioned the effects of legislation being unclear, while others related to the recognition that cockle entitlements were a right that should be retained in the family or for local fishermen. The final argument was that the term entitlement had evolved, and this shaped the perception of generational cockle fishermen.

6.3.2.3. Effects of increasing fees

The effects of potentially increasing the entitlement fee to cockle fish was a common source of discontent, particularly because many cockle fishermen felt that they 'owned' entitlements. Again, the commercial–independent research participants appeared to express this as a concern in terms of supporting the nomadic sector and the longevity of The Wash fishing fleet. As the Eastern-IFCA authority took responsibility for the WFO permitting scheme, the decisions to raise the permit fee were prolonged and contentious. During the interviews, many discussions were centred around cockle entitlement fees that were planned to increase. For many of the nomadic fishermen, this meant that they would be "hanging on by a thread" because the cost would increase by over £1,000 per entitlement. **F1** and **F2** explained:

> *"They* [Eastern-IFCA, ed] *are now putting cockle licence fee which you would have to buy every year, that's doubling it for the next three years, and I went over to see them and I said to them 'You are going to put people out of business… this year it is going to be 660 quid and next year 1,050 or 1,060'… and I said 'that's a lot of money for a one man band, who don't earn that much money.' I mean, I don't earn that much. And they can't*

see it. I said for the factory boats, that costs them 5,000 for their boats, that's heinous. But they can't see it. There is only 6 of us small boats [nomadic, ed] *left. Now we are hanging by a thread."* (**F1** and **F2**)

In this case, several years were taken up to resolve the issue, because of some potentially fractious legal obstacles surrounding cockle entitlements. A significant point raised was that it appeared that the Eastern-IFCA were generally supportive of increasing tolls for cockle fishing, but also acknowledged that there may be legal consequences attributed to those increases, particularly with issues regarding legally defining the right to fish, which is open to interpretation.

6.3.3. Commercial-industrial and skippers

6.3.3.1. Effects of allocating cockle entitlements

The commercial-industrial research participants and skippers appeared to be less concerned about the transferability of a cockle entitlement than safeguarding business continuity. A processor with ten cockle entitlements and another with thirteen vessels appeared to express the same sentiment. As **F21** stated:

"I am not prejudiced against newcomer coming in, but for him to get one [cockle entitlement, ed], *I would have to give one away. And I am not in the position to want to give one away. I've already invested in a vessel, time, effort, a factory, staff, trained them you know so, it is not like I'm not going to lose anything by giving that away. I am going to lose a lot by giving one away. When one is taken away."* (**F21**)

The industrial-scale operators based in Kings Lynn had a quid pro quo arrangement with Thames fishermen and could support them to fish for cockles and vice-versa.

In contrast, by restricting the number of cockle entitlements in circulation, it was felt by many skippers that the Eastern-IFCA were preventing locally based entrants from exploring cockle fishing in The Wash as a career. **F14** explained:

"But they [Eastern-IFCA, ed] *stopping new blood coming through. There's a lot of people who's had licences. Some renting them out when they retire, rather than placed back in the fishery and that's stopping young fishermen to get their own vessels."* (**F14**)

F14, a skipper, represented the views of a small minority of this group, empathising with early career fishermen wanting to join the profession. In response, given the number of commitments made by the commercial-industrial operators based in Kings Lynn, there was the feeling that they were not in a position to give entitlements away because they were supporting the livelihoods of their employees, and this included skipper, crew, and supporting administrative staff.

6.3.4. External fisherman on the Eastern-IFCA committee

6.3.4.1. Effects of demonstrating a track record

F24, a fisherman outside of The Wash, was aware that some 'exaggerated' track records were becoming an issue in The Wash. With reference to fin-fishermen moving into shellfishing more broadly, he explained:

> *"Based on track record, an awful lot of fictitious track record suddenly appeared… they knew they were fictitious, but they can't prove it. Because they had to go out for licences. Whereas people like us, we depend on shellfish for a living, we weren't helped. See when you get business come in, them people who did lie, there's no way about it, they did lie, if you are doing a research you will find that that's right. They lied to get their shellfish entitlements. And they are fin-fish vessels. That's all they ever were. They didn't even have cockles or anything else."* (**F24**)

F24 depicted a general feeling among shellfishermen that fin-fishing quotas were heavily exploited, and this resulted in some fishermen fictitiously presenting shellfishing track records to move into the shellfishing sector, including cockle fishing.

6.4. The Wash Fishery Order review

In asking cockle fishermen about changes they were hoping to see in the 2022 WFO review, many fishermen were unaware of the review, with some expressing that they would rather avoid consultations because of concerns they would not be listened to.

In January 2018, a formal WFO review consultation had not been issued, although some fishermen on the Eastern-IFCA committee knew it was imminent. A common expectation was that loopholes would be closed, thus protecting Wash cockles from outside interest. There was a concern that fishing rights, by way of cockle entitlements, were not being protected and that cockle entitlements ought to be ring-fenced for those fishermen living locally and having a family or cultural heritage. **F1** and **F2** explained that when entitlements went back into the pool, they should be allocated to newcomers to keep a steady stream of new entrants coming into the cockle fishery in Boston. They explained:

> *"Well, when entitlements go back to the time of the* [EJSFC, ed] *fisheries, when people retire or when they pass away, bereavement, they should go back in to the committee. And they should be reallocated, other blood going into the job."* (**F1** and **F2**)

F20, a skipper, poignantly expressed that he deserved a cockle entitlement.

> *"I've been fishing for 30 years. So I think I deserve one. I've always worked on company ships but produced a lot more as has some of the other guys here and it's not fair. Some*

> *of the younger guys can't come into the job and all that. They can't go up the ladder because of these, you know, you need these entitlements."* (**F20**)

All fishermen expressed hope that the WFO review would lead to cockle entitlements ceasing in their current form as it prevented progression for fishermen. Discontent was commonly expressed by Wash entitlement holders, particularly the industrial-scale fishermen holding several entitlements and generational commercial-independent fishermen holding cockle entitlements within the family.

In the interim, Eastern-IFCA were aware of the difficulties faced by entitlement holders, so were trialling a method to enable some fishermen to fish for cockles, while accounting for the reason cockle fishermen presented for not being able to maintain a track record, such as poor health. The Eastern-IFCA minutes stated:

> *"The CEO has been advised that* [the current, ed] *system leaves some fishermen at a disadvantage if they are ill or their vessel breaks down. Consequently, the question has been raised whether or not the Total Allowable Catch can be divided to allow individual quotas which would give them the option to decide when they fish depending on weather conditions and market forces… However, there are also a number of points which could be considered unfavourable such as value being put on a quota, transhipping, tensions and rivalries, to avoid these there would need to be a mechanism in place to link the quota to a vessel and more importantly there would need to be resources available to ensure the fishery could be enforced."* (Eastern-IFCA Minutes, 21 October 2013)

It became apparent that many fishermen were unaware of the WFO review and its potential consequences, one of which was that cockle entitlements could be phased out. In asking fishermen about the changes they would like to see after the WFO review, most fishermen were concerned about passing on the entitlement to fish for cockles. The expectation was that the WFO review would resolve any of the ambiguities surrounding cockle entitlements, as framed in Section 6.3.

6.5. Synthesis and reflections on the perceptions of fishing rights

Table 6.1 summarises the finding of this chapter. The fishermen's concerns are listed vertically and inshore fisheries typology are arranged horizontally. The main distinction was between the legislative and normative understanding of fishing rights. Drawing from Figure 2.1, interactive governance framework, these findings relate to the second order elements (the tools and instruments) of governance and first-order action where the mode of governance is adaptive co-management. These factors have important governance and justice implications that are illustrated

by the fisheries characteristics and typology (described in Chapter 3) and legislation of the WFO Order, guidance notes and The Wash cockle fishing right in Appendices 3, 4 and 6.

Section 6.3 investigated the difficulties related to cockle fishing under current process. The nomadic sector could not legally fish for cockles without an entitlement resulting in borrowed or leased entitlements to fish for cockles leaving them financially disadvantaged. The nomadics right to fish was formed entirely on 'gentlemen's agreements' and trust between entitlement holders and the nomadics. For example, the entitlement holders were shareholders of the nomadics fishing vessels or/and benefitted from a proportion of the catch. Other nomadics struggled to make fishing a viable occupation due to the inflated financial value of cockle entitlements, leaving them to re-think fishing altogether. Additionally, the commercial-industrial operations controlled the market value of The Wash cockles, affecting nomadics and commercial-independents who sold cockles to them.

Table 6.1: Main concerns raised by cockle fishermen by typology present in The Wash.

	Typology		
	Nomadic	**Commercial-independent (including skippers)**	**Commercial-industrial, owning the two local processing plants (including skippers)**
Concerns			
Entitlement holders	No.	Yes, with some held within the family.	Own several entitlements and transfer them to fishing boats from the Thames.
Employs crew and skippers	No. Sometimes this group could and do crew or skipper for the commercial-independent and industrial sector.	Yes, skippers.	Skippers and crew.
Track records	Usually part-time or seasonal, so could not demonstrate a track record.	Difficult to maintain track record due to poor health or vessel is broken down.	Transfer cockle entitlements to a Thames vessel due to WFO loopholes.
Allocating cockle entitlements	Borrowed or leased from an independent fisherman.	Lease to an independent. Favour retaining cockle entitlements within The Wash.	Skippers favour having an entitlement. Business owners are not affected by the allocation of cockle entitlements.

Increasing a toll fee	Were unaware.	Concerns about where the cost falls.	Can absorb costs by inflating the market price of cockles bought from independents.
Value of the cockle entitlement	Fewer in circulation.	Prefer to retain for local interests/new entrants.	Hold multiple cockle entitlements to maintain a business portfolio.

Drawing from the interactive governance framework (IG, Kooiman et al 2008) these findings demonstrate a link between the elements of governance, perceptions and attitudes towards the right to fish. The dominant view, although not exclusively, was that the Eastern-IFCA identified the WFO permit and licence as two separate rights to fish in The Wash: one for prescribed species and the other specifically for cockles. The commercial-independent largely referred to permits and entitlements as being the same thing but were familiar with the nuances. The nomadics knew entitlements as subjective 'entitlements'. Confusion regarding the right to fish at first and second order of governance levels meant that the Eastern-IFCA's institutional arrangements that denote the rights, bylaws and procedures *actioned* and the management tools (or *instruments*) used to regulate the cockle fishery were no longer fit for purpose. In the first-order, a legacy left over from the EJSFC, the nuances, and confused understanding of licences, permits and entitlements, meant an *image* of the right to fish was created by fishermen. However, *actions* by the Eastern IFCA meant that fishermen were circumventing authority to enable a cockle fishery. In the first order, the *actions* had legal implications where entitlements could be leased and traded, thus creating an informal market. Additionally, and indirectly, the nomadics were affected by the imbalanced allocation of those rights (along with attributed costs). McClanahan et al (2016) stated that resource users in local fisheries have cynical views of management, thus ignoring national laws or displaying weak compliance or form corrupt relationships overriding local regulations. As with Dawson 2017, and in line with Berkes (2006) adaptive-co-management approach, the results in Chapter 6 show that second order processes require enhancing transparency of rules and procedures and on-going dialogue with fishermen, responsive management structures and iterative decision-making recognising the diverse groups of local fishermen.

Having explored how the WFO contained many nuances and ambiguities that created logistical difficulties for the Eastern-IFCA, the findings in Table 6.1 show the importance of perceptions in resource management decisions. The views varied amongst the different fishing sectors. For example, the commercial-independent sector associated entitlements to the international interpretation of common property fishing rights based on the principle of relative stability, perceiving cockle entitlements as their own 'property'. The same was also the case for the commercial-independent sector. The nomadics, however, took a contrasting view, stating that

entitlement was right to make a living from fishing. The two IFCA Officers interviewed provided polarised views of WFO cockle entitlements, one stating that cockle entitlements exist, while the other stating the opposite. Polarised perceptions on management tools implemented from second to first-order have important legal consequences on how to define fishing rights. Dimech (2009) reports that individual differences in circumstances may cause people to make a range of responses to the same management tool, and this highlights the importance of perception. He also stated that communication is very important for the successful implementation of management tools. The findings illustrate the value of adding cognitive and behavioural reactions to the environmental justice framework (Dawson et al 2017). Communication forms part of cognitive and behavioural reactions as poor communication can lead to resentment of authority and resistance to new regulations.

Focussing on the nomadic sector, the interviewees perceived fishing as a right to make a good living. The freedom and ability to make a good living from fishing was challenged by the rules set out by other fishermen and the Eastern-IFCA. Leach (1999) explains that environmental entitlement refers to "alternative sets of utilities derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving wellbeing" (Leach 1999:2). According to social psychology literature, perceptions of wellbeing, earning a good living and rules can differ according to socio-demographic traits and in different contexts (McClanahan et al. 2005a, Gelich et al. 2009, Pita et al. 2010). In the context of The Wash, the perception of fishing rights, licences, permits and entitlements marginalised the nomadic sector.

Drawing from the IG and EJ frameworks, the findings in this chapter highlight that the perception of fishing rights created: 1] procedural (in)justices in the implementation of second-order instruments. 2] distributive justice in the allocation of entitlements. 3] justice as recognition was highlighted through the nomadics being marginalised and not having a voice in decision-making. 4] capabilities in the way the nomadics were unable to earn a living fairly.

In keeping with this investigation on first and second-order governance, Chapter 7 is concerned with the factors affecting the physical restriction of access to cockles.

Chapter 7. Marine Activities Constraining Fishermen

Introduction

This chapter investigates the marine activities that fishermen perceived as constraining the cockle fishery to address the research question 'how are inshore fishermen being constrained by other marine activities?' Fishermen widely reported that the ability to cockle fish was inhibited by the presence of other marine activities, policies, and fishing sectors present in The Wash. The purpose of Section 7.1 is to critique the dataset used to investigate this research question. Section 7.2 draws from Chapter 5 and maps activities that fishermen reported as constraining. This is followed by a verbal account of what fishermen claimed spatially constrained their activity. Finally, Section 7.3 investigates the claims that could not be mapped but were significant in explaining policy and sectoral constraints affecting cockle fishing.

Two methodological approaches are used in Chapter 7 to analyse claims that other marine activities are constraining cockle fishing in The Wash. Drawing from Chapter 5, where possible, this Chapter maps the activities that create obstacles for fishing. The obstacles that are mapped are the Lynn and Inner Dowsing and Race Bank windfarm cable routes (Chapter 5.1.2), Marine Protected Area (MPAs) Bylaws, the European Marine Site (EMS) (Chapter 5.1.1), and the Le Strange Estate fishery boundary (Chapter 6, referring to fishing rights and private ownership). Fishing activity data that pre- and post-date the Eastern Inshore Fisheries and Conservation Authority (Eastern-IFCA) are collated from the fishing vessel sightings database. Fishing activity data are used to indicate changes in fishing activity over an approximate 10 year period, from 2005 to 2015. In addition, 2017 data are used to illustrate the effects of the Race Bank windfarm cable on fishing activity. Interview data from **F1** to **F24** and **A2**, as well as personal communications, policy documents, parliamentary debates, and Eastern-IFCA minutes are used to complement the analyses and offer evidence of how the maps and supporting data help understand distributive justice in the context of The Wash. Further, marine activities that may have led to spatial, policy, and sectoral constraints in The Wash are investigated through a procedural and recognition as justice lens, particularly focusing on the role of the different fishing sectors in decision-making.

7.1. Characteristics of dataset used

To illustrate the constraints highlighted by fishermen, a number of sources were drawn from and are listed in Table 7.1, which provides a commentary on the eight sources of data used for the spatial analysis. The table gives pertinent dates, sources, and the corresponding figures throughout Chapter 7. Sources 1 to 3 illustrate the land cover map (LCM). The LCM was the coastline, the 3 nautical miles (nm) line, and The Wash European Marine Site (EMS). The corresponding dates

are associated with the year the data were available. Sources 4 to 6 provide the Marine Protected Areas (MPA) bylaws, cable routes, and Le Strange Fishery boundary that fishermen referred to as constraining. Source 7 provides the location of the cockle sandbanks that fishermen claimed were affected, while Source 8 gives the fishing vessel sightings data used to identify the fishing sectors that were reported as geographically constrained.

The datasets used to illustrate the impacts on fishing were the fishing vessel sightings data and the Eastern-IFCA cockle assessment sites (Sources 7 and 8, Figures 7.1a and 7.1b, and Figure 7.2 respectively). The Eastern-IFCA cockle assessment sites provided the Eastern-IFCA with size class densities for stock assessment purposes. The overall annual difference in cockle size classes in The Wash appeared minimal in the Geographic Information System tool used for the spatial component of this analysis, and consequently was not used to investigate the fishermen's claims of justice. Nevertheless, knowing the location of cockle assessment sites was useful in attempting to corroborate the two methodological approaches: spatially mapping the constraints and interviews presenting the perceptions of fishermen.

Table 7.1: Data and data sources used to illustrate the marine activities perceived by fishermen to hinder cockle fishing.

Source (1-8) and Dataset	**Data source**	**Corresponding figures**	**Dates**	**Commentary**
1 Coastline and Land Cover Map (LCM)	NERC Countryside Assessment 2007 http://nora.nerc.ac.uk/id/eprint/5191 Accessed Mar 2019	Figure 7.2. LCM template	The LCM provides the coastline template for 2007.	LCM template. Cockle Sand Banks; coastline. The data locates the sandbanks and the colour scheme to illustrate the sandbanks that are fished for cockles in The Wash. The coastline may have changed which affected the location of the Le Strange Estate Fishery boundary. This LCM provides the template for the analysis.
2 Eastern-IFCA Boundary and LCM	Eastern-IFCA Marine Science Officer Accessed Mar 2019	Figure 7.1a, 7.1b and 7.2. LCM template	For 1983 only.	LCM template. 3 nm Eastern-IFCA Boundary. Taken from the Admiralty Charts. These are historically used by the EJSFC. The EJSFC and Eastern-IFCA boundary remained unchanged so does the shapefile used in GIS. This component of the LCM provides the template for the analysis.
3 The Wash European Marine Site and LCM	Natural England website https://naturalengland-defra.opendata.arcgis.com and https://magic.defra.gov.uk/ Accessed Mar 2019	Figure 7.1a, 7.1b and 7.2 LCM template	For 1992 only.	LCM template. Wash Special Protected Area and the Special Area for Conservation protecting the birds and their habitats under the Birds and Habitats Directives, 1992.The Wash has retained its status as EMS since 1992 so this designation and the subsequent GIS shapefile remains unchanged.
4 Marine Protected Areas Bylaws	Eastern-IFCA Marine Science Officer Accessed Mar 2019	Figure 7.9. (Figures 7.8 and 7.10, illustrate the fishing activity)	For 2014 only. The Bylaw in the Butterwick Low area is 3.794 hectares which is difficult to visually illustrate.	Locates the Marine Protected Areas Bylaws locally administered by the Eastern-IFCA Committee, advised on by Natural England, and enforced by Eastern-IFCA Officers. The MPA Bylaws protecting the Sabellaria Spinolosa and Stony Reef, were designated in 2014.
5 Le Strange Estate Fishery Boundary	Eastern-IFCA website http://www.eastern-ifca.gov.uk/ Accessed May 2019	Figure 7.11	For 2016 only.	Locates The Le Strange Fishery Boundary on the eastern extent of The Wash. The annual change in the boundary from 1997 to 2016 is not presented.
Source and	**Data source**	**Corresponding**	**Dates**	**Commentary and critique**

Dataset		**figures**		
6 Windfarm cable route	Crown Estate (https://www.thecrownestate.co.uk/en-gb/resources/maps-and-gis-data/) and report from 4c Offshore (per comms 4c Offshore April 2019) Accessed Apr 2019	Figure 7.3 to Figure 7.7 (with figures 7.4,7.5 and 7.7 illustrating fishing activity)	For 2007, 2008 and 2017 only. The exact months affected by installation is not presented.	Locates the cable routes in relation to the cockle beds and fishing activity. Lynn and Inner Dowsing windfarm subsea cable installation in 2007/2008. The Race Bank subsea cable, 2017, installation which was an extension to the existing Lynn and Inner Dowsing subsea cable.
7 Cockle stock assessment sites	Eastern-IFCA Marine Science Officer Accessed Feb to May 2019	Figure 7.1a and 7.1b	The annual changes in cockle densities in The Wash over the period under investigation appeared minimal in GIS therefore the overall increase in cockle assessment sites from 2005 to 2015 is illustrated only.	1] Cockle assessment sites were used to illustrate the increase in cockle assessment sites under the Eastern-IFCA (from the months Apr to Mar) from 2005 to 2015. 2] These data is used annually by the Eastern-IFCA to produce charts showing the areas and densities of cockle stocks over the beds. 3] The information gained from this work is then used directly to facilitate the management of the cockle fishery. Data on cockle densities is used to calculate a total allowable catch based on a bird-feed model and to undertake a habitats regulations assessment in accordance with the Habitats Directive, which enables the fishery to go ahead (Eastern-IFCA Marine Science Officer pers. comm).
8 Fishing vessel sightings	Eastern-IFCA Marine Science Officer Accessed Feb to May 2019	Figure 7.13 to Figure 7.15.	Monitors fishing vessel activity for the Eastern-IFCA District from Flamborough Head to Thames Estuary Approaches up to 6 nautical miles. From the dates 2005 to 2015 and 2017 only. Eastern-IFCA did not collect fishing vessel sightings data for 2016.	1] Fishing vessel sightings were used to identify the change in fishing activity from 2005 to 2015 (and 2017). 2] These data are collected on an ad hoc basis throughout the year, depending of the availability and work priorities of the Eastern-IFCA patrol officers (Eastern-IFCA Marine Science Officer pers. comms). 3] The increase and/or decrease in perceived fishing activity is logged as the number of individual sightings by the Eastern-IFCA for the given year. 4] Illustrates the fishing effort, intensity, and methods which were critical to informing effective management of fisheries and other human activities within Marine Protected Areas (MPAs) (Jennings and Lee 2012, Szostek et al. 2017).

7.1.1. Caveats of using Eastern-IFCA obtained sightings data

Fishermen reported in Chapter 5.2.3 that the Eastern-IFCA were enforcement heavy, and that the data collected supported the Eastern-IFCA's *raison d'etre*. Therefore, for the purposes of Chapter 7, the initial step was to investigate the caveats of the dataset used to understand the claims of justice. Personal communications with the Eastern-IFCA Marine Officer (2019) highlighted that the caveats in the fishing vessel sightings data were: 1] Although the Eastern-IFCA claimed there was a greater emphasis on collecting vessel sightings data, the remit appeared unchanged from the EJSFC; 2] Spatial variations: The Wash had a higher density of sightings than other parts of the Eastern-IFCA District, but the reasons for this were unclear. In addition, there was bias within The Wash caused by the nature of the survey effort (often concentrated over sandbanks where most cockle fishermen were positioned for the day); 3] The Wash patrol/survey vessels remained in a single position for most of the day because the patrol or survey was undertaken in line with the tidal patterns observed in The Wash; 4] Temporal variations: Over a ten year period, several patrol officers used several different patrol vessels when/if a vessel was available. The data collected on fishing vessel sightings data was therefore opportunistic, rather than uniform; and 5] WFO bag limits were restricted to approximately 2 and 4 tonnes per calendar month for the cockle fishing season (from 2011 onwards) depending on the health of cockle stocks.

The number of caveats found in using these data meant that it was not possible to accurately reflect fishing activity for cockle fisheries in The Wash. Therefore, the extent to which the maps and data sources were solely relied upon to inform conceptual understandings of justice in The Wash were limited. The limitations are discussed in section 7.5, Synthesis and Reflections.

7.1.2. Inshore Vessel Monitoring Systems (IVMS)

Changes to the way inshore vessels were monitored were expected with the introduction of the Inshore Vessel Monitoring System (IVMS). The functionality and costs of the IVMS were reported as a concern among the nomadic vessel operators (as explained in Chapter 5). The Vessel Monitoring Systems were required in the UK only on vessels over 12m long (EC No. 1224/2009). Consequently, fishing data representing the inshore fleet, which supported a high number of smaller nomadic independent and commercial independent vessels in The Wash, was poor. The lack of IVMS data for The Wash fleet, which was primarily composed of boats less than 12m, meant that there were significant gaps in the data describing the spatial distribution and intensity of fisheries in the area (Eastern-IFCA Marine Science Officer, pers. comm).

From April 2019 to June 2021, the IVMS were being made compulsory. To account for activities for all inshore fishing vessels registered in England, IVMS recorded the location of fishing vessels at regular three minute intervals, as opposed to the two hourly intervals recorded for the over 12m vessels (DEFRA 2018). DEFRA (2018) reported that from the 3,078 English-registered vessels, only

327 operated a VMS that employed an expensive satellite version for the over 12m in length. The 12m and over vessels were those that typically fished commercially offshore in national and international waters. The remaining un-monitored vessels were the 12m and under, and these remained untracked. The costs of the IVMS was intended to be less than the satellite based VMS used for the over 12m vessel, because these new types use a General Packet Radio Service that was a mobile data service global system that stored and transmitted data within range of a transmitter (DEFRA 2018).

A six-week DEFRA administered public consultation, from October to mid-November 2018, revealed that 181 of the 3,078 of fishermen responded to a consultation on the proposal to introduce IVMS (DEFRA 2018). The main benefits reported by the DEFRA would improve effectiveness and efficiency of Inshore Fisheries Conservation Authorities (IFCA) by: improved enforcement; monitoring and fisheries management; managed access to MPAs; deterring illegal, unreported and unregulated fisheries; and a useful tool for stock management, traceability, and sustainability (DEFRA 2018; Eastern-IFCA minutes 32, 2018). The main concerns reported by the consultees were: the cost of IVMS, privacy, access, and use of data; the relevance of monitoring smaller nomadic vessels in comparison to the 12m and over vessels; and discrimination against the fishing industry. A separate consultation by the Eastern-IFCA in 2017 revealed similar concerns to the national consultation except that improved enforcement activities were perceived as negative by consultees (Eastern-IFCA minutes 4, 2013). However, the number of participants consulted were too few and the process too bureaucratic to draw any conclusions on the future benefits of IVMS and the justice consequences for fishermen (Eastern-IFCA minute 32 2018).

7.1.3. Cockle stock assessment sites

The maps in Figure 7.1a and 7.1b illustrated an increase in Eastern-IFCA cockle assessment sites from 2005 to 2015. Cockle sites were assessed for size class, maturity, and density information to support cockle fisheries for that particular year. The size class categorisations were ‘less that 14mm’, ‘14mm – 16mm’, and ‘over 16mm’, with the assumption that the larger cockles were ideal for harvesting (**F16** and **F17**). These data were collected annually through WFO cockle assessments in the spring (usually March and April, with some running into May). The dates and times within this period were tide and weather dependent. By overlaying Figure 7.1a and 7.1b onto Figure 7.2, the location of the sandbanks that fishermen referred to as being obstructed were identified.

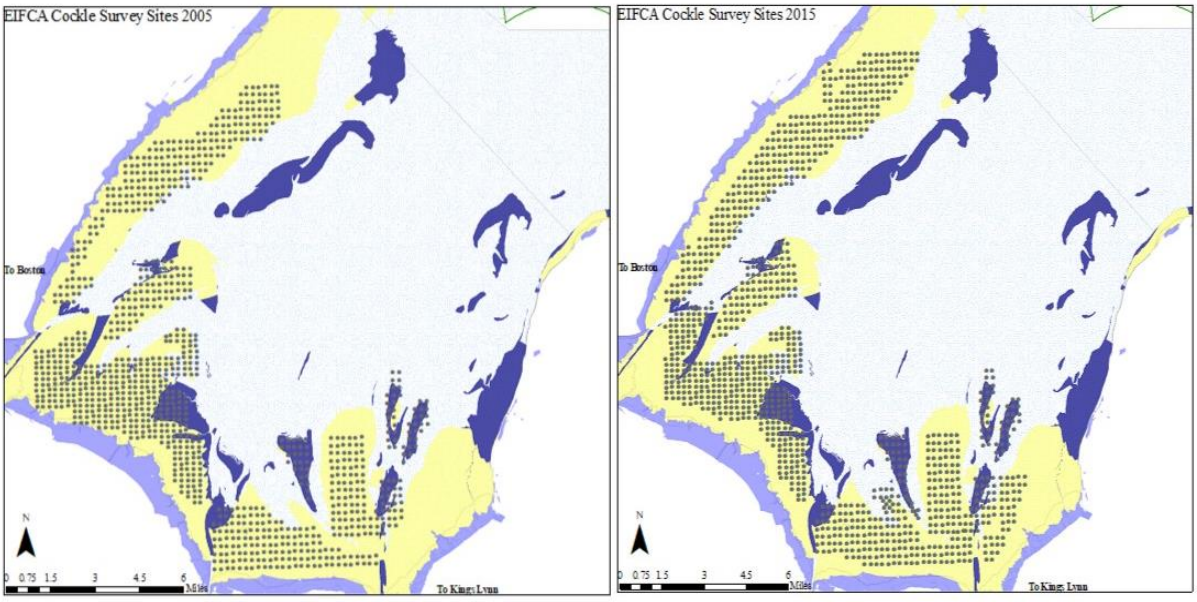


Figure 7.1a: Eastern-IFCA Cockle Assessment Sites, 2005, and 7.1b: Eastern-IFCA Cockle Assessment Sites, 2015. The Land Cover Map presents the Cockle Assessment Sites assessed by the Eastern-IFCA typically during March and April each year.

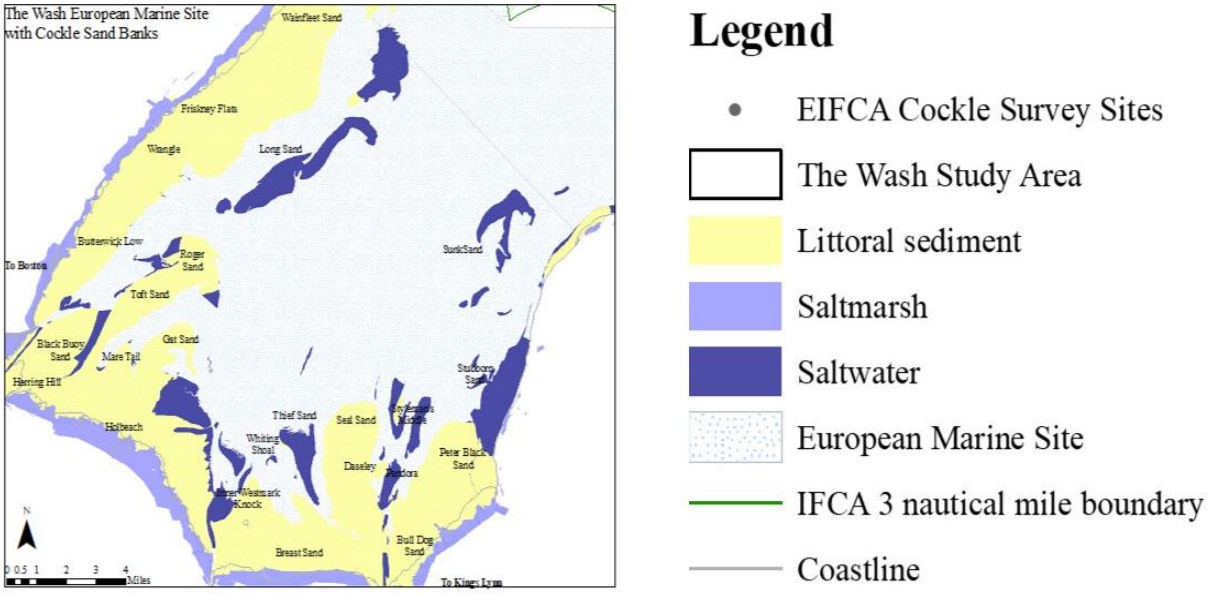


Figure 7.2: The Land Cover Map presenting the location of the cockle sandbanks discussed in Chapter 7. NERC Countryside Assessment 2007.

Mapped cockle densities provided the Eastern-IFCA with data on the areas that supported dense cockle beds with appropriate cockles of the correct size for a functional fishery. Personal communications with an Eastern-IFCA Marine Officer (2019) reported that this enabled the Eastern-IFCA to decide on areas that could be opened to the fishery without impacting the ability of the site to

meet its conservation objectives or having detrimental impacts on the cockle stocks. In addition, mapped cockle densities also enabled compliance with the requirements of the Habitats Directive, as it enabled the Eastern-IFCA to introduce closed areas for seal haul outs or any other designated feature that could be disturbed or damaged by a cockle fishery (pers. comms, Eastern-IFCA Marine Officer 2019).

The assessment method remained unchanged once the EJSFC became the Eastern-IFCA as it was considered the most suitable and best practiced method for this type of assessment. Personal communications with the Eastern-IFCA Marine Officer (2019) revealed that over time more assessment sites were introduced to provide larger coverage of the intertidal beds, increasing the number of stations from about 800 in 2000 to 1,350 in 2018. Since the Eastern-IFCA, approximately 300 assessment sites that had not supported cockles in the last 10 years were removed. Anthropogenic and natural processes may have contributed to the change in cockle density patterns over the ten-year period.

7.1.4. Fishing Vessel Sightings

The Eastern-IFCA Marine Officer (2019) clarified that the Eastern-IFCA collected Fishing Vessel Sighting Data to 'indicate' fishing activity in the eastern district from Flamborough Head to the Approaches of The Thames Estuary, including The Wash. Fishing Vessel Sightings data were collected opportunistically, on an ad hoc basis, when the Eastern-IFCA Officers were at sea. This meant that when time allowed the officers recorded data; however, if there were other priorities (e.g. if they were using the day grab during cockle assessments), then sightings data were not recorded. The frequency and location of patrols and surveys were not uniform throughout the year, so these data could not indicate temporal trends. The timing of high-intensity annual surveys (e.g. annual cockle and mussel assessments that occur in spring and autumn, respectively) could increase the number of sightings recorded, while vessel refit – which usually occurred throughout the month of February – would automatically result in a very low number of sightings being recorded from other vessels, if any were recorded at all. Consequently, there were risks associated with producing fishing intensity maps utilising these vessel-based sightings data, as whole areas may have received very low or no survey coverage at certain times of the year. Additionally, as the Eastern-IFCA tended to use a targeted enforcement strategy rather than random patrols, fishery observation data was biased towards where 'higher risk' fisheries were focused at any time. Cockle fisheries may or may not have featured as a 'higher risk' fishery in the period observed.

The EJSFC (2010) had previously compiled fishing charts of the distribution of important fishing grounds for bass, brill/turbot, cockles, cod, crustacea, dab/flounder, dogfish, herring/sprat, mackerel, mussels, plaice, rays, sand eels, shrimp, soles, whelks, and whiting in the district. As an additional source of information, the EJSFC used informal sightings and face-to-face interviews with fishermen

to corroborate the information presented by their fishing charts. With the work of the EJSFC, the vessel sightings database recorded sightings of fishing vessels on an opportunistic basis, when Eastern-IFCA Officers were at sea for other research and marine protection work. This information provided additional information to support the remit of the Eastern-IFCA.

The data the Eastern-IFCA recorded was collected using radar systems on the fisheries patrol and research vessels and was therefore highly accurate.

7.2. Spatial Constraints

7.2.1. Interaction between windfarm renewable energy and cockle fishing

To put the spatial constraints in perspective, this section draws from the findings in Chapter 5.1.1 where the Eastern Marine Plan (EMP) was used as a basis for the Lynn and Inner Dowsing and Race Bank windfarm cable routes that fishermen claimed were geographically disadvantaging cockle fishing activities by preventing them from accessing sandbanks.

In order to understand the geographical disruption caused by windfarm cable routes, Figures 7.3 illustrates fishing activity prior to the installation of the Lynn and Inner Dowsing cable route. For this period the Eastern-IFCA mostly sighted hand worked and suction dredging methods, presumably for cockles. Figure 7.4 illustrates the Lynn and Inner Dowsing cable route that was installed during 2007 and 2008. Figure 7.5 maps fishing activity for 2007 and Figure 7.6 maps fishing activity for 2008, during the period the cable route was installed. Similarly, in order to understand the effects of the Race Bank infrastructure in 2017, Figure 7.7 illustrates that the Race Bank cable route fishing activity for the same period was mapped in Figure 7.8. Fishing activity for 2016 was not recorded by the Eastern-IFCA (pers. comms, Eastern-IFCA Marine Science Officer, May 2019). The Figures showed that although fishing activity was not spatially obstructed by the cable route installations *per se*, there may have been a temporary obstruction in the Breast Sand because the cable route intersected the Breast, Thief, Seal, Bull Dog, and Peter Black Sands to connect to the Sutton Bridge substation. These sands not only supported a cockle fishery but were part also of The Wash National Nature Reserve (WNNR), the biggest nature reserve in the UK (Natural England, 2010). Given that the dates of both installations crossed over two years, the extent to which cockle fishing was affected could not be represented accurately in Figures 7.5, 7.6, and 7.8. Instead fishing activity was aggregated for those individual years to get an overview of fishing activity in those particular years. Using fishing vessel sighting data alone, there was no disruption caused by the windfarm cable installations to the fishermen. Interview data provided an additional source of information to understand spatial constraints.

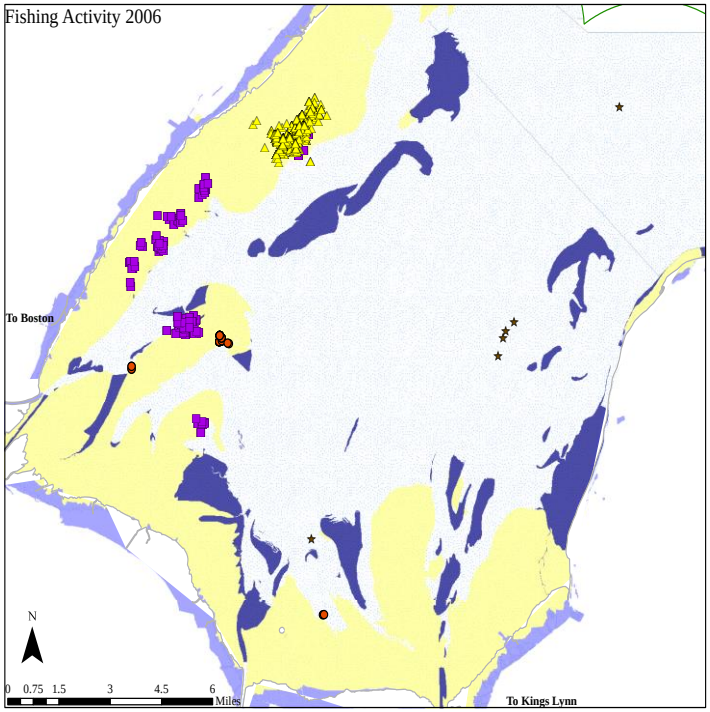


Figure 7.3: Fishing activity before the installation of The Lynn and Inner Dowsing cable route. 2006.

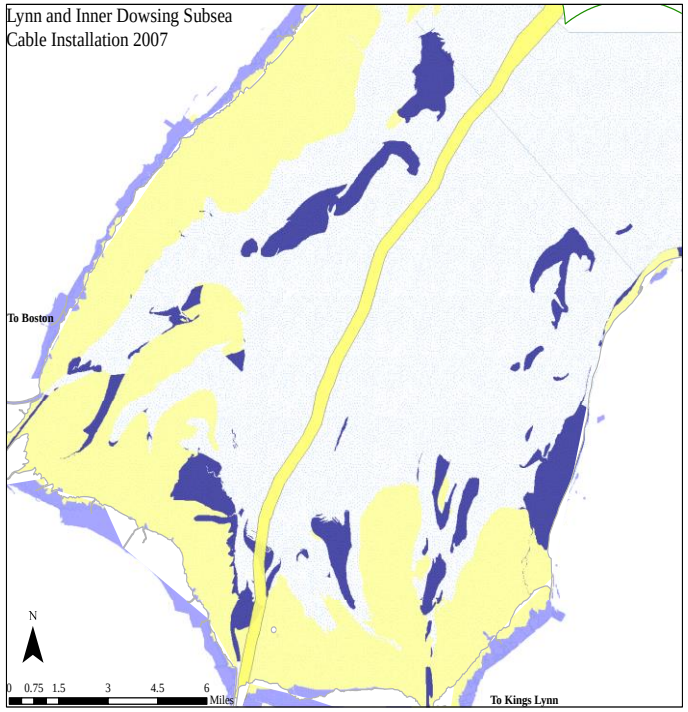
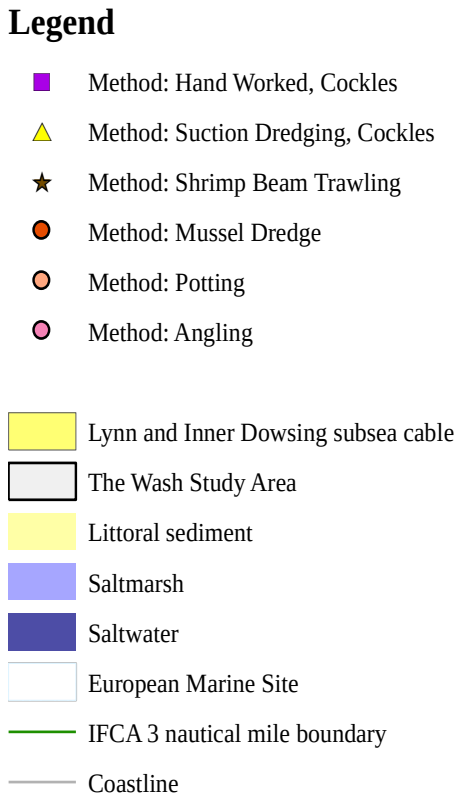


Figure 7.4: The Lynn and Inner Dowsing cable route that was installed during 2007 (and possibly 2008).



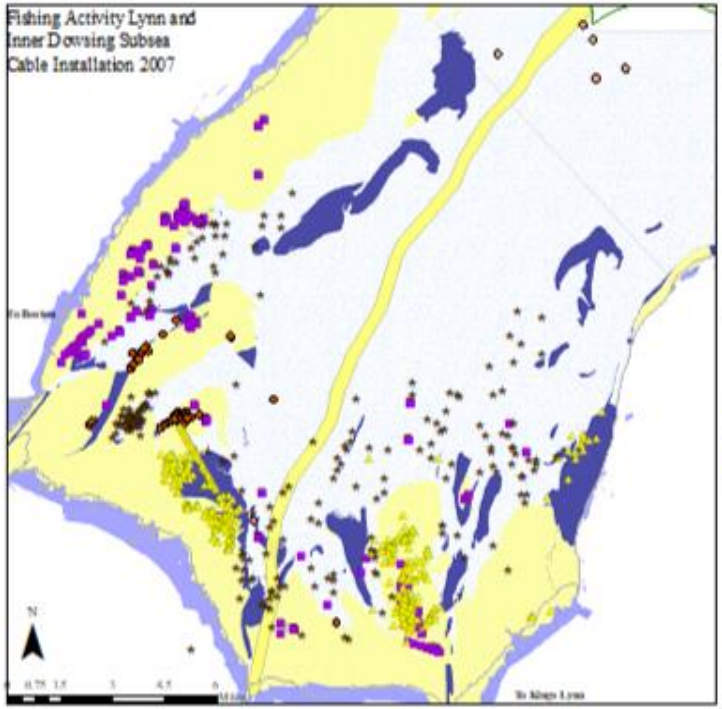


Figure 7.5: Fishing activity when the Lynn and Inner Dowsing cable was installed. During 2007.

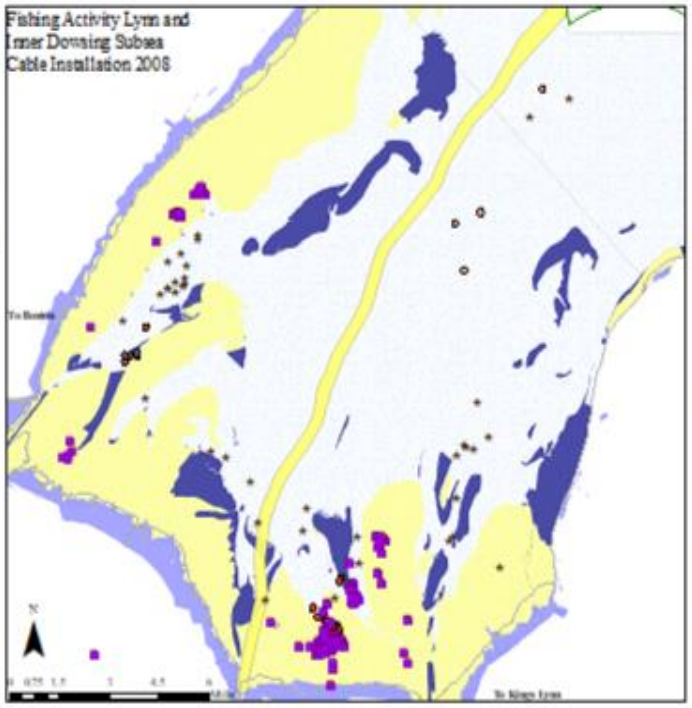
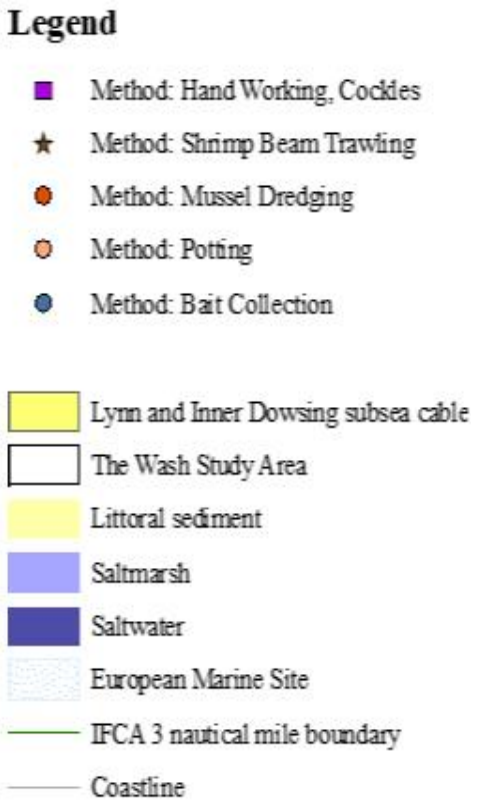


Figure 7.6: Fishing activity when the Lynn and Inner Dowsing cable was installed. During 2008.



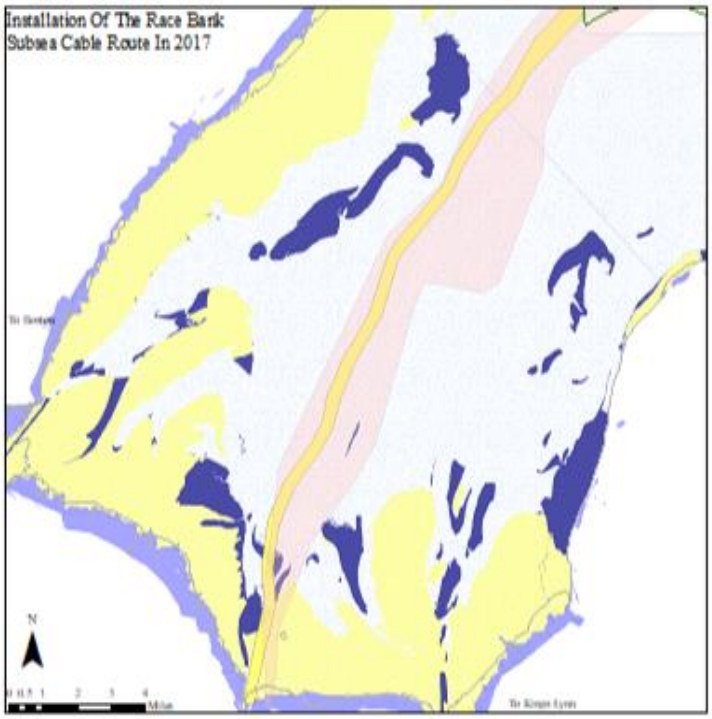


Figure 7.7: The location of the Race Bank cable route installed in 2017.

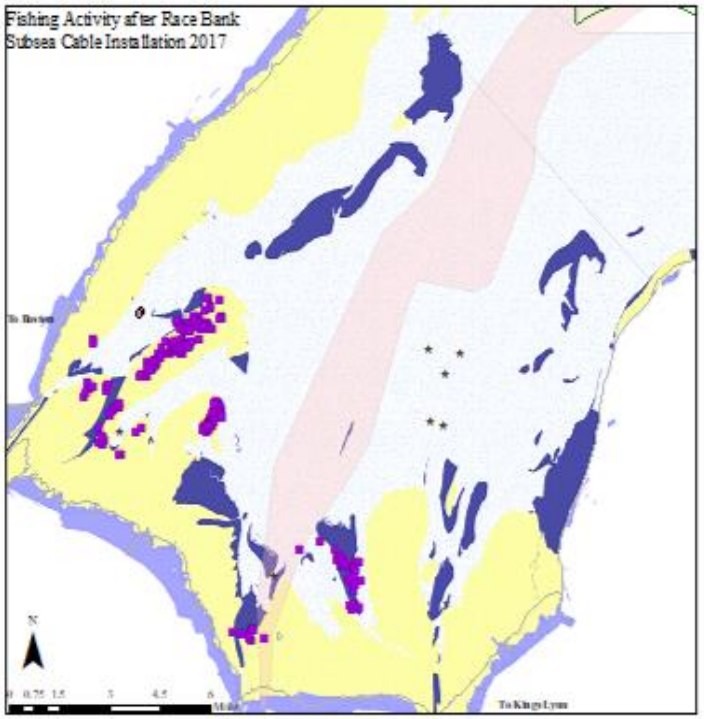


Figure 7.8: Fishing activity during the period the Race Bank cable was installed. 2017.

The importance of understanding the effects of spatially constraining fishermen is clarified in the Eastern-IFCA's High Level Objectives (HLO). The HLO guidelines state:

> *"There is equitable access for those who want to use and enjoy the coast, seas and their wide range of resources and assets and recognition that for some island and peripheral communities the sea plays a significant role in their community."* (Eastern-IFCA Research and Environment Strategy. Box 2, page 31, 2013-2018)

The excerpt above implies that the ability of fishermen to physically access cockle beds was an attribute of the works undertaken by the Eastern-IFCA. The term 'access' is also a key attribute of environmental justice, particularly in ensuring that "access to environmental goods and resources" is fair (Walker 2012). Broadly, a view shared by fishermen was that access to cockle beds was unfair because fishermen were spatially constrained in The Wash by increased pressure from other marine activities.

To explain the spatial constraints fishermen faced in The Wash, a debate in the House of Commons, MP Henry Bellingham, North-West Norfolk, explained the effects of marine spatial planning and subsequent marine congestion in the East Anglian region. He stated:

> *"A potential crisis is looming. Already 40% of the original fishing grounds in The Wash are no longer available because of the RAF bombing range and the exclusion zone around the 1,000 or so offshore wind turbines. The number of conservation areas has been increased, and there has been an increase in sand extraction. For those reasons, fishermen have lost 40% of the fishing grounds that were available about 20 years ago."* (MP Bellingham, HoC 71-xvi, Hansard, 18th Report of session 2016-2017; catch quotas and effort limitations)

A general observation by two independent fishermen was that increased congestion caused by windfarms, aggregate dredging, and other marine activity was preventing them from accessing fishing grounds. **F8** and **F9** explained:

> *"Windfarms and aggregate dredging, cable routes and all this lot. It feels... if the general public knew exactly what was going on in the Southern North Sea, where we're fishing in, they will be horrified to see the industry. It is all put on a big chart – in colour all the areas for aggregate dredging you could see that they're taking something like the Grand Canyon in every year."* (**F8** and **F9**)

In this example, **F8** and **F9**'s point was to emphasise that the additional marine activities in The Wash were burdensome to fishermen and to conservation. Expressing continued frustration with windfarm development, **F8** and **F9** reported that the noise from the windfarm cables were actually a contributing factor to the recent spate of sperm whales reported by various media as having been washed up in

Hunstanton and Skegness in recent months. They felt a disproportionate amount of blame was cast upon the noise emanating from fishing vessels.[11]

Broadly, fishermen argued that policies supporting the development of the Lynn and Inner Dowsing windfarm infrastructure was preventing access to shellfishing grounds, including cockle beds. In discussing the disruption, the windfarm development was causing his Kings Lynn constituents, MP Henry Bellingham argued:

> *"The latest planning proposal from* [formerly, ed] *Centrica will involve two buried sub-sea cables through The Wash…onshore cables will be buried. As far as fish are concerned, the jury is out. There will be some conservation advantages, as the area around the turbines will be an exclusion zone that will not be able to be fished; indeed, there will be an opportunity for some of the shellfish to breed and regenerate with no fishing taking place.*
>
> *There are many concerns about the main cable and the lack of access to mussel beds during the cable laying. There will also be an area of The Wash and the offshore Norfolk shellfishery that will be out of bounds for the foreseeable future, certainly for the life of these turbines. It is important that we are able to find out the exact size of the area affected."* (MP Henry Bellingham, Hansard. 20 November 2008: column 430).

The EMP meant that Centrica could financially compensate or offer employment to fishermen for loss of earnings. Some fishermen corroborated this and reported that they sought seasonal employment from the windfarm companies. **A2** reported that he understood there was a *quid pro quo* arrangement between the windfarm companies and the fishermen. **F3**, **F4**, and **F12** reported that they participated in seasonal survey work for the windfarms to supplement their income.

> 1] *"F3 actually took scientists for the Windfarms off Skegness…when they did sampling on the grounds…the scientist said oh we don't want to see this because we can't build on it."* (**F12**)
>
> 2] *"I did the surveys for them. They (windfarm companies) cheated us."* (**F3** and **F4**)

In accordance with the EMP, the proposals by windfarm companies should have mitigated against some of the negative impacts encountered by fishermen (MMO, 2015). In some cases, financial compensation and seasonal employment was viewed as mitigating against the effects of the installations, but not all cockle fishermen, particularly the nomadic sector, were recipients of compensation or employment.

The Marine Management Organisation (MMO), following statutory advice from Natural England (NE) (DEFRA 2012), granted permission for windfarm cables to intersect the WNNR using their own

[11] https://www.bbc.co.uk/news/uk-england-norfolk-35926455

assessment criteria. Similarly, and also following statutory advice from NE, the Eastern-IFCA provided cockle fisheries advice to the MMO prior to permissions being granted for the cable route (Eastern-IFCA Guidance 2011). The overall assumption made by fishermen was that the Eastern-IFCA, MMO, and NE inaccurately judged that the cockle fishery in The Wash was not obstructed by windfarm development. The effects of the windfarm development on fishermen were not considered in the process, and the interviews revealed that fishermen felt defenceless against government strategies that supported windfarm renewable energy.

7.2.2. The Wash European Marine Site and Marine Protected Areas Bylaw

Section 5.1.2 highlighted that multifunctional uses of The Wash and surrounding areas in the EMP frustrated fishing activities. Fishermen reported that the Eastern-IFCA was preventing fishing activities because The Wash was unnecessarily and extensively monitored under the EMS designation and latterly the MPA Bylaw. Consequently, these spatial restrictions prevented fishermen from fishing effectively.

Fishermen claimed The Wash was a designated EMS under the Birds and Habitats Directive (1992). This meant that overwintering birds and their habitats were already routinely and thoroughly monitored by NE (Natural England 2014). Fishermen referred to a NE conducted assessment that found that there was a decline in overwintering bird populations, and advised that a 30 per cent allocation of cockle stocks should be reserved for the overwintering bird populations (Eastern-IFCA minutes 27 2017). The population of two out of the three migratory birds were observed by NE as "unfavourable declining" (shelduck population 58% lower than baseline level, oystercatcher at 27% decline, knot at 40% increase). The effects of the EMS designations on fishing activity were difficult to map because these data pre-dated the Eastern-IFCA, and consequently were not mapped. Fishermen, however, reported that they were doubting how the 30 per cent cockle allocation was determined (**F3** and **F4**).

Fishermen identified stony reef and the sabellaria reef worm in The Wash that the Eastern-IFCA, after seeking conservation advice from NE, decided to protect as a local MPA Bylaw in 2014. In order to illustrate the effects of MPA Bylaws on fishing activity, Figure 7.9 maps fishing activity for 2013, Figure 7.10 illustrates the stony reef and the sabellaria reef worm from the MPA Bylaw for 2014, and Figure 7.11 maps fishing activity for 2014 alongside the MPA Bylaws. The presence of the sabellaria reef worm may have affected some areas of the Butterwick Low, but the size of the MPA was too small to determine an effect on fishing activity. Some fishermen who operate or diversify into trawls, pots, or rod and lines targeting shrimp or other species in the autumn/winter months may have been impacted by the MPA Bylaw situated at the mouth of The Wash Estuary. Fishermen expressed that the commitments to conservation were already met by The Wash being designated an EMS, and that additional conservation work undertaken for MPA Bylaw purposes was unnecessary and often

resulted in enforcement action. Fishermen felt that the move to protect MPAs was damaging their trust with the Eastern-IFCA.

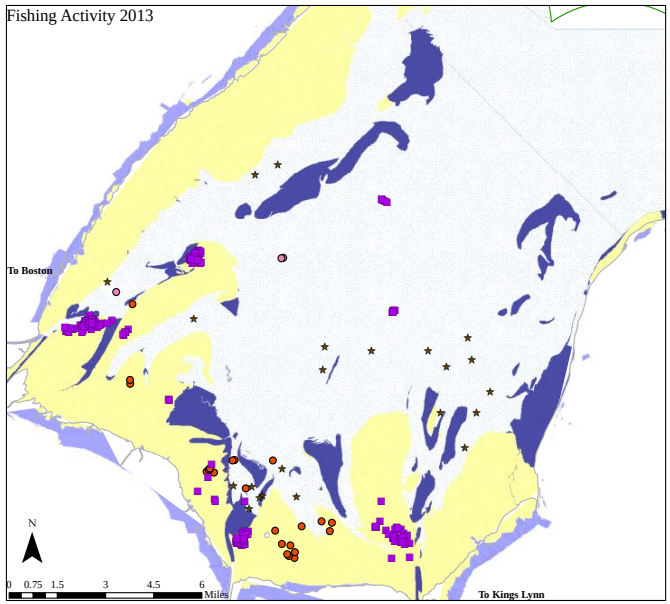


Figure 7.9: The Wash European Marine Site and fishing activity. 2013.

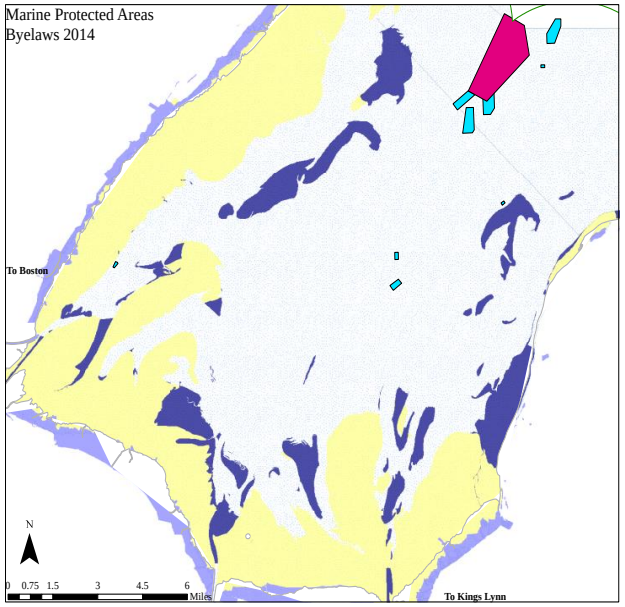


Figure 7.10: The Wash European Marine Site and Marine Protected Areas Bylaws. 2014.

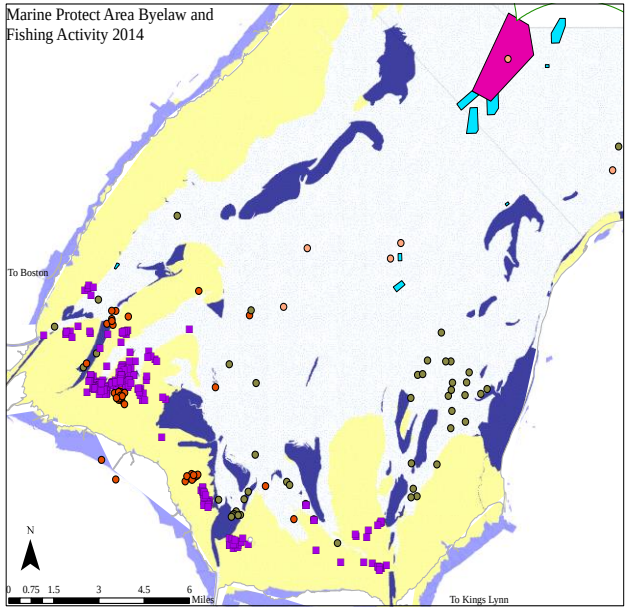


Figure 7.11: The Wash European Marine Site, the Eastern-IFCA Marine Protected Areas Bylaws and fishing activity. 2014.

Legend

- Method: Hand Working, Cockles
- Method: Shrimp Beam Trawling
- Method: Mussel Dredging
- Method: Potting
- Method: Bait Collection
- Sabellaria Reef Worm EIFCA Byelaw
- Stony Reef EIFCA Byelaw
- Lynn and Inner Dowsing subsea cable
- The Wash Study Area
- Littoral sediment
- Saltmarsh
- Saltwater
- European Marine Site
- IFCA 3 nautical mile boundary
- Coastline

In offering a contrasting perspective, **A2** explained the difficulties in balancing nature conservation advice and the views expressed by fishermen. In balancing the views of cockle fishermen and evidence presented by NE, **A2** indicated that it was not necessarily the practical operations of a fishery that were the concern, but the management of a cockle fishery in an EMS that caused the Eastern-IFCA difficulties. The Eastern-IFCA broadly accepted the frustrations expressed by cockle fishermen. **A2** explained,

> *"It's not necessarily so much about the cockle fishery in there or a shellfish fishery. It's the fact that is a heavily designated MPA."*(**A2**)

F14 explained that establishing MPAs had displaced fishing effort in other areas of The Wash EMS, which he felt was contradictory. **F14** reported,

> *"We work around those marine protected areas, but our argument is that by having these areas …pushing more effort into the areas which perhaps should have less effort."* (**F14**)

The common view expressed throughout Kings Lynn and Boston was that the evolution of the EMS with the addition MPA bylaws placed unnecessary burden on the Eastern-IFCA, and this ultimately undermined the Eastern-IFCA's responsibility to the cockle fishery and its fishermen.

7.2.3. Private ownership of Le Strange Private Estate Fishery

Ownership of private 'cockle entitlements' (or permits) as 'fishing rights' were investigated extensively in Chapter 6. A disadvantage reported by fishermen was that the rights of cockle fishermen to fish on a section of privately owned cockle sandbank was challenged. The foreshore illustrated in Figure 7.12 was privately owned by the Le Strange Estate and leased by Mr John Loose since 1970. A legal dispute since 2007 (resolved in 2016) had progressed to the Supreme Court, to resolve the claim that 13 fishermen had illegally trespassed onto the private fishery to fish for cockles. The 13 fishermen claimed that they had a right to fish on those sandbanks because they had done so for generations.[12]

[12] Lynn Shellfish Ltd and other Kings Lynn fishermen (Appellants) v Loose (Respondents). [2016] UKSC 14 / [2014] EWCA Civ 846

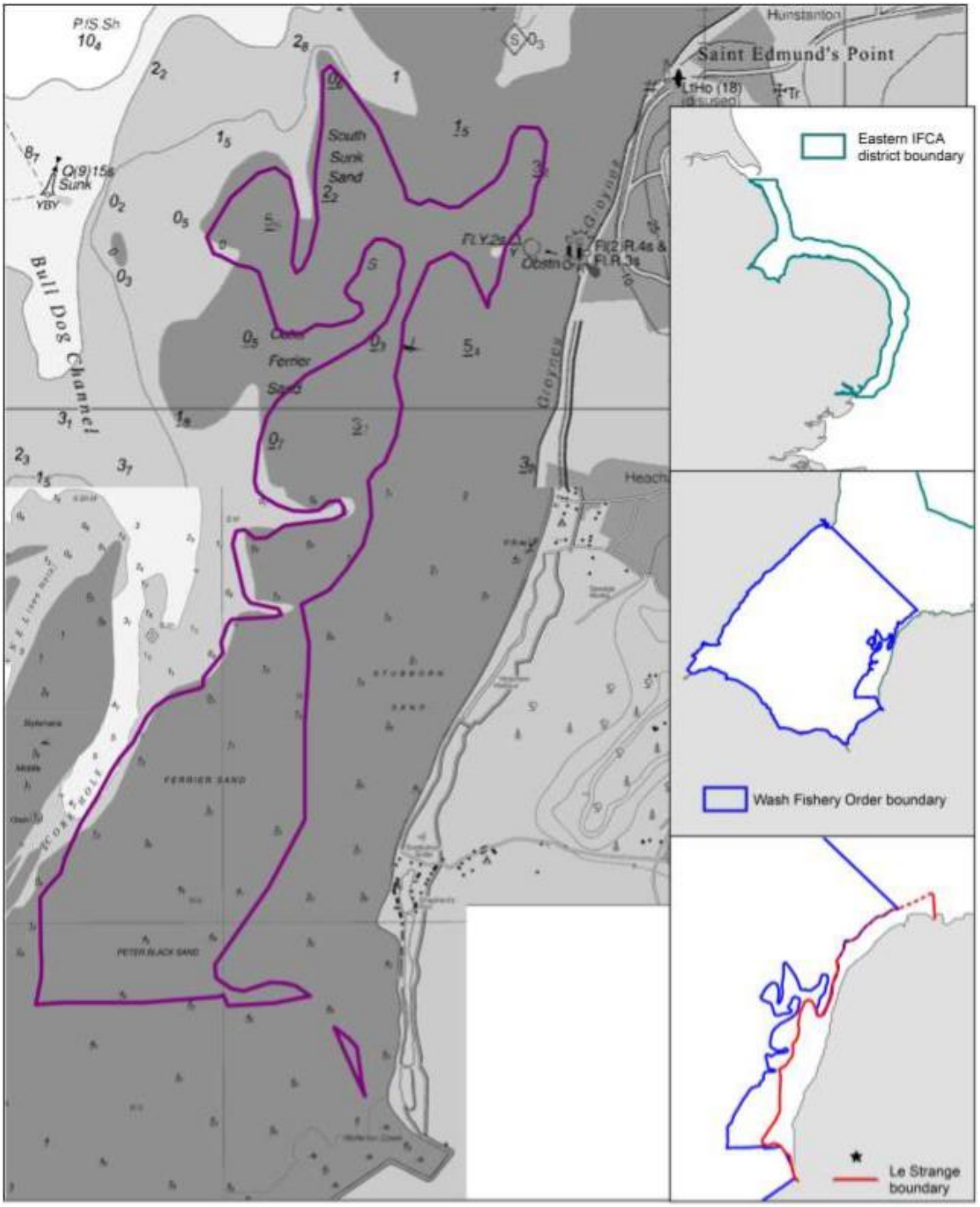


Figure 7.12: The unregulated area under dispute between 13 fishermen and Mr John Loose – Le Strange boundary. The boundary had been disputed by the cockle fishermen and John Loose between 2007 and 2016. Purple marks the unregulated area of The Wash, the areas between the blue and red marking (in the bottom right-hand map is the areas under dispute). The blue marks The Wash regulated area, red marks the Le Strange boundary, and turquoise marks the Eastern-IFCA district (source: http://www.eastern-ifca.gov.uk/. Accessed May 2019).

Two issues regarding the thirteen fishermen's right to access the cockle beds were being disputed by John Loose, the lessee. These were, first, re-defining the low water mark on the western seaward boundary preventing access to the Stubborn Sand cockle beds, and second, fishing rights extended to sandbanks which, having been previously separated from the foreshore, became attached to it as a result of the gradual silting up of channels separating the banks and the foreshore (UKSC 14, 2016[13]). The Supreme Court ruled that since the Magna Carta, the public, including the 13 fishermen, had a right to gather cockles from the foreshore of The Wash and that the owner of the foreshore, the Crown Estate, had not been permitted to privatise the foreshore away from public access.

The Kings Lynn fishermen were particularly vocal when reporting the Le Strange Estate Fishery boundary. The new boundary marking The Wash regulated cockle fishery and the Le Strange Estate was unregulated and posed a threat of being overfished (Eastern-IFCA minutes 23, 2016), while for fishermen this was a positive move towards the cockle fishermen gaining extra fishing ground. **F21** explained that fishing ground had previously been lost because John Loose, the rights holder, was claiming more cockle beds than were previously identified by the Le Strange Fishery:

> *"what happened was, he claimed all the way up to here. It just kept on growing and growing ...as The Wash was silting up."*(**F21**)

Marked by the purple boundary in Figure 7.12, **F21** referred to the areas disputed by the 13 fishermen and Mr Loose. **F21** explained the legal battle was momentous in securing more cockle sands for cockle fishermen. **F21** added that the Eastern-IFCA were not impartial in the way they handled the court ruling and appeared more concerned about safeguarding the sands from fishermen. In his view, a boundary was now defined by the Court and the Eastern-IFCA ought to be supporting the fishermen to fish sustainably, but rather they had chosen to prevent fishermen from fishing. The minutes noting the Eastern-IFCA's concerns explained:

> *"…an area of the sea bed between the WFO and where Le Strange Fishery starts which was unregulated…until a boundary for the Le Strange Fishery was defined it was difficult to determine where this area was. Legal advice was being sought on the best course of action in the event of fishing activity taking place in this area….*[there was a, ed] *risk to management of the area left between the WFO and Le Strange Fishery,…*[there was, ed] *disappointed in the Association of IFCA – Chief Executive Officer's view on the outcome, he had hoped it would have been appreciated that the industry had gained back some of*

[13] United Kingdom Supreme Court (UKSC 14,2016) ruling. https://www.supremecourt.uk/cases/docs/uksc-2014-0191-judgment.pdf

the grounds and finally the boundary was likely to be sorted, rather than implying the court ruling had created a problem for Eastern-IFCA." (Eastern-IFCA minutes 23 2016)

F18 explained that the dispute over the boundary spanned over ten years, and supported the view that temporary measures were needed as a short-term solution to the issue. However, he also expressed the urgency of resolving the boundary issue before the WFO expired in 2022 because it presented a risk to being scrutinised again. The subsequent management measures had yet to be arranged by the Eastern-IFCA.[14]

7.2.4. Competition between independent and industrial-scale operators

The difference between the preferences expressed by fishermen between the two methods of cockle fishing are presented in Table 7.2 (UK Marine Stewardship Council, 2016). The independent sector preferred a longer hand worked fishery, while the industrial-scale operators preferred a suction dredge fishery because of its efficiency; these were discussed in Chapters 5 and 6.

Table 7.2: Description and presence of cockle fishing activity in The Wash for 2017. Adapted from the Eastern-IFCA Code of Practice (2012) and UK Marine Conservation Society Good Fish Guide (2016). The fishing method voted on by the Eastern-IFCA committee is described as 'active' and the fishing method not voted on by the Eastern-IFCA committee is 'passive'.

Fishing Type and Sector	**'Active' or 'Passive' fishing method for 2017**	**Description**
Suction dredging (preferred by industrial-scale commercial operators)	Active. Since 2008, suction dredging had not been as prominent in The Wash, as conditions had not been deemed suitable to support a dredge fishery. Therefore, the fishery was mostly exploited by hand. Preference for suction dredging in late June because of its efficiency and the possibility that there are larger/valuable cockles.	Suction dredging was one method used to fish for cockles in The Wash. Most commonly, boats used a hydraulic dredge with solid handling pumps. A jet of water liquified the sand, and pumps on the boat to create suction that drew cockles up through pipes onto the fishing boat. The cockles passed through a riddle, which allowed undersized species to be returned to the sea. The retained cockles collect in large tonne bags. Suction dredge fisheries were carefully managed under The Wash Fishery Order, taking place only when certain conditions (relating to factors such as stock levels, year, class structure, sediment type) exist

[14] In 2018 The Wash Emergency Bylaw issued a temporary ban on fishing for cockles and other molluscs in the new unregulated area of The Wash. An emergency bylaw was implemented to protect the area between Le Strange Fishery and region of The Wash cockle fishery from overfishing. Unregulated areas of The Wash are defined in Chapter 4, Governance of The Wash Cockle Fishery.

		on a given sand.
Hand working (preferred by independent and nomadic sector and by conservationists)	Passive. Historically, the cockle fishery was exploited by hand working; then technology (particularly dredging) enabled a more efficient method of harvesting cockles. These efficiency gains resulted in a boom and bust style of fishing. Preference for a prolonged fishing season starting in early May.	The hand worked fishery usually involved rakes and shovels. Prop-washing was commonly used to harvest cockles, where fishermen turned their vessels in tight circles around a single point. The propeller washes cockles out of the sediment and into a pile that is more easily collected than when cockles are buried under the surface of the sediment. A Code of Practice was issued by the Eastern-IFCA (Eastern-IFCA Code of Practice, 2012).

An additional constraint was that the Eastern-IFCA committee representatives carried one vote. The industrial-scale operator reported regular marginalisation in the decisions that affected his business (**F21**). The independent hand worked fishermen, who dominated the committee, were favoured for being low-impact and sustainable. This meant that by default the one industrial sector vote at Eastern-IFCA committee that favoured suction dredging was regularly outvoted. Corroborating **F21**'s claim, Figures 7.13, 7.14, and 7.15 illustrate that between 2006, 2011, and 2016, the count of fishing vessel sightings over the period analysed assumed a decline in the suction dredge fishery. Moreover, a preference for suction dredging had slowly deteriorated in lieu of strengthened support for a hand worked fishery by independent fishermen and conservationists on the Eastern-IFCA committee.

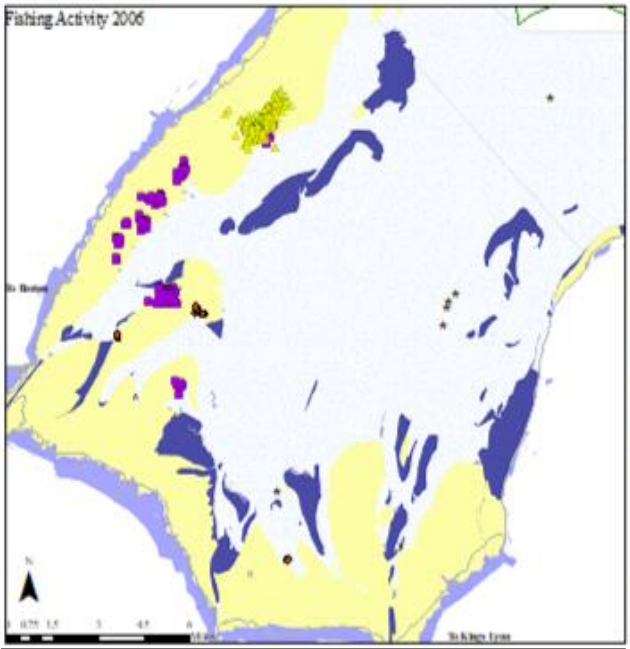


Figure 7.13: Fishing activity for 2006. Clusters of both hand worked cockles and suction dredged cockles.

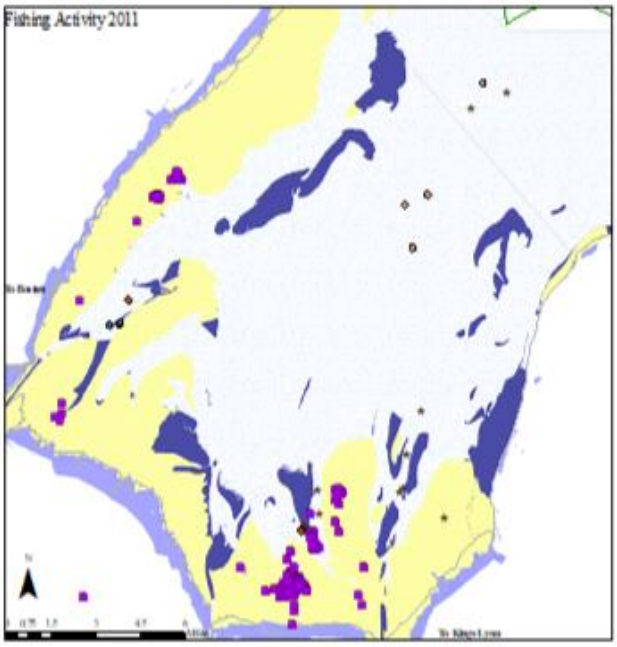


Figure 7.14: Fishing activity for 2011. Predominantly hand worked cockles, during the period the Eastern-IFCA were established.

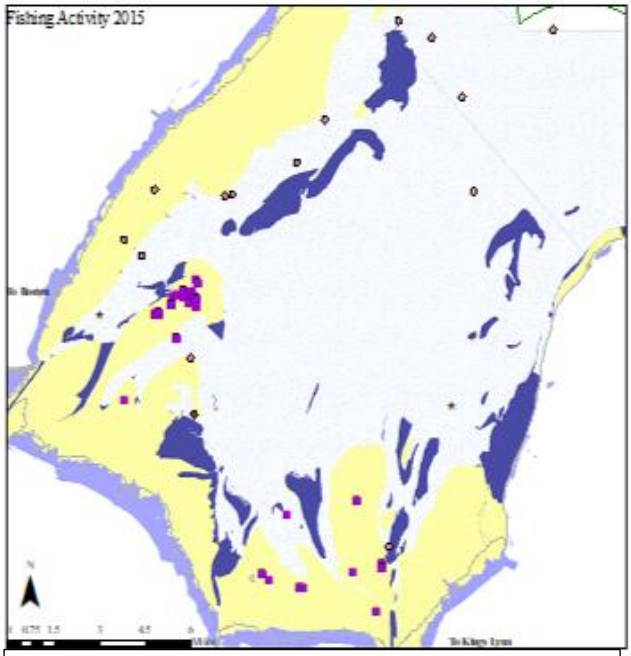


Figure 7.15: Fishing activity for 2015. Hand worked cockles, potting, and angling appear as the dominant fishing activities.

Chapter 6 provided insight into the conflicts that had arisen between the various fishing sectors resulting from a poorly constructed Wash Fishery Order (WFO, 1992) and accompanying cockle entitlements. The number of cockle entitlements that were largely owned by commercial enterprises were closely regulated, while horsepower remained unregulated causing disenfranchisement among the nomadic fishermen operating lower horsepower vessels. Nomadic-independent cockle fishermen explained that the higher horse-powered engines or mechanised fishing vessels, largely operated by commercial fishermen, were advantaged because they were able to reach the fishing grounds more quickly than the nomadic-independent fishermen. In the context of the shrimp fishery, **F23** explained the extent of having efficient fishing vessels:

> "*And the trouble is, the shrimp fishery will stand a certain amount of effort and that used to be 12 hour trips, which was about 8 hours' worth of fishing. It's gotten now to a point where the boats were fishing as late in the tide as they possibly can, and they gain an extra couple of hours in the bay and they are doing 24/36 hour trips, so they are fishing over one or two high waters which otherwise they would have not done so."* (**F23**)

The excerpt above also provided an example of the Eastern-IFCA's attempt to regulate fishing pressure by controlling fishing effort. However, by restricting monthly catch limits to two, three or four tonnes was having an opposite effect on the viability of the cockle fishery. The viability was dependent upon the *modus operandi* of the fishermen involved, such as the business model employed, mechanics and gears of the vessel, and the time spent at sea. For example, industrial-scale operators used intensive methods, with a preference for a shorter fishing season, as it suited their business model. **F16** and **F17** explained the efficiencies of the suction dredge fishery and the benefits to their sector:

> *"They* [Eastern-IFCA, ed] *surveyed the beds in early spring of cockles. The* [cockles, ed] *haven't started to grow but they are not fished till say June at the earliest and they've grew another two or three ml. So, what you are actually fishing on is actually a lot bigger than when the stock they've* [Eastern-IFCA, ed] *surveyed.*
>
> *And course the little* [independent, ed] *boats wanted the fishery opened sooner, to accommodate that they were doing the assessments even sooner in the year, when there's no growth on them at all. It was crazy. I've said it myself, the earlier you have it, you are going to get less tonnage because they are not going to start to grow."* (**F16** and **F17**)

The argument against the use of prop-washing was also presented by **F16** and **F17**, who argued that the prop-washing method used by hand worked fishermen was destructive because it muddied the sediment that choked the mature cockles that were ideal for harvesting. In contrast,

however, independent fishermen, conservationists, and the Eastern-IFCA perceived suction dredging as destructive.

Another argument presented by the independent fishermen was that fishermen choosing to use the suction dredge exemplified the 'race to fish' mentality. **F22** explained that certain individuals operating businesses appeared to try and dominate The Wash fisheries. **F22** among others explained that individual operating commercial practices were vociferously "wanting all of the pie, not just a slice" (**F22**).

Some fishermen mitigated against the effects of competition between sectors by partnering with other fishermen with similar interests. For instance, **F1** and **F2** or **F5** and **F6** from Boston felt that a partnership between two fishermen was best suited to their practice. **F15** reported that they were financially tied to skippering for the industrial-scale operators in order to secure full-time work and continuity in the profession, as they also feared that they might struggle to find alternative, suitable employment.

The extent of the gear conflict was reported as 'complaints' by the Eastern-IFCA, with **A2** reporting:

> *"The shrimpers will complain about the potters* [nomadic, ed] *because you've got a gear conflict there – so if you've got an area which is covered in pots, you can tow a beam trawl through it… so that would be a conflict."* (**A2**)

Competition for cockles presented arguments for and against the choice in gear used. The Eastern-IFCA appeared unaware of the increasing pressure that the various fishing sectors were faced with, and the emerging conflict.

7.3. Policy and sectoral constraints

7.3.1. National effort restrictions

A view shared by a number of cockle fishermen was that DEFRA-mandated policies, delivered by the MMO, prevented cockle fishermen from diversifying into other fisheries available to them should the cockle fishery suffer. Shellfisheries such as shrimp, or sprat that were recently found in the region, presented viable alternatives for The Wash cockle fishermen (**F8** and **F9**).

One such policy reported by fishermen was the licence capping scheme that limited licences to the species that individual fisherman had a proven track record of fishing. Following the 2009 and 2015 licence capping scheme, DEFRA and the MMO carried out an assessment to address latent capacity in the under 10m English fishing fleet. Traditionally, the licence capping policy was a tool occasionally relied on by DEFRA to remove "latent fishing capacity" from so-called 'inactive' fishing vessels in UK waters. Latent fishing capacity, in fisheries policy, means

reducing dormant fishing capacity (DEFRA 2011 and 2015). For example, the MMO fishing licences enabled UK registered fishing vessels to fish for quota stocks that were already listed on their fishing licences. The devolved nations were perceived by fishermen and DEFRA policy makers as having lenient regulatory controls, and tended to partially implement the policy, thus allowing for English fishing fleet to be registered in Scotland, Wales, or Northern Ireland, in order to bypass the policy restrictions imposed in England (Glasgow, I., pers. comm., February 2018). The under 10m fishing vessels were the largest fishing sector, of approximately 1,500 fishing vessels, fishing in the UK's inshore waters. These vessels typically fish in inshore waters up to 6 nm (Symes and Phillipson, 2010). The licence capping policy was commonly used by policy makers at reducing fishing capacity of vessels as a quick response to increased fishing pressure and decreasing fish stocks.

The policy has been widely criticised by academics and fisheries managers for being poorly conceived and having unjust consequences for the under 10m fishing vessels representing the small-scale inshore fishing sector (Gray et al. 2011, Morgan 2016). Independent cockle fishermen reported the history of the capping scheme in the context of The Wash.

> *"Some years ago there was a decision made that there was too much 'effort' on the cockle and mussel fisheries, that the effort needed to be capped, and therefore the idea of a fixed number of licences and no more cut a lot of people out of the fishery."* (**F23**)

Independent fishermen from Boston explained that Eastern-IFCA tended to add fuel to the fire by taking all quota and non-quota fish and shellfish stocks off their licences too.

> *"The Eastern-IFCA take everything off us. Bass. Shrimp."* (**F3** and **F4**)

F8 and **F9** explained the effects:

> *"Then we were having to come down* [implying fishing pressure, ed] *on the cockles or mussels and shrimps and other quota species… But we should have been able to fish when the sprats were about…*[the other, ed] *new fishery that was coming up here. There's mackerel and bass about. Because we haven't got the right to fish, we've not got a licence to fish for them."* (**F8** and **F9**)

In addition, **F15** explained the effects that licence capping had on an independent fishermen.

> *"I've been fishing full-time since 1976. And if I want to get an entitlement and buy my own boat, I couldn't because it's* [the licence is, ed] *capped and that's not really fair on someone like me who's tied to a company boat now."* (**F15**)

The excerpts from **F8** and **F9** and **F15** show that they believed that if the Eastern-IFCA had fulfilled their fisheries management duties, cockle fishermen should be offered uncapped licences in order to seek new fisheries emerging in The Wash.

Both excerpts explained the unintended consequences and knock-on effects of the national licence capping policy for the Eastern-IFCA in managing The Wash cockle fisheries.

7.3.2. Local effort restrictions

Fishermen reported that a number of local bylaws and moratoriums restricted fishing efforts in The Wash. First, there were 21 bylaws in the Eastern-IFCA district that affected most cockle fishermen fishing in The Wash (Eastern-IFCA website, accessed February 2019). For example, **A2** explained that the Eastern-IFCA wanted to avoid the boom and bust cycle for whelks so introduced an emergency bylaw in 2015, which in 2016 was formalised into a permanent arrangement of granting a permit-enabled whelk fishery similar to that of the cockle entitlement. Second, the WFO moratorium on granting mussel lays (in 2008) and entitlements (in 2011) prevented many fishermen from joining the profession (Eastern-IFCA minutes 11, 2013). Licences validating the occupation of mussel lay holders were valid for ten years. Although not mutually exclusive, research participants understood that mussel lay holders typically held on to cockle entitlements, in order to give them flexibility over their fishing season. These fishermen were often generational fishermen (Eastern-IFCA minutes 11, 2013). Third, a moratorium in 2015 was imposed banning trawling for seabass during spawning months to avert the collapse of declining seabass stocks. The Wash cockle fishermen remarked that competition between both commercial and recreational fishermen protected the interests of recreational anglers over commercial interests (Eastern-IFCA minutes 30, 2017).

At the time of interviewing, a restriction to shrimp fishing was being consulted on (**A2**). The MP for North-West Norfolk echoed a dispute in a parliamentary discussion. He argued:

> *"The Wash shellfishery is one of the best and biggest in Europe and the shrimp fishery has had record catches this year, which is very good for exports. Is my Hon. Friend aware that the Marine Stewardship Council is now recommending that 14% of the shrimp fishery be closed down?"* (MP Bellingham, HoC 2016-2017; East Anglian Fishing Fleet)

The consultation period took 18 months because of an argument from fishermen without owned cockle entitlements reporting that they could not continue to fish viably and earn a living unless they could target the shrimp fishery in The Wash (**F19**).

7.3.3. Irregular and uncertain cockle fishing season

For some fishermen, the irregular fishing season caused annual changes to catches that also affected their annual income. The decision on whether to open or close a fishery was dependent upon timely and thorough cockle assessments. Attempts were made by the Eastern-IFCA to conduct different scientific investigations to find the reasons for the recent variability experienced in the cockle fishery. Financial pressure limited research to simple quadrant-based sampling only. Quadrant-based sampling was usually an inexpensive and helpful way to make estimates on

cockle stocks in The Wash (Eastern-IFCA minutes 32, and Eastern-IFCA Strategic Assessment 2018, Eastern-IFCA Marine Science Officer, pers. comms 2019).

Uncertain cockle populations and availability of fish stocks were attributed to a number of reasons reported by fishermen. **F15** and **16, F17** and **F20** believed the variability of cockle populations was due to natural predation. Participants representing the independent sector note that the 2017 cockle fishery should have opened in early May, when it opened in mid-June to account for the uncertain stock levels, the implications of which were described by **F1** and **F2**:

> **F1** and **F2**: *"It opened in the middle of June, but really it should have been opened at the beginning of May. Because really, it was too late. They issue these quotas or Total Allowable Catches for the fisheries and the fisheries aren't open till late. And your fisheries not taking the allocated quotas for that year."*
>
> **Interviewer:** *"What were the implications of that?"*
>
> **F1** and **F2:** *"Cockle die off."*

The nomadic-independent sector believed cockle populations were declining due to mechanisation, and 'a few bad apples' with a 'race to fish' mentality that were hammering down at the cockle fishery (**F10** and **F11**). The sectoral differences were believed, by the independent fishermen, to have influenced the Eastern-IFCA's role to heavily monitor The Wash as opposed to other areas within the Eastern-IFCA district. This action taken by the Eastern-IFCA made many individual fishermen feel unnecessarily penalised.

7.4. Synthesis and reflections on marine activities constraining fishermen

Referring back to the interactive governance framework (in Figure 2.1 or Kooiman 2008), decisions taken at meta-order governance restricted access to cockle beds and other available fisheries in The Wash. This *hierarchical* form of governance is where policies relate to the Common Fisheries Policy effort restrictions, MSPs and EMS sites. Further, at the second–order level the governance *images*, *instruments* and *actions* relate to MPA bylaws and other restrictive bylaws. The idea of *co-management* was not reflected by the functions of the Eastern-IFCA Committee, in the eyes of the fishermen, as the consultation appeared to them to be ineffective at influencing meta-order policy decision.

Two sources of information were used to gain insight into the factors constraining access to cockle fishing grounds in The Wash: quantitative data from the Eastern-IFCA (from second-order sources to reflect *actions* of governance in Figure 2.1) and qualitative data gathered from semi-structured interviews (reflecting the first-order *actions* of governance). While Chapter 3 explained

the nature and limitations of using secondary data and semi-structured interviews, by using both spatial and interview data, Section 7.2 and Section 7.3 explained the power of using interviews to understand justice in fisheries management. This chapter builds on some of the findings of the previous two chapters. The findings illustrate that, where the maps inaccurately reflected access and spatial marginalisation issues, the interview data did. The findings also support Ribot and Peluso's (2003) theory of access, Ballet's (2011 and 2013) views on access to resource space and capabilities as justice. Robeyns (2011) work on measuring justice using existing analytical tools inaccurately reflected the level (in)justice experienced. As such, insufficient support to access available cockle beds caused conflict between decisions made at meta-order (for example, to share the cockle fishing grounds with windfarms and MPA restrictions, etc,) and on the ground, first order (for example with fishermen's historical patterns of fishing being altered in a way they feel is beyond their influence via the Easter IFCA). At second-order there was also little support for fishermen to influence the position of MPA bylaws research and this further aggravated fishermen. On the ground access to resource space was further restricted between those able to both access and fish the bed efficiently and the more nomadic vessels. Kyems (2011), Gezelius (2010) and Said (2017) highlighted similar distributional conflicts as the findings presented in this chapter. However, while their findings illustrated spatial effects, this was not evident in the GIS findings of this chapter, but rather the qualitative elements explained spatial marginalisation and resulting conflicts. Nevertheless, Table 7.3 presents the findings from the spatial analysis.

Despite the caveats in the spatial data set out in Section 7.1, where possible column 3 in Table 7.3 provides a description of vessel activity, and where 'counts' were available, these were added. The spatial maps were supposed to present spatial constraints visually, but the effects of effort restrictions appeared minimal. However, the maps showed there was an overall decline in fishing activity, with no suction dredging activity in recent years. Another notable observation is that Figure 7.14 appears to show more of a mixed fishery emerging in 2014, rather than one, which was exclusively, hand worked cockles or shrimping. There was also little interference caused by some of the MPA bylaws. There may have been some interruption caused by the windfarm cable route installation, but given that the installation was over two years, the extent of the interruption was difficult to determine. These findings appeared to correlate with some of the interview data findings. The spatial maps, when coupled with the interview data, provided a better understanding of justice.

Table 7.3: A relationship between the spatial and interview data presented in Chapter 7. The table illustrates the difficulties of determining the issues of justice with spatial data alone.

Constraint	Fishing activity mapped?	Number of fishing vessels and gear type affected, if possible to conclude.	Summary of spatial maps in illustrating distributional conflicts (Gezelius, 2010).	Summary of interview data where justice issues exist.
EMS	Not mapped	Heavily monitored with an overall decline illustrated in Figures 7.13 to 7.15.	Data unavailable.	Distributive: Access to marine space is monitored. Procedural implications. Heavily monitored by all agencies. Recognition: Fishing activities declined over the ten years studied, particularly the suction dredge fishery. Natural processes affecting cockle fishing are difficult to determine. Capabilities: Monitoring in the Wash limits opportunities to diversify into other fisheries.
MPA Bylaws	Mapped	Figure 7.11 show one potter affected by the stony reef. From Figure 7.9 to 7.11 there is an overall increase in activity, although a decline in shrimp beam trawling and an increase in bait collection.	Perhaps Butterwick Low affected by the sabellaria reef worm.	Procedural implications. Heavily enforced by EIFCA. Distributive: Access to marine space is restricted. Procedural and distributive: Effort restrictions.
Le Strange Fishery	Not mapped	Figure 7.12 shows no activity counted in this area.	Data unavailable.	Procedural implications. Heavily enforced by EIFCA and Le Strange Estate Fishery. Distributive implications. Fishermen near Kings Lynn were mostly affected. Capabilities and procedural: Accusations of trespassing and High Court injunctions limited choice of where to fish. Recognition*: Fishermen came together to challenge the injunction.
Windfarm cable route	Mapped	Figure 7.3 shows suction dredging and the handworked cockle fishery as the two main cockle fisheries in the Wash. Figure 7.5 and 7.6 show thirteen shrimp beam trawls affected in 2007 and two in 2008 by the Lynn and Inner Dowsing windfarm and no suction	Difficult to conclude.	Procedurally marginalised in EMP decision making process. Distributive: Fishing activity is potentially disturbed particularly during active cockle fishing season. Recognition: Fishermen being displaced or inadequately acknowledged in the designation of windfarm infrastructure. Capabilities: Fishermen unable to influence decisions.
Fishing activity for 2006, 2011 and 2017	Mapped	Figures 7.13 to 7.15 show an overall decline in fishing activity in the Wash, with no suction dredgers.	Using a container approach, there was a decline in general fishing activity particularly the suction dredge fishery that disappeared.	Procedural and recognition. The industrial scale operators explained that the suction dredge was regularly outvoted at committee. This had procedural and recognition justice implications for their business, crew and skippers. Distributive and procedural: Effort restrictions Capabilities: Choice to fish as an occupation is threatened due to the general decline observed.

* Positive recognition of the Wash cockle fishery was that fishermen came together to challenge the injunction at the High Court.

As explained in Chapter 3, a strength of using the interview data was that cockle fishermen were able to provide detailed explanations on the effects of governance constraints, even when they were not evident through the spatial maps. For example, fishermen were not only able to better explain the extent of the spatial constraints but also to explain the drawbacks of policies and natural processes on their activity.

The interview data showed the practicalities in administering policy instruments such as IVMS were restrictive. For instance, there was widespread concern that using IVMS was going to lead to more enforcement action rather than just monitoring alone. Similarly, Walker (2012:58) also cites the potential weaknesses of using spatial maps or similar tools to understand spatial marginalisation and resource allocations and access issues. Table 7.3 draws comparisons between the information provided by the two methodological approaches used to understand environmental justice. It summarises and compares spatial and interview data to illustrate that The Wash cockle fishery is too complex to rely on spatial maps, particularly when determining the sectors most affected. The same observations appear in Said et al.'s (2017) findings about the nomadic sector in mapping spatial competition in Malta. She also suggests that unconvincing data aggregations can misrepresent visual maps, and these can present resource allocation problems at meta-order. The same was found in this case where there was disparity between the Eastern-IFCA collected data and interview data. In the UK, given that the data available for mapping inshore fisheries are at the early stages (i.e. implementation by 2021) of development (Breen et al. 2014, Turner et al. 2015), IVMS is a progressive step to providing a better spatial understanding of the sectoral segregations existing in inshore fisheries.

An interesting point emerged in this chapter where fishermen came together to challenge the divide between the Le Strange (cockle) fishery and the regulated cockle fishery accessed by The Wash cockle fishermen. This recognition shows that not all experiences observed by the inshore fishermen were negative. As Kyem (Nyergres 2011) states, sometimes competition generates conflict, but conflict may also be a catalyst for social cohesion, as was the case in this instance.

Another key finding in this chapter was that all fishermen reported that effort restrictions would deplete cockle fishing activity and have very negative livelihood impacts. Moreover, the findings also showed effort restrictions appeared to increase, thus affecting all fishing sectors. Symes (2000) reports that policies tend to favour the more specialised mechanised vessels. Whereas this is the case for larger vessels fishing offshore to target EU managed quotas, the findings here suggest that recognition for the diverse nature of the inshore fleet requires further research to help improve policy making.

In addition, this research found effects of effort restrictions on individual sectors were difficult to determine. Payne (2000) states that effort restrictions are difficult to apply indiscriminately in the

EU, so it is difficult to determine the effects on individual sectors. Hadjimichael (2018) (among others) examines EU policies for Blue Growth and reports social problems are caused by the EU's fisheries and maritime policies (for example, effort restrictions) and are to the detriment of small-scale sectors, perhaps due to the diverse nature of small-scale fisheries. Blue Growth is an economic term presenting a "long term strategy to support sustainable growth in the marine and maritime sectors as a whole" (European Commission 2012:2). Brookfield et al. (2005) state that, in recognition of the effects of Blue Growth on small-scale fisheries, recommendations were made by the EU for Member States to consider reserving shares of national effort for small-scale fishermen. However, since making this recommendation, the EU has funded schemes that continue to restrict fishing effort. For example, since the recommendation there have been two licence capping schemes and CFP Reform that have made very little change to effort restriction regimes. The implications for small-scale fisheries in The Wash are that the other fishery (i.e. the shrimp fishery) could face further restrictions and inevitably marginalise the nomadic sector further, potentially pushing them to leave the profession.

In conclusion, I had expected to see more evidence of spatial inequities. that broadly corresponded with arguments presented by Gezelius (2010) on distributional conflicts. Instead, I found that no single element of environmental justice stood out and that all four elements of justice were relevant. The EJ framework combined provided a rich picture of spatial and policy issues that affect fishermen.

Chapter 8 draws from the conclusions in Chapters 5, 6, and 7 and discusses them in the context of broader overlap between environmental justice and interactive governance.

Chapter 8. Discussion

Introduction

Past and on-going exploitation of natural resources has led to a growing number of socio-environmental consequences at the global scale. Local geographies and national economic, political, and social processes shape the country-specific utilisation of natural resources. Therefore, governance processes for managing natural resource exploitation and conservation have important consequences for inshore fisheries management.

In this thesis, I set out to investigate *How has the government-led management regime of the natural resources of the sea changed over time and what have been the implications for fishermen? How do fishermen perceive their fishing rights? and How are fishermen being constrained by other marine activities?* I gathered evidence for this investigation through a case study approach. I started in January 2016 using The Wash inshore cockle shellfishery as the locality, looking at the struggles of fishermen with marine resource governance, controlled through the local Eastern-Inshore Fisheries and Conservation Authority (Eastern-IFCA). I also used an analytical and conceptual lens to help examine governance justice on the ground.

Sections 8.1 to 8.3 summarise the main findings under each research question; Section 8.4 outlines the theoretical contributions; 8.5 discusses implications and limitations, as well as opportunities for further research. Section 8.6 finally concludes the thesis in relation to pertinence for inshore fisheries management and global resource governance issues.

8.1. How has the management regime changed over time and what have been the implications for fishermen?

Using the theory of interactive governance (IG), I investigated the justice implications of meta- and second-order decision-making upon first-order fishing practices. From the empirical findings presented in Chapter 5, since 2009, aside from the additional and strengthened conservation remit the change from Eastern Joint Sea Fisheries Committee (EJSFC) to Eastern-IFCA governance structures appear not to have changed considerably. Nevertheless, the strengthened conservation remit had significant implications for the management of the eastern area fishery and throughout the UK. Over time, decisions that protected fishing interests were traded off against marine conservation and marine spatial planning (MSP) policies. Essentially, the Eastern-IFCA had a different mandate to the EJSFC: to include conservation and balance this against resource exploitation, namely cockle fishing, as looked at in this study. Local fishermen believe this change negatively impacted their ability to fish. The main changes in the fishermen's view were: 1] priorities shifting towards the protection of natural resources and MSP; 2] stronger

enforcement measures being employed; 3] productivity in the seafood sector; 4] involvement of multiple-stakeholders in decision-making whose interests in some cases usurped the interests of fishermen; 5] management perceived as being too bureaucratic, affecting trust and leading to a breakdown of relations between fishermen and the Eastern-IFCA management organisation, therefore resulting in decision-making that is considered longwinded, burdensome, and opaque; and 6] the knowledge and expertise of fishermen, which had been built under the former management regime, being lost.

8.1.1. Research question 1 and interactive governance

Focusing on first-order practice (or on the ground), fishermen and IFCA Officers explained a disconnect between the meta-order policies made at the EU level, national level governance, and local level (first-order) implementation. The decision to legislate in favour of a system involving multiple stakeholders, including for conservation and the MSP, together under the Marine and Coastal Access Act (MCAA, 2009), poorly reflected the needs of fishermen. Fishermen reported that decisions were made at the meta-order level with little apparent consideration for the management of fishing on the ground. For inshore shellfisheries, management policies at meta-order level are ostensibly about mitigating against the adverse effects of overfishing while encouraging the sustainable production of fish for human consumption; however, conservation policies lean towards strictly protecting natural ecosystems. On the ground, for inshore shellfisheries, the relationship between both agendas is intertwined but explicitly affects the fishermen by reducing fishing opportunities.

Throughout Chapter 5, analysis of meta-order government policy documents, such as DEFRA's Marine Policy Statement (see, for example, Section 5.2.3), shows fishermen marginalised in decisions related to conservation and stock recovery. While there is very little research on the potential benefits of fishermen being involved in the designation of Marine Protected Areas (MPA), fishermen insist that with their local knowledge they can facilitate the success of MPA. Fishermen claimed that they were an asset when identifying the location of suitable MPA for bylaw protection and also provided scoping surveys for the position of wind turbines for the renewables sector.

In addition, as Garcia et al (2014) point out, integration of conservation and fisheries policy is limited by fundamental differences rooted within the two governance streams of conservation and food production. While they have been convergent over time, the fundamental differences in the goals of extractive industries and of conservationists, which may bring social and economic benefits locally and nationally, have been hindered. Through this investigation, it appears that the priority of conservationists is always protection of resource, while fishermen, for example, tend to

prioritise maximising yields. Resource management should bring benefits to both sectors if they employ relevant stakeholders and effectively communicate with a diverse range of stakeholders.

8.1.2. Research question 1 and environmental justice

Evident from the research findings, particularly Chapter 5, was that environmental decision-making processes effectively involve deploying EU and national policies to local geographies. Chapter 5 highlighted that fishermen perceived that value-laden or biased decisions shaped voting strategies within the Eastern-IFCA committee, with the Marine Management Organisation (MMO) also represented on the Eastern-IFCA. Fishermen became the minority, and the majority marginalised some fishing sectors in decision-making processes.

It is important to recognise that the involvement of fishermen (as stakeholders) can facilitate legitimacy, participation, and transparency in decision-making. Chapter 5 explained that while provisions for stakeholder management are detailed within policy documents, the findings suggest that the arrangements are ineffective. The nomadic sector were especially unaware that the Eastern-IFCA Committee meetings were public. It also meant that they relied on a local fisherman fairly representing their views when his opinions were often contested. This process exposed inequalities where local elites influenced decisions for their own gain (sometimes known as 'elite capture' see Iversen 2006, Cleaver 2012). The process also meant that the nomadic sector was prevented from participating in the local IFCA in any meaningful way. Also, over time the Eastern-IFCA reduced engagement with the Fishermen's Association, after disputes between them and some individuals involved in the fishing organisation, so there was little recourse for some marginalised fishermen to influence decisions (see, for example, Section 5.1.3 and 5.3). This practice of "status inequalities and political marginalisation" (Martin et al. 2016) led to nomadic fishermen being unfairly marginalised locally within the fisheries associations and Eastern-IFCA decision-making processes.

Section 5.2.3 shows that the process for stakeholder engagement was unclear. Transparent, accountable, and legitimate decision-making processes are important components of effective stakeholder engagement in natural resource management (NRM) and conservation (Burgess and Chilvers 2006). Trust building is also bound into the process (Prell 2006) and requires methods that are strong enough to withstand conflicting views and minimise the negative effects of potential trade-offs. Procedural legitimacy (Turner et al. 2016) can be gained if processes of interpretation and communication are designed in accordance with reality on the ground. Those processes can take a long time to establish, and in the short-term entail a trade-off between participation and effective decision-making.

There are potentially harmful consequences for those not adequately engaged with decision-making processes. Using stakeholder theory, Crona and Parker (2012) state that salient, credible,

and legitimate decision-making processes can improve social interactions, socio-political environments, and power relations between stakeholders. In doing so, they can bridge activities, such as the orders of governance. National interpretation processes should incorporate adequate strategies and methods to facilitate attendance and effective participation of all relevant stakeholders. This should include all actors who are not in the participatory process, such as those at the periphery of decision-making. The findings conclude that there was a disconnect between many fishermen on the ground and meta-order decision-making.

Stakeholder engagement introduces plurality in decision-making, but there were evident pitfalls in the process within first-order governance. As the management of the seas takes on more inclusive and plural governance structures, building greater participation into processes such as MSPs presents some risk – such as the 'participation paradox' whereby the greater the number of actors, the smaller the role each stakeholder plays, and the lesser the importance of each sector (De Santo 2010). The case study investigation shows that there are broader considerations of plurality in second-order governance arrangements. For example, in the second-order, MSP involve consultation with conservation quangos and marginal input from the Eastern-IFCA. MPA bylaws, however, require consultation with recreational users, conservation quangos, and environmental non-governmental organisations as well as other resource users.

8.2. How do fishermen perceive their right to fish?

In this answering this research question, the focus became the relationship between mechanisms or tools used in second-order governance and the effects (in the first-order) of implementing them on the ground. The findings showed that first, there was a lot of confusion among fishermen on the distinction between licence, permit, and entitlement, with some using the terms interchangeably. Ironically, the IFCA Officers also considered the distinctions confusing. The difficulty was largely due to the change from the EJSFC to the Eastern-IFCA, which meant that the purpose of the cockle entitlement was lost. Legally, the lack of clarity opened up opportunities to exploit resources unfairly, which disadvantaged many nomadic fishermen and also frustrated many independent fishermen. Second, the normative understanding of the term entitlement was perceived differently by different groups of fishermen. The misapprehension had additional consequences for the various fishing sectors. For example, the commercial sector identified cockle entitlements as their own property right, while the nomadic sector explained that cockle fishing is a livelihood, which presents a broader human rights issue.

8.2.1. Research question 2 and interactive governance

Since the introduction of the Marine and Coastal Access Act (DEFRA 2009), fisheries management policies have changed direction towards ecosystem-based fisheries management, with conservation of resource as a significant policy aim. Ecosystem-based fisheries management

leans heavily towards conservation rather than food production, and this has had implications for the management tools used by the Eastern-IFCA (Garcia et al. 2015).

The findings in Chapter 6 revealed the need for management tools to have flexibility and to be context-specific. For example, permits and bylaws are agreed in the second-order of governance, and should deliver long-term sustainability. The long-term viability of the cockle fishery in The Wash is vital for providing social and ecological benefits and livelihoods for Boston and Kings Lynn fishermen and long-term economic prosperity for businesses. However, the findings show that cockle permits were essentially a 'one-size-fits-all' tool, and this led to confusion on the definition of an entitlement. Attempts made to clarify 'permits' and 'entitlements' by the EJSFC opened up legal loopholes that some fishermen were able to circumvent (see, for example, Section 6.2.2). The 'band aid' solution (e.g. covering up the symptoms but doing nothing to mitigate the underlying problem) to fixing short-term management problems meant that there was on-going disagreement with local policies and the fishermen (Gonzalez 2018; Fulton et al. 2011).

Statutory instruments are designed to support inshore fisheries management policy, however, the perception of them was sometimes confused. In Chapter 6, the opinion of statutory instruments implied that they were not adapting quickly to a fast-paced environment. For example, with the diversity of views at play, historical entitlements were sometimes confused with the principle of relative stability in meta-order governance arrangements. Sometimes fishermen saw entitlements as a right to making a living (Allison et al. 2012). In this case, the Eastern-IFCA appeared to acknowledge the confusion but had not clarified it for some fishermen. Here, the role of second-order governance (e.g. the overlap between the Eastern-IFCA and MMO) became significant. For instance, the meaning of evidencing and presenting a track record was lost and became subjective in terms of how the Eastern-IFCA and MMO managed fisheries. Fishermen and IFCA Officers agreed that the mechanisms for management were no longer fit for purpose and were hopeful that reform would bring some beneficial changes.

IG revealed that although cockle permits and entitlements were a useful tool to reduce open-access, their positive effect on the abilities of local fishermen to access decision-making and resource space is somewhat less obvious. Despite the availability of shrimp fisheries during the winter months (when cockles are not fished), the nomadic fishermen experienced little in the way of improved access to cockles or other fishing opportunities. The seasonality of shrimp fishing, as well as not having access to cockle entitlements (or harvestable mussel beds), prevented nomadic fishermen from diversifying. For some fishermen limited opportunities to diversify were marked by unsustainable fishing practises, rising costs, and weak bargaining power (in the decision-making process) – and reduced opportunities to acquire cockle entitlements. There were fewer options for the nomadic sector and commercial-industrial operators to fish, with the latter citing concern over business continuity. Further, the risk attached to significant changes to The Wash

Fishery Order would have detrimental effects on business overheads, including for self-employed crew and staff. Therefore, in attempting to manage the over-exploitation of cockles, the permit system was hindering the sustainability of fishing as a livelihood.

Empirical findings in Chapters 5, 6, and 7 illustrated that fishermen on the ground were removed from national and EU level decisions. Contributions in Chapter 6 found that the effectiveness of implementing regulatory tools was largely down to the perceptions of them. Effective implementation of those instruments can contribute to bridging a gap between decision-makers at national level and those on the ground. Unfortunately, the incoherence of policies at local level meant that the Eastern-IFCA also found it difficult to implement the higher-level policy objectives and coordinate necessary buy-in (Gelcich and Donlon 2015) from local fishermen. It also meant that most communication with Eastern-IFCA Officers was met with disdain from fishermen. Effective communication generated trust and buy-in from stakeholder participants; progressive policy implementation is widely discussed by other researchers (McClanahan et al. 2005a, Gelich et al. 2009, Levi et al. 2009, Pita et al. 2010, Leleu 2012, Turner et al. 2012, Gustavsson et al. 2014, Jones 2016).

8.2.2. Research question 2 and environmental justice

In Chapter 6, perceptions of the right to cockle fish were considered. There were evident challenges to regulating access to resources that are both renewable and depletable through the permit system. The perception of this right affected the ability of fishermen to improve and meet livelihood needs. A principal assertion was that the diverse range of views presented by fishermen on the meaning of licences, permits, and entitlements highlighted a number of complexities. Therefore, to understand environmental justice (EJ) in terms of the "ability to access to common pool resources" (Myers and Hansen 2018) was also difficult.

Imbalanced recognition of the diverse range of views meant marginalising some fishing sectors. For example, Chapters 1 and 4 explored the meta-order governance that underpinned the 'consensus' style of management used by the MMO and Eastern-IFCA. Majority rule, as stated earlier, marginalised fishermen with the allocation of votes in two ways: first, the commercial-industrial fishermen were regularly outvoted and, second, the allocation of the votes in the first place appeared to be set against the method preferred by the commercial-industrial fishermen. In order to mitigate against the effect of management decisions, the commercial-industrial sector outsourced cockle entitlements to the Thames fishermen. Eastern-IFCA inshore fisheries management meant that the allocation of entitlements created local level conflicts over whether they should be retained locally or loaned to other fishermen outside of The Wash.

Although not closely explored, the impact of sustainable livelihoods permeated the findings of Chapter 6. Licensing restrictions that the Eastern-IFCA imposed included legal loopholes creating

an informal market for cockle entitlements. Some fishermen could not afford to invest the time and money necessary to obtain the required permissions, which resulted in some of them operating an informal market, trading a percentage share of their fishing vessels or quota for an entitlement. Similar issues were also found by Barnett et al. (2017, 2018) in the management of the Nova Scotia lobster fishery. For others, loopholes involved a team of barristers unpicking regulation to enable Thames fishermen to fish for cockles in The Wash. Neither group wanted to act illegally, but because they lacked the ability to work legally (and for some, the need to make money), they felt their needs outweighed the need to report the practice to the Eastern-IFCA.

The findings from Chapter 6 (linked to Chapter 5) support the view that governance is failing to support small-scale fisheries (SSF) in terms of giving them equal rights to cockle permits. The IFCA goals mentioned in Chapter 4 and the trade-offs that fishermen face in Chapter 5 show that serious consideration is needed in inshore fisheries governance to address social objectives. Inshore fisheries in the UK host aquaculture, shellfish, and finfish for both small-scale and industrial-scale operators. The Wash fishermen's range of views exposed the justice issues explicitly linked to the heterogeneity of the inshore sector. These stakeholders hold disparate views on many marine matters; this is to be expected, as found in small-scale and indigenous fisheries around the world (Chuenpagdee et al 2005, Bavinck et al. 2013). The UK inshore shellfisheries experience shows a delineation between the commercial and inshore fisheries priorities and the failure to meet social objectives. However, meeting social objectives is not simple, and there is no mandate within the management structure to achieve social goals – unless they can be quantified in economic terms by the regulatory impacts assessments (RIA) for policy. A recent search has shown that the need to capture social objectives in the RIA is still on-going (HM Government 2013).

8.3. How are fishermen being constrained by other marine activities and what are the implications?

Chapter 7 found that fishing practices in the first-order were restricted by policies emanating from second-order and meta-order governance arrangements. Spatial techniques and interviews were used to understand the extent of spatial access concerns. While the spatial maps failed to spatially illustrate the constraints, the interviews captured the perceived nature and extent of those constraints.

8.3.1. Research question 3 and interactive governance

Within second-order governance, there is a lack of clarity in data collection protocols. The findings illustrate that the process involved in collecting fishing vessel sightings data had not changed under the MCAA nor had they appeared to meet a particular policy requirement. One

dataset monitors whether cockles stock biomass levels remain sustainable for a viable fishery, while another dataset logs vessel sightings within the Eastern-IFCA district. These datasets have consequences for first-order practices, where fishermen report they were being closely monitored and that the data is used to reinforce enforcement action.

Over time, resource governance policies appeared to serve political goals rather than equal access. European (or 'first order'), policies on European Marine Sites (EMS) and the Marine Strategy Framework Directive (MSFD) were too generic to be implemented by Member States. In the UK, the EMS and MSFD were loosely codified by the MCAA to include Marine Conservation Zones and MSP. At ground level meta order, fishermen were restricted both spatially and sometimes by fishing effort limiting bylaws. In addition, local MPA bylaws, tenure of shellfisheries, and fishermen migrating from the Thames further restricted fishing activity in certain areas of The Wash. Policies from meta-order and second-order governance spatially marginalised fishermen local to The Wash. Over time, it appears that policies served political goals rather than addressing issues such as equal access in spatial terms, and this has marginalised many fishermen.

Although not central to the findings of Chapter 7, the increased use of spatial techniques in marine research is encouraging. However, it should be noted that the meta and second-order policies use of Geographic Information Systems do not always capture the true nature of constraining effects. Within The Wash, the lack of data collection protocols meant that the dataset was ad hoc rather than routinely collected. Therefore, there were difficulties in drawing any conclusions from the dataset provided by the Eastern-IFCA. However, although imperfect for this investigation, the use of spatial techniques with interviews is a novel alternative to understand fishermen's views on spatial constraints and could be developed to provide meaningful data.

8.3.2. Research question 3 and environmental justice

While I had expected to see distributive justice as a visual demonstration of spatial marginalisation, this was not the case. Spatial policy and fishing effort limitations, as well as natural causes, were preventing fishermen from accessing cockle beds. Although little can be achieved, in terms of managing the natural conditions for cockle stocks, there was a lack of recognition of the impacts upon fishermen. During the spring/summer months, fishermen without leased mussel beds or without larger mechanised fishing vessels that could explore fisheries farther offshore were unable to fish. However, during periods of instability, the Eastern-IFCA did little in terms of mitigation and due diligence. Fishermen require adaptive and flexible fisheries management policies to cost-effectively practice fishing throughout the year.

Translating policies into positive fisheries management is complex and challenging. An important finding in Chapter 7 was that results from meta-order decisions showed that the initial allocation of fishing opportunities within The Wash spatially and procedurally marginalised fishermen in

decisions affecting The Wash. For example, the location of wind farm turbines was chosen with ineffective consultation with fishermen. The consultation caused widespread distributional problems, resulting in conflict over space between fishermen or over the allocation compensation from the renewable energy sector. Likewise, MPAs were also designated using fishermen's knowledge, but rather than including their knowledge to sustainably fish within or around the MPA, the Eastern-IFCA restricted all fishing access within MPAs. Graham et al. (2006) and Bennett et al (2017) state that to achieve positive action from stakeholders, appropriate relationships must be cultivated. This is by establishing a common understanding from policy makers and resource users so that they can find a way through the complex process of fisheries management.

Evident in this case study was the challenge of implementing complex spatial policies while supporting fishing. Spatial marginalisation can occur through unsuccessfully planning and implementing conservation and spatial policies. Research by Arias et al. (2015) explains that MPA regulation has more chance of success if and when stakeholders understand the purpose of the designation. In addition, Reilly et al. (2015) explain that co-existence between conflicting demands requires a better understanding of fishermen's attitudes towards the proposed development. Therefore, understanding the rationale for designation or planned wind farms can help identify limiting factors, which would help to facilitate compliance and success of the designation or development.

As present, throughout Chapters 5, 6, and 7, universal policies are shown to be counterproductive in local settings. The main hurdle lies in the practical implementation of meta-order policies. To overcome some of the challenges and to understand sustainable fisheries management, several points need to be considered: 1] fishermen have rarely engaged in decision-making; 2] private-public tenure and rights-based management of shellfisheries requires clarity; 3] cultural aspects of fishing need defining; and 4] the role fishermen play in MSP and fisheries needs to be better elaborated. Within the context of The Wash, political marginalisation of fishermen at meta-order governance and second-order regulatory implementation is sure to continue without recognition of such complexities.

8.4. Theoretical contributions and reflections

8.4.1. Interactive governance and marine (or blue) environmental justice

The distinctive conceptual or theoretical contributions identified in this research are: 1] orders of governance strongly influence experiences and perceptions of justice; 2] experiences of justice are not limited to distributive and procedural justice. One of the main strengths of combining both the environmental justice and interactive governance frameworks is that together they empirically

highlight interactions that lead to injustices related specifically to distributive, procedural, recognition as justice and capabilities as environmental justice (EJ) concepts. The IG lens supports the claim that decisions made at meta and second-order (central government and delivery agencies) can result in experiences of (in)justice on the ground at first-order level. Using a context-specific case-study approach, the IG lens highlights practical implications of unequal inshore fisheries resource governance policies.

- The order of governance strongly influences experiences of justice

The existing literature into IG and EJ is fragmented and studied in a small way in the Global North in Norway and Canada by investigating the challenges of governing nomadic fisheries. Likewise, research on EJ in the Global North has focussed mainly on developing theoretical understanding rather than empirically exploring the elements of justice conceptualised by Walker (2012). For example, in Denmark, broad discussions on justice and SSF is highlighted relate to access to fishing grounds (Host 2015). Similarly, in Spain regarding access to Marine Protected Areas (Pasquel-Fernandes and De La Cruz Modina 2011). Both case studies strongly link to Rawls' conceptualisation of distributive justice. Additionally, the latter two studies focus on the 'modes of governance' particularly injustices resulting from collaborative forms of resource governance (Carlsson and Berkes 2005, Armitage 2009, Berkes 2009, Plummer et al. 2012, Fukuyama 2013 Mkulama 2018). Other articles support an in-depth understanding of fishermen marginalisation resulting from MSPs (Gezelius 2002, Said 2017). These studies provide a strong basis for examining the influences of government on EJ. The contribution of this thesis combines these and other justice studies and positions them under Walker's EJ framework by empirically investigating procedural, distributive, recognition and capabilities. The thesis then draws from the IG framework and connects across to the 'orders of governance' to understand how governance can influence experiences of justice.

The findings of The Wash case study suggest that experiences of justice are largely 'felt' in the first order of governance or 'on the ground'. These experiences are as Schlosberg (2013) describes, the 'lived experience' of the reality of environmental justice. This thesis suggests that collaborative forms of governance shape the 'lived experience' of justice. Along with corroborating with Schlosberg's broad work on recognition, this research highlights the pitfalls of collaborative forms of fisheries governance cited by Jones (2016), Smith (2018) and Gustavsson et al (2014) as tokenistic or failing to meet expectations of good governance. The Wash case study reveals that a consequence of collaborative decision-making resulting from EU MSPs and MSFD has been strong conservation influence and lobbying. Marginalised resource user groups such as inshore fishermen will always be the "underdogs" having the odds stacked against them in terms of demarcation, access and distribution of resources (Jentoft 2017).

This study strongly suggests that elements[15] of governance, instruments used by fisheries managers to manage fisheries (or second order of governance), cause experiences of justice felt on the ground. This thesis empirically examines these instruments (for example, Orders and bylaws) and the source data used to shape these policy instruments. The use of spatial monitoring data is growing in popularity to support resource governance decisions. Spatial data collected by officers in The Wash in a small way reflected resource distribution and fishermen habits. However, the data reinforced enforcement action taken against fishermen This research suggests 1] a disconnect between source data used for decision-making purposes and resource management. 2] existing inshore fisheries spatial monitoring data presents a snapshot in time, so any informative decision-making regarding access and distribution of resources is doubtful, leading to additional tensions.

Centralised governance structures (meta-order governance) overlook effective fisheries governance balancing both fisheries and conservation (Malin 2008, Cardwell 2012). The findings in this thesis support the assertion made by Phillipson (2005) that fisheries decision making is top-down. Additionally, this thesis reveals that participatory fisheries governance is not only top-down but is widening. How and why resource governance decisions are made has blurred the interplay between the politics and governance of resources. Although not the focus of this research. The Wash case study revealed that the influence of politics was instrumental in fisheries and often usurped transparent governance processes. The consequence of which often resulted in disenfranchisement and marginalisation among fishermen on the ground.

Both Phillipson (2005) and Bavinck et al. (2005) detail the influence of central government on inshore or small scale fisheries. This thesis empirically links Phillipson and Bavinck's school of thought to the perception of right to fish. This investigation suggests perceived fishing rights were a political bargaining chip tied into TACs at EU level (meta-), and majority of finfish quotas at national level (second-) and quotas for shellfish and finfish at local level (first-). This thesis shows influences of meta-order governance can contribute to the breakdown of trust, communication and relations between managers and fishermen on the ground. Inshore fisheries in the UK vary across districts and managers administer policies accordingly (Symes et al. 2020). This regional variation coupled with institutional or regulatory tradition of a top-down governance adds another layer of complexity to inshore fisheries governance.

Some attempts have been made by Anbleyth-Evans 2018 and others to situate environmental justice in broad discussions of inshore fisheries governance (see, for example, Coulthard 2012, Urquhart et al. 2014). Overall however, by using a case study and social science approach and guidance from Symes and Phillipson (see for example works by these authors 2001, 2002, 2005,

[15] Elements of governance are defined as the tools used by fisheries managers.

and 2020), as well as Kooiman, Bavinck, Chuenpagdee and Pullin (see for example general works by these authors), this thesis claims marine EJ in the global north remains under investigated. However, a strong approach examining marine EJ can be created by merging the EJ and IG frameworks.

- ### Experiences of EJ are not limited to distributive and procedural justice

> "*Lack of recognition does not imply injustice, but perhaps injustice implies lack of recognition. To begin with, it seems that anyone who suffers injustice also experiences disrespect or lack of proper recognition. If injustice and lack of positive, proper recognition always accompany each other, it is important for purposes of remedial action to know which (if either) of these dyadic terms is explanatorily primary*." *(Ingram 2018:74)*

Research on EJ and its application to EU conservation policy in the global north has largely focused on procedural and distributive justice (Paavola 2004). Gustavsson (2014) applies Paavola's understanding of procedural and distributive justice to fisheries in the global south. However, my research points to recognition as justice and capabilities as equally deserving of theoretical praise. Figure 8.1 highlights capabilities and recognition in blue as two dimensions of environmental justice on an equal footing with procedural and distributive justice.

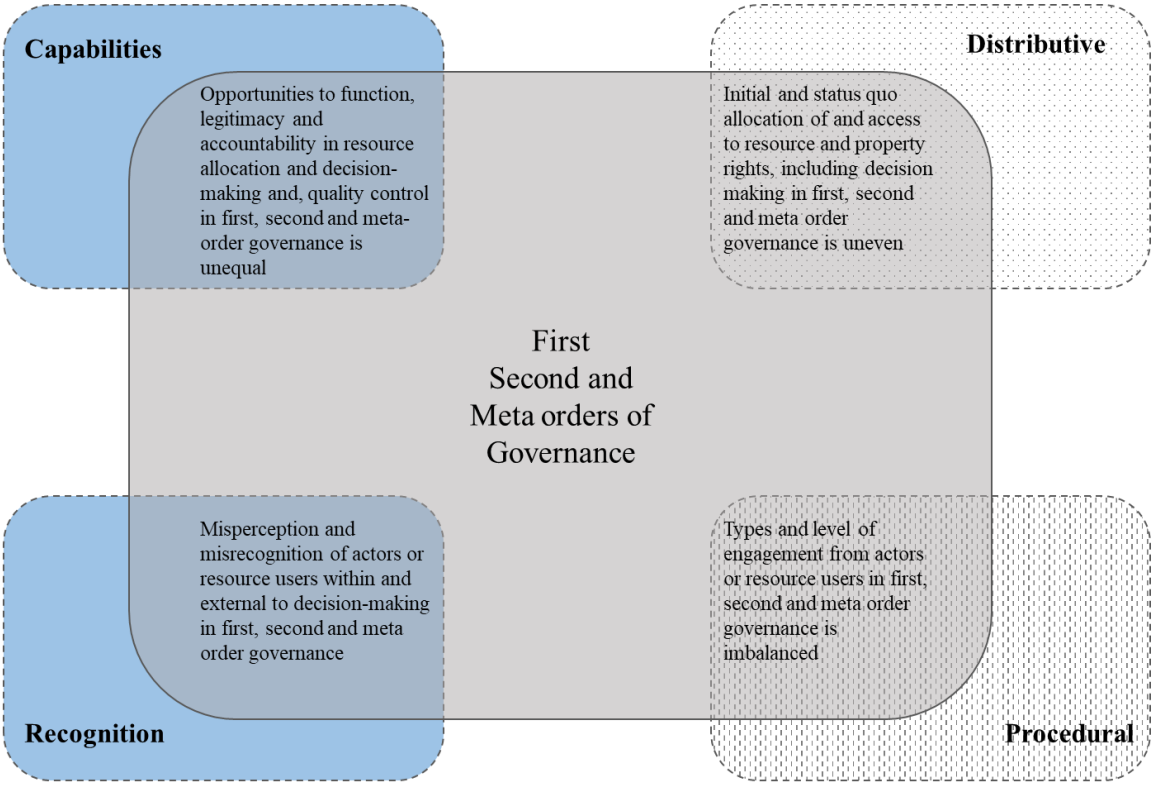


Figure 8.1: Merging the interactive governance and environmental justice frameworks. Recognition and capabilities are equal to procedural and distributive justice when considering natural resource governance.

When linking EJ to the IG framework, this research reveals that capabilities and justice as recognition are equally parallel to traditional conceptions of justice as proposed by Rawls. Throughout the thesis, the justice elements combined (as described in Figures 8.1) effectively explained justice issues related to mismanagement and poor governance. A simple example related to the allocation of votes to cockle fish highlighted misallocation of votes at Eastern-IFCA Committee meetings (procedural and distributive justice), misallocation of cockle entitlements (distributive justice), inadequate mechanisms to access fair and representative decision-making (capabilities and recognition as justice), and in access to inshore fisheries (distributive justice).

Despite the strength of combining the four elements of EJ, the connections between ‘access to natural resources’ and ‘capabilities as justice’ require further empirical unpacking. The gap between theoretical and empirical understanding of “access” and capabilities has been debated extensively in terms of ‘having the ability and right to benefit from things and for individuals and groups to choose the life they value’ (Ribot and Peluso 2003, Sen 2005, Nussbaum 1997 2005). Like other scholars (McCall 2004, Robeyns and Brighouse 2010, Ginger et al. 2012, Ballet et al. 2013, Myers and Hansen 2019), this research builds on existing works to deepen understanding of

‘capabilities as justice’ and access to natural resources. Unlike previous works the link between capabilities as justice and inshore fisheries is strong when examined empirically within a case study setting. The framing of the capabilities as justice in the context of The Wash (i.e. the first-order of governance) is enshrined in power dynamics on the ground and being able to benefit from cockle fishing.

Recognition is not a resource that can simply be distributed, but arises from the interaction of people who recognise each other – or between institutions and people – and thus give each other experiences that are valuable to them (Honneth 2002). Recognition as justice in this research is displayed in terms of fishermen having the right to earn a living and having a role in collaborative inshore fisheries management. The trade-offs between conservation and inshore fisheries management meant that fishermen’s intrinsic right to benefit from resources and earn a living were misunderstood or ‘misrecognised’. Honneth’s framing explains that experiences of recognition are varied, diverse and, culturally and socially, constructed. While in small-scale fisheries research in the global south. recognition as justice (and EJ more broadly) is relatively easy to evaluate (i.e. what they lack– which makes their condition intuitively unjust) (Schweiger 2019) – this is more difficult to apply to inshore fisheries in the global north.

Justifying recognition of nature is one thing and managing it in a participatory context is another Schlosberg (2004). Participatory processes in collaborative forms of fisheries governance are criticised for revealing power imbalances (see for example, Dobson 1998, Schlosberg 2004, Honneth 2004) and everyday cultural practices shaping laws and policies (as understood by Martin 2013, Lukasiewicz et al. 2013, Coolsaet 2016, Martin et al 2017, Bustos et al. 2017). This thesis examined the exclusion of fishermen (as individuals and associations) in participatory processes. Sometimes participation manifested in processes of elite capture leading to ‘non-recognition’, ‘misrecognition’, or ‘mal-recognition’ (Fraser 1995:71) thus marginalising some fishermen or ineffectively engaging with others. These findings tie into works by McClanahan et al. (2005a, 2005b), Pita et al. (2010), Leleu (2012), and Turner (2012) claiming that plurality in decision-making undermines trust, confidence, and legitimacy as measures of meaningful participation (Azmi 2020).

Widespread consideration of resource depletion requires new thinking in terms of achieving fair and just resource governance for future generations. This study shows that while there are some UK and EU examples of progressive steps to include a broad base of stakeholders, the reach of stakeholder participation needs to extend further to capture the diverse nature of opinions and views of those affected. The use of IG and EJ combined can contribute to the formation of a stronger and fairer governance process.

8.5. Implications, limitations and further work

8.5.1. Implications for policy

An important aim of this study was to address the widespread lack of research on environmental justice in the context of fisheries governance, particularly inshore fisheries governance. Another was to emphasise that at the epicentre of legitimate decision making are social interactions and that these interactions have consequences for inshore fisheries governance and in addressing SDGs 14 on life below water and to SDG 16 on peace. Justice and strong institutions address some of the issues raised for inshore fisheries in the global north. Additionally, and importantly, this research further characterises the heterogeneity of inshore fisheries in the UK and this is a factor in legitimate and just decision-making. I have done this by observing the practicalities of inshore fisheries governance.

Accordingly, the first major implication is that the implementation of the MCAA 2009 and collaborative MSPs has meant that inshore fisheries are being traded off against conservation objectives and broader commercial interests. Going forward and in the context of EU Exit, the findings will allow policy makers to consider redesigning policies accordingly. Further, the redesign may consider establishing an evaluation framework designed to assess environmental justice within a localised fisheries setting.

A second important implication is that evaluating policy cycles should include an iterative process to consider all voices within policy formation (Better Regulations -DEFRA website, accessed August 2018). The role for this type of analysis and feedback is limited in practice at present, but could be a valuable tool not only for inshore fisheries, but also for all NRM concerns. Therefore, in the developmental phase of the policy cycle, fishermen's input could be introduced in developing regulations on the ground. The demand for natural resources could mean greater plurality in decision-making, thus fulfilling the social aspects of fisheries governance, which are becoming far more pertinent now. So far, the time taken to develop policies on social issues concerning natural resource policies is still developing (HM Government 2013):

> "Social aspects: Impacts of any policy which affect the generation of social benefits are important in sustainable development. Further consideration will be given to social aspects and how to incorporate these into the Sustainable Development Specific Impact Test." (HM Government 2013)

A progressive step would be to assemble social scientists and natural resource users to convene and create a set of indicators that can be incorporated within government protocols, and within the context of RIAs as soon as possible (HM Government 2013).

8.5.2. Limitations

There are three main limitations to this research. First, without observing meta-order decision-making processes this research has made assumptions that experiences of justice at first-order stem from decisions made at Defra and/or the EU (or meta-order governance). Torfing (2012) states that accessing meta-order governance decision-making processes and interactions is complicated for researchers. Second, the theoretical basis used to understand EJ as a result of social interactions on the ground still requires further development in the context of the global north. The scope of researching the heterogeneity of inshore fisheries is broad and each IFCA operate differently to manage their districts. Where the challenges of EJ faced by The Wash inshore fishermen depended on their individual circumstances at that particular moment in time, the same difficulties may be experienced differently in other inshore or SSF in the EU (see, for example, Symes and Phillipson 2013). A lack of research material on inshore fisheries means difficulties exist in capturing the complex, diverse, and dynamic nature of inshore fisheries in the EU. Thirdly, while there has been progress made to understand changes that affect SSF in the global south and indigenous fisheries of the global north, the framework in Figure 8.1 would benefit from being applied again to other case study scenarios investigating changing governance structures and subsequent effects on NRG. With the rise of populist governments globally, there is the expectation that changes to NRM would be felt across the globe. Therefore, understanding the effect of changing governance arrangements on NRM would expand research into EJ.

8.5.3. Further work

Combining two conceptual models shows strong two-way interactions between governance and experience of justice. My research touched upon these issues and highlighted that significant progress needs to be made to ensure the intricacies of those interactions are well understood. Bavinck et al. (2013) have made considerable progress in pursuing interactive governance and a 'governability' perspective that they claim resolves key fisheries problems. However, my research confirms that fisheries are complex, diverse and dynamic, particularly in light of the current political situation observed in the UK. Still, irrespective of the politics of fisheries, important questions related to the influences of meta-order governance on fisheries governance remain unresolved. When progress is made to unpacking influences stemming from meta-order governance, and power relations, then solutions to key fisheries problems can be unlocked. Therefore, although progress on linking 'governability' and meta-order governance is continuing, further work resulting from my findings would be to continue progressing research on interactive governance and justice.

There is no doubt that research in this area is growing to address scarcity of both land-based and marine-based resources. For most in the global north conflict over natural resources is not part of everyday life. In contrast, for many in the south access to resources cannot be taken for granted.

Access theory remains widely used among scholars on resource management yet conceptually it is not yet fully understood. The thesis progresses and adds to the Ribot and Peluso (2003) collection of mechanisms to understand access: force, moral economy, social movements, innovation, physical factors, psycho-social factors and in addition implication for access at different scales of governance. This thesis also emphasises a "grey zone" between access and property rights that require further unpacking. In this context further research would benefit from additional work to empirically investigate the interconnection between access and property rights.

On a practical level, The Wash as a single case study presents rich and insightful information on the interactions between justice and governance. There is no doubt that expanding upon and replicating this research within UK and other global north settings would ensure a greater understanding of the norms, values, and principles that govern fisheries.

8.6. Conclusion

The United Nations (UN) has set global SDGs and aims to achieve a better and more sustainable future for all (UN SDGs 2019). SDG 14 aims to "conserve and sustainably use the oceans, seas and marine resources for sustainable development". Specifically, SDG 14b aims to provide access for small-scale nomadic fishermen to marine resources and markets. The EU and the UK government have responded to these goals by enacting legislation that was in turn passed down to agencies to deliver. During my investigation, the MMO was the body that administered marine planning for renewable energy and has responsibility for the overarching governance of inshore fisheries, that include cockle fishing in The Wash. At the local level, the Eastern-IFCA is the relevant authority. In conducting this investigation, I attended Eastern-IFCA meetings, met fishermen, and gathered other relevant data. I used distributive, procedural, justice as recognition and capabilities to consider justice and IG theory to highlight the operation of the Eastern-IFCA and stakeholders, focusing on the impacts on fishermen.

Sustainable development balances the need for society to conserve natural resources and the need to exploit them. In the Marine and Coastal Access Act (2009) the UK Government enshrined this balance for UK fisheries in law. This led to a change in local fisheries governance, and the Eastern-IFCA replaced the EJSFC. As a result, the Eastern-IFCA included a wider range of stakeholders in its decision-making processes. This change was considered significant by the fishermen who felt that they lost considerable influence over The Wash fisheries governance as a result.

Through the data collection process, I found fishermen expressed concern at the loss of this influence, which was recorded as the uneven distribution of cockle permits among the fishing community's different sectors. A lack of procedural representation at the Eastern-IFCA and

beyond was apparent to certain sectors of the fishing community. Eastern-IFCA policies did not accurately reflect the diversity of views of fishermen, and fishermen felt that local fishing knowledge was not well regarded by the authority. Some fishermen experienced spatial marginalisation as their capacity to access resource spaces and decisions were not considered. All of these issues revealed that the Eastern-IFCA was not functioning justly in the eyes of fishermen. In short, the fishermen felt the balance of power had shifted too far from fishing to conservation, at their expense. This led in some cases to fishermen leaving the industry, having a negative effect on their livelihoods. It also resulted in ineffective governance, as fishermen put their efforts into circumventing, by legal and illegal means, the local bylaws. This neither helped the goal of conservation nor use of the resource.

In light of observing first-order interactions, it is clear that the two levels of IG (second and first-order) are disconnected as a result of meta-order policies. Closing the gap between the orders of governance through further research and IG processes could improve justice, and therefore the effectiveness of governance in The Wash cockle fishery.

Almost all NRM requires a balance between conservation and exploitation to become more sustainable, both environmentally and socially. In recent years, there have been many conflicts and debates around the world regarding delivery of this balance. The research is a testament to the determination showed by my case study participants to adapt to what appears to be strong top-down pressures. The lessons learnt in my thesis about justice and governance of The Wash cockle fisheries are equally applicable to these and other similar global challenges.

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Appendices

Appendix 1: Participant Consent Form.

Dear participant,

RESEARCH ABOUT ENVIRONMENTAL JUSTICE AND GOVERNANCE OF THE WASH COCKLE FISHERY

I would be grateful for some of your time, approximately and hour and a half, to assist me with my research into an analysis of environmental justice in the governance of cockle fisheries in The Wash.

Under the Marine and Coastal Access Act, the Inshore Fisheries Conservation Authority (IFCA) is obliged to develop modern and functional ways to manage societal and conservation objectives of coastal waters to include integrating: local focus, local knowledge, serve local fishing communities, and, involve stakeholders in the management of regional waters in a fair and balanced way. My intention for this project is to investigate how, fairly balancing different objectives, is working in practice.

This research is being carried out at the University of East Anglia (UEA) as part of a Research Council funded PhD project which is looking into understanding the challenges of fair governance in the EIFCA district. The focus is specifically on The Wash fisheries region, to include, the home ports of Boston and Kings Lynn.

The interview has 3 components:

1. The first section is aimed to seek your thoughts on the governance structure, international and local conservation targets and shellfisheries management, and, how marine space and shellfish stock is distributed and/or accessed by resource users.

2. The second section is to gauge opinions on the procedures in place for stakeholders to engage with the decision making process and to how representative current arrangements are.

3. The third section is to understand individual and group recognition within the decision making process. Specifically, the treatment of individuals within the decision making process.

Your answers and comments will be treated confidentially and made anonymous and a code designated to the interviewee.

The data will be kept securely and only for as long as is necessary for the purposes of this research. After that it will be destroyed.

If you would like to be updated on the project outputs please provide your contact details below.

[……
…]

Thank you for participating so far, are you happy to proceed with the interview on this basis?

…….……..[Interview starts]……..…….…….…….

Thank you very much for taking the time to complete this interview. Your input is valued and very much appreciated!

Appendix 2. General Research Ethics Committee Clearance.

University of East Anglia

Research and Enterprise Services
East Office (Arts Building)

University of East Anglia
Norwich Research Park
Norwich NR4 7TJ
United Kingdom

Tel: +44 (0) 1603 591574
Email:grec@uea.ac.uk
https://portal.uea.ac.uk/ren/research-integrity

Gurpreet Padda
School of Environmental Studies
UEA

Thursday 31 August 2017

Dear Gurpreet,

Our reference: GREC 16-777

I am writing to you on behalf of the University of East Anglia's General Research Ethics Committee, in response to your request for ethical approval for your project 'An analysis of environmental justice in the governance of the inshore mollusc shellfishery in The Wash.'.

Having considered the information that you have provided in your correspondence I am pleased to confirm that your project has been approved on behalf of the Committee.

You should let us know if there are any significant changes to the proposal which raise any further ethical issues.

Please let us have a brief final report to confirm the research has been completed.

Yours sincerely

pp. Polly Harrison, Secretary
General Research Ethics Committee

Appendix 3. The Wash Fishery Order (1992).

STATUTORY INSTRUMENTS

1992 No. 3038

SEA FISHERIES

SHELLFISH

The Wash Fishery Order 1992

Made - - - -	*30th November 1992*
Laid before Parliament	*11th December 1992*
Coming into force -	*4th January 1993*

Whereas an application for an Order under section 1 of the Sea Fisheries (Shellfish) Act 1967**(a)** was made to the Minister of Agriculture, Fisheries and Food by the local fisheries committee for the Eastern Sea Fisheries District;

And whereas the said Minister prepared a draft Order and served a copy of it on the said committee in accordance with paragraph 1 of Schedule 1 to the said Act;

And whereas the said committee caused printed copies of the draft Order to be published and circulated, and gave notice of the application, in accordance with paragraph 2 of the said schedule;

And whereas the only objection that was made to the said Minister under paragraph 3 of the said schedule was subsequently withdrawn;

Now, therefore, the said Minister, in exercise of the powers conferred on him by the said section 1 and of all other powers enabling him in that behalf, and with the consents of the Crown Estate Commissioners and the Chancellor of the Duchy of Lancaster, hereby makes the following Order:

Title, commencement and interpretation

1.—(1) This Order may be cited as the Wash Fishery Order 1992 and shall come into force on 4th January 1993.

(2) In this Order–

"the Committee" means the local fisheries committee for the Eastern Sea Fisheries District established under section 1(1) of the Sea Fisheries Regulation Act 1966**(b)**;

"the definitive map" means the map sealed in duplicate by the Minister and marked "Map referred to in the Wash Fishery Order 1992" one copy of which is in the possession of the Committee and the other copy of which is in the possession of the Minister;

"the fishery" means that part of the Wash in the Counties of Norfolk and

(a) 1967 c.83; section 1 was amended by section 15(2) of the Sea Fisheries Act 1968 (c.77) and paragraph 15 of Schedule 2 to the Fishery Limits Act 1976 (c.86) and is to be read with section 15(3) to (5) of the Sea Fisheries Act 1968 and S.I. 1987/218; Schedule 1 was amended by section 15(7) of the Sea Fisheries Act 1968; section 22(1) contains a definition of "the Minister".

(b) 1966 c.38; section (1) was amended by section 272 of, and Schedule 30 to, the Local Government Act 1972 (c.70) and by section 16 of, and paragraph 19 of Schedule 8 to, the Local Government Act 1985 (c.51).

Lincolnshire which lies below the line of mean high water and is shown coloured pink on the definitive map;

"the prescribed species" are oysters, mussels, cockles, clams, scallops and queens;

"the regulated fishery" means all parts of the fishery that are not for the time being specified under article 3(1) of this Order;

"the several fishery" means such parts of the fishery as are for the time being specified under article 3(1) of this Order;

"vermin" means an organism injurious to any of the prescribed species.

The Committee

2. The Committee shall continue in being as a body corporate for the purposes of this Order.

Right of several fishery

3.—(1) There is hereby conferred on the Committee for a period of 30 years the right of several fishery for the prescribed species with respect to such parts of the fishery as the Committee shall from time to time, with the consent of the Minister, determine.

(2) The right of several fishery hereby conferred shall not be exercised by the Committee in its corporate capacity.

Right of regulating a fishery

4. There is hereby conferred on the Committee for a period of 30 years the right**(a)** of regulating a fishery for the prescribed species with respect to the regulated fishery.

Taking of samples for the purpose of disease control

5. The Committee shall permit any person authorised in that behalf by the Minister to do the following things for any purpose connected with preventing the spread of disease–

(a) at any reasonable time to obtain samples of any of the prescribed species found within the fishery and to take them away provided that they have been marked, labelled or otherwise made capable of identification;

(b) when the purpose for which any such sample was taken has been satisfied, to dispose of it as he may determine.

Power to grant leases

6.—(1) The Committee may lease to any person the right of several fishery for any of the prescribed species within such part of the several fishery (hereinafter referred to as a "laying") as it may think fit and upon such terms and for such period as may be agreed with that person and the following provisions of this article shall apply in relation to such leasing.

(2) Without the written consent of the Minister the Committee shall not grant to any person a lease of the right of several fishery if–

(a) the total area in respect of which that person would be entitled to that right would exceed 10 hectares; or

(b) the period in respect of which that person would be so entitled in respect of any area would end more than ten years after he first became so entitled in respect of that area.

(3) Any lease shall forbid the making of an assignment thereof or the grant of, or assignment of, a sub-lease without the consent of the Committee and the Committee shall not unreasonably withhold such consent.

(4) The Committee shall not without the written consent of the Minister give its

(a) This is to be read in the light of the duties conferred on local fisheries committees by the Sea Fisheries (Wildlife Conservation) Act 1992 (c.36.)

consent for the purposes of paragraph (3) above if it appears to the Committee that in consequence of the assignment or sub-lease–

(a) the total area in respect of which the assignee or sub-lessee would be entitled to the right of several fishery would exceed 10 hectares; or

(b) the period in respect of which that person would be so entitled in respect of any area would end more than ten years after he first became so entitled in respect of that area.

(5) In determining whether a person is entitled to a right of several fishery for the purposes of paragraphs (2) and (4) above–

(a) references to a person's being so entitled include references to his being–

(i) entitled by virtue of the assignment of a lease or the grant or assignment of a sub-lease, or

(ii) beneficially entitled under the terms of one or more trusts; and

(b) the following shall be treated as one person–

(i) any two or more persons carrying on a business of shellfish cultivation in partnership;

(ii) the person having control of any company and all the companies controlled by that person;

(iii) spouses;

(iv) parents and children.

(6) Any lease shall prohibit the lessee or his assignee or sub-lessee from entering into any agreement with any other person having an interest in any part of the fishery for the common management of their respective businesses or the common exploitation of their respective layings without the consent of the Committee and the Committee shall not unreasonably withhold such consent.

(7) The Committee shall not without the written consent of the Minister give its consent for the purposes of paragraph (6) above if it appears to the Committee that in consequence of the agreement–

(a) the total area of layings under the common management or exploitation of the parties to the agreement would exceed 10 hectares; or

(b) the period in respect of which any party to the agreement would be concerned in the management or exploitation of any laying would end more than ten years after he first became entitled to the right of several fishery in any part of the area subject to the agreement.

(8) Any lease shall require the lessee to permit any person authorised in that behalf by the Minister to do the things mentioned in article 5 of this Order for a purpose of the kind mentioned in that article.

(9) Any lease shall provide that it may be determined by the Committee in the event that the lessee, or his assignee or sub-lessee, is in breach of any provision of the lease inserted therein pursuant to the requirements of this article and the Committee shall take all reasonable steps to monitor compliance with such provisions.

(10) The Committee shall mark or cause to be marked, on ground which at the time of marking is not set with any of the prescribed species or the brood thereof, all layings in the several fishery in such manner as the Minister may from time to time approve.

(11) The marks defining the limits of each laying in the several fishery shall be maintained in position and in good repair by the Committee or, if so stipulated in the lease, by the lessee.

Power to impose restrictions and make regulations

7.—(1) The Committee may, with the consent of the Minister, from time to time impose restrictions on, and make regulations respecting, the dredging, fishing for and taking of any of the prescribed species within the whole or any specified part of the regulated fishery.

(2) Without prejudice to the generality of paragraph (1) above, regulations may be made under that paragraph for the purpose of–

(a) determining the size below which or above which it shall be unlawful to take any of the prescribed species from the regulated fishery or to remove them from one part of the fishery to another; and

(b) determining the size or description of vessels, dredges and fishing instruments to be used in dredging, fishing for or taking any of the prescribed species; and

(c) regulating the disposal of such vermin as may be dredged or otherwise taken in dredging, fishing for or taking any of the prescribed species.

(3) The production of a copy of any regulation purporting to be certified by any officer authorised by the Minister of Agriculture, Fisheries and Food shall be conclusive evidence of the existence of the regulation and of the due making of it.

Licensing of fishing

8.—(1) No person shall dredge, fish for or take any of the prescribed species within the regulated fishery except under the authority of a licence issued in that behalf, on application, by the Committee.

(2) No person shall use a vessel for dredging, fishing for or taking any of the prescribed species within the regulated fishery except under the authority of a licence issued under paragraph (1) above in which the vessel is named.

(3) Subject to paragraph (9) below, a licence for dredging, fishing for or taking any of the prescribed species from a vessel shall be issued jointly to the applicant, who shall be the owner of the vessel, and his representative and shall be used only by those persons or, with the written authority of the Committee and in accordance with any conditions contained in that authority, by a deputy nominated by them.

(4) A licence shall be valid for the period not exceeding 12 months specified therein.

(5) Subject to any directions given by the Minister and the provisions of this article, licences may be issued by the Committee under paragraph (1) above in such numbers and to such persons, and may authorise the dredging, fishing for or taking of the prescribed species at such times, in such manner and in such parts of the regulated fishery as the Committee may determine.

(6) The Committee may, after consultation with such organisations as appear to it to be representative of interests likely to be substantially affected by a limitation on the number of licences issued, and such other persons as the Committee thinks fit, place a limitation on the number of licences issued in any one year having particular regard to scientific advice on the desirability of limiting the level of exploitation.

(7) Any person dredging, fishing for or taking any of the prescribed species under the authority of a licence issued under paragraph (1) above shall, when so requested by any officer authorised by the Committee and after production by that officer of written evidence of his authority if so required, produce the licence and shall desist from dredging, fishing for or taking any of those species until it is produced.

(8) Subject to paragraphs (6) above and (9) below, an applicant for a licence shall be entitled to have a licence issued to him if–

(a) in respect of licences for the first fishing year after the coming into force of this Order, he was engaged in dredging, fishing for or taking any of the prescribed species within the regulated fishery as a commercial activity or as part of a commercial activity in the fishing season immediately prior to the date of advertisement of this Order, or

(b) in respect of licences for all subsequent fishing years, he held a licence at any time within the period of 24 months immediately preceding the date of application for the licence.

(9) At the Committee's discretion–

(a) no person may be named on a licence in accordance with paragraph (3) above as the representative of an applicant if on at least two separate occasions within the period specified in paragraph (8)(b) above that person has been convicted of a relevant offence, and

(b) the entitlement described in paragraph (8) above shall not apply if on at least

two separate occasions within the period specified in paragraph (8)(b) above the applicant has been convicted of a relevant offence.

(10) In this regulation "relevant offence" means either an offence under section 3(3) of the Sea Fisheries (Shellfish) Act 1967 or an offence under section 11(5) of the Sea Fisheries Regulation Act 1966 in so far as that offence relates to the contravention of a byelaw made under the powers contained in section 5(1)(d) of that Act.

Tolls and fees payable for fishing

9.—(1) Any person to whom the Committee proposes to issue a licence under the provisions of article 8 of this Order shall pay to the Committee before or upon receipt of the licence a toll in respect of a combined licence which authorises the dredging, fishing for and taking of cockles and mussels of either £200 per annum or £30 per month.

(2) The Committee may from time to time with the consent of the Minister vary the toll payable under paragraph (1) above and introduce separate tolls in respect of each of the prescribed species for which dredging, fishing for or taking is authorised.

Power to create reserves

10. The Committee may from time to time designate and mark out as reserves such parts of the regulated fishery as it thinks necessary for–

(a) experimental, management or scientific purposes, including the control of pests or diseases of any of the prescribed species;

(b) cleansing and subsequent restocking with any of the prescribed species and the protection of stock introduced;

(c) the collection of spat of any of the prescribed species; or

(d) the deposit or re-laying of any of the prescribed species for the purposes of cleansing before their removal from the fishery

and may use such reserves for their designated purposes and prohibit their use for any other purpose connected with or ancillary to fishing for any of the prescribed species.

Restriction on removal of culch

11.—(1) Except with the prior consent in writing of the Committee, no person shall remove any culch or other material for the reception of spat from the fishery or from one part of the fishery to another.

(2) Any person lifting any culch or other such material within the regulated fishery, whether in the course of fishing or dredging or otherwise, shall replace it forthwith as nearly as possible in the place from which it was lifted.

(3) Paragraphs (1) and (2) above shall not apply to a removal or lifting effected by raising an anchor or other mooring device for the purpose of navigation.

Power to remove brood of any of prescribed species

12. For the purpose of cultivating the regulated fishery any person authorised by the Committee may remove any spat or small oysters, mussels, cockles, clams, scallops or queens from the regulated fishery or from one part of the fishery to any other part at such times and in such quantities as the Committee may direct.

Exemptions for scientific purposes

13. The Committee may, by authority given in writing, exempt any person who is dredging, fishing for or taking any of the prescribed species for scientific purposes from any provision of this Order or from any restriction imposed or regulation made under this Order.

Accounts of income and expenditure and other information

14. The Committee shall render to the Minister annual accounts of its income and expenditure under this Order, shall furnish to the Minister all other information required by him with reference to this Order and to the fishery in such form and at such times as he may require, shall allow any person authorised by the Minister in that behalf to

inspect the fishery and all books of account and other documents in the possession of the Committee relating to this Order and to the fishery and shall give to such person any information relating thereto as he may require.

Rights of the Crown

15. Nothing in this Order or in any restriction imposed or regulation made by the Committee shall affect prejudicially any estate, right, power, privilege or exemption of the Crown and in particular nothing therein contained shall authorise the Committee to take, use or in any manner interfere with any portion of the shore or bed of the sea or of any river, channel, creek, bay or estuary or any land, hereditament, subject or right of whatever description belonging to Her Majesty in right of the Crown and under the management of the Crown Estate Commissioners or belonging to Her Majesty in right of Her Majesty's Duchy of Lancaster.

Rights of various persons and bodies

16.—(1) Nothing in this Order shall affect prejudicially–

(a) the exercise of any statutory power or authority from time to time vested in or exercisable by any person carrying on an undertaking falling within paragraph (2) below;

(b) any right, power or privilege of Hamon le Strange of Hunstanton in the County of Norfolk or his executors, administrators or assigns and in a like manner nothing herein contained shall be deemed to be a consent to or be construed to recognise or admit on behalf of the Committee the existence of any right, power or privilege of the said Hamon le Strange, his executors, administrators or assigns.

(2) The following are the undertakings which fall within paragraph (1)(a) above–

(a) the undertaking of any water undertaker or sewage undertaker;

(b) any undertaking consisting in the running of a telecommunications code system, within the meaning of Schedule 4 to the Telecommunications Act 1984**(a)**;

(c) the undertaking of any public gas supplier within the meaning of Part I of the Gas Act 1986**(b)**;

(d) the undertaking of any person authorised by a licence under Part I of the Electricity Act 1989**(c)** to generate, transmit or supply electricity;

(e) the undertaking of any navigation, harbour, general lighthouse or conservancy authority.

Revocation

17. The River Nene Fishery Order 1986**(d)** is hereby revoked.

In Witness whereof the Official Seal of the Minister of Agriculture, Fisheries and Food is hereunto affixed on 30th November 1992.

John Selwyn Gummer
Minister of Agriculture, Fisheries and Food

L.S.

(a) 1984 c.12.
(b) 1986 c.44.
(c) 1989 c.29.
(d) S.I. 1986/1896.

EXPLANATORY NOTE

(This note is not part of the Order)

This Order confers on the Eastern Sea Fisheries Joint Committee ("the Committee") rights of several fishery and regulating a fishery for oysters, mussels, cockles, clams, scallops and queens in the Wash for a period of 30 years, the Boston Deeps Fishery Order 1870, the Boston Fishery Order 1902, the Lynn Deeps Fishery Order 1932 and the Lynn Fishery Order 1932, which conferred similar rights on that Committee, having expired.

The situation and extent of the area within which the rights are conferred are shown on the definitive map which is described in article 1(2) of the Order. The definitive map is available for inspection by prior appointment during office hours at the offices of the Committee at 10 Tuesday Market Place, King's Lynn PE30 1LD and at the offices of the Minister of Agriculture, Fisheries and Food at Nobel House, 17 Smith Square, London SW1P 3JR.

The Order revokes the River Nene Fishery Order 1986.

Appendix 4: Wash Fishery Order (1992) Guidance Notes.

Wash Fishery Order 1992

Management Policy Statement

And

Guidance Notes

Eastern Sea Fisheries Joint Committee having been granted for a period of 30 years the right of regulating a fishery for oysters, mussels, cockles, clams, scallops and queens, hereafter referred to as "prescribed species", within that part of the Wash in the counties of Norfolk and Lincolnshire which lies below the line of mean high water, hereby issue the following guidance notes to holders of licences issued under Article 8 of the Wash Fishery Order 1992.

These guidance notes are a statement of the policy of the Committee with regard to their role as grantees of the Wash Fishery Order 1992 (hereafter referred to as the Order) and their management of the Wash Molluscan shellfish fishery within the regulated fishery. The notes incorporate relevant provisions of the Order. You are advised to acquaint yourself additionally with the Wash Fishery Order 1992 Regulations.

In this statement the expression "prescribed species" means oysters, mussels, cockles, clams and queens.

Note 1

No person shall dredge, fish for or take any of the prescribed species from within the regulated fishery, the boundary of which is shown on the plan attached to these notes, except under the authority of a licence issued in that behalf on application by the Committee.

Note 2

No person shall be granted a licence under Article 8 of the Order unless such a person's name appears on a register of pre-qualified persons (see Notes 13 & 14 below). Any individual acting as skipper (named representative or nominated deputy) on a WFO licensed vessel must also appear on the prequalified register.

Note 3

No person shall use a vessel for dredging, fishing for or taking any of the prescribed species within the regulated fishery except under the authority of a licence issued under Article 8(1) of the Order in which the vessel is named.

Note 4

No vessel named in a licence issued under Article 8 of the Order may be used to dredge, fish for or take the prescribed species within the regulated fishery under the authority of such a licence unless such a vessel is a British Registered Fishing Vessel and in possession of the relevant licence issued by the Ministry of Agriculture, Fisheries and Food applicable to its length. The production of the Registration Certificate and the relevant MAFF licence must accompany any application by the owner for a licence. The vessel's Name, Port Letters and Number shall be clearly displayed as provided for in Schedule 4 of the Merchant Shipping (Registration of Fishing Vessels) Regulations 1988.

Note 5

A licence issued under Article 8 of the Order shall be granted jointly to the owner of the vessel and his representative and shall be used only by those persons named therein or, with the written authority of the Committee, by a deputy nominated by those persons.

Note 6

Any person to be licensed under the provisions of Article 8 of the Order shall pay to the Committee before or upon receipt of the licence a toll of £200 per annum or £30 per month in respect of a combined licence which authorises the dredging, fishing for or taking of mussels and cockles. The Committee may from time to time, with the consent of the Minister, vary the toll payable and may introduce tolls of different amounts in respect of each of the prescribed species for which dredging, fishing for or taking is authorised.

Note 7

The maximum catch per calendar day shall be limited to; for mussels 4000 kilograms per licence holder and for cockles 4000 kilograms per licence holder when dredging and 2000kg per licence holder when handworking. The catch shall be contained in bags, boxes or bins.

Note 8

Having regard to the Committee's need to assess the level of exploitation of the fishery all holders of licences issued under Article 8 of the Order must, for each of the prescribed species so licensed, provide the Committee by the 5th day of every month, a daily record for the preceding month of actual catch taken, area fished, fishing effort (time and method) and any such data that the Committee may require to effectively manage the fishery.

Note 9

Subject to any directions given by the Minister and contained within Article 8 of the Order, licences to dredge, fish for or take any of the prescribed species may be issued by the Committee in such numbers and to such persons, and may authorise the dredging, fishing for or taking of those species specified, at such times, in such manner and to such extent as the Committee may determine.

Note 10

Having regard to Article 8(6) of the Order the Committee may place a limitation on the number of licences issued in any one year, having particular regard to the scientific advice on the desirability of limiting the level of exploitation and after consultation with such organisations as appear to it to be representative of interests likely to be substantially affected by such a limitation.

Note 11

A licence issued under Article 8 of the Order shall be valid for a period not exceeding 12 months specified therein. However, having particular regard to the scientific advice on the desirability of limiting the level of exploitation and after consultation with such organisations as appear to be representative of interests likely to be substantially affected and in accordance with Article 8(5)&(6) of the Order, the Committee may suspend all licences for a particular species authorised in order to conserve stocks.

Note 12

If a vessel named on a licence issued under Article 8 of the Order authorising the dredging, fishing for or taking of any of the prescribed species is sold then the licence shall be cancelled immediately. If the vessel is sold to a pre-qualified person (as defined in Note 13 below) the Committee shall issue a licence to the new owner. The Committee shall have the absolute discretion to re-issue a licence in the event of the following circumstances;

(i) if the licensee selling the vessel is replacing such vessel with another

(ii) special circumstances relating to the transfer of ownership between close relatives.

Note 13

A pre-qualified person shall be such a person whose name appears on a register, held by the Committee, and who is in possession of the relevant certificates required under the Fishing Vessels (Safety Training) Regulations 1989 or be exempt from such regulations by virtue of their age.

Note 14

A registered person shall exhibit his entitlement to a licence under Article 8 of the Order by providing the Committee with evidence of having three years experience of fishing within the Wash. The Committee shall determine, after consultation with such organisations as appear to it to be representative of interests likely to be substantially affected, what level of experience is deemed appropriate. Any individual acting as skipper (named representative or nominated deputy) on a WFO licensed vessel must also present evidence of having three years experience of fishing in the Wash. Endorsements of the individual's stated qualifications by one or more of the local fishermen's associations would be advantageous but would not necessarily be viewed as sufficient evidence. Applications from any individual applying to join the pre-qualified persons register would need to be considered by members of the Joint Committee at a Committee meeting.

Note 15

Any person dredging, fishing for or taking any of the prescribed species under the authority of a licence issued under Article 8 of the Order shall, when so requested by any Officer authorised by the Committee and after production by that Officer of written evidence of his authority, if so required, produce the licence and shall desist from dredging, fishing for or taking said shellfish until it is produced.

Note 16

Any person employed on a vessel named on a licence issued under Article 8 of the Order authorising the dredging, fishing for or taking of any of the prescribed species shall be in possession of the relevant certificates required under the Fishing Vessels (Safety Training) Regulations 1989 or be exempt from such regulations by virtue of their age.

Note 17

Except with the prior consent in writing of the Committee, no person shall remove any culch or other material for the reception of spat from the regulated fishery or from one part of the regulated fishery to another. Any person lifting any culch or other such material within the regulated fishery, whether in the course of dredging or fishing or otherwise, shall replace it forthwith as nearly as possible in the place from which it was lifted. The forgoing shall not apply to a removal or lifting effected by raising an anchor or other mooring device for the purpose of navigation.

Note 18

Any person who has been licensed under Article 8 of the Order to dredge, fish for or take any of the prescribed species as a commercial activity or part of a commercial activity at any time within the period of 24 months immediately preceding the date of his application for a new licence shall be entitled to have a new licence issued to him unless; he has on at least two separate occasions within a 5 year period prior to the date of application for a new licence been convicted of a relevant offence, that is to say, an offence under either; Section 3(3) of the Sea Fisheries (Shellfish) Act 1967 as amended which states;

"Any person who dredges, fishes for or takes shellfish of any description to which any such order applies in contravention of any such restriction or regulation, or without paying any such toll or royalty, as aforesaid shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 2 on the standard scale and to forfeit all such shellfish so taken or, if they have been sold, a sum equal to their value; and any such shellfish or sum so forfeited shall be recoverable in like manner as a fine",

Or

an offence under Section 11(5) of the Sea Fisheries Regulation Act 1966 which states;

"without prejudice to the operation of subsections (2),(3) and (4) above, any person who contravenes any bylaw of a local fisheries committee shall be guilty of an offence and liable upon summary conviction to a fine not exceeding level 5 on the standard scale",

such bylaws having been made under the powers contained in Section 5(1) of the Sea Fisheries Regulation Act 1966, in which case the Committee may refuse to grant him a licence.

Note 19

In the event of failure to comply with any of the Regulations made by the Committee under Article 7 of the Order (the Wash Fishery Order 1992 Regulations), any of the Bylaws made under Section 5(1) of the Sea Fisheries Regulation Act 1966 and any of the provisions laid out in this Policy Statement the Committee shall have the absolute discretion to refuse to grant a licence the following year.

Note 20

Once a vessel has been named on a licence using an entitlement, the vessel is dedicated to that entitlement. The entitlement holder and owner of the vessel can not subsequently licence the vessel using a different entitlement. Only after presenting documentation proving a change of ownership can the entitlement holder licence a different vessel on that entitlement.

Note 21

A vessel cannot be licensed using any entitlement held by any of the vessel's previous owners.

Dated: October 1992

Amended 13 January 2009

Further amendment to Regulation 2 dated 15th April 2010

Appendix 5: Criteria for defining cockle fishing rights in The Wash by the EJSFC and subsequently the Eastern-IFCA (source: WFO (1992) and Guidance notes). Orange makrs the change.

Section	Criteria	By EJSFC	By Eastern-IFCA	Notable changes.
1	Geographical extent	The Wash up to 3 nm. Lincolnshire and Norfolk	The Wash up to 3 nm. Lincolnshire and Norfolk	No change.
2	Granting of licence	Committee has authority to grant licence for cockle fishing, vessel used and gears used, with appropriate Marine Coastguard Agency (MCA) and Marine Management Organisation (MMO) checks. In the event that policies are not complied with, EJSFC have absolute discretion over granting licences.	Committee has authority to grant licence for cockle fishing, vessel used and gears used, with appropriate Marine Coastguard Agency (MCA) and Marine Management Organisation (MMO) checks. In the event that policies are not complied with, Eastern-IFCA have absolute discretion over granting licences.	No change.
3	Licence holders	Owner of vessel and representative assigned ownership of a licence by the Committee.	Owner of vessel and representative assigned ownership of a licence by the Authority.	No change.
4	Toll fees	£200/pa and £30/pm. Note: Dredging and hand working attracted different licence fees.	Suggested increases in licence fees.	Potentially increasing. No clear timeline established for the increase.
5	Catch sizes	4000kg of cockles per licence holder for dredgeing and 2000kg per licence holder for hand working	Dredging banned and hand working with a variable quota stored in Eastern-IFCA approved WFO bags with size limitations.	Eastern-IFCA has autonomy over gear used over the temporal and spatial scale.
6	Renewal of licences	Every 12 months and Committee can suspend licences.	Every 12 months, but Eastern-IFCA can suspends licences.	No change.
7	Vessel ownership and cockle licensing	If the vessel is sold the licence is immediately cancelled, unless the new owner is in possession of the relevant certificates from the regulatory agencies. Committee has discretion under the following circumstance: 1. The licencee is replacing the vessel with another. 2. Transfer	If the vessel is sold the licence is immediately cancelled, unless the new owner is in possession of the relevant certificates from the regulatory agencies. Committee has discretion under the following circumstance: 1. The licencee is replacing the vessel with another. 2. Transfer of ownership	No change in theory. Loophole found in transferring WFO cockle permit from one vessel to

		of ownership to a close relative.	to a close relative.	another.
8	Mention of entitlement under the WFO	A registered person shall exhibit their entitlement by providing the Committee with evidence of having 1. Three year track record of fishing in the Wash. 2. The Committee shall determine, after consultation with such organisations as appear to it to be representative of interests likely to be substantially affected, what level of experience is deemed appropriate.3. Any individual acting as skipper (named representative or nominated deputy) on a WFO licenced vessel must also present evidence of having three years experience of fishing in the Wash. 4. Endorsements of the individual's stated qualifications by one or more of the local fishermen's associations would be advantageous but would not necessarily be viewed as sufficient evidence. 5. Applications from any individual applying to join the pre-qualified persons register would need to be considered by members of the Joint Committee at a Committee meeting.	A registered person shall exhibit their entitlement by providing the Committee with evidence of having 1. Three year track record of fishing in the Wash. 2. The Committee shall determine, after consultation with such organisations as appear to it to be representative of interests likely to be substantially affected, what level of experience is deemed appropriate.3. Any individual acting as skipper (named representative or nominated deputy) on a WFO licenced vessel must also present evidence of having three years experience of fishing in the Wash. 4. Endorsements of the individual's stated qualifications by one or more of the local fishermen's associations would be advantageous but would not necessarily be viewed as sufficient evidence. 5. Applications from any individual applying to join the pre-qualified persons register would need to be considered by members of the Joint Committee at a Committee meeting.	No change.
9		Once a vessel has been named on a licence using an entitlement, the vessel is dedicated to that entitlement. The entitlement holder and owner of the vessel can not subsequently licence the vessel using a different entitlement. Only after presenting documentation proving a change of ownership can the entitlement holder licence a different vessel on that entitlement.	Once a vessel has been named on a licence using an entitlement, the vessel is dedicated to that entitlement. The entitlement holder and owner of the vessel can not subsequently licence the vessel using a different entitlement. Only after presenting documentation proving a change of ownership can the entitlement holder licence a different vessel on that entitlement.	No change.
10		A vessel cannot be licenced using any entitlement held by any of the vessel's previous owners.	A vessel cannot be licenced using any entitlement held by any of the vessel's previous owners.	No change.
11	Enforcement: Licensing	Licence suspended until EJSFC officer is presented with evidence of a licence.	Licence suspended until EJSFC officer is presented with evidence of a licence.	No change.
12	Enforcement: Fishing activity infringement	Any person who has been licenced under Article 8 of the Order to dredge, fish for or take any of the prescribed species as a commercial activity or part of a commercial activity at any time within the period of 24 months immediately preceding the date of his application for a new licence shall be entitled to have a new licence issued to him unless in a 5 year period been convicted of 1. Not	Any person who has been licenced under Article 8 of the Order to dredge, fish for or take any of the prescribed species as a commercial activity or part of a commercial activity at any time within the period of 24 months immediately preceding the date of his application for a new licence shall be entitled to have a new licence issued to him unless in a 5 year period been convicted of 1. Not paying a toll for cockle	No change legislative change. MCAA embeds enforcement powers within the Eastern-IFCA functions.

		paying a toll for cockle fishing 2. Violates any bylaws.	fishing 2. Violates any bylaws.	

Appendix 6. The Wash cockle 'fishing right' as a licence, permit or entitlement.

EASTERN INSHORE FISHERIES & CONSERVATION AUTHORITY

Chief Executive Officer

ENT. Nº. /2018/No

WASH FISHERY ORDER 1992

Handworking Licence

6 North Lynn Business Village
Bergen Way, King's Lynn
Norfolk, PE30 2JG

TEL: (01553) 775321
FAX: (01553) 772031

VESSEL NAME : ..... REG No:.....

I hereby certify that .....of .....

having paid the sum of £..... is licensed to fish for cockles or mussels by hand or with a hand rake during such period as may be open to fishing for one year commencing on ..... and ending on ..... subject to the provisions of any Act relating to Sea Fisheries and the Wash Fishery Order 1992, to Regulations of the Wash Fishery Order 1992 and to the Byelaws made from time to time by the Local Sea Fisheries Committee for the Eastern Sea Fisheries District.
For the purposes of Article 8(3) of the Wash Fishery Order 1992 the owners representative shall be ..... If the owner or his representative shall not be the Master of the vessel, then the Master of the vessel at any given time shall be deemed to be the nominated deputy of the owner or his representative and shall be regarded as the person fishing under the authority of the licence for the purposes of the Wash Fishery Order 1992.

Issued by : .....Dated : .....Time of Issue.....

EASTERN INSHORE FISHERIES & CONSERVATION AUTHORITY

Chief Executive Officer

ENT. Nº. /2018/No

WASH FISHERY ORDER 1992

Handworking Licence

6 North Lynn Business Village
Bergen Way, King's Lynn
Norfolk, PE30 2JG

TEL: (01553) 775321
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VESSEL NAME : ..... REG No:.....

I hereby certify that .....of .....

having paid the sum of £..... is licensed to fish for cockles or mussels by hand or with a hand rake during such period as may be open to fishing for one year commencing on ..... and ending on ..... subject to the provisions of any Act relating to Sea Fisheries and the Wash Fishery Order 1992, to Regulations of the Wash Fishery Order 1992 and to the Byelaws made from time to time by the Local Sea Fisheries Committee for the Eastern Sea Fisheries District.
For the purposes of Article 8(3) of the Wash Fishery Order 1992 the owners representative shall be ..... If the owner or his representative shall not be the Master of the vessel, then the Master of the vessel at any given time shall be deemed to be the nominated deputy of the owner or his representative and shall be regarded as the person fishing under the authority of the licence for the purposes of the Wash Fishery Order 1992.

Issued by : .....Dated : .....Time of Issue.....