GÖTEBORGS UNIVERSITET

DEPARTMENT OF POLITICAL SCIENCE

SOMETHING FISHY ON THE HIGH SEAS

International Regulation, State Capacity and Common Pool Resources

Konstantin Felix Heim

Master's Thesis:	30 credits
Programme:	Master's Programme in International Administration and Global Governance
Date:	23.05.2022
Supervisor:	Prof. Dr. Marcia Grimes
Words:	16.678

Something Fishy on the High Seas: International Regulation, State Capacity and Common-Pool Resources

How State Capacity affects Overfishing within and beyond National Jurisdiction

Abstract

Overfishing is a large-scale collective action problem that poses real threats to the marine ecosystem, livelihoods, food security, and the world's climate. Thus, understanding fishermen's compliance with fisheries regulations is particularly valuable. How does state capacity affect overfishing within and beyond national jurisdiction? While previous research threats overfishing as a rather static matter and has strongly focused on the regulatory agencies' capacity to monitor fishermen and enforce fisheries regulation under and beyond national jurisdiction, the transfer of earlier, under national jurisdiction, generated norms of compliance to areas beyond national jurisdiction has been overlooked. Furthermore, regulatory areas might vary in their appeal to fishermen, due to levels of state capacity, and the fishermen might shift their activities into areas with a lesser extent of monitoring and enforcement. By using a more dynamic framework, I argue that fishermen generate norms of compliance depending on the coastal or flag state's level of state capacity, which are, transferred into regulatory areas beyond national jurisdiction. Moreover, areas with low capacities that allow for the exploitation of fisheries by external actors, are expected to show a greater extent of overfishing. Evidence from a cross-sectional and time-series cross-sectional analysis of 106 countries suggests that state capacity affects overfishing and that norms are transferred to areas beyond national jurisdiction. Furthermore, vessels of flag states with open registries engage more often in overfishing and fishermen comply to a greater extent with fisheries regulation in waters of democracies with high state capacity.

Table of Content

List of Figures & Graphs

List of Tables

Abbreviations

BE Between-Effects

CNM Cooperating Non-Member

DWFN Distant Water Fishing Nations

EEZ Exclusive Economic Zones

FAO Food and Agriculture Organization of the United Nations

FD First Difference

FE Fixed-Effects

FoC Flag of Convenience

GDP Gross Domestic Product

GNI Gross National Income

ICRG International Country Risk Guide

IPOA-IUU International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing

ITF International Transport Workers' Federation

ITLOS International Tribunal for the Law of the Sea

IUU-fishing Illegal, Unreported, Unregulated Fishing

MSC Marine Stewardship Council

MTI Marine Trophic Index

NOAA National Oceanic and Atmospheric Administration

OLS Ordinary Least Squares

POLS Pooled OLS

RE Random-Effects

RFMO Regional Fisheries Management Organizations

TAC Total Allowable Catch

TS Territorial Sea

TSCS time-series cross-section

UNCLOS United Nations Convention on the Law of the Sea

UNSFA United Nations Straddling Fish Stock Agreement

V-Dem Varieties of Democracy

Acknowledgments

I would like to thank Marcia Grimes and Martin Sjöstedt for the opportunity to exchange ideas. Their knowledge enriched my way of thinking and advanced this work. Additionally, I want to thank Marina Nistotskaya for an early exchange of thoughts. I further thank my family and friends for their support, encouragement, and rewarding discussions.

1 Introduction

The overexploitation of fisheries worldwide does not only threaten the ocean's biodiversity but, furthermore, has far-reaching and cascading effects on the marine ecosystem, the world’s climate, food security, and livelihoods (Estes et al., 2011; Jönsson & Kamali, 2012; Muawanah et al., 2012; Pomeroy et al., 2007; Stobutzki et al., 2006; Telesetsky, 2017). Overfishing on the high seas, but also in a country’s territorial seas can be described as a large-scale collective action problem over resources that are exceptionally difficult to manage and prone to overexploitation. Collective action theory emphasizes the role of institutions developed to coordinate and foster cooperation, thus, overcome collective action problems. State capacity and democracy incorporate and facilitate these social institutions and, thus, are found to benefit cooperation in social dilemmas. Elinor Ostrom’s theoretical framework on the prospects for collective action and the train of thought, further developed by a multitude of scholars, is an exceptionally powerful tool to analyze collective action problems. However, its static view of actors that are bound to a regulatory area may come with some limitations for the analysis of large-scale collective action and fisheries management.

While countries are responsible for the sustainable management of fisheries in their own territorial seas that fall under national jurisdiction, the high seas are a complex issue of international law, and the management of fisheries is maintained by supranational organizations and, consequently, falls outside of national jurisdiction. Furthermore, fishermen are mobile and able to act in different regulatory areas. Fisheries management and the specific setting of collective action within- and beyond national jurisdiction with mobile actors and mobile resources requires a modification of classical collective action approaches.

This paper uses a more dynamic approach to theories of common-pool resource management suited for collective action within and beyond areas of national jurisdiction. Instead of treating actors and regulatory areas as static and bound to each other, it argues for the inclusion of the extent to which an area is open to the resource extraction of other, international actors, and suggests that norms of compliance travel with the actors to other regulatory areas. The formation of the actors’ norms of compliance, on the other hand, can be predicted by classical rational choice and collective action theory.

This paper seeks to shed light on the question of how state capacity affects overfishing within and beyond national jurisdiction. Previous research on fisheries management stresses the importance of state capacity as well as effective monitoring and enforcement practices (Englender et al., 2014; Ewell et al., 2020; Koehler, 2013; Pentz et al., 2018; Sjöstedt, 2013; Sjöstedt & Jagers, 2014), though, it neglects the mechanisms of norm creation and the transfer of those to areas outside of national jurisdiction. Although the viability of different regulatory areas has been recognized by Petrossian (2018) and Österblom and colleagues (2010), it has not been integrated into large-n studies of fisheries management. Moreover, the interaction effect between state capacity and regime type, which is found to play a role in the provision of environmentally sustainable outcomes (Povitkina, 2018), has not been researched in the context of overfishing. The study fills these gaps in the research on overfishing, contributes to an improved understanding of complex large-scale collective action problems, and the role of norm transfer. I build on previous research and argue that levels of state capacity, as a 'push' and 'pull' mechanism, affect overfishing within and beyond areas of national jurisdiction. Moreover, it is argued that state capacity interacts with regime type and affects overfishing. These expectations are empirically tested by cross-sectional and time-series analyses of data from the Illegal Unreported Unregulated Fishing-Index and the Marine Trophic Index. The sample covers 106 countries worldwide and the analysis suggests that high levels of state capacity are associated with lower degrees of overfishing within a state's jurisdiction and by its flagged vessels outside of national jurisdiction, indicating that norms are shaped by state capacity as well and travel to contexts beyond national jurisdiction. Furthermore, it is found that states with low state capacity attract non-compliant fishermen to sail under their flag on the high seas. Lastly, it is shown that under national jurisdiction the relationship between state capacity and overfishing is conditioned by the regime type.

In the remainder, this paper gives an introduction to key concepts of collective action theory and previous research done in the field of fisheries management. It continues by discussing the researched empirical cases: coastal states and their territorial waters as well as flag states and the regulatory authorities on the high seas. Next, a synthesis of the previous research, collective action theory, and the empirical cases develops the theoretical argument of the paper. From the theoretical argument, then, testable hypotheses are derived. This is followed by a presentation of the data and measurements, the applied statistical method, and the analyses' results. Lastly, the results are summarized, further research is proposed, and the theoretical and policy implications are laid out.

2 Literature Review

2.1 Migratory Common-Pool Resources and Collective Action

Individuals' compliance in collective action and ways to overcome potential social dilemmas have been of great scholarly interest. "It often seems paradoxical, that cooperation is least likely where those involved stand to lose most" (Connelly et al., 2012, p.143). Garret Hardin (1968) illustrates in "The Tragedy of the Commons" collective action problems over common-pool resources. In his parable of herdsmen managing the number of cattle added to a pasture that is open for all, rational and utility-maximizing herdsmen are incentivized to hold as many cattle in the pasture as possible. The addition of cattle to the pasture comes with positive and negative consequences for the herdsman's utility. As more cattle leads to greater economic benefit for the individual, it comes with the cost of overgrazing. However, while the individual herdsman profits from their sales, the costs of overgrazing are shared among all herdsmen. Thus, Hardin (1968) argues, that herdsmen are incentivized to continue with the addition of cattle to the pasture even though it ultimately leads to the depletion of the common resource.

In order to understand collective action problems arising in the management of some natural resources, the differentiation between different types of resources is particularly important. The *difficulty of exclusion* and *substractability of benefits* are characteristics that can be used to distinguish resources into a fourfold typology (Becker & Ostrom, 1995). Due to the sheer size of some resources, the exclusion of single resource users faces challenges, as the fencing of an entire ocean is not feasible. The benefits of the exclusion of particular resource users remain smaller than the calculated costs of monitoring the exclusion, or legal considerations complicate it (Becker & Ostrom, 1995). The extent to which utilization of resources poses limits to resource utilization of other resource users also varies (Becker & Ostrom, 1995). According to this typology, resources can be distinguished into private goods, club goods, public goods, and common-pool resources. Non-excludable goods, such as public goods and common-pool resources, can be utilized by anyone even if they do not contribute to the sustainable management of the resource (Mansbridge, 2014). "A public good is something to which everyone has access, but unlike a common-pool resource, one person's use of the resource does not necessarily diminish the potential for use by another" (Ostrom et al., 2002, pp.4-5). An example of a common-pool resource is fisheries, everyone has access to it and as a "fisherman lands a ton of fish, that ton is not available for others" (Becker & Ostrom, 1995).

Common-pool resources' characteristic of non-excludability is particularly problematic since it creates horizontal expectations among the resource users that their peers freeride instead of cooperating (Sjöstedt, 2013). The resource users' prisoner's dilemma facilitates freeriding as, although each actor has a genuine interest in the sustainable management of the resource for the future, benefitting from peers' conservation efforts while refraining from contributing to costly conservation measures, maximizes the individual's gain. Consequently, rational choice theory expects that all resource users are incentivized to defect and overexploit the resource. Thus, in the game of the conservation of a common-pool resource the Nash equilibrium is Pareto-inefficient (Ostrom et al., 2002).

Simultaneously to the horizontal relationship between the several resource users, another prisoner's dilemma on the vertical relationship between the regulatory authority and the resource users occurs (Sjöstedt, 2013; Skyrms, 2004). As the resource users, the regulatory authority would maximize their utility in a scenario in which resource users comply with the established rules since sustainable management ensures future resource extractions (Sjöstedt, 2013; North, 1994). However, if the regulatory authority refrains from the costly rule enforcement, fears of non-compliant peers arise within the resource users, incentivizing them to non-compliance (Sjöstedt, 2013). The authority's worst-case scenario would be one in which non-compliance with the authority's regulations is widespread while the regulatory authority engages in costly rule enforcement. Since both actors, the resource users, and the regulatory authority, are risk-averse, the Nash equilibrium on the vertical relationship is also Pareto-inefficient and common-pool resources are particularly susceptible to depletion.

Common-pool resources can further be distinguished between *biological* and *physical* resources as well as *mobility* and *storage* (Becker & Ostrom, 1995). This has implications for the analysis of potential difficulties of cooperation. It is easier for institutions trying to mitigate cooperation between resource users when the resource is physical, e.g. minerals, compared to biological resources, e.g. fisheries, as biological resources are further influenced by ecological variables, adding further complexity (Becker & Ostrom, 1995). Moreover, the degree of mobility and the extent of storage affects the prospects of cooperation in collective action. For moving resources, these prospects of cooperation are lower as information about the resource size is difficult to obtain and the actors' assurance of compliance is less credible (Schlager et al., 1994).

Since fisheries can be described as biological migratory common-pool resources, the management of these faces challenges as actors find themselves in horizontal- as well as vertical prisoner’s dilemmas, and the biological and mobile nature of the resource further complicates the matter. Thus, fisheries are exceptionally susceptible to depletion.

2.2 The Role of Trust, Reciprocity, and Reputation

Despite the challenges in the sustainable management of common-pool resources, cooperation in collective action problems is not impossible. Scholars argue that there are social institutions shifting the individuals’ tendency of defection in collective action towards cooperation. In Hardin’s “The Tragedy of the Commons” (1968), he suggests that only privatization and state interference could overcome collective action problems. Over the years, Hardin’s (1968) pessimistic view on the prospects of collective action over common-pool resources has been criticized and mechanisms facilitating cooperation have been laid out by scholars.

Ostrom (1998) creates a framework focusing on the roles of norms and heuristics in collective action. The behavioral explanation for cooperation’s mutually reinforcing core is “the links between the trust that individuals have in others, the investment others make in trustworthy reputations, and the probability that participants will use reciprocity norms” (Ostrom, 1998, p.12). As individuals can be seen as conditional cooperators (Cook & State, 2017; Frey & Meier, 2004; Gächter & Herrmann, 2009; Ostrom, 1998) trust in the individuals’ peers increases the chances of cooperation, since trusting individuals signals the other actors, through their willingness to contribute to collective action, that they are perceived as trustworthy (Cook & State, 2017). Furthermore, individuals can utilize reciprocity norms to analyze their peers’ behavior and react accordingly (Ostrom et al., 2002). Thus, they are able to identify actors and the likelihood of involved conditional cooperators, cooperate with conditional cooperators or punish and refuse to cooperate with free riders (Ostrom, 1998). The more people use reciprocity, the individuals are incentivized to acquire a positive reputation, since “trustworthy individuals who trust others with a reputation for being trustworthy (…) can engage in mutually productive social exchanges“ (Ostrom, 1998, p.12). While norms of trust, reciprocity, and reputation are reinforcing and facilitate cooperation, decreased levels of trust, and reciprocity, as well as negative reputation, facilitate defection and could lead to a downward spiral (Ostrom, 1998). These norms do not only come to play in the horizontal relationship in collective action problems over common-pool resources but also in the vertical relationship between the resource users and the regulatory authority. Moreover, these norms of behavior can be created by exposure to collective action in one place and are transferred into different collective action problems (Fisman & Miguel, 2007).

While it is substantially easier to facilitate trust in small-scale collective action problems through face-to-face communication, homogeneous trust levels, clear responsibilities, and known actors, this is particularly more complicated in large-scale collective action. However, solutions to collective action do not solely rely on trust, and “careful institutional design appears to be an important requirement for the successful resolution of large-scale social dilemmas” (Cook & State, 2017, p.18). The institutional setup and indirect reciprocity are crucial as individuals usually have an interest in maintaining a good reputation (Milinski, 2002).

2.3 The Role of State Capacity

Collective action research after Hardin (1968) focused less on state interference and rather on how property rights and design principles for long-enduring social institutions for governing resources could overcome collective action problems (Agrawal, 2001; Becker & Ostrom, 1995; Schlager & Ostrom, 1992). Agrawal (2001) suggests that the role of the state as a formal institution in the management of common-pool resources should receive greater scholarly attention.

An important phenomenon in overcoming collective action problems is “governance without government”, which however becomes increasingly complicated with added system complexity (Young, 2017). Often, large-scale collective action problems lack well-defined boundaries, include a large number of international actors with different interests and identities, and the exclusion of outsiders is even more challenging (Linell et al., 2017). Linell and colleagues (2017) find that monitoring systems, enforcement, and trust in regulatory authorities foster compliance in large-scale collective action settings, but that the harmonization of policies and the coordination of the rule enforcement is crucial for the effective management of migratory common-pool resources. According to Becker’s (1968) deterrence model, effective monitoring and enforcement of rules increase the individuals’ tendency to comply with regulation, as the costs of non-compliance in relation to the gains of illegal activity increases.

The state can take the position of the external agent, executing monitoring and rule enforcement of its country’s resource users (D’Arcy & Nistotskaya, 2017). In order to effectively manage collective action, the state requires high levels of state capacity, the “high capacity to monitor and project power over all those subject to its authority and to apply this power to punish citizens found (…) to be free-riding” (D’Arcy & Nistotskaya, 2017, p.195). This study focuses on state capacity as the state’s “eyes” and “teeth” (D’Arcy & Nistotskaya, 2017), with the ability to execute policies (Fukuyama, 2004) and the provision of public goods (Hanson, 2015; Norris, 2012).

2.4 The Role of Legitimate Coercion and Regime Type

The legitimacy of rules is a further important concept introduced to the discussion of collective action (Hønneland, 1999). While empirical studies show that deterrence models, like Becker's (1968), are able to analyze sources of non-compliance, they usually tend to overestimate the individuals' probability of engaging in illegal activities (King & Sutinen, 2010). King and Sutinen (2010) suggest that such economical models should include an individual's consideration of moral consequences that also depend on the individual's perception of rule legitimacy. Individuals that perceive regulations as just, as well as applied equitably and fairly, are argued to be less likely to engage in illegal activities, even if the basic deterrence model would expect them to.

Mansbridge (2014) suggests that legitimate coercion, provided by governments, is crucially fostering cooperation in numerous collective action problems. Governments are created to administer and develop coercion, the threat of sanction or use of force (Mansbridge, 2014). Legitimate coercion is superior to basic coercion since the more legitimate the coercion is, the less likely the application of sanction (Hønneland, 1999; Mansbridge, 2014) as the legitimacy of rules fosters voluntary compliance (Arias, 2015). Researching fishermen's non-compliance with EU fisheries regulation, Soto-Onate and Lemos Nobre (2021) find that weak enforcement and a lack of the regulation's perceived legitimacy contribute to fishermen's non-compliance.

What, then, might enhance the legitimacy of regulations? Democracy, "the rule of the people", ensures that the government is representing the preferences of the citizens, as the citizens hold the government accountable, and prevents the abuse of power (Rodrik, 2000). Democratic institutions, according to Dahl (1986), include free and fair elections, universal suffrage, freedom of association, freedom of expression, free media, and constitutional guarantees that officials executing control over the decision- and policymaking are elected (Povitkina, 2018). Consequently, due to the accountability structures in democracies and the constitutional guarantees that solely elected officials have control over the decision- and policymaking, rules in democracies are more likely to be legitimized than in autocracies.

Apart from reasons building upon collective action theory, scholars argue that regime type matters for the provision of environmental policy by the government. It is argued that autocracies prefer the provision of private goods over the provision of costly public goods. The "winning coalition" in autocracies is, per definition, smaller than in democracies, as democratic leaders are held accountable by the citizens. Since autocratic leaders only need to please a smaller group of people, the provision of private goods is more cost-effective for the leader, as public goods are costly and the whole population benefits (Bueno de Mesquita, 2003). On the other hand, democracies are more likely to have the provision of public goods, e.g. environmental conservation, on their political agenda as they require the support of the masses (Povitkina, 2018). Furthermore, as Dahl (1986) stresses the importance of free media, freedom of association, and freedom of expression in democracies, citizens' awareness of environmental issues could be raised by the free media and the citizens can articulate environmental interests because of freedom of speech and association (Povitkina, 2018). Since democracies are relying on public support, democratic governments are open to a variety of interests, resulting in an increased likelihood of including environmental protection in their political agenda (Povitkina, 2018).

However, the scholars acknowledge that democracies have some elements that could be considered counterproductive in the provision of sustainable environmental regulations. Short electoral cycles in democracies incentivize democratic leaders to focus on short projects that deliver quickly, and highly visible outcomes in order to secure public support (Keefer, 2007). Environmental conservation, however, could be seen as a rather long-term commitment that does not deliver quickly observable results (Povitkina & Bolkvadze, 2019). Furthermore, due to short time horizons, democratic leaders might engage in clientelism and vote-buying instead of listing to the interests of the general population (Hicken, 2011; Kitschelt, 2000).

Taken together: as trust, reciprocity, and reputation enhance to prospects of collective action, state capacity and democracy play an important role in the management of common-pool resources. The capacity to monitor and enforce regulations as well as the credible commitment of the state and the legitimacy of regulation foster cooperation in the horizontal- and vertical prisoner's dilemmas. Thus, state capacity and democracy are argued to benefit the sustainable management of common-pool resources.

2.5 *Actors' Avoidance of Regulation*

Scholars also drew attention to patterns of actors' behavior to circumvent and avoid regulation. Actors are attracted to areas that they perceive to be an opportunity for effective rule circumvention (Petrossian, 2018; Österblom et al., 2010). Petrossian (2018) examined overfishing in the territorial waters of 23 Western African countries, by focusing on the existence of targeted species and the special proximity to ports that are known for handling illegally caught fish. Her results suggest that actors are especially attracted to areas close to ports that lack the capacity to monitor catches. Moreover, Österblom and colleagues (2010) researched how operators of vessels that engage in overfishing adapt to regulation. In their study, they focus on the area of the Convention for the Conservation of Antarctic Marine Living Resources and the flagging behaviors of members. Their results suggest that vessels that have been identified for active overfishing re-register their vessels under a different flag. The countries in which the vessels are re-registered are found to lack state capacity and "have a lower ability to address non-compliance" (Österblom et al., 2010, p.3). These countries provide an opportunity for actors that are hoping to engage in illegal activities, as the actors face a lower chance of legal consequences.

2.6 *The Interaction of State Capacity and Regime Type*

State capacity and regime type are observed to profoundly affect each other. While Bäck and Hadenius (2008) find that democratization affects the level of state capacity in a curvilinear manner (J-shape), Møller and Skaaning (2011) suggest that state capacity, on the other hand, has implications for democratization and that state capacity is "a necessary condition for democracy to gain (and retain) foothold" (Møller & Skaaning, 2011, p.17). Regarding the effect of state capacity and regime type on environmental outcomes, Pellegrini and Gerlagh (2006) argue that the inclusion of both variables in the analysis is necessary in order to account for the correlation between levels of state capacity and regime type. While Pellegrini and Gerlagh (2006) conclude that state capacity has a substantial effect on the stringency of environmental policy and the effect of regime type remains insignificant, Sjöstedt and Jagers (2014) on the other hand find that regime type is more important than state capacity for the sustainable management of the marine ecosystem. As the results of the role of state capacity and regime type in collective action are divided, Darcy and Nistotskaya (2017) synthesize existing collective action theory into a dynamic model and argue that state capacity and regime type interact with each other over time. Their proposition "state first, then democracy" finds support in the data, suggesting that democracies that had high levels of state capacity before democratization show higher levels of public goods provision than democracies that had lower levels of state capacity before democratization (Dracy & Nistotskaya, 2017). The static interaction between state capacity and regime type is examined in the context of environmental outcomes by Povitkina (2018). While regime type plays a role on the input and preference aggregation side of the political system, state capacity plays a role in the output and outcome side of the political system (Povitkina, 2018). Thus, there is an interplay between state capacity and regime type in the provision of environmental sustainability outcomes. Higher levels of state capacity are argued to positively affect the output and outcome side. While it is argued that democracy mainly positively affects the input and preference aggregation side, democracy, however, could potentially affect these institutions negatively due to shorter time horizons and incentives of vote-buying.

This paper builds on previous research by combining the collective action-centered theory of Darcy and Nistoskaya (2017) and the input-output approach of Povitkina (2018) regarding the interaction effect between state capacity and regime type on environmental outcomes.

2.7 Literature on Compliance with Fisheries Regulation

The literature on overfishing manly applies classical rational choice and collective theory by predicting the extent to which actors engage in overfishing with the degree to which the regulatory authority is able to monitor and enforce these rules (Englender et al., 2014; Ewell et al., 2020; Koehler, 2013; Pentz et al., 2018; Sjöstedt, 2013; Sjöstedt & Jagers, 2014). While the ability to monitor and enforce regulations certainly affects fishermen's compliance, this approach often neglects the actors’ mobility to other regulatory areas and the transfer of created norms elsewhere. The extent to which norms of compliance travel to a regulatory area that lays outside of national jurisdiction remains to be examined. Furthermore, while the attraction of specific territorial waters (Petrossian, 2018) and attraction to certain flag registries (Österblom et al., 2010) have been identified, the interaction between a regulatory area’s openness to external actors and state capacity remains to be examined in a large-*n* study. Moreover, while Sjöstedt and Jagers (2014) include state capacity as well as regime type in their analysis, the interaction effect of the two variables within and beyond national jurisdiction on overfishing is a novelty addressed in this paper.

This paper seeks to provide the reader with an overview of how fishermen's norms of compliance are created by accounting for the effects of state capacity and regime type, demonstrating that fishermen transfer these created norms into areas that fall outside of national jurisdiction, as well as show that the mobile fishermen can be attracted to regulatory areas that lack state capacity and where, consequently, the risk of detection of defection is low. By synthesizing the here presented collective action theories with the, in the following section discussed, empirical cases the theoretical argument of the study is built.

3 The Empirical Cases

As this thesis seeks to analyze the relationship between state capacity and overfishing in areas within and beyond national jurisdiction, coastal states and their exclusive economic zones (EEZs), as well as flag states - the state under which flag a vessel sails, and regional fisheries management organizations (RFMOs) are the two central scenarios researched. While the management of fisheries of the coastal state's EEZ falls under national jurisdiction, the management of fisheries on the high seas by RFMOs falls outside of national jurisdiction. The following section discusses both cases and the scale of the collective action problem in either scenario is briefly analyzed with the help of Jagers et al.'s (2020) analytical framework for large-scale collective action.

3.1 Coastal States & EEZs – a scenario within national jurisdiction

The concept of the EEZ originates from coastal states' earlier claims to control marine resources and exercise national jurisdiction in areas beyond the territorial sea (TS) adjacent to their countries' borders (Andreone, 2015; Gagern & van den Bergh, 2013). The EEZ regime became codified in the 1982 United Nations Convention on the Law of the Sea (UNCLOS) as a zone that stretches out 200 nautical miles from the baseline in which selected powers and sovereign rights of the coastal states coexist with some freedoms of the high seas, such as the right of navigation and overflight (Gagern & van den Bergh, 2013).

Regarding living resources, coastal states enjoy exclusive sovereign rights on the regulatory and judicial levels. However, as stated in Part V of UNCLOS, coastal states are subjected "to a number of limitations in exercising these functional powers" (Andreone, 2015, p.5). Articles 61 and 62 of UNCLOS state that after proclaiming an EEZ, coastal states are obliged to determine the total allowable catch (TAC) of the stocks, examine their capacity to harvest these, and establish conservation and management measures guaranteeing the optimum utilization of each stock (Andreone, 2015). Stocks of living resources within a country's EEZ are not necessarily exclusively harvested by the coastal state. When the determined TAC is higher than the coastal state's estimated fishing capacity, and therefore surplus fisheries exist, coastal states are able to allocate these surplus fisheries to third states (Andreone, 2015; Gangern & van den Bergh, 2013; Lado, 2016).

The surplus fisheries are allocated through agreements that can be unidirectional or reciprocal, bilateral or multilateral, and the signatory parties may either be companies or governments (Gangern & van den Bergh, 2013). Distant water fishing nations (DWFNs) are nations with contractual rights to the exploitation of surplus fisheries within other countries' EEZs. The most important DWFNs that have unidirectional agreements are the EU, Japan, the ex-Soviet countries, as well as Asian and South East Asian countries (Gagern & van den Bergh, 2013). The domestic and DWFNs' fishing vessels operating in a country's EEZ fall under the monitoring and enforcement of the coastal state. Article 73 of UNCLOS stipulates coastal states with the right to boarding, inspection, arrest, and judicial proceedings (Andreone, 2015).

3.2 Flag States & High Seas/RFMOs – a scenario beyond national jurisdiction

Nearly 60% of the world's oceans do not belong to a country's 200 nautical miles EEZ and, consequently, fall outside of national jurisdiction (Cullis-Suzuki & Pauly, 2010). Until the 1995 Straddling Fish Stocks Agreement (UNSFA), the so-called high seas were considered open-access, enabling fishermen to extract fish without regulations (Cullis-Suzuki & Pauly, 2010). However, with the UNSFA, RFMOs are provided with the legal mandate of managing the vast majority of the high seas, assuring the conservation and the optimal use of marine living resources (Pentz et al. 2018; Peterson 2020).

RFMOs are supranational organizations consisting of member- and cooperating non-member (CNM) states, as well as a scientific committee. It is the scientific committee's task to annually gather and analyze data, in order to determine sustainable catch levels for each species that falls under the RFMO's management. The committee presents its recommended measures, and an implementation plan is devised. For the implementation plan to be set in place, the consensus of all member states is required, and the established rules become binding for everyone allowed to fish in the respective RFMO’s area (Koehler, 2013). All vessels that are registered in an RFMO and whose flag state is a member or CNM are allowed to engage in fishing activities in the regulatory area.

In order to regulate ships on the high seas, the principle of flag state jurisdiction is crucial. According to Article 92 (1) UNCLOS:

> Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in this Convention, shall be subject to its exclusive jurisdiction on the high seas.

In other words: “the flag links the ship to a particular state, and this link supersedes other links, including other traditional categories such as ownership or nationality of seafarers”, ships are treated as “floating parts of a state’s territory” (Ringbom, 2015, pp.21-22). However, with regard to overfishing, the 1995 UNFSA mandates non-flag states to enforce international fishing regulations (Ringbom, 2015). UNFSA privileges boarding and inspection schemes of RFMOs, allows non-flag states the inspection of vessels suspected of violating fisheries standards and notification of the flag state, and applies RFMOs enforcement schemes (Ringbom, 2015). Thus, the monitoring and enforcement of RFMO fishing regulations fall outside of the flag state’s national jurisdiction.

Although according to Article 91 (1) of UNCLOS, a genuine link between the flag state and the ship must exist, the flagging of vessels looks quite different in practice as the International Tribunal for the Law of the Sea (ITLOS) weakened the importance of that link in a decision in 1999 (Miller & Sumaila, 2014; Ringbom, 2015). Some countries have open registries, where vessel owners have the ability to flag their vessel based on flexible requirements that do not include nationality (Miller & Sumaila, 2014). Thus, vessel owners are able to choose a flag that provides them with an economical advantage, such as reduced costs relating to legal requirements or tax avoidance, a so-called ‘flag of convenience’ (FoC) (Miller & Sumaila, 2014; Österblom et al., 2010).

3.3 Overfishing as a Large-Scale Collective Action Problem

Typically, the characteristics of large-scale collective action problems are a large number of actors, spatial distance, temporal distance, and complexity (Jagers et al., 2020). Both, illegal fishing within a country's EEZ as well as within the regulatory area of RFMOs, are collective action problems that involve a large number of actors: domestic and international fishermen, companies, governments, and the regulatory authority. The number of actors makes it more difficult to coordinate action, cooperate, and the introduction of principals can further enhance the collective action problem (Jagers et al., 2020). Both cases also affect large geographic territories. Even though, by definition overfishing in EEZs happens within a geographically limited area that is administered by one state, overfishing affects a greater territory as migratory fish stocks straddle over countries' borders, and the overexploitation of stocks at one place affects fisheries in other places. The management of biological mobile resources complicates collective action as the size of the resource is difficult to estimate and the actors' assurance of compliance is less credible (Becker & Ostrom, 1995; Linell et al., 2017; Schlager et al., 1994). overfishing and the depletion of fish stocks, moreover, have a long temporal distance. While the overexploitation of stock has rather directly observable consequences: a lack of this particular stock, the resulting disappearance of the marine ecosystem due to the imbalance of the food web (Heppell et al., 2000; Komorske & Lewison, 2015; McCauley et al., 2015) further leads to extensive cascading effects. Despite the ecological effects that include wildlife, biochemical cycles, and carbon sequestration (Estes et al., 2011), overexploitation of fisheries poses threats to coastal communities' livelihoods and food security (Jönsson & Kamali, 2012; Muawanah et al., 2012; Pomeroy et al., 2007; Stobutzki et al., 2006; Telesetsky, 2017). These effects with longer time horizons complicate collective action further, as future generations are affected (Jagers et al., 2020). Lastly, overfishing is a collective action problem with a large degree of complexity. It is interconnected with further large-scale collective action problems. While depleted fish stocks, due to overfishing, negatively affect the carbon sequestration of the oceans, global warming accelerates as a smaller portion of the world's carbon emission can be stored in the oceans, and global warming leads to ocean acidification which in turn leads to further biodiversity loss. However, the further interconnections with other large-scale collective action problems and the resulting complexity fall outside of the study's scope and will not be discussed in greater detail.

To summarize the cases: First, fishing regulations in the EEZ fall under the coastal states' national jurisdiction and, depending on negotiations and agreements, DWFNs, international fishermen, might be allowed to harvest surplus fisheries. Second, although flag states exercise exclusive jurisdiction over their vessels, in regard to fishing practices, the rules, monitoring, and enforcement schemes of RFMOs apply to those vessels operating on RFMO waters. Consequently, fishing regulations in RFMOs are beyond national jurisdiction. Due to open registries in some countries, vessel owners can pick the flag under which they want to sail. Third, overfishing, within EEZs as well as within RFMOs, is a large-scale collective action problem as it involves a large number of actors, has spatial and temporal distance, and is very complex.

4 Theoretical Approach

Building upon research on the vertical relationship (Sjöstedt, 2013) and the role of state capacity (D'Arcy & Nistotskaya, 2017; Povitkina, 2018; Sjöstedt & Jagers, 2014) in collective action problems, this paper argues that a country's level of state capacity affects overfishing within and beyond national jurisdiction, while 'push' and 'pull' mechanisms come to play. It is argued that a lack of state capacity 'pushes' resource-users, through norm creation on the vertical relationship, towards overfishing on one hand, and, on the other hand, attracts or 'pulls' those resource-users in their EEZ (DWFN) or their flag registries (FoC) that do not intent to comply with fisheries regulations.

Applying rational choice and enriched economic models of compliance, the individual's tendency to comply with regulations is estimated by subtracting the cost of punishment being caught from the expected gains of engaging in illegal activity (Becker, 1968), by accounting for individuals' moral consequences, such as personal morality and the individual's perception of rule legitimacy (King & Sutinen, 2010). The cost of punishment when being caught is naturally dependent upon the extent of monitoring and rule enforcement by the regulatory authority as it increases the likelihood of being caught and getting a fine. The extent to which monitoring and enforcement are executed builds the cornerstone of this argument.

In areas where total compliance monitoring and rule enforcement come with great costs for the regulatory authority, like the monitoring and rule enforcement of the country's EEZ, but to an even greater extent on the high seas, the resource users' trust in the regulatory authority becomes crucial. As the regulatory authority effectively monitors and enforces fishery regulations and fishermen comply with these rules, the fishermen benefit, since the authorities ensure “that other fishermen follow the fishery regulation, and common-pool resources would be sustainably managed for everyone’s long term benefit” (Sjöstedt, 2013, p.618). State capacity resembles the ‘eyes’ and ‘teeth’ of the state, its capacity to monitor and enforce compliance (D’Arcy & Nistotskava, 2017). As a state lacks this capacity, “expectations of non-compliance will spread among fishermen, and, under such circumstances, the most costly outcome for an individual resource user is to comply while the rules are not enforced” (Sjöstedt, 2013, p.618). Thus, assuming that the resource-users are risk-averse, they overexploit the resource. I argue that the fishermen’s exposure to a country’s state capacity and the resulting pattern of compliance generates a behavioral norm. While a focus on the individual’s nationality’s level of state capacity would also be a reasonable approach, the coastal- or flag states capacity is regarded in this paper. Seafarers are exceptionally international, meaning that the crew of a vessel consist of various nationalities, consequently, focusing on the nationality’s state capacity would be difficult in this study. Rather, it is argued that the fishermen’s exposure to the coastal- or flag states' capacity is of particular importance for the creation of fisheries compliance norms. This norm creation is the underlying ‘push’ mechanism of the focal relationship between state capacity and overfishing.

Furthermore, following the enriched economic models of compliance, utility-maximizing individuals are incentivized to choose to operate in areas in which the monitoring, as well as rule enforcement, is poorly executed, as it reduces the likelihood of costly punishment, increasing the overall utility of the individuals’ non-compliance. This paper argues that a lack of state capacity attracts resource-users with low values of moral consequence who are hoping to engage in illegal activities of resource extraction to greater their economic benefit. This attraction is the underlying ‘pull’ mechanism of the focal relationship between state capacity and overfishing. However, in order for the ‘pull’ mechanism to work and to attract resource users into areas of low state capacity, open access to these areas is necessary. Thus, the openness of areas for external actors, such as the allocating of surplus fisheries to DWFNs or open flag registries, becomes a moderating variable in this relationship.

In collective action theory, the role of state capacity in overcoming problems of common-pool resource management is also interacting with regime type (D’Arcy & Nistotskaya, 2017; Povitkina, 2018). Two conditions are seen to be crucial in overcoming collective action problems over common-pool resources: credible commitment and credible enforcement

(D’Arcy & Nistotskaya, 2017; Sjösted, 2013). While state capacity captures the condition of credible enforcement, democracy is generally perceived to be the best solution to the credible commitment problem (D’Arcy & Nistotskaya, 2017), as it embodies the prevention of power abuse and ensures that the elites are responsive to the citizens’ preferences (Rodrik, 2000).

Moreover, in the provision of public goods such as environmental conservation, the input side of the political system is shaped by the regime type and the output side is shaped by the state capacity (Povitkina, 2018). Due to the democracies’ openness to a variety of interests and the greater public awareness about environmental issues, through freedom of association and expression, as well as the larger size of the “winning coalition” (see Bueno de Mesquita et al., 2003), environmental issues are more likely to be on democracies agenda than on autocracies (Povitkina, 2018). Consequently, it is not sufficient to excel merely on the output side of the political system by providing effective monitoring and enforcement, if the provision of public goods is not internalized politically and common-pool resources, such as fisheries, remain unregulated. Further, as democracies are well equipped to execute legitimized coercion (Mansbridge, 2014), regime type does not only affect the input-side of the political system, but also the likelihood of compliance to rules. It is argued that the perception of legitimate regulations increases the resource users’ voluntary compliance (King & Sutinen, 2010). Following this line of thought, I argue that regime type serves as a second moderating variable in the focal relationship between state capacity and overfishing which will be analyzed separately. *Figure 1* captures the theoretical model of the study.

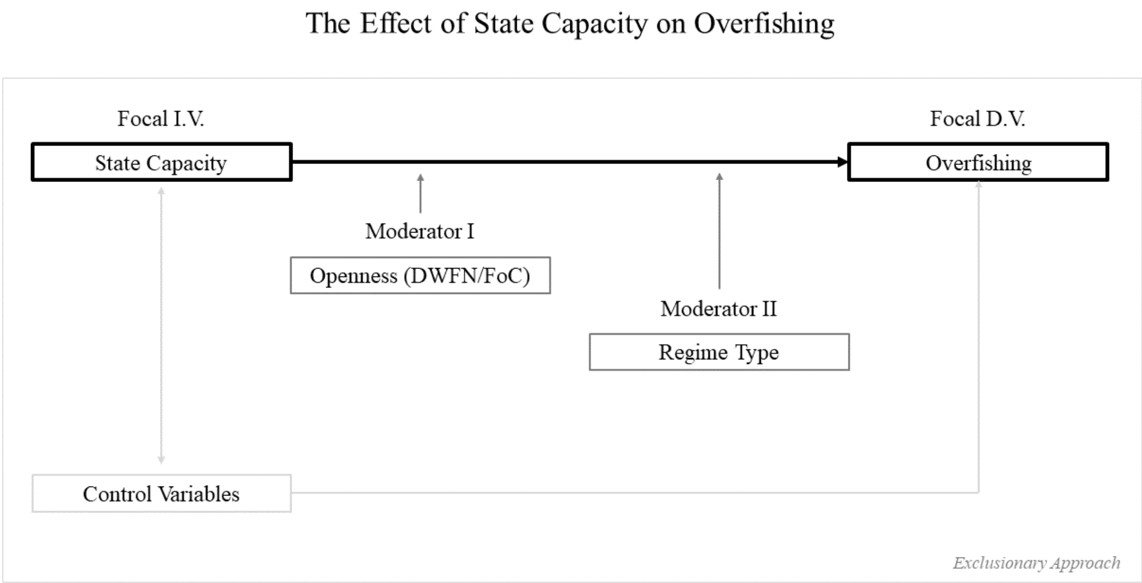


Figure 1: The relationship between state capacity and overfishing moderated by openness and regime type

While the actors' strategies and the effect of state capacity on overfishing by controlling for regime type within national jurisdiction have been empirically tested by Sjöstedt and Jagers (2014), the attraction of actors in the relationship between state capacity and overfishing under national jurisdiction remains to be empirically tested. Moreover, the transfer of the relationship between state capacity and overfishing in a sphere beyond national jurisdiction is a novelty and has not been researched in a large-*n* study. This paper contributes to the literature by providing an analysis of the relationship between state capacity and overfishing within and beyond national jurisdiction, by accounting for "push" and "pull" mechanisms as well as the interaction of state capacity with regime type. *Table 1* clarifies the different aspects of the relationships within and beyond national jurisdiction.

	Within National Jurisdiction	Beyond National Jurisdiction
Actors' Strategies - "Push"	Lack of monitoring and enforcement incentivizes resource users to non-compliance in the vertical- & horizontal prisoner's dilemma	Norms of compliance created in collective action within national jurisdiction travel to contexts beyond national jurisdiction
Attracting Actors - "Pull"	Lack of monitoring and enforcement attracts resource users with low values of moral consequence	Lack of monitoring and enforcement attracts resource users with low values of moral consequence; Norms of compliance within national jurisdiction travel to contexts beyond national jurisdiction
Interaction Regime Type	Lack of monitoring and enforcement interacts with the extent to which environmental policies are established	Norms of compliance with environmental policies created in collective action within national jurisdiction travel to contexts beyond national jurisdiction

Table 1: Table of the covered components of the relationship between state capacity and overfishing as well as the respective underlying causal mechanism

5 Expectations

The first set of testable hypotheses that are derived from the theory focus on the relationship between state capacity and overfishing within national jurisdiction. As the monitoring and enforcement of rules are crucial in the vertical relationship of collective action problems over common-pool resources, fishermen are incentivized to engage in illegal fishing practices when they observe inefficient monitoring and enforcement practices of the state. However, if a country has high levels of state capacity, according to collective action theory, the fishermen are more likely to comply with the country's fisheries regulations. With *H1.1* the underlying 'push' mechanism of the focal relationship between state capacity and overfishing is tested:

H1.1: Higher state capacity is associated with lower degrees of overfishing in a country's EEZ

In order to test the 'pull' mechanism of the focal relationship between state capacity and overfishing, countries' fishing agreements with DWFNs need to be considered. If a country allows DWFNs to harvest surplus fisheries, I argue that the country's level of state capacity can additionally attract international resource users, that are hoping to engage in overfishing and exceed the agreed-upon TAC, in their EEZ. As argued earlier, the extent to which a state is capable of effectively monitoring and enforcing rules affects the likelihood of detection when non-compliant, and therefore the costs in the fishermen's cost-benefit calculation.

Consequently, utility-maximizing fishermen, that intend to engage in overfishing, seek to lower their costs of non-compliance by fishing in the EEZ of a country with low levels of state capacity. However, fishermen can only harvest surplus fisheries in EEZs of countries that have fishing agreements with the flag state of the international fishermen. As the level of state capacity increases, countries lose their attractiveness to international fishermen willing to engage in overfishing, and the extent of overfishing reduces. Thus, I expect an interaction effect between the state capacity of the country and the EEZ's openness to DWFNs' fishing vessels.

H1.2: State capacity affects overfishing especially when countries have agreements with DWFNs, i.e. allow vessels from other states to fish in their own water. In other words, in countries with fishing agreements with DWFNs, increasing levels of state capacity lead to a faster reduction of overfishing in their EEZ than the same increase in the level of state capacity would reduce overfishing in countries' EEZs without those agreements.

Following the arguments of previous research, *H1.3* tests the interaction effect between state capacity and regime type. In collective action theory, the role of the state has been identified as crucial in the managing of common-pool resources and the provision of public goods. Democracies offer credible commitments and democratic leaders are held accountable by the citizens. Thus, rules in democracies are legitimized by the public. The legitimacy of fishing regulations in a country's EEZ could increase fishermen's compliance, since it affects the fishermen's moral consequences, making non-compliance more costly. I argue, that even though the fishermen on vessels operating in a country's EEZ might have different nationalities, and therefore might not hold the authority establishing rules directly accountable, the rules are legitimized by the public and not dictated; crewmembers onboard perceive the regulations as more legitimate than in autocracies.

H1.3: Authoritarian regimes with low levels of state capacity show higher degrees of overfishing in their EEZ than democracies with low levels of state capacity. In Authoritarian regimes, increasing levels of state capacity lead to a faster reduction of overfishing in their EEZ than the same increase in the level of state capacity would reduce overfishing in democracies' EEZs.

Figure 2 visually displays the expected relationships regarding EEZ overfishing.

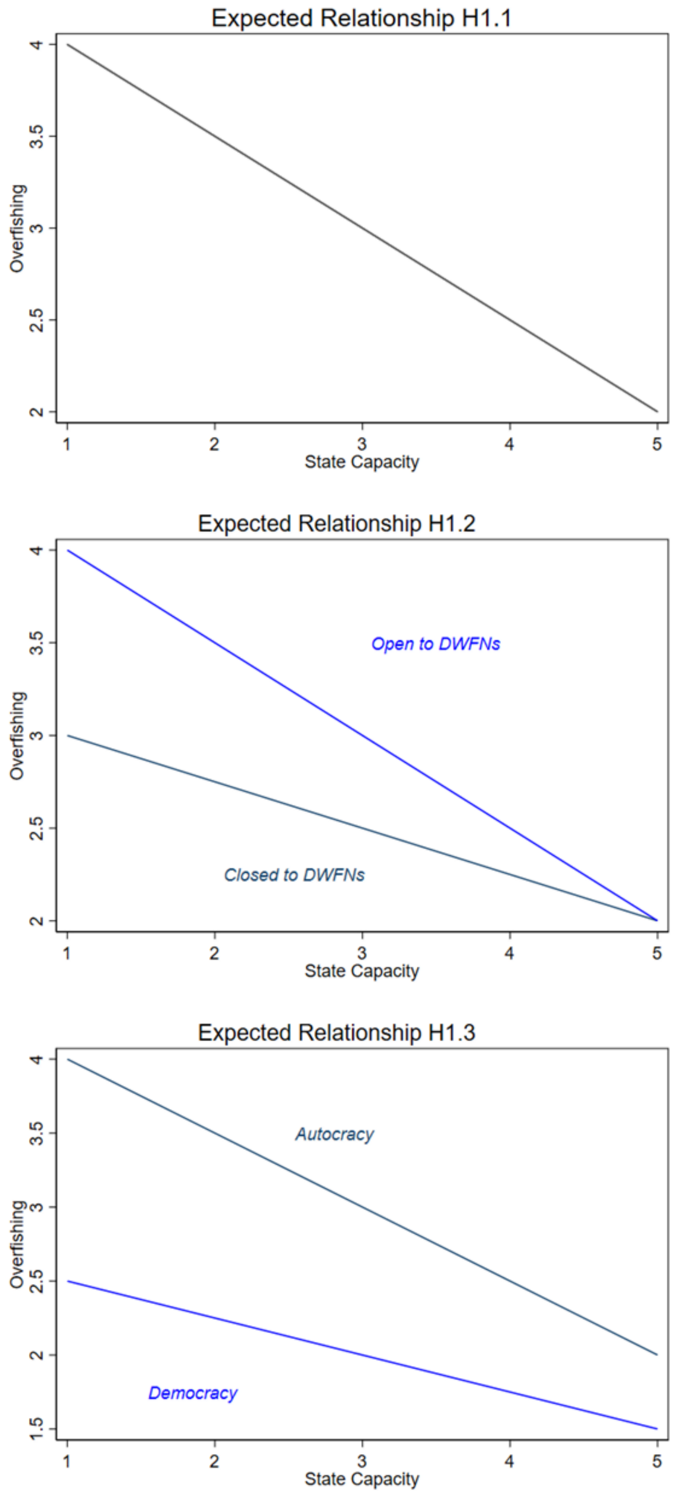


Figure 2: Visualization of the hypotheses H1.1, H1.2, and H1.3 of the relationship under national jurisdiction

The second set of testable hypotheses focuses on the relationship between state capacity and overfishing in areas beyond national jurisdiction. While the theory from which the hypotheses are derived remains mainly the same, the element of norm creation and the transfer of those norms is added, in order to apply the theory in areas beyond national jurisdiction. As flag states execute exclusive jurisdiction over their vessels on the high seas in most matters, I argue that the fishermen's exposure to the flag state's monitoring and enforcement practices affects the fishermen's compliance to regulations in general, in accordance with the vertical relationship in collective action theory between the resource user and the regulatory authority. As the flag state's level of state capacity is low, fishermen of vessels flying the flag are more likely to break rules set by the flag state, since the flag state lacks the capacity to monitor and enforce these rules. I argue that the incentive of non-compliance with the flag states' regulations onboard generates a norm of non-compliance. Furthermore, the norm of non-compliance is transferred into areas that lay beyond the flag state's jurisdiction, such as fishing regulations under RFMOs on the high seas. In a previous study, Fisman and Miguel (2007) found that individuals' norms of compliance, resulting from their exposure to levels of state capacity, have been transferred into contexts outside of the individuals' national jurisdiction. Thus, it is expected that fishermen that sail under the flag of countries with low levels of state capacity are more likely to engage in overfishing on the high seas, as they transfer their norms of compliance, created onboard, into a space in which an RFMO and not the flag state is responsible for the monitoring and rule enforcement.

H2.1: Higher state capacity is associated with lower degrees of overfishing on the high seas of vessels that sail under the respective country's flag.

The next hypothesis deals again with the 'pull' mechanism of state capacity, but this time in the relationship between state capacity and overfishing in areas beyond national jurisdiction. Since some countries have open flag registries, vessel owners can, independent of their own or the crew's nationality, choose the country in which they register their vessel and therefore choose whose country's jurisdiction applies to the vessel. Besides tax avoidance and lower legal requirements, low levels of state capacity could draw vessel owners to flags of convenience. Since low levels of state capacity of the flag state lower the costs of non-compliance with the rules that fall under the flag state's jurisdiction, maximizing the individuals' utility when disobeying, the crew is incentivized to neglect existing rules laid down by the flag state. Being exposed to the rule monitoring and enforcement on the flag state onboard, fishermen create norms of compliance. As argued before, these norms of compliance might in turn be transferred in areas that fall outside of the flag states' jurisdiction, like fishing regulations under RFMOs on the high seas. Consequently, I expect fishermen sailing under a flag of convenience with low levels of state capacity to be more likely to engage in overfishing on the high seas.

H2.2: Countries with low levels of state capacity and open flag registries show higher degrees of overfishing on the high seas on vessels sailing under their flag than countries with low levels of state capacity that do not have open registries. In countries with open flag registries, increasing levels of state capacity lead to a faster reduction of overfishing on the high seas of their vessels than the same increase in the level of state capacity would reduce overfishing by countries without open registries.

When focusing on the interaction effect between state capacity and regime type in areas beyond national jurisdiction, the argument of credible commitment and rule legitimacy no longer holds, as rules in RFMOs are mostly decided by consensus of all member states and the lines of accountability are too complex. However, it is argued that democracies have advantages over authoritarian regimes when it comes to environmental policy on the input-side of the political system, due to freedom of media, freedom of speech and association, and the openness to the public interests. As democracies have the environment on their political agenda, vessels sailing under the flag of democracies are likely to be exposed to regulations concerning the environment in their operations at sea. While this exposure to environmental regulations onboard alone should not be sufficient to affect the fishermen's compliance, I argue that the exposure to environmental regulations does play a role in combination with the flag states' state capacity. As argued before, the fishermen on vessels exposed to other environmental regulations create norms of compliance with environmental regulations based upon the extent to which the flag state monitors and enforces those. On the other hand, fishermen on vessels flying the flag of autocratic regimes are less likely to encounter environmental regulations. Even if the flag state executes effective monitoring and enforcement of the flag state's regulations on their vessels, fishermen are less likely to create norms of compliance with environmental regulations. Consequently, it is argued that with increasing levels of state capacity, vessels flying flags of democratic countries reduce levels of overfishing faster than vessels of autocratic countries, as they transfer their gained norms of compliance with environmental regulations onto the high seas.

H2.3: Authoritarian regimes with low levels of state capacity show the same degree of overfishing on the high seas of their vessels as democracies with low levels of state capacity. In democracies, increasing levels of state capacity leads to a faster reduction of overfishing on the high seas of their vessels as the same increase of the level of state capacity would reduce overfishing on vessels from authoritarian states.

Figure 3 shows the expected relationships regarding overfishing in international waters.

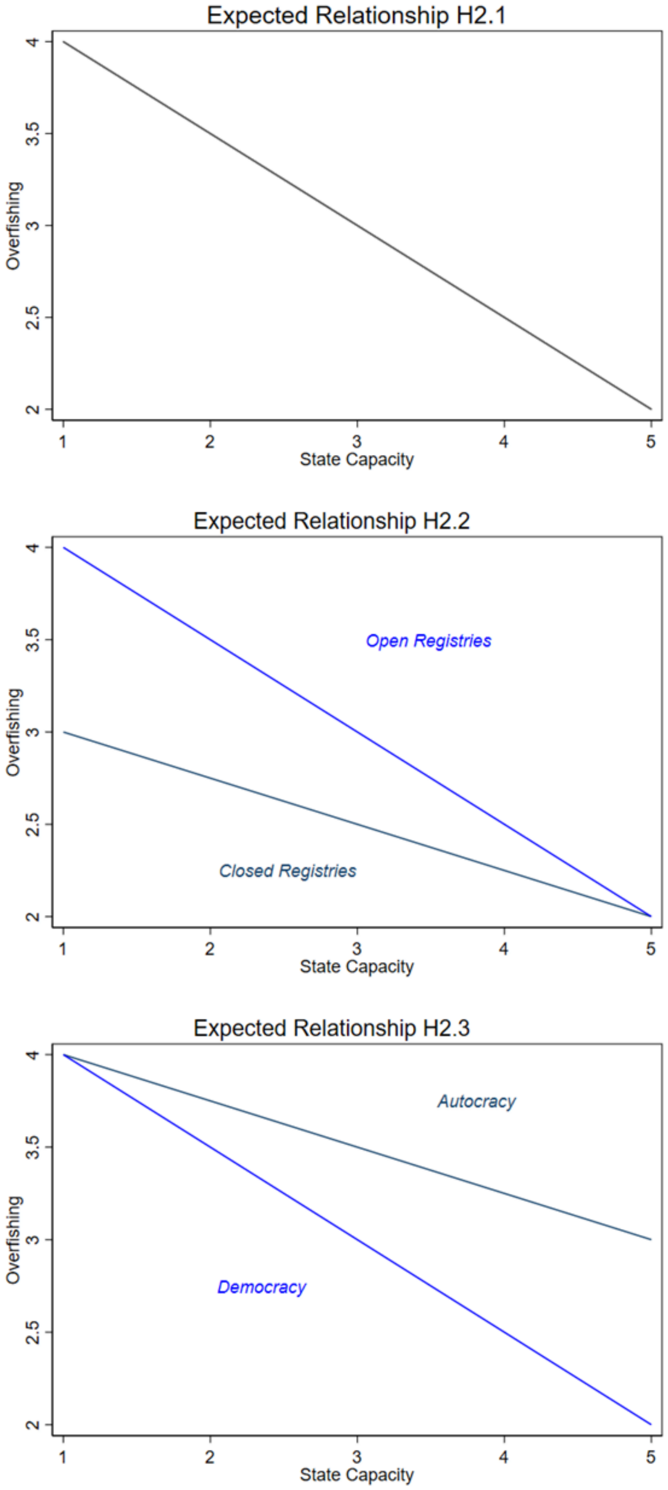


Figure 3: Visualization of the hypotheses H2.1, H2.2, and H2.3 of the relationship under national jurisdiction

To summarize, building upon collective action theory research and following the theoretical argument of this paper, six hypotheses are tested. These hypotheses concern the focal relationship between state capacity and overfishing, the interaction effect between a country's openness to third parties and state capacity, as well as the interaction effect between regime type and state capacity. They will be tested in areas under national jurisdiction and beyond national jurisdiction. Distinct from the casual mechanism underlying the hypotheses within national jurisdiction, in areas beyond national jurisdiction the importance of the creation and transfer of norms is stressed.

6 Data & Measurements

For analyzing the theoretical model and testing the therefrom derived hypotheses, a cross-sectional dataset, complemented by a longitudinal dataset is used. While the cross-sectional dataset enables me to analyze all hypotheses, the longitudinal dataset provides only data for areas that fall under national jurisdiction and, consequently, is merely applicable for the first set of hypotheses. However, this dataset provides valuable information about within-country changes over time and, therefore, contributes to a deeper analysis of the relationship.

The unit of analysis differs between the two datasets. While the unit of analysis in the relationship between state capacity and overfishing is countries in the cross-sectional dataset, it is country-years, nested within countries, in the longitudinal dataset. The population of the study is the whole modern world that engages in coastal- and open-ocean fishing, while the samples consist of countries or country-years with available data.

6.1 Cross-Sectional Dataset

The cross-sectional dataset consists of data covering 106 countries from around the world that engage in fishing. The focal dependent variable, overfishing, in the cross-sectional dataset is conceptualized as IUU-fishing. IUU-fishing is defined as illegal, unreported, and unregulated fishing by the 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing (IPOA-IUU). *Illegal* includes the violation of laws of waters under national jurisdiction or the high seas, *Unreported* includes the misreporting or abstaining from reporting of catches, and *Unregulated* includes vessels operating in an RFMO sailing under a flag that is not an RFMO member or fishing in areas where there is no RFMO in place.

The IUU-Index, developed by Poseidon Aquatic Resource Management Ltd. and the Global Initiative Against Transnational Organized Crime, is used as the measurement for IUU-fishing in this study. I use certain indicators of the IUU-Index to create variables measuring the extent of flag states engaging in IUU-fishing, for the relationship outside of national jurisdiction on the high seas, and for coastal states, for the relationship under national jurisdiction in a country's EEZ.

Flag-States IUU Engagement: The study uses an index consisting of several prevalence indicators for flag states of the IUU-Index as a focal dependent variable. These indicators measure known and suspected IUU incidents for the years 2019 and 2021. It is created by combining the number of a flag state's vessels listed on IUU lists, a blacklist for vessels engaging in IUU-fishing, the view of fisheries observers on flag state compliance incidents, and views of Marine Stewardship Council (MCS) practitioners on flag state compliance incidents. It furthermore includes general prevalence indicators as a variable for whether a country is "carded" under the EU IUU Regulation and a dummy-variable measuring whether a country is "identified" by the National Oceanic and Atmospheric Administration (NOAA) for IUU-fishing, in order to increase the variance of the created index. The different indicators are weighted in their importance according to the, by the IUU-Index recommended, weights. All indicators of the created index vary between 0 and 1, where 0 reflects the absence of IUU-fishing practices, and 1 reflects the highest extent of IUU-fishing practices. Consequently, the created *Flag-States IUU Engagement* variable theoretically varies between 0 and 1, however, no single country scores 1 on all separate indicators.

Coastal-States IUU Engagement: For coastal states and the relationship between state capacity and overfishing under national jurisdiction, the focal dependent variable is, as the variable for flag states, created by combining several prevalence indicators of the IUU-Index measured in 2019 and 2021. Apart from the general prevalence measures as being "carded" under the EU IUU Regulation or "identified" by NOAA for IUU-fishing, measures for the views of MSC practitioners on coastal compliance incidents, as well as a dummy variable for MSC-certified fisheries are included in the created *Coastal-States IUU Engagement* Index and weighted according to the by the IUU-Index recommended weights. Again, this index varies theoretically between 0 and 1, as that is the scale on which all separate indicators are measured. 0 reflects the absence of IUU-fishing practices in coastal waters (EEZs) and 1 reflects the worst possible extent of IUU-fishing practices in a country's EEZ.

The validity of both measures for the focal dependent variables, *Flag-States IUU Engagement* and *Coastal-States IUU Engagement* is given, as both measures accurately measure the concept of IUU-fishing which is the conceptualization of overfishing in the cross-sectional dataset, and therefore neatly fit the proposed theory for compliance to fishing regulations within and outside of national jurisdiction.

State Capacity: While there are many different conceptualizations of the concept of state capacity, such as Skocpol's (1985) rather broad concept that defines it as the government's ability to implement official goals and provide services or Levi's (1988) concept of the state's ability to extract revenues, this study focuses more on state capacity in a context of collective action and the provision of public goods. Consequently, state capacity is defined as the "eyes and teeth" of the state (D'Arcy & Nistotskaya, 2017), with the ability to execute policies (Fukuyama, 2004) and the provision of public goods (Hanson, 2015; Norris, 2012), such as a healthy environment. *State Capacity* is the focal independent variable of the relationship between state capacity and overfishing within and outside of national jurisdiction. For this study, it is operationalized as the International Country Risk Guide (ICRG) Indicator of Quality of Government, which combines measures for corruption, law and order, and bureaucracy quality. The indicator covers a time span from 1984-2020 and includes 147 countries. The corruption indicator measures the prevalence of corruption as nepotism, patronage, tit-for-tat exchanges, job reservations, close connections between business and politics, and unofficial party funding. The indicator for law and order measures public obedience to the law and the capabilities and strength of the legal system. The indicator for bureaucracy quality approximates the public administration's capacity to perform tasks without political influence. While the most frequent measures of state capacity quantitatively measure the same (Vaccaro, 2020), the ICRG Indicator of Quality of Government has data available until the year 2020 and as the IUU-Index data for the focal dependent variables are available for the years 2019 and 2021, the ICRG Indicator of Quality of Government is of practical advantage for the cross-sectional dataset. "Taken together, the components reflect aspects of governmental quality relevant for countries' environmental performance" (Povitkina, 2018, p.58). The combination of a strong legal system, the absence of corruption, and the administration's capacity neatly reflect the state's "eyes and teeth", leading to a high validity of the measure for the studied relationship of this paper. The measure ranges between 0 and 1, where 1 reflects the highest possible level of state capacity.

As the ICRG Indicator of Quality of Government includes the measurement of the public obedience to the law, potential bias arises because a part of the independent focal variable is to some extent related to the focal dependent variable engagement in IUU-fishing, which measures disobedience with fishing regulations, and could conflate both variables. However, this is just one indicator of many in the Index created by the ICRG, and fishing regulations are a rather specific niche. Moreover, seafarers are exceptionally international, just because a vessel sails under a certain flag or in a certain EEZ does not mean that the fishermen are nationals of this country. Consequently, the fishermen are not necessarily included in the measure for public obedience but rather affected by the exposure to this country's state capacity. Thus, I proceed with the ICRG Indicator of Quality of Government as my focal independent variable.

Openness for other Actors: The first moderating variable of the theoretical model deals with the attraction of other actors to operate under a flag of convenience or as a DWFN in another country's EEZ as described in *H1.2* and *H2.2*. The *Openness for other Actors* in the context of coastal states and overfishing under national jurisdiction in a country's EEZ is operationalized as the variable: authorize foreign vessels to operate in EEZ from the IUU-Index by Poseidon Aquatic Resource Management Ltd. and the Global Initiative Against Transnational Organized Crime. The information is gathered by a survey of government contracts but could not be obtained for all countries of the sample. The *Openness for other Actors* in the context of flag states and overfishing beyond national jurisdiction on the high seas is operationalized as the variable: International Transport Workers' Federation (ITF) Flag of Convenience classification. The ITF Flag of Convenience classification list countries that have open flag registries, enabling vessel owners to flag out their vessels in countries to which there is no existing genuine link and to pick and choose a flag that provides economic and legal benefits for the vessel owner. Both measures for *Openness for other Actors*, in a country's EEZ and in its flag registries measure what they intend to measure and have, therefore, high validity.

Regime Type: The second moderating variable in the theoretical model is *Regime Type* which deals with the expected interaction effect between state capacity and regime type in *H1.3* and *H2.3*. Regime Type, or rather democracy and autocracy have been conceptualized in various ways. For this study and the test of the relationship between state capacity and overfishing within and beyond national jurisdiction, democracy is conceptualized as a minimal or thin understanding of electoral democracy as Dahl's (1989) polyarchy concept. As a thin understanding of democracy does not include rule of law it allows testing interaction effects between state capacity and regime type "without conflating the two through the overlapping measurements" (Povitkina, 2018, p.57). Thus, *Regime Type* is operationalized as the electoral democracy index from Varieties of Democracy (V-Dem). The V-Dem electoral democracy index covers data from 1946-2020 in 184 countries. The index measures the extent to which elections are free and fair, whether the executive is elected, whether suffrage is universal, and the freedom of expression and association with the help of 2,500 country experts that code the data for each country year (Pemstein et al. 2017). The measure ranges between 0 and 1, where 1 reflects a perfect electoral democracy. This measure fits the theoretical argument of the paper and matches the statistical requirements for an analysis of an interaction effect.

Control Variables: Apart from the focal dependent- and independent variables, as well as the moderating variables, the cross-sectional dataset consists of further control variables to control for potentially spurious relationships between the independent variables and the dependent variable. Firstly, a vulnerability index is created for the flag- and coastal states by combining several indicators of the IUU-Index and weighting them. All indicators of the vulnerability indexes are argued to positively affect overfishing and are therefore important to include in the analysis. The *Flag-State Vulnerability* includes the number of county's fishing vessels, the number of RFMOs it is a member in, catch volumes, volumes of imported fish, and the country's trade balance for fisheries products. The *Coastal-State Vulnerability* includes the size of a country's EEZ, whether there are clear EEZ borders, the country's dependency on fish protein, catch volumes, volumes of imported fish, and the country's trade balance for fisheries products. Both vulnerability measures theoretical range between 0 and 1, as all individual indicators are measured on this scale. 1 reflects the highest vulnerability of a flag state or coastal state to IUU-fishing, meaning that these countries have a higher likelihood of being caught engaging in IUU-fishing practices. Secondly, a variable measuring economic development is included, to account for a potential spurious relationship, where overfishing is mainly affected by economic development. Usually, scholars use Gross National Income (GNI) as a control variable when researching overfishing (Povitkina et al., 2014). However, due to issues of multicollinearity between state capacity and GNI, economic development is operationalized as World Bank's *Gross Domestic Product* (GDP) per capita in purchasing power parity, as it still captures a country's economic development but correlates less with the variable for state capacity. Economic development is argued to affect environmental performance (Scruggs, 2009) and is thus included as a control variable. Thirdly, a control variable for geography is included in the dataset to account for potential geographical effects on overfishing. The variable accounts for different *Ocean basins.*

A table that shows the sample's countries, as well as a the variables summary-statistics, can be found in the Appendix.

6.2 Longitudinal Dataset

The Longitudinal dataset consists of data covering 103 countries from around the world that engage in fishing and a maximum of 27 years per country. As the dataset is fairly balanced and covers more than 20 years per country, it is structured as a long panel.

Marine Trophic Index: The focal dependent variable for the time-series analysis of the relationship between state capacity and overfishing within a country's EEZ and under national jurisdiction is operationalized as the *Marine Trophic Index (MTI)* from the Sea Around Us Project, a scientific collaboration between the Pew Environment Group and the University of British Columbia. The *MTI* measures the extent to which countries are "fishing down the food chain" (Sjöstedt, 2013, p.620), meaning that fishermen are catching smaller and smaller fish, as fishing pressures increase in their EEZs. For the calculation of the index, numbers are assigned to each species according to their position in the food web, where megafauna (predators) receives higher numbers than herbivores. "The measure averages trophic levels from the overall catch, based on a dataset of commercial fish landing compiled by the Food and Agriculture Organization of the United Nations (FAO)" (Povitkina et al., 2014). While this measurement has been used as a proxy for marine ecosystem health in several studies (Povitkina et al. 2014; Sjöstedt, 2013; Sjöstedt & Jagers, 2014), it also serves as a proxy for overfishing (Bhatal & Pauly, 2008; Pauly et al., 1998; Pauly, 2005; Pauly & Palomares, 2005; Pauly & Watson, 2005) as a negative trend in the *MTI* reflects overfishing in a countries EEZ. The variable ranges between 0 and 1. Data for the *MTI* covers a time span from 1950-2018 and captures EEZs in 114 countries. The data is aggregated to the country level while special dependent areas e.g. American Samoa or French Polynesia are excluded from the analysis, as data for the independent variables are not available for these special dependent areas. As the *MTI* is a measure of overfishing, it matches the paper's theory and is of high validity.

State Capacity and *Regime Type* are, as in the cross-sectional dataset, measured as the ICRG Indicator of Quality of Government and the V-Dem electoral democracy index.

Control Variables: The longitudinal dataset, furthermore, consists of a number of control variables that potentially could affect the dependent variable. These variables are included in the analysis to account for potential bias due to spurious relationships between variables of interest. Firstly, a control variable for economic development is included, operationalized as the logged version of *GDP per capita* measured in purchasing power parity. Again, this measurement is chosen over the GNI, as the GNI correlates highly with the ICRG Indicator of Quality of Government, resulting in multicollinearity. The data is retrieved from the World Bank and covers a time span from 1990-2020 including 198 countries. Secondly, *Population Size* is accounted for as the growing human population increases the pressure on fisheries (Delado et al., 2003). This measurement is retrieved from the World Bank Database which measures all residents of a country in a given year. Data for this variable is available for a time span from 1960-2020 and includes 200 countries. Thirdly, a variable for *Trade Openness* is included in the dataset as it is argued to affect environmental outcomes in several ways. While some scholars argue that trade encourages a "race to the bottom" (Managi et al., 2008) others argue that the establishment of higher environmental standards (Braithwaite & Drahos, 2000). It is operationalized as the World Bank's Share of Trade variable which is the sum of all exports and imports as a share of the country's GDP in a given year. Data for this variable is available from 1960-2020, including 187 countries. Lastly, control variables for geography are included. One variable that accounts for the geographical *Region* of a country and dummy-variable accounting for whether a country is an *Island.*

A table that shows the sample's countries, as well as the variables' summary-statistics, can be found in the Appendix.

7 Method

In order to examine the relationship between state capacity and overfishing in areas under and beyond national jurisdiction, two separate analyses of two separate datasets are conducted to test the hypotheses. While the cross-sectional dataset is suited for an analysis of all proposed hypotheses, the longitudinal dataset's advantage is to shed more light on within-country changes in overfishing within a country's EEZ over the years.

As in Sjöstedt (2013), an Ordinary Least Squares (OLS) regression analysis is executed since the cross-sectional dataset has a rather simple data structure. However, as the paper's argument builds on norm creation and norm transfer it would be flawed to expect that changes in state capacity immediately affect overfishing. Rather, it is argued that it takes time for the fishermen to notice changes in levels of state capacity, generate norms based upon those levels of state capacity, and transfer those norms into another context. Thus, the focal dependent variable and the focal independent variable are not analyzed in the same year in order to account for this lag. The focal dependent variable is lagged by two years, consequently, the fishermen had the time to adjust their behaviors of compliance to the levels of state capacity they are exposed to. As the Breusch-Pagan test indicates that the analyzed multivariate models suffer from heteroskedasticity, which means that the error terms do not have constant variance, robust standard errors are used for the analysis, as they generate more efficient and unbiased confidence intervals (White, 1980). The Variance Inflation Factor suggests that there are no critical levels of multicollinearity observed in the models and Cook's Distance suggests that the data has no critical outliers (Appendix). However, in the analysis of the flag states' levels of state capacity effect on overfishing on the high seas, the Link test indicates that models including the GDP per capita variable lack linearity. Attempts to mathematically adjust the linearity of the variable by using its natural logarithm, squaring it, converting it to an e-function, or including the variable in the created *Flag-State Vulnerability* index failed. The reason being is that the USA, as well as China, are critical outliers in the GDP variable. After excluding the USA as well as China from the analysis of the flag states' levels of state capacity effect on overfishing on the high seas, the Link test suggests that the models fulfill the statistical requirement of linearity. The variables of interest are not affected by the exclusion of the two cases, but the coefficient of GDP rises and turns statistically significant at the 95% confidence level. A full regression table where the USA and China are included can be found in the Appendix. Although the Shapiro-Wilk test suggests issues with the distribution of residuals, the distribution of residuals looks sufficiently normal (see Appendix) and I proceed with the analysis of the models. In the analysis of the effect of coastal states' level of state capacity on overfishing within a country's EEZ, the inclusion of the openness variable, measuring whether DWFNs are allowed to operate in a country's EEZ, decreases the sample size drastically. Since the variable has no significant effect on the focal dependent variable, does not interact with the focal independent variable, or affects other included variables, this variable is omitted from the analysis of the effect of coastal states' level of state capacity on overfishing within a country's EEZ. The regression table including for the models including the openness variable in the analysis within national jurisdiction can be found in the Appendix. The regression equations for the applied models are the following:

Coastal States (Interaction State Capacity x Regime Type)

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_1 x_2 + \epsilon$$

Flag States (Interaction State Capacity x Openness)

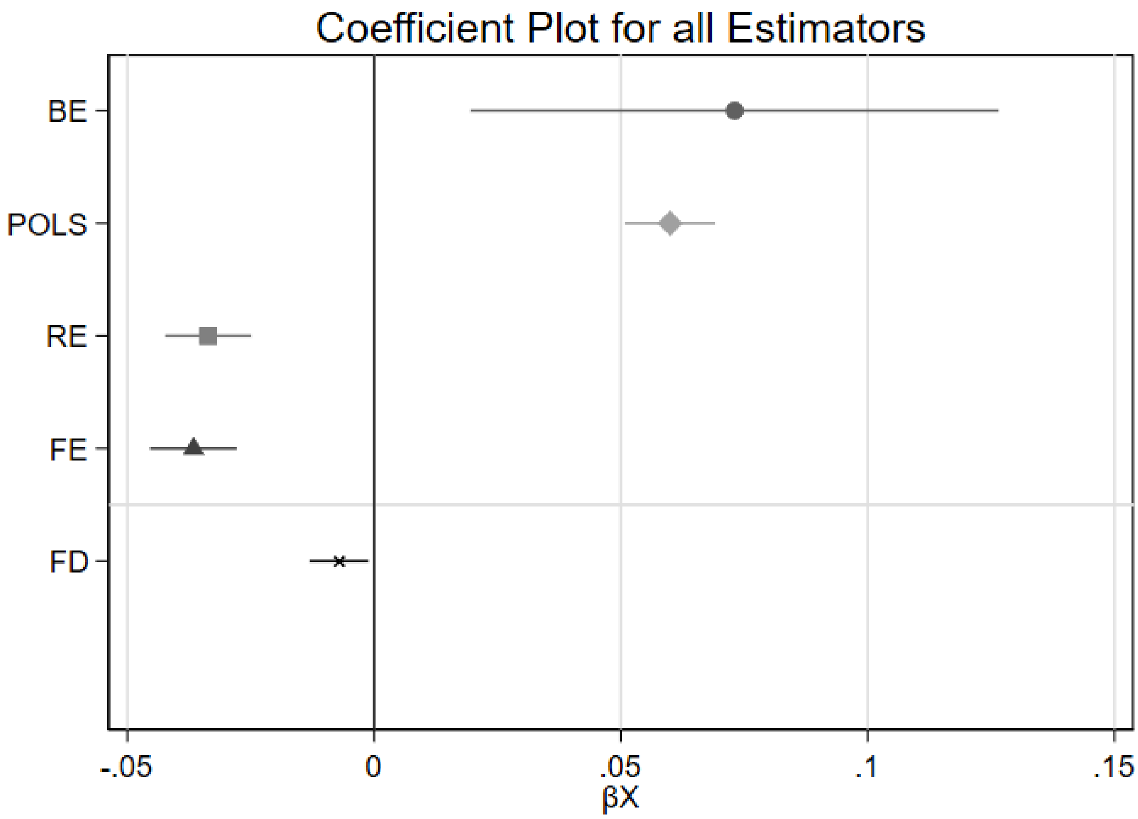
$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_1 x_2 + \epsilon$$

Due to the data structure of the longitudinal dataset, an OLS regression analysis is inappropriate, as potential interdependencies are not accounted for. The unit of analysis is country years, nested within different countries. As the data is structured like a long panel with fairly balanced data and more than 20 years per country, a time-series cross-section (TSCS) analysis is performed (see. Sjöstedt & Jagers, 2014). The selection of the panel data estimator is theoretically motivated and backed by statistical tests. While the variance explained by the model between the countries is larger, a respectable part of the variance is explained by within-country differences. Furthermore, the first set of hypotheses does not solely focus on differences in state capacity between countries but additionally on within-country changes in the level of state capacity over time. As the random-effects estimator accounts for within country- as well as between country effects by weighting them, it is, therefore, well suited for the analysis of the relationship between state capacity and overfishing from a theory-centered point of view. Moreover, the results of the Breusch-Pagan Lagrange multiplier test suggest the inclusion of a within-country effects estimators, and the Hausman test supports the application of a random-effects estimator over a fixed effects estimator. Additionally, the random-effects estimator enables the inclusion of time-invariant covariates, such as geographical dummies for islands and regions. The rather difficult interpretation of the coefficients and the fact that it does not solve omitted variable bias is, however, a drawback of the estimator. The Woolridge test for autocorrelation suggests that the model suffers from autocorrelation. This is, however, not surprising as the different observations of the same country are interdependent. To account for the autocorrelation of the model, clustered standard errors are used. These standard errors do affect the range of the confidence intervals and consequently decrease the ability to reach statistical significance at the common thresholds. Additionally, the time-variant independent variables are lagged by two years, as the theory expects the independent to affect the focal dependent variable after some time. The regression equation for the applied model is the following:

Coastal States (Interaction State Capacity x Regime Type)

$$Y_{i,t} = \alpha + \beta_1^{re} X_{1\,i,t} + \beta_2^{re} X_{2\,i,t-2} + \beta_3^{re} X_{3\,i,t-2} + \beta_4^{re} X_{4\,i,t-2} + \beta_5^{re} X_{5\,i,t-2} + \beta_6^{re} X_{6\,i,t-2} + \beta_7^{re} X_{7\,i} + \beta_8^{re} X_{1\,i,t} X_{2\,i,t} + \upsilon_i + \epsilon_{i,t}$$

Graph 1 displays the coefficients for state capacity with the 95% confidence intervals of the different panel data estimators: between-effects (BE), pooled OLS (POLS), random-effects (RE), fixed-effects (FE), and first difference (FD). All estimators reach statistical significance in the bivariate model at the 95% confidence level. However, while the estimators focusing on between-country differences suggest a positive relationship between state capacity and the absence of overfishing (BE and POLS), the estimators accounting for within-country differences suggest a negative relationship between state capacity and the absence of overfishing (RE, FE, and FD). The within-country relationship could be, however, driven by a small number of cases as most cases see no substantial changes in state capacity. Consequently, it is likely that the negative relationship between state capacity and the absence of overfishing is driven by a few developing countries that are at a stage in their development where economic growth is prioritized.



Graph 1: Coefficient plot for the bivariate relationship between state capacity and MTI, presenting the results for the five different estimators

8 Results

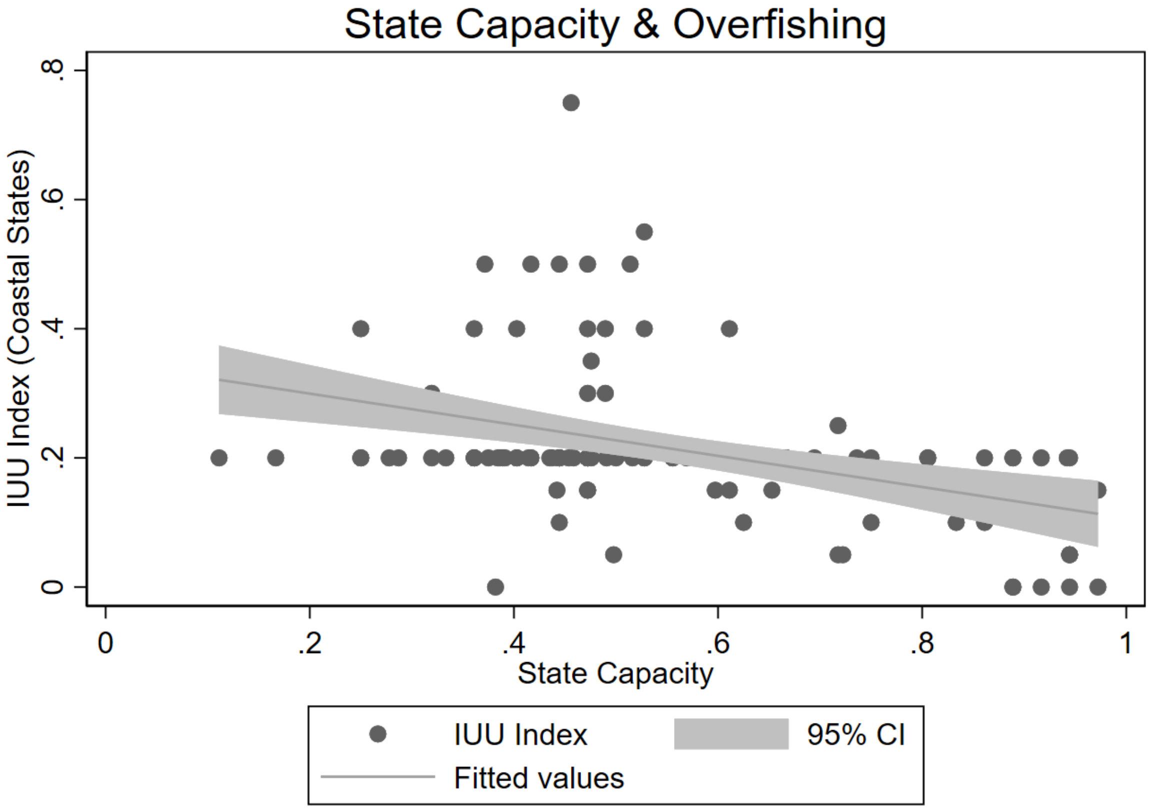
For the test of the first set of hypotheses, regarding the relationship within areas of national jurisdiction, four models are analyzed with the cross-sectional data. *Table 2* displays the regression results of the OLS analysis.

Effect of State Capacity on IUU-Fishing (Coastal States)

	Bivariate	Control robust se	Moderator robust se	Interaction robust se
StateCapacity	-0.241***	-0.289***	-0.301***	0.216
	(0.0553)	(0.0534)	(0.0667)	(0.142)
CoastVulnerability		-0.00240	-0.00400	0.0237
		(0.0798)	(0.0839)	(0.0856)
EconomicDev.		0.0205	0.0246	0.0349
		(0.0795)	(0.0869)	(0.0860)
RegimeType			0.0166	0.451***
			(0.0585)	(0.126)
StateCapacity # RegimeType				-0.793***
				(0.211)
Constant	0.348***	0.448***	0.447***	0.160
	(0.0324)	(0.0795)	(0.0801)	(0.102)
r2	0.154	0.387	0.387	0.439
adj. r2	0.146	-	-	-
Observations	106	106	106	106

*Table 2: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

In *Model 1* bivariate relationship between a coastal state's level of state capacity and the extent of overfishing in its territory is examined. The effect of the level of state capacity is negative and reaches statistical significance at the 99,9% confidence level. On average, a one unit increase of state capacity leads to a .24 decrease in IUU-fishing. The bivariate model is able to explain 15% of the variation of the dependent variable. *Graph 2* visually displays the bivariate relationship between state capacity and IUU-fishing.

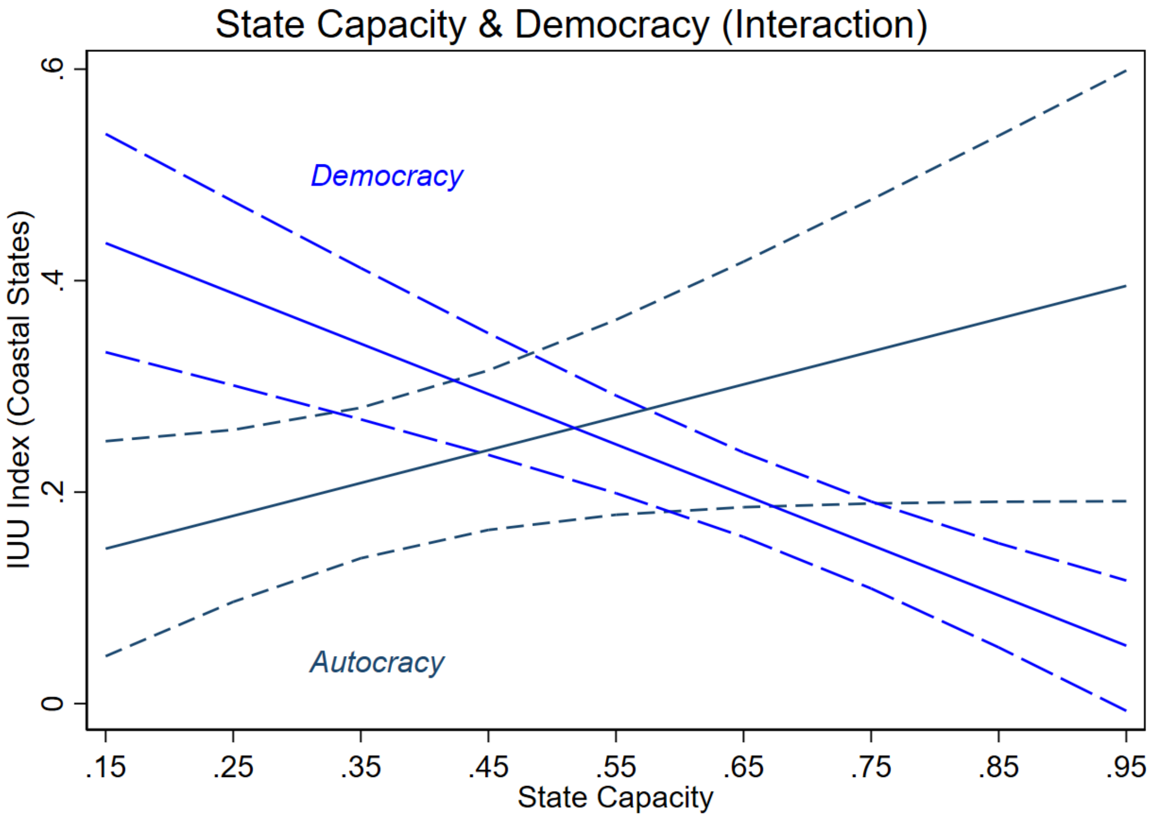


Graph 2: Bivariate relationship between state capacity and overfishing Coastal States OLS

In *Model 2* the control variables *Coastal-State Vulnerability*, *Economic Development*, and dummy variables for the *Ocean Basins* are added to the multivariate regression while robust standard errors are used (regression results for the geographical control variables are provided in the Appendix). The negative effect of state capacity on IUU-fishing increases and remains statistically significant at the 99,9% confidence level. On average, a one unit increase in state capacity, holding everything else equal, leads to a .29 decrease in IUU-fishing. While the control variables coastal state vulnerability and economic development fail to reach statistical significance, several ocean basin dummies reach statistical significance. The r-squared of the model increases compared to the bivariate model. The multivariate model that includes the control variables is able to explain 39% of the variation in IUU-fishing.

In *Model 3* the moderating variables are added to the multivariate regression. As argued earlier, the openness variable for coastal states is omitted from this analysis as it drastically reduced the sample size and did not influence the regression results notably (see Appendix). While the negative effect of state capacity on IUU-fishing further increases, it remains statistically significant at the 99,9% confidence level. On average, a one unit increase in state capacity, holding everything else equal, leads to a .3 decrease in IUU-fishing. Apart from a few ocean basin dummies, no other variables reach statistical significance at a 90% confidence level. The addition of the moderating variable regime type did furthermore not increase the model's goodness of fit, and it continues to explain 39% of the variation in the dependent variable.

In the final model, *Model 4*, the interaction effect between the focal independent variable state capacity and the moderating variable regime type is examined. The analysis suggests a strong interaction effect that reaches statistical significance at the 99,9% confidence level. While an increase in state capacity in democracies leads to a reduction of IUU-fishing in their EEZ, an increase in state capacity in autocracies leads to an increase in IUU-fishing. The model furthermore suggests that democracies with low levels of state capacity are engaging to a greater extent in IUU-fishing compared to their autocratic counterparts. *Graph 3* shows the interaction effect of the fourth model. Apart from several ocean basin dummy variables, no other control variable reaches statistical significance at the 90% confidence level. However, the addition of the interaction term further increased the explanatory power of the model, which is now able to explain 44% of the variation of IUU-fishing within a county's EEZ.



Graph 3: The moderating effect of regime type on the relationship between state capacity and overfishing under national jurisdiction. The solid line represents the point estimates and the dashed lines the 95% confidence intervals

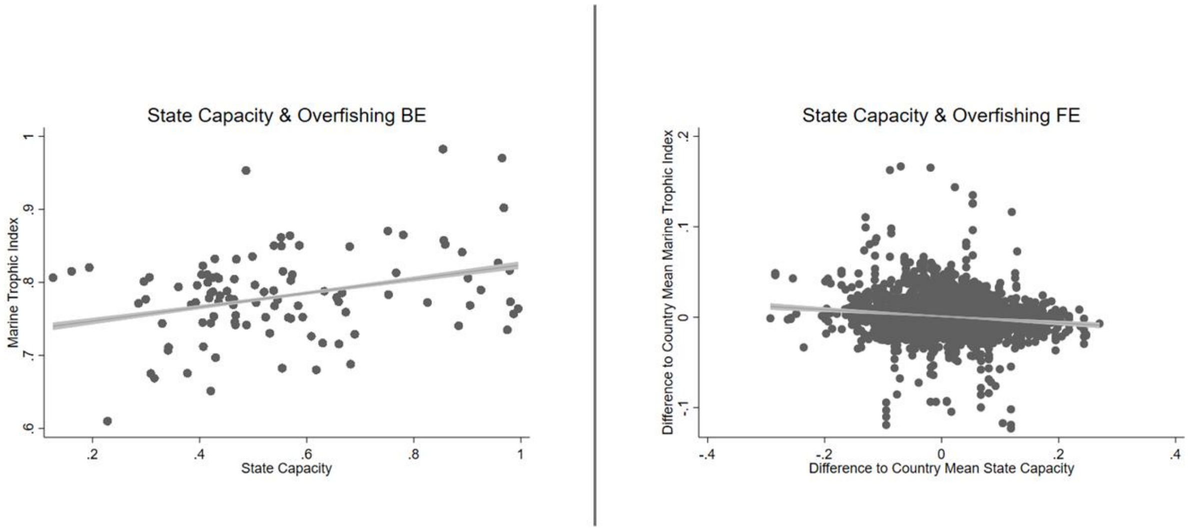
The OLS regression analysis of the cross-sectional dataset is complemented with a TSCS analysis of the longitudinal dataset in order to account for potential within-country developments over time. 103 different countries around the world are analyzed. *Table 3* summarizes the results of the five models examining the effect of state capacity on overfishing.

Effect of State Capacity on Marine Trophic Index (RE Coastal States)

	Bivariate (RE clustered SEs)	Moderator (RE clustered SEs)	TimeVariant (RE clustered SEs)	TimeInvariant (RE clustered SEs)	Interaction (RE clustered SEs)
StateCapacity	-0.0310*	-0.0314*	-0.0277*	-0.0291*	-0.0184
	(0.0146)	(0.0145)	(0.0141)	(0.0143)	(0.0253)
RegimeType		0.0344**	0.0250â€	0.0253	0.0347
		(0.0125)	(0.0150)	(0.0154)	(0.0279)
EconomicDev.			0.00767	0.00774	0.00767
			(0.00505)	(0.00527)	(0.00523)
PopulationSize			-0.000055	-0.000058â€	-0.000058â€
			(0.000035)	(0.000034)	(0.000034)
TradeOpen.			0.0000254	0.0000214	0.0000209
			(0.0000680)	(0.0000671)	(0.0000675)
Islands				0.0391*	0.0393*
				(0.0168)	(0.0168)
StateCapacity # RegimeType					-0.0212
					(0.0525)
Constant	0.801***	0.782***	0.589***	0.537***	0.535***
	(0.0107)	(0.0134)	(0.123)	(0.135)	(0.136)
Observations	2602	2602	2602	2602	2602
Countries	103	103	103	103	103

Table 3: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In *Model 1* the bivariate relationship between the two time-variant focal variables is examined. The effect of state capacity on the MTI is negative and reaches statistical significance at the 95% confidence level. A decrease in the MTI reflects an increase in overfishing. Depending on what is more important, the between-country or within-country effects, whether countries with higher levels of state capacity have more overfishing or countries' engagement in overfishing increases as they increase their level of state capacity, on average, a one unit increase in the level of state capacity within and between each unit, weighted by the coefficient's precision, leads to a .03 decrease of MTI. *Graph 4* visually displays the bivariate relationship of the random effects TSCS analysis. Since the random effects estimator accounts for the between effects (lefthand side) as well as the within-country effects / fixed effects (righthand side) and weighs these estimators according to their importance for the data, the graph shows the between effects and the fixed effects estimators as the real regression line will be somewhere in between. While the between-effects estimator suggests a positive relationship between state capacity and MTI, the fixed effects estimator suggests a negative relationship.



Graph 4: Random effects in the relationship between state capacity and MTI. Between-country effects with BE (right), within-country effects with FE (left)

In *Model 2* the time-variant moderating variable regime type is added to the multivariate regression. The negative effect of state capacity increases slightly in strength compared to model 1 and remains statistically significant at the 95% confidence level. Controlling for the regime type of a country, a one unit increase in the level of state capacity within and between each unit, weighted by each coefficient's precision, leads, on average, to a .03 decrease in MTI. The effect of regime type is positive and statistically significant at the 99% confidence level. Controlling for the level of state capacity, a one unit increase in regime type within and between each unit, weighted by each coefficient's precision, leads, on average, to a .03 increase in MTI. The effect of state capacity and regime type is equally weak in this model and works in different directions.

In *Model 3* the remaining time-variant independent variables are added to the multivariate regression. With the additional variables the effect size of the negative effect of state capacity decreases but remains statistically significant at the 95% confidence level. Holding everything else equal, a one unit increase in the level of state capacity within and between each unit, weighted by the coefficient's precision, leads, on average, to a .027 decrease in MTI. The effect size of regime type also decreases and only reaches statistical significance at the 90% confidence level. Holding everything else equal, a one unit increase of state capacity within and between each unit, weighted by the coefficient's precision, leads, on average, to a .025 increase in MTI. No other time-variant variable reaches statistical significance at the 90% confidence level.

In *Model 4* the time-invariant geographical dummies island and region are added to the regression. Note that table 2 does not include the regression results for the region dummies, these can be found in the appendix. The negative effect of state capacity increases slightly from the previous model and remains significant at the 95% confidence level. Holding everything else equal, a one unit increase in the level of state capacity within and between each unit, weighted by the coefficient's precision, leads, on average, to a .029 decrease in MTI. While regime type fails to reach statistical significance at the 90% confidence level in this model, the negative effect of population size and the positive effect of islands reaches statistical significance. Holding everything else equal, islands, on average, have a .039 higher MTI than non-island states. Holding everything else equal, an increase of one million inhabitants within and between each unit, leads, on average, to a .000058 decrease in MTI.

In the final model, Model 5, the interaction effect between the focal independent variable state capacity and the moderating variable regime type is examined. The interaction term fails to reach statistical significance and merely the island dummy and population size reach statistical significance at respectable thresholds. The effect size of both statistically significant coefficients does not change between models 4 and 5.

As the trade openness variable is not trend stationery, the Wald test checking for continuously relevant shocks has been applied. The results suggest that controls for each year should be included. With this additional variable in the models, none of the, for the study interesting, variables reaches statistical significance, thus the results of table 3 should be interpreted with caution. The results of the random effects regression with the additional control for years could be found in the Appendix.

While model 1-3 of the OLS analysis are in line with *H1.1* and suggest that countries with higher levels of state capacity show a lower engagement in overfishing, model 1-4 of the random effects TSCS analysis suggests that as state capacity increases, overfishing increases as well. However, it is important to bear in mind that the random effects estimator accounts for within-country as well as between-country changes. As the between-country component of the analysis, examined by a between-effects estimator, is in line with *H1.1*, the within-country component, examined by the fixed effects estimator, is not. Thus, the analysis suggests that *H1.1* cannot be falsified when comparing different countries with each other. Regarding developments within a country, *H1.1* can be falsified on the other hand. The interaction term for *H1.2*, examining the interaction between state capacity and openness to DWFN in a country's EEZ remains insignificant in the OLS model. As the variable for openness is not available in the longitudinal dataset, *H1.2* couldn't be further analyzed. Therefore, this study suggests that *H1.2* can be rejected. This does, however, not mean that EEZs of countries with low levels of state capacity do not attract actors willing to overexploit resources, but rather that agreements of the particular country with DWFNs are not a necessary condition for that. Petrossian (2018) finds that fishermen are prone to overexploit stocks in areas where monitoring and enforcement are low. It could be argued, that due to the low state capacity and the lack of enforcement and monitoring, fishermen evaluate the risks of illegally fishing in other countries' EEZ lower. Lastly, *H1.3*, focusing on the interaction effect between state capacity and regime type, is partially in line with the expectation in the OLS regression. However, while democratic countries behave as expected and lower their engagement in IUU-fishing, autocracies behave against the expectations and rather increase overfishing as they increase the level of state capacity. Furthermore, autocracies with low levels of state capacity have lower levels of overfishing than democracies with a comparable level of state capacity. While these findings are just partially in line with *H1.3*, these results are coherent with Povitikna and Bolkvadze's (2019) result where democracies solely perform better than autocracies in the management of environmental sustainability problems when the level of state capacity is high. If the level of state capacity is low, autocracies outperform democracies. Povitkina and Bolkvadze (2019) argue that, since democratic leaders have short political horizons and, thus, are incentivized to focus on the provision of goods with high visibility (Harding & Stasavage, 2014), in countries with low levels of state capacity paired with democratic leaders, commitments to long-term goals such as environmental conservation are unlikely. Moreover, Boräng and colleagues (2017) find that democracies with a less impartial bureaucracy are more likely to bias policy data. This could additionally contribute to democracies' weak environmental outcomes in countries with low state capacity, as distorted policy data hinders citizens from effectively holding the incumbent accountable. Nevertheless, the results of the OLS analysis regarding *H1.3* should be treated carefully as the random effects TSCS analysis of the longitudinal data as well as the application of a between effects estimator find no statistically significant interaction effect between state capacity and regime type in the longitudinal dataset.

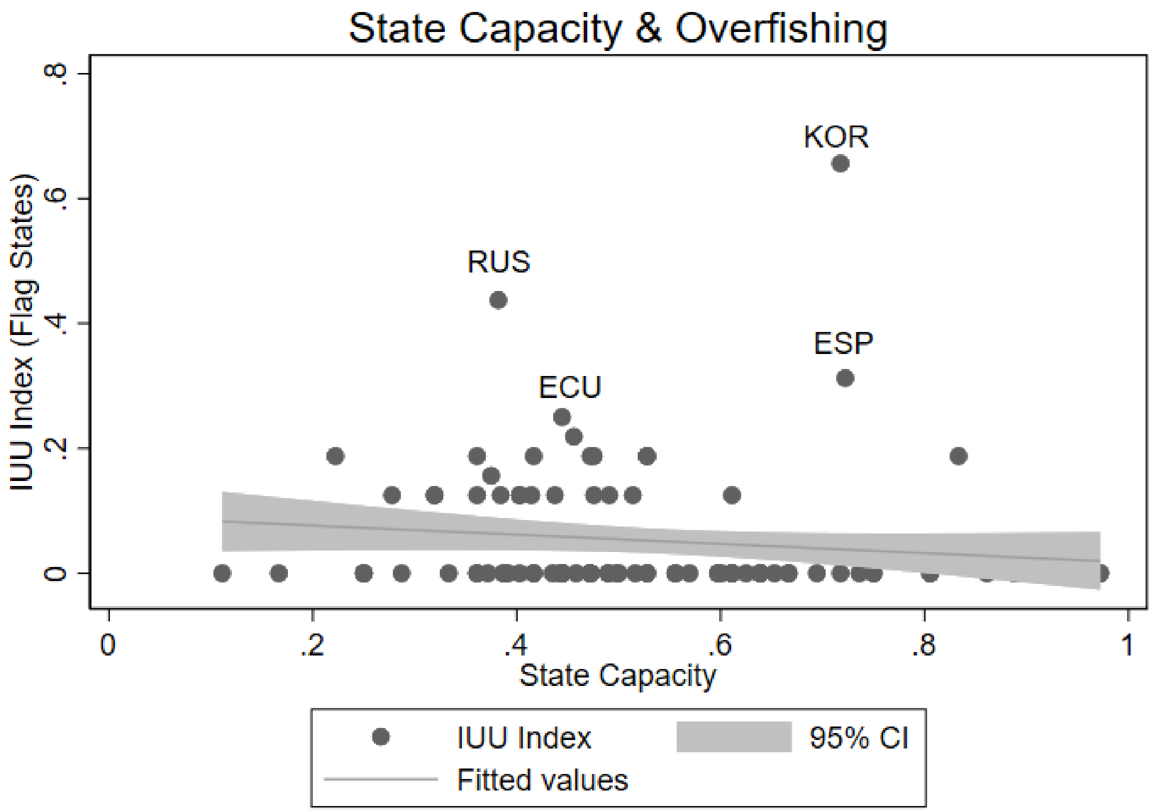
Shifting the focus to the second set of hypotheses, five models are tested by the OLS regression analysis of the flag state related variables of the cross-sectional dataset. As stated earlier, USA and China have been excluded from the sample due to linearity issues of the economic development variable. Consequently, the models cover 104 observations compared to 106 observations of the coastal state OLS regression analysis. *Table 4* displays the results of these five models.

Effect of State Capacity on IUU-Fishing (Flag States)

	Bivariate	Controls	Moderators	Interaction 1	Interaction 2
		robust se	robust se	robust se	robust se
StateCapacity	-0.0736	-0.191***	-0.189**	-0.166**	-0.0294
	(0.0497)	(0.0398)	(0.0566)	(0.0571)	(0.142)
FlagVulnerability		0.169*	0.164*	0.139â€	0.173*
		(0.0845)	(0.0812)	(0.0797)	(0.0817)
EconomicDev.		0.157	0.163	0.308	0.163
		(0.180)	(0.188)	(0.202)	(0.182)
Openness			0.0122	0.135**	0.0125
			(0.0210)	(0.0473)	(0.0213)
RegimeType			0.00146	0.0129	0.134
			(0.0537)	(0.0534)	(0.114)
StateCapacity # Openness				-0.237*	
				(0.0924)	
StateCapacity # RegimeType					-0.246
					(0.192)
Constant	0.0911**	0.210**	0.210**	0.191**	0.123
	(0.0290)	(0.0670)	(0.0669)	(0.0677)	(0.0993)
r2	0.0210	0.465	0.466	0.485	0.473
adj. r2	0.0114	-	-	-	-
Observations	104	104	104	104	104

Table 4: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In *Model 1* the bivariate relationship between a flag state's state capacity and the extent of overfishing on the high seas is examined. The effect fails to reach statistical significance at the 90% confidence level and, therefore, cannot be meaningfully interpreted and the model only accounts for 2% of the variation in the dependent variable. *Graph 5* visually displays the bivariate relationship.

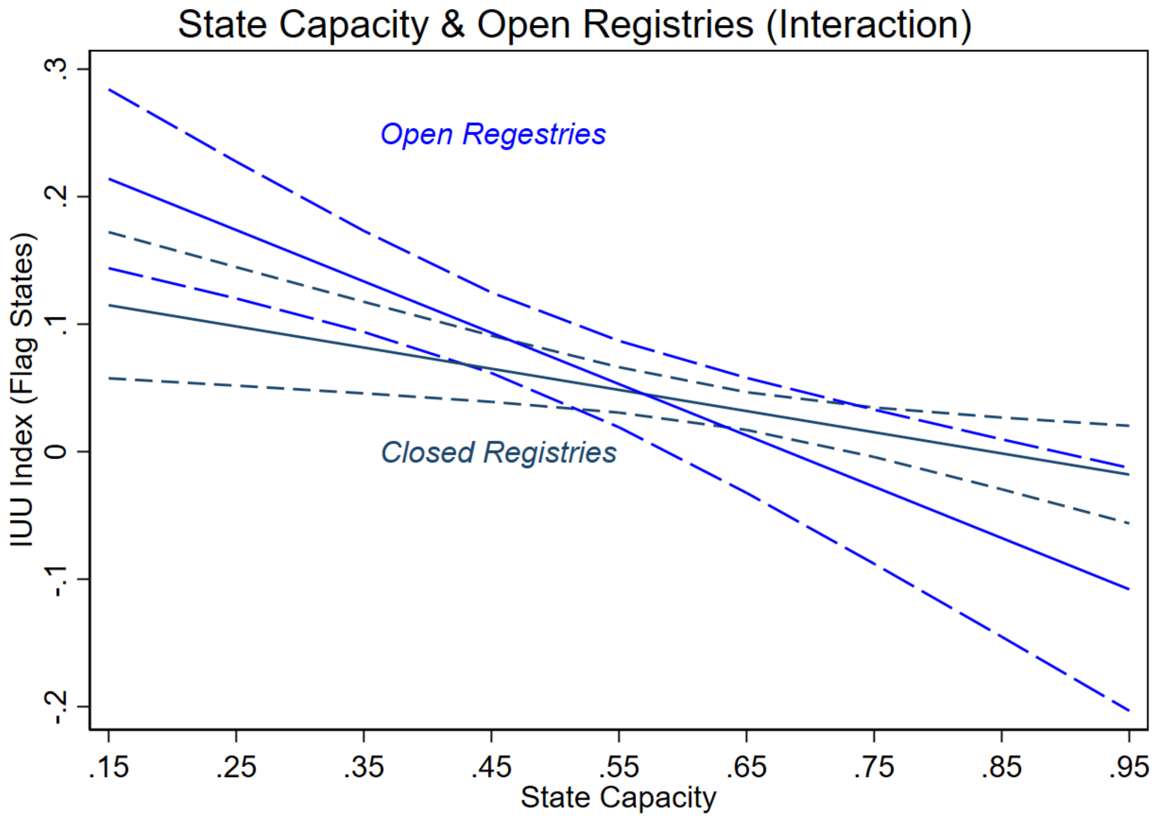


Graph 5: Bivariate relationship between state capacity and overfishing beyond national jurisdiction

However, when adding the control variables to the focal relationship in *Model 2*, the focal independent variable reaches statistical significance at the 99,9% confidence level. On average, a one unit increase of state capacity, holding everything else equal, leads to a .19 decrease in IUU-fishing. While the effect of economic development fails to reach statistical significance, the positive effect of flag state vulnerability reaches statistical significance at the 95% confidence. On average, a one unit increase of flag vulnerability, holding everything else equal, leads to a .17 increase in IUU-fishing. Moreover, some of the ocean basin dummy variables also reach statistical significance at the 90% confidence level (Appendix). With the addition of the control variables, the model increased its goodness of fit drastically and is now able to explain 47% of the variance in IUU-fishing.

In *Model 3* the moderating variables are introduced to the multivariate regression. While this leads to a slide decrease in the strength of the focal independent variable, state capacity remains statistically significant, however, at the 99% confidence level. On average, a one unit increase in state capacity, holding everything else equal, leads to a .19 decrease in IUU-fishing. Similarly, the effect size of flag state vulnerability decreases slightly in model 3, but the positive effect remains statistically significant at the 95% confidence level. On average, a one unit increase of flag state vulnerability, holding everything else equal, leads to a .16 increase in IUU-fishing. Again, several ocean basin dummies reach statistical significance. The addition of the moderating variables did not change the model's explanatory power for the dependent variable's variance.

In *Model 4* the interaction effect between state capacity and the openness of flag registries is examined. The effect size of flag state vulnerability further decreases in this model and it only reaches statistical significance at the 90% confidence level. On average, a one unit increase of flag state vulnerability, holding everything else equal, leads to a .14 increase in IUU-fishing. Several ocean basin dummies reach also statistical significance. The interaction effect tested in this model is statistically significant at the 95% confidence level and suggests that an increase in state capacity in countries with open flag registries decreases IUU-fishing faster than an equal increase in state capacity would decrease IUU-fishing in closed flag registries. Furthermore, while open flag registries with low levels of state capacity engage to a greater extent in IUU-fishing than their closed flag registries counterparts with the same level of state capacity, open flag registries, at high levels of state capacity, engage to a lower extent in IUU-fishing compared to states with closed flag registries and the same levels of state capacity. This model is able to explain 49% of the variance in IUU-fishing. *Graph 6* displays the interaction effect.



Graph 6: The moderating effect of open registries on the relationship between state capacity and overfishing beyond national jurisdiction. The solid line represents the point estimates and the dashed lines the 95% confidence intervals

In *Model 5* the interaction effect between state capacity and regime type is tested. Apart from the flag state vulnerability variable (95%) and several ocean basin dummies, no variable reaches statistical significance at the 90% confidence level. On average, a one unit increase in flag state vulnerability, holding everything else equal, leads to a .17 increase in IUU-fishing. Since the interaction effect fails to reach statistical significance at the 90% confidence level, it cannot be meaningfully interpreted. Model 5 explains 47% of the variance in the dependent variable.

Although state capacity has no statistically significant effect on IUU-fishing in the bivariate model, it turns statistically significant as soon as control variables and moderators are introduced. The direction of the effect, in all models, is in accordance with *H2.1* that an increase of a flag state's level of state capacity decreases the extent to which it overfishes the high seas. Thus, the analysis could not falsify this hypothesis. Moreover, the interaction effect between state capacity and open flag registers is statistically significant. As expected, countries with open flag registries and low levels of state capacity engage to a higher degree in overfishing on the high seas and an increase in state capacity reduces this exploitation faster than in countries with closed flag registries. Surprisingly, against the expectation of *H2.2* countries with high levels of state capacity and open flag registries overfish the high seas less than their counterparts with closed flag registries. *H2.3* can be falsified as the interaction effect between the flag state's level of state capacity and regime type did not reach statistical significance at an acceptable threshold. To summarize: While *H2.1* is consistent with the evidence, *H2.3* can be falsified, and the interaction effect between state capacity and open flag registries behaves partially as *H2.2* expects.

9 Discussion & Conclusion

How does state capacity affect overfishing in areas within and beyond national jurisdiction? By drawing on collective action theory, a dynamic theoretical approach that accounts for the actor's ability to move between regulatory areas and the resulting transfer of norms is developed. For the study of overfishing under national jurisdiction, the state capacity of coastal states is of particular interest, while for the analysis beyond national jurisdiction, the state capacity of the flag states is examined. The paper argues that state capacity of coastal states affects overfishing in the country's EEZ and that the flag state's capacity affects their vessels' compliance to fisheries regulation in RFMOs on the high seas, as the created norms under the flag state get transferred into an area outside of national jurisdiction. While this can be seen as a push mechanism, incentivizing fishermen to act in a particular way, an additional pull mechanism, attracting fishermen that hope to disobey regulation, is argued for. In other words, it is argued that coastal states with low levels of state capacity attract these specific fishermen and that these fishermen are prone to flag their vessels under the flag of a state with low levels of state capacity. Lastly, it is argued that the relationship of a coastal- or flag state's state capacity is moderated by the respective country's regime type.

The OLS and TSCS analyses on the sample of 106 countries worldwide demonstrate that state capacity negatively affects overfishing within and beyond national jurisdiction, suggesting that norms are created based on the levels of state capacity and, furthermore, transferred into regulatory areas that fall outside of national jurisdiction. While the study fails to demonstrate an interaction effect between coastal states' level of state capacity and their openness to external fishing fleets on overfishing within a country's EEZ, it shows that there is an interaction between flag state’s capacity and whether their flag registries are open on overfishing in RFMOs. This suggests that open flag registries in countries with low state capacity attract actors that seek to circumvent fisheries regulation. On the other hand, the interaction between state capacity and regime type fails to reach statistical significance in areas beyond national jurisdiction, while the analysis of coastal states suggests that regime type moderates the relationship when focusing on between-country differences.

This paper improves the literature by examining the importance of norms created under the exposure to flag states’ capacity and the transfer of these norms into RFMOs, which are beyond national jurisdiction. Furthermore, it researches to what extent the openness for external actors and a country's regime type moderates the relationship between state capacity and overfishing. Thus, this paper provides a more complex analysis of the role of state capacity in international fisheries regulations. Moreover, the theoretical approach incorporates a different understanding of actors in collective action theory, in which actors are mobile between regulatory areas, and their norms of compliance travel with them.

The positive effect between state capacity and overfishing, shown in Povitkina and Bolkvadze (2019) and the analysis of this study, is puzzling. The more state capacity an autocracy has, the more its fishermen engage in overfishing. Further research should further investigate the effect of state capacity on overfishing in autocracies in order to shed light on the underlying mechanisms causing this relationship. Also, to deepen the understanding of the role of state capacity on overfishing, accounting for whether a country had high state capacity before democratizing, as suggested by Darcy and Nistotskaya (2017), could further improve the literature on overfishing. Lastly, the observed interaction between a regulatory area’s openness to external actors and state capacity could be further researched in the context of the provision of other environmentally sustainable outcomes.

Furthermore, it should be mentioned, that although the most popular measures of state capacity significantly correlate with each other, different relationships are observed depending on which state capacity measurement is used in a different context (Vaccaro, 2020). Thus, replication studies, using different measures for state capacity could further increase the robustness of the here presented relationship between state capacity and overfishing to ensure that the direction of the relationships is not a product of the choice of measurement.

The findings of the paper deliver valuable insights for policymakers. While it is nothing new that monitoring and enforcement affect fishermen's compliance with fisheries regulation, the fact that the flag state's capacity affects fishermen's compliance even outside the flag state's jurisdiction could be of particular interest for the management of fisheries on the high seas under RFMOs. As improving a country's state capacity is a laborious process, efforts to separate state capacity and fishing could be taken. If fishermen are no longer exposed to weak state capacity under national jurisdiction, they might not create norms of non-compliance which, then, are transferred to areas beyond national jurisdiction. One potential solution to separate state capacity from fishing could be to mandate an external international authority for the monitoring and enforcement of fisheries regulations in the respective country's EEZ. As monitoring of such a large area comes with great challenges, scholars suggest the introduction of remote electronic monitoring systems on fishing vessels in order to improve the coverage of the regulatory authority (Ewell et al., 2020).

Since countries with open registries and weak state capacity attract fishermen that hope to disobey regulations, further overwhelming the regulatory authorities, a return back to the genuine link between the vessel and the flag state, as stated in Article 91 (1) of UNCLOS should be considered by the ITLOS, the court responsible for that matter. While this genuine link does not make it impossible to circumvent this restriction, it certainly makes it more laborious and costly to register in countries with low state capacity. This, in turn, and following the logic of the paper's argument, decreases the extent of overfishing.

10 References

Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World development*, *29*(10), 1649-1672.

Andreone, G. (2015). The exclusive economic zone. In *The Oxford handbook of the law of the sea*.

Arias, A. (2015). Understanding and managing compliance in the nature conservation context. *Journal of environmental management*, *153*, 134-143.

Becker, G. S. (1968). Crime and punishment: An economic approach. In *The economic dimensions of crime* (pp. 13-68). Palgrave Macmillan, London.

Becker, C. D., & Ostrom, E. (1995). Human ecology and resource sustainability: the importance of institutional diversity. *Annual review of ecology and systematics*, *26*(1), 113-133.

Bhathal, B., & Pauly, D. (2008). 'Fishing down marine food webs' and spatial expansion of coastal fisheries in India, 1950–2000. *Fisheries Research*, *91*(1), 26-34.

Boräng, F., Cornell, A., Grimes, M., & Schuster, C. (2018). Cooking the books: Bureaucratic politicization and policy knowledge. *Governance*, *31*(1), 7-26.

Braithwaite, J., & Drahos, P. (2000). *Global business regulation*. Cambridge university press.

Connelly, J., Smith, G., Benson, D., & Saunders, C. (2012). *Politics and the environment: from theory to practice*. Routledge.

Cook, K. S. (2017). Trust and social dilemmas: A selected review of evidence and applications.

Cullis-Suzuki, S., & Pauly, D. (2010). Failing the high seas: a global evaluation of regional fisheries management organizations. *Marine Policy*, *34*(5), 1036-1042.

Dahl, R. (1989). Democracy and its Critics New Haven: Yale U.

D'Arcy, M., & Nistotskaya, M. (2017). State first, then democracy: Using cadastral records to explain governmental performance in public goods provision. *Governance*, *30*(2), 193-209.

Delgado, C. L., Wada, N., Rosegrant, M. W., Meijer, S., & Ahmed, M. (2003, October). Outlook for fish to 2020. In *Meeting global demand [Internet]. International Food Policy Research Institute, Washington, DC*.

de Mesquita Bruce, B., Smith, A., Siverson, R. M., & Morrow, J. D. (2003). The logic of political survival.

Englender, D., Kirschey, J., Stöfen, A., & Zink, A. (2014). Cooperation and compliance control in areas beyond national jurisdiction. *Marine Policy*, *49*, 186-194.

Estes, J. A., Terborgh, J., Brashares, J. S., Power, M. E., Berger, J., Bond, W. J., ... & Wardle, D. A. (2011). Trophic downgrading of planet Earth. *Science*, *333*(6040), 301-306.

Evans, P. B., Rueschemeyer, D., & Skocpol, T. (1985). Bringing the state back in.

Ewell, C., Hocevar, J., Mitchell, E., Snowden, S., & Jacquet, J. (2020). An evaluation of Regional Fisheries Management Organization at-sea compliance monitoring and observer programs. *Marine Policy*, *115*, 103842.

Frey, B. S., & Meier, S. (2004). Social comparisons and pro-social behavior: Testing" conditional cooperation" in a field experiment. *American Economic Review*, *94*(5), 1717-1722.

Fukuyama, F. (2004). The imperative of state-building. *Journal of democracy*, *15*(2), 17-31.

Gagern, A., & van den Bergh, J. (2013). A critical review of fishing agreements with tropical developing countries. *Marine Policy*, *38*, 375-386.

Gächter, S., & Herrmann, B. (2009). Reciprocity, culture and human cooperation: previous insights and a new cross-cultural experiment. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *364*(1518), 791-806.

Hanson, Jonathan K. 2015. "Democracy and State Capacity: Complements or Substitutes?" *Studies in Comparative International Development* 50(3):304–30.

Hardin, G. (1968). The Tragedy of the Commons. *Science* 162(3859): 1243-1248.

Harding, R., & Stasavage, D. (2014). What democracy does (and doesn't do) for basic services: School fees, school inputs, and African elections. *The Journal of Politics*, *76*(1), 229-245.

Heppell, S. S., Caswell, H., & Crowder, L. B. (2000). Life histories and elasticity patterns: perturbation analysis for species with minimal demographic data. *Ecology*, *81*(3), 654-665.

Hicken, A. (2011). Clientelism. *Annual review of political science*, *14*, 289-310.

Hønneland, G. (1999). A model of compliance in fisheries: theoretical foundations and practical application. *Ocean & Coastal Management*, *42*(8), 699-716.

Jagers, S. C., Harring, N., Löfgren, Å., Sjöstedt, M., Alpizar, F., Brülde, B., ... & Steffen, W. (2020). On the preconditions for large-scale collective action. *Ambio*, *49*(7), 1282-1296.

Jönsson, J. H., & Kamali, M. (2012). Fishing for development: A question for social work. *International Social Work*, *55*(4), 504-521.

Keefer, P. (2007). Clientelism, credibility, and the policy choices of young democracies. *American journal of political science*, *51*(4), 804-821.

King, D. M., & Sutinen, J. G. (2010). Rational noncompliance and the liquidation of Northeast groundfish resources. *Marine Policy*, *34*(1), 7-21.

Kitschelt, H. (2000). Linkages between citizens and politicians in democratic polities. *Comparative political studies*, *33*(6-7), 845-879.

Koehler, H. R. (2013). Promoting compliance in tuna RFMO's: a comprehensive baseline survey of the current mechanics of reviewing, assessing and addressing compliance with RFMO obligations and measures. *Int Seaf Sustain Found*, *2013*, 36-37.

Komoroske, L. M., & Lewison, R. L. (2015). Addressing fisheries bycatch in a changing world. *Frontiers in Marine Science*, *2*, 83.

Lado, E. P. (2016). *The common fisheries policy: the quest for sustainability*. John Wiley & Sons.

Levi, Margaret. (1988). Of rule and revenue.

Linell, A., Sjöstedt, M., & Sundström, A. (2017). Compliance dynamics in transboundary governance of natural resources.

Managi, S., Hibiki, A., & Tsurumi, T. (2009). Does trade openness improve environmental quality?. *Journal of environmental economics and management*, *58*(3), 346-363.

Mansbridge, J. (2014). Presidential Address: What Is Political Science For?. *Perspectives on Politics*, 8-17.

McCauley, D. J., Pinsky, M. L., Palumbi, S. R., Estes, J. A., Joyce, F. H., & Warner, R. R. (2015). Marine defaunation: animal loss in the global ocean. *Science*, *347*(6219).

Milinski, M., Semmann, D., & Krambeck, H. J. (2002). Reputation helps solve the 'tragedy of the commons'. *Nature*, *415*(6870), 424-426.

Miller, D. D., & Sumaila, U. R. (2014). Flag use behavior and IUU activity within the international fishing fleet: Refining definitions and identifying areas of concern. *Marine Policy*, *44*, 204-211.

Muawanah, U., Pomeroy, R. S., & Marlessy, C. (2012). Revisiting fish wars: conflict and collaboration over fisheries in Indonesia. *Coastal Management*, *40*(3), 279-288.

Norris, Pippa. 2012. *Making Democratic Governance Work: How Regimes Shape Prosperity, Welfare, and Peace*. Cambridge: Cambridge University Press.

North, D. C. (1994). Institutions and credible commitment. *Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift für die gesamte Staatswissenschaft*, 11-23.

Ostrom, E. (1998). A behavioral approach to the rational choice theory of collective action: Presidential address, American Political Science Association, 1997. *American political science review*, 1-22.

Ostrom, E. E., Dietz, T. E., Dolšak, N. E., Stern, P. C., Stonich, S. E., & Weber, E. U. (2002). *The drama of the commons*. National Academy Press.

Pauly, D., Christensen, V., Dalsgaard, J., Froese, R., & Torres Jr, F. (1998). Fishing down marine food webs. *Science*, *279*(5352), 860-863.

Pauly, D. and Watson, R. (2005) Background and interpretation of the 'Marine Trophic Index' as a measure of biodiversity. Philosophical Transactions of the Royal Society of Biological Sciences 360, 415–423.

Pauly, D. and Palomares, M.L. (2005) Fishing down marine food webs: it is far more pervasive than we thought. Bulletin of Marine Sciences 76, 197–211.

Pauly, D. (2005) The marine trophic index: a new output from the sea around us project. Issue 29, May/June 2005.

Pemstein, D., Marquardt, K. L., Tzelgov, E., Wang, Y. T., Krusell, J., & Miri, F. (2018). The V-Dem measurement model: latent variable analysis for cross-national and cross-temporal expert-coded data. *V-Dem Working Paper*, *21*.

Pentz, B., Klenk, N., Ogle, S., & Fisher, J. A. (2018). Can regional fisheries management organizations (RFMOs) manage resources effectively during climate change?. *Marine Policy*, *92*, 13-20.

Petersson, M. T. (2020). Transparency in global fisheries governance: The role of non-governmental organizations. *Marine Policy*, 104-128.

Petrossian, G. A. (2018). A micro-spatial analysis of opportunities for IUU fishing in 23 Western African countries. *Biological Conservation*, *225*, 31-41.

Pomeroy, R., Parks, J., Pollnac, R., Campson, T., Genio, E., Marlessy, C., ... & Hue, N. T. (2007). Fish wars: Conflict and collaboration in fisheries management in Southeast Asia. *Marine Policy*, *31*(6), 645-656.

Povitkina, M. (2018). *Necessary but not sustainable? The limits of democracy in achieving environmental sustainability*.

Povitkina, M., & Bolkvadze, K. (2019). Fresh pipes with dirty water: How quality of government shapes the provision of public goods in democracies. *European Journal of Political Research*, *58*(4), 1191-1212.

Ringbom, H. (Ed.). (2015). *Jurisdiction over ships: post-UNCLOS developments in the law of the sea*. Brill.

Robert, A. (1989). *Democracy and its critics*. Yale University Press.

Rodrik, D. (2000). Institutions for high-quality growth: what they are and how to acquire them. *Studies in comparative international development*, *35*(3), 3-31.

Schlager, E., & Ostrom, E. (1992). Property-rights regimes and natural resources: a conceptual analysis. *Land economics*, 249-262.

Scruggs, L. (2009, April). Democracy and environmental protection: An empirical analysis. In *annual meeting of the Midwest Political Science Association 67th Annual National Conference, The Palmer House Hilton, Chicago, Illinois*.

Sjöstedt, M. (2013). Horizontal and vertical resource dilemmas in natural resource management: the case of African fisheries. *Fish and fisheries*, *14*(4), 616-624.

Sjöstedt, M., & Jagers, S. C. (2014). Democracy and the environment revisited: The case of African fisheries. *Marine Policy*, *43*, 143-148.

Skocpol, Theda. 1985. "Bringing the State Back In: 'Strategies of Analysis in Current Research'." In *Bringing the state back in*, eds. Peter B Evans, Dietrich

Reuschemeyer, and Theda Skocpol. Cambridge: Cambridge University Press, 3–38.

Skyrms, B. (2004). *The stag hunt and the evolution of social structure*. Cambridge University Press.

Soto-Oñate, D., & Lemos-Nobre, A. C. (2021). The European Union landing obligation: The compliance problems derived from its multilevel approach.

Stobutzki, I. C., Silvestre, G. T., & Garces, L. R. (2006). Key issues in coastal fisheries in South and Southeast Asia, outcomes of a regional initiative. *Fisheries Research*, *78*(2-3), 109-118.

Telesetsky, A. (2017). Overfishing and Bycatch. In *International Farm Animal, Wildlife and Food Safety Law* (pp. 405-431). Springer, Cham.

Vaccaro, A. (2020). Measures of State Capacity: Same Same, but Different?.

White, H. (1980) A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica 48, 817–838.

Young, O. R. (2017). *Governing complex systems: social capital for the anthropocene*. MIT Press.

Österblom, H., Sumaila, U. R., Bodin, Ö., Hentati Sundberg, J., & Press, A. J. (2010). Adapting to regional enforcement: fishing down the governance index. *PloS one*, *5*(9), e12832.

11 Appendix

1. Summary-statistics Cross-sectional Dataset

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
IUU-Index (coast)	158	.2227848	.1216389	0	.75
IUU-Index (flag)	158	.0534019	.1156594	0	.78125
State Capacity	114	.5434535	.2066857	.0555556	.9722222
Fishing Agreements	133	-	-	-	-
Open Registries	158	-	-	-	-
Regime Type	132	.5533409	.2495395	.023	.9
Vulnerability (coast)	156	.3735978	.1800378	.03125	.96875
Vulnerability (flag)	158	.2743275	.2346343	0	.9791667
Economic Dev.	140	.0387348	.1228268	2.22e-06	1.001178
Ocean Basin	158	-	-	-	-

Countries of the Sample: Angola, Albania, United Arab Emirates, Argentina, Australia, Belgium, Bangladesh, Bulgaria, Bahrain, Brazil, Canada, Chile, China (excluded in Flag States), Cote d'Ivoire, Cameroon, Congo (Democratic Republic), Congo, Colombia, Costa Rica, Cyprus, Germany, Denmark, Dominican Republic, Algeria, Ecuador, Egypt, Spain, Estonia, Finland, France, Gabon, United Kingdom, Ghana, Guinea, Gambia, Guinea-Bissau, Greece, Guatemala, Guyana, Honduras, Croatia, Haiti, Indonesia, India, Ireland, Iran, Iraq, Iceland, Israel, Italy, Jamaica, Jordan, Kenya, Korea (South), Kuwait, Lebanon, Liberia, Libya, Sri Lanka, Lithuania, Latvia, Morocco, Madagascar, Mexico, Malta, Myanmar, Mozambique, Malaysia, Namibia, Nigeria, Nicaragua, Netherlands, Norway, New Zealand, Oman, Pakistan, Panama, Peru, Philippines, Papua New Guinea, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Sudan, Senegal, Singapore, Sierra Leone, El Salvador, Suriname, Slovenia, Sweden, Togo, Thailand, Trinidad and Tobago, Tunisia, Turkey, Tanzania, Ukraine, Uruguay, United States (excluded in Flag States), Vietnam, South Africa

Table 5: Summary-statistics Cross-sectional Dataset

2. Summary-statistics Longitudinal Dataset

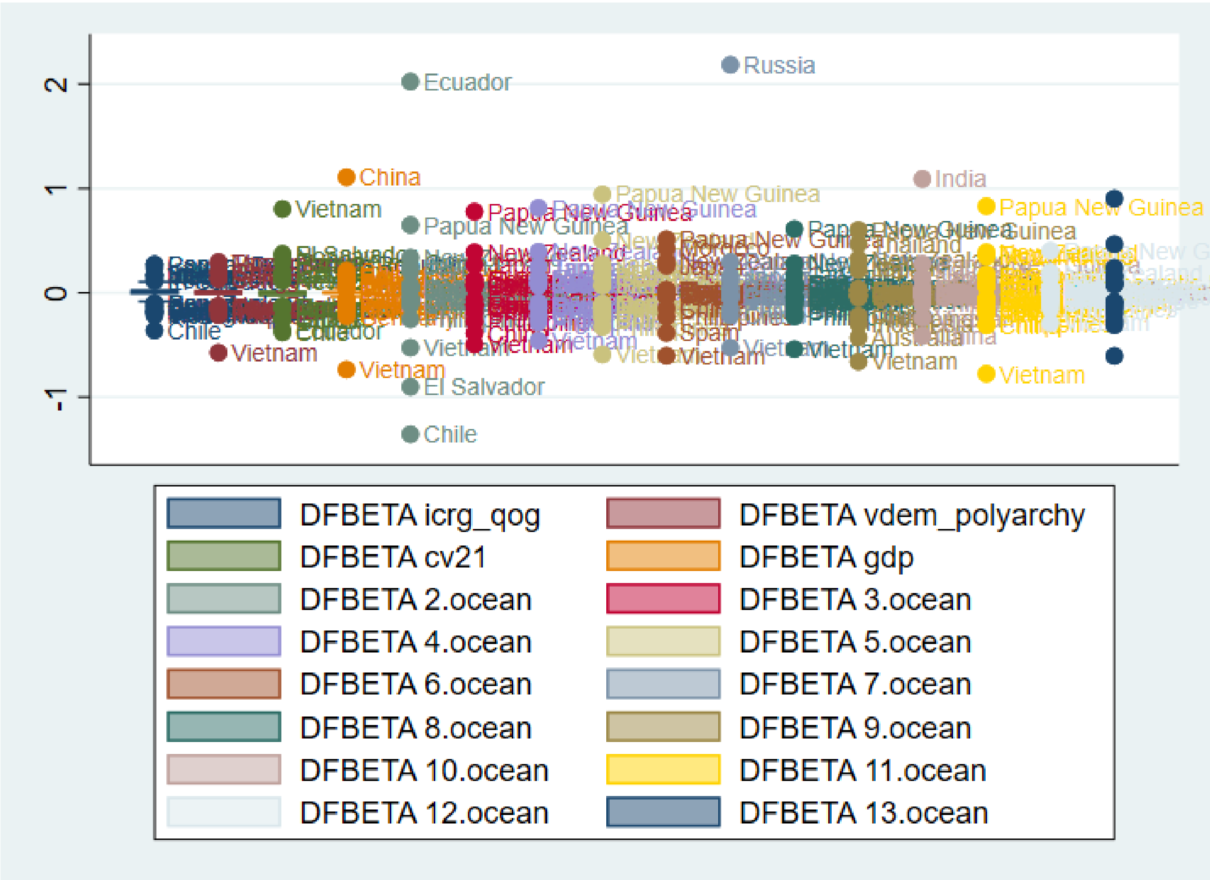
Variable	Observations	Mean	Std. Dev.	Minimum	Maximum

MTI	3,853	.7862926	.0637512	.5445144	1
State Capacity	3,625	.5483106	.2221917	.0416667	1
Regime Type	3,551	.5169665	.288629	.016	.924
Economic Dev.	2,795	25.69325	1.847287	21.38755	30.57901
Population Size	3,589	50.82106	158.5874	.218175	1378.665
Trade Openness	3,280	75.45427	49.22572	.0209992	437.3267
Island	3,853	-	-	-	-
Region	3,853	-	-	-	-

Countries of the Sample: Albania, Algeria, Angola, Argentina, Australia, Bahrain, Bangladesh, Belgium, Brazil, Bulgaria, Cameroon, Canada, Chile, China, Colombia, Congo, Congo (Democratic Republic), Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Gabon, Gambia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Korea (South), Kuwait, Latvia, Lebanon, Liberia, Libya, Lithuania, Madagascar, Malaysia, Malta, Mexico, Morocco, Mozambique, Myanmar, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Papua New Guinea, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Senegal, Sierra Leone, Singapore, Slovenia, South Africa, Spain, Sri Lanka, Suriname, Sweden, Tanzania, Thailand, Togo, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Vietnam

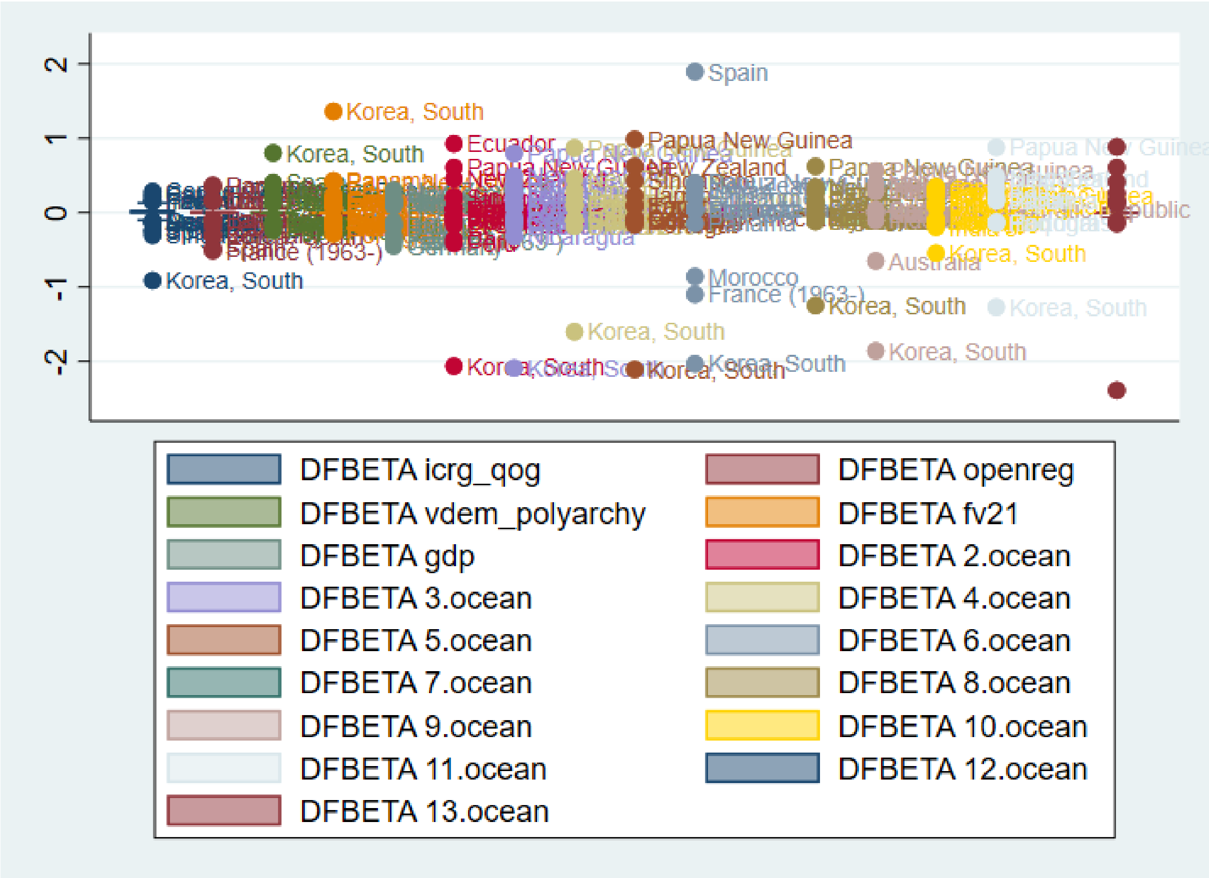
Table 6: Summary-statistics Longitudinal Dataset

3. Outliers (Coastal States)



Graph 7: Outliers Coastal States

4. Outliers (Flag States)



Graph 8: Outliers Flag States

5. Regression Table Flag States with USA and China included (OLS)

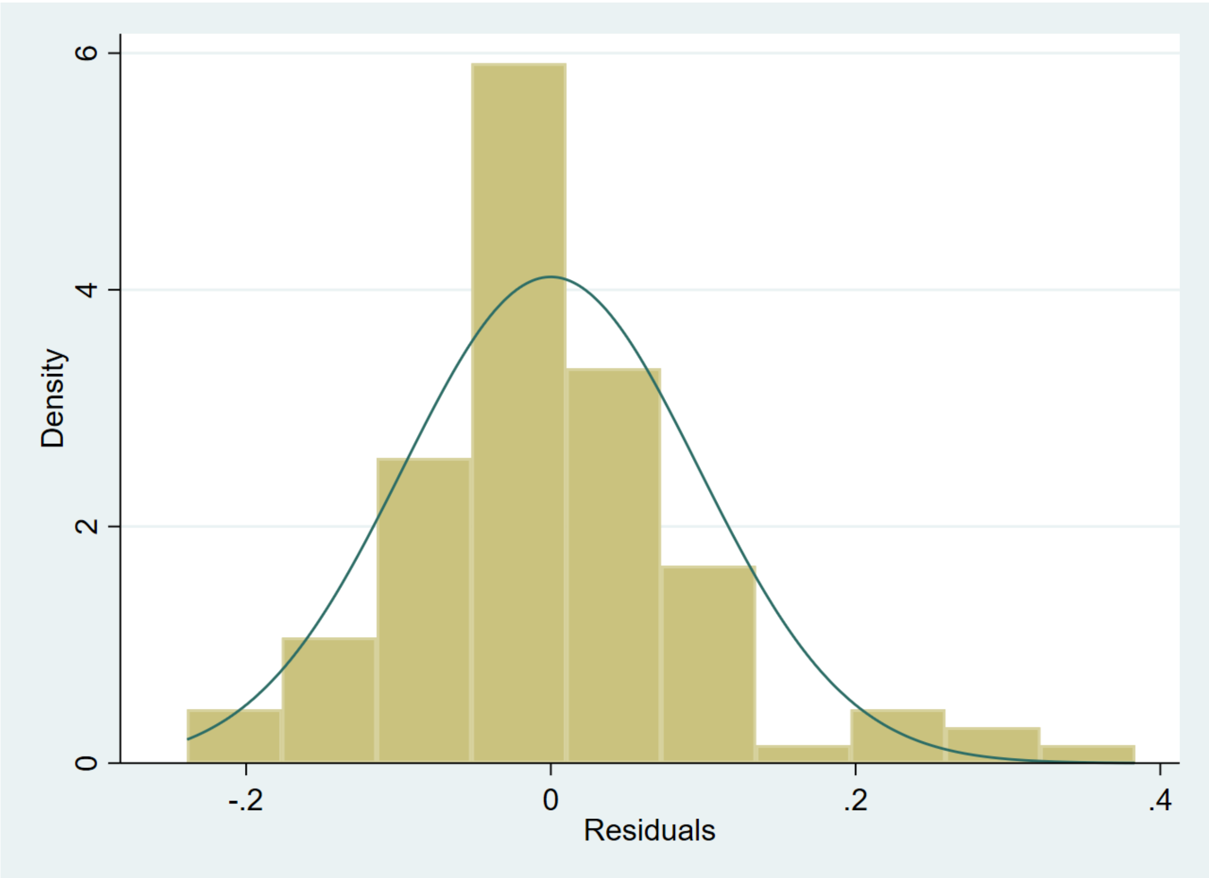
	(1)	(2)	(3)	(4)	(5)
StateCapacity	-0.0707	-0.217***	-0.205***	-0.182**	-0.0457
	(0.0603)	(0.0418)	(0.0568)	(0.0578)	(0.150)
FlagVulnerability		0.151$^{\text{â€}}$	0.150$^{\text{â€}}$	0.136	0.159$^{\text{â€}}$
		(0.0876)	(0.0830)	(0.0829)	(0.0836)
EconomicDev.		0.363**	0.362**	0.383**	0.364**
		(0.131)	(0.125)	(0.130)	(0.125)
Eastern Pacific		-0.162$^{\text{â€}}$	-0.157	-0.153	-0.160
		(0.0892)	(0.0977)	(0.0990)	(0.0976)

Eastern Pacific and West Atlantic	-0.156*	-0.156*	-0.159*	-0.153â€
	(0.0718)	(0.0783)	(0.0787)	(0.0783)
West Atlantic	-0.169**	-0.165*	-0.165*	-0.164*
	(0.0628)	(0.0752)	(0.0756)	(0.0751)
East Atlantic	-0.118â€	-0.117	-0.121â€	-0.106
	(0.0638)	(0.0712)	(0.0718)	(0.0727)
East Atlantic and Mediterranean	-0.135	-0.138	-0.117	-0.137
	(0.121)	(0.126)	(0.122)	(0.127)
East Atlantic and Western Pacific	0.0895	0.0889	0.103	0.0979
	(0.0850)	(0.0816)	(0.0824)	(0.0832)
East Indian Ocean	-0.199**	-0.208**	-0.217**	-0.202**
	(0.0649)	(0.0681)	(0.0700)	(0.0695)
East Indian Ocean and Western Pacific	-0.0894	-0.0887	-0.0859	-0.0854
	(0.0756)	(0.0773)	(0.0788)	(0.0776)
East Indian Ocean and West Indian Ocean	-0.291***	-0.291***	-0.299***	-0.297***
	(0.0636)	(0.0666)	(0.0671)	(0.0671)
West Indian Ocean	-0.143*	-0.146*	-0.143*	-0.145*
	(0.0624)	(0.0617)	(0.0624)	(0.0627)
West Indian Ocean and East Atlantic	-0.254**	-0.249**	-0.242**	-0.255**
	(0.0813)	(0.0902)	(0.0912)	(0.0901)
Mediterranean & Black Sea	-0.166*	-0.167*	-0.159*	-0.165*
	(0.0693)	(0.0730)	(0.0742)	(0.0736)
Openness		0.0155	0.133**	0.0158
		(0.0228)	(0.0479)	(0.0230)
RegimeType		-0.0152	-0.00320	0.117

			(0.0552)	(0.0553)	(0.117)
StateCapacity # Openness				-0.228*	
				(0.0905)	
StateCapacity # RegimeType					-0.245
					(0.203)
Constant	0.0984**	0.244***	0.245***	0.227**	0.158
	(0.0353)	(0.0656)	(0.0660)	(0.0675)	(0.100)
r2	0.0130	0.621	0.623	0.636	0.628
Observations	106	106	106	106	106

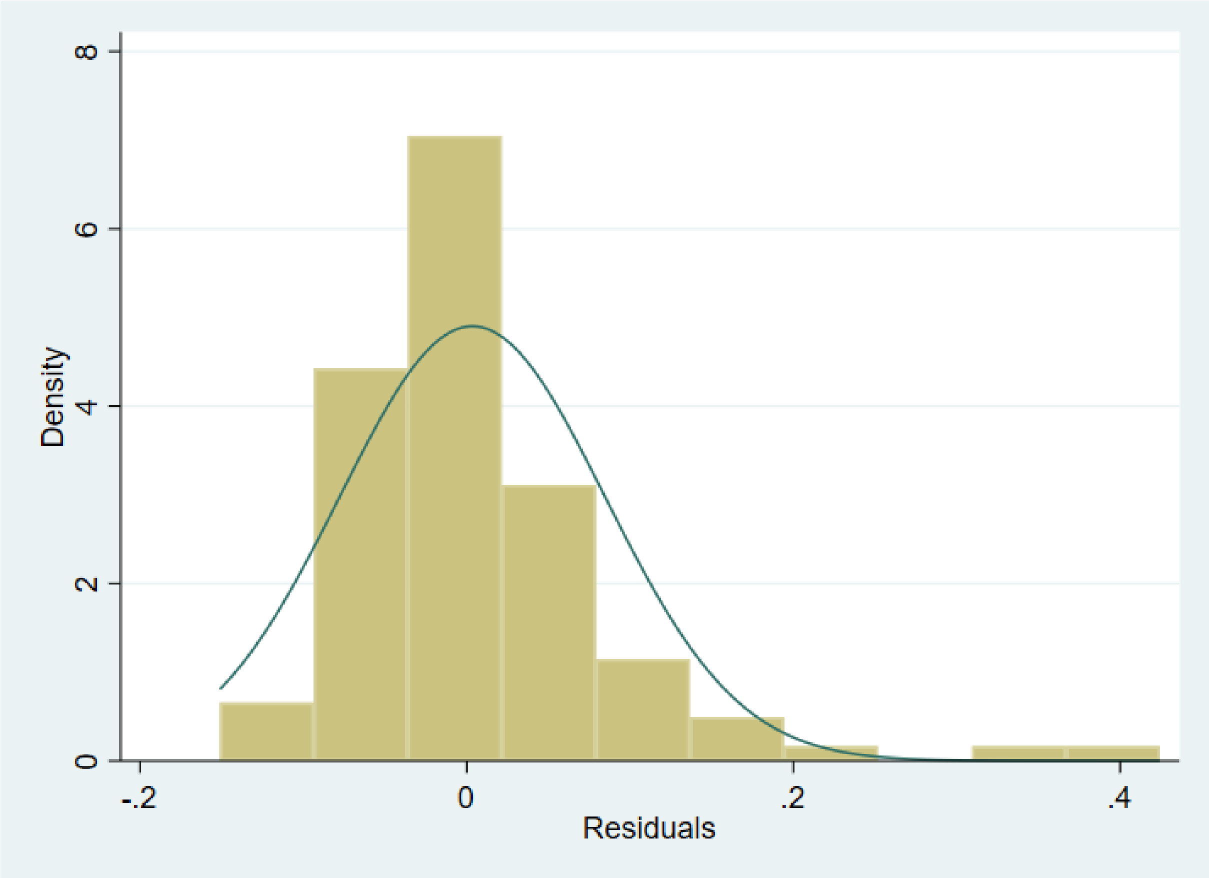
*Table 7: Standard errors in parentheses â€ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001*

6. Distribution of Residuals (Coastal States)



Graph 9:Distribution of Residuals Coastal States

7. Distribution of Residuals (Flag States)



Graph 10: Distribution of Residuals Flag States

8. Regression Table Coastal States with Fishing Agreement Variable (OLS)

	(1)	(2)	(3)	(4)	(5)
StateCapacity	-0.274***	-0.291***	-0.262***	-0.222*	0.357*
	(0.0596)	(0.0571)	(0.0674)	(0.0879)	(0.177)
CoastVulnerability		0.0123	-0.0229	-0.0135	0.00886
		(0.0904)	(0.120)	(0.124)	(0.120)
EconomicDev.		0.0183	0.0104	0.0156	0.0200
		(0.0837)	(0.0951)	(0.0933)	(0.0927)
Eastern Pacific		0.0530	0.0532	0.0572	0.0507
		(0.147)	(0.145)	(0.147)	(0.142)
Eastern Pacific and West Atlantic		-0.135*	-0.147*	-0.139*	-0.122*
		(0.0540)	(0.0650)	(0.0673)	(0.0595)
West Atlantic		-0.114â€	-0.112	-0.103	-0.103
		(0.0675)	(0.0766)	(0.0798)	(0.0713)

East Atlantic		-0.0673	-0.0796	-0.0744	-0.0358
		(0.0612)	(0.0688)	(0.0709)	(0.0660)
East Atlantic and Mediterranean		-0.136*	-0.141*	-0.137*	-0.129*
		(0.0638)	(0.0642)	(0.0655)	(0.0569)
East Indian Ocean		-0.124â€	-0.122â€	-0.116	-0.0981
		(0.0624)	(0.0692)	(0.0720)	(0.0633)
East Indian Ocean and Western Pacific		0.0888	0.104	0.106	0.117
		(0.0676)	(0.0746)	(0.0770)	(0.0718)
East Indian Ocean and West Indian Ocean		-0.0691	-0.0494	-0.0518	-0.0831
		(0.0475)	(0.0533)	(0.0529)	(0.0518)
West Indian Ocean		-0.0362	-0.0553	-0.0532	-0.0363
		(0.0753)	(0.0807)	(0.0820)	(0.0787)
West Indian Ocean and East Atlantic		-0.167**	-0.149*	-0.139â€	-0.158*
		(0.0608)	(0.0674)	(0.0703)	(0.0619)
Mediterranean & Black Sea		-0.0743	-0.0747	-0.0708	-0.0629
		(0.0599)	(0.0664)	(0.0680)	(0.0626)
Openness			0.0357	0.0770	0.0311
			(0.0353)	(0.0666)	(0.0337)
RegimeType			-0.0138	-0.0174	0.479***
			(0.0689)	(0.0708)	(0.135)
StateCapacity # Openness				-0.0751	
				(0.108)	
StateCapacity # RegimeType					-0.925***
					(0.245)
Constant	0.377***	0.440***	0.434***	0.404***	0.0984
	(0.0360)	(0.0821)	(0.0848)	(0.0980)	(0.111)
r2	0.197	0.374	0.385	0.389	0.447

Observations	88	88	88	88	88

*Table 8: Standard errors in parentheses â€ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001*

9. Regression Table Coastal States with Geographic Controls (OLS)

	(1)	(2)	(3)	(4)
StateCapacity	-0.241***	-0.289***	-0.301***	0.216
	(0.0553)	(0.0534)	(0.0667)	(0.142)
CoastVulnerability		-0.00240	-0.00400	0.0237
		(0.0798)	(0.0839)	(0.0856)
EconomicDev.		0.0205	0.0246	0.0349
		(0.0795)	(0.0869)	(0.0860)
Eastern Pacific		0.0513	0.0468	0.0407
		(0.145)	(0.147)	(0.144)
Eastern Pacific and West Atlantic		-0.133*	-0.137*	-0.127*
		(0.0563)	(0.0581)	(0.0543)
West Atlantic		-0.137*	-0.142*	-0.142*
		(0.0650)	(0.0675)	(0.0635)
East Atlantic		-0.0715	-0.0747	-0.0400
		(0.0607)	(0.0620)	(0.0590)
East Atlantic and Mediterranean		-0.136*	-0.138*	-0.130*
		(0.0634)	(0.0645)	(0.0571)
East Atlantic and Western Pacific		-0.339***	-0.337***	-0.303***
		(0.0626)	(0.0655)	(0.0614)
East Indian Ocean		-0.127*	-0.128*	-0.109â€
		(0.0616)	(0.0623)	(0.0583)
East Indian Ocean and Western Pacific		0.0875	0.0869	0.0991
		(0.0670)	(0.0685)	(0.0681)
East Indian Ocean and West Indian Ocean		-0.0698	-0.0708	-0.0984*
		(0.0478)	(0.0486)	(0.0474)
West Indian Ocean		-0.0546	-0.0523	-0.0491

		(0.0656)	(0.0692)	(0.0663)
West Indian Ocean and East Atlantic		-0.169**	-0.174**	-0.185**
		(0.0603)	(0.0619)	(0.0577)
Mediterranean & Black Sea		-0.0881	-0.0899	-0.0787
		(0.0591)	(0.0602)	(0.0566)
RegimeType			0.0166	0.451***
			(0.0585)	(0.126)
StateCapacity # RegimeType				-0.793***
				(0.211)
Constant	0.348***	0.448***	0.447***	0.160
	(0.0324)	(0.0795)	(0.0801)	(0.102)
r2	0.154	0.387	0.387	0.439
Observations	106	106	106	106

Table 9: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

10. Regression Table Coastal States with Geographic Controls (TSCS)

	(1)	(2)	(3)	(4)	(5)
StateCapacity	-0.0310*	-0.0314*	-0.0277*	-0.0291*	-0.0184
	(0.0146)	(0.0145)	(0.0141)	(0.0143)	(0.0253)
RegimeType		0.0344**	0.0250â€	0.0253	0.0347
		(0.0125)	(0.0150)	(0.0154)	(0.0279)
EconomicDev.			0.00767	0.00774	0.00767
			(0.00505)	(0.00527)	(0.00523)
PopulationSize			-0.0000546	- 0.0000582â€	- 0.0000580â€
			(0.0000346)	(0.0000338)	(0.0000337)
Trade			0.0000254	0.0000214	0.0000209
			(0.0000680)	(0.0000671)	(0.0000675)
Island				0.0391*	0.0393*
				(0.0168)	(0.0168)
Latin America				0.0289	0.0284
				(0.0200)	(0.0197)

North Africa & the Middle East				0.0524^{*}	0.0514^{*}
				(0.0214)	(0.0218)
Sub-Saharan Africa				0.0470^{*}	0.0462^{*}
				(0.0194)	(0.0192)
Western Europe and North America				0.0544^{**}	0.0571^{**}
				(0.0180)	(0.0199)
East Asia				0.103^{*}	0.103^{*}
				(0.0432)	(0.0436)
South-East Asia				0.0542^{*}	0.0531^{*}
				(0.0221)	(0.0220)
South Asia				0.0194	0.0188
				(0.0332)	(0.0332)
The Pacific				0.183^{***}	0.182^{***}
				(0.0230)	(0.0224)
The Caribbean				0.0667^{*}	0.0659^{*}
				(0.0293)	(0.0291)
StateCapacity # RegimeType					-0.0212
					(0.0525)
Constant	0.801^{***}	0.782^{***}	0.589^{***}	0.537^{***}	0.535^{***}
	(0.0107)	(0.0134)	(0.123)	(0.135)	(0.136)
Observations	2602	2602	2602	2602	2602
Countries	103	103	103	103	103

Table 10: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

11. Regression Table Coastal State with Control for Constant Shocks (TSCS)

	(1)	(2)	(3)	(4)	(5)
StateCapacity	-0.0153	-0.0183	-0.0170	-0.0194	-0.0137
	(0.0172)	(0.0166)	(0.0170)	(0.0173)	(0.0262)
Year1993	0.000156	-0.000459	-0.000388	-0.000333	-0.000317
	(0.000953)	(0.00116)	(0.00116)	(0.00118)	(0.00120)

Year1994	-0.0000197	-0.000685	-0.000565	-0.000338	-0.000301
	(0.00209)	(0.00227)	(0.00225)	(0.00228)	(0.00233)
Year1995	-0.000882	-0.00192	-0.00174	-0.00139	-0.00138
	(0.00318)	(0.00345)	(0.00341)	(0.00348)	(0.00349)
Year1996	-0.00158	-0.00261	-0.00237	-0.00191	-0.00192
	(0.00396)	(0.00421)	(0.00417)	(0.00427)	(0.00425)
Year1997	-0.00172	-0.00302	-0.00270	-0.00210	-0.00214
	(0.00460)	(0.00492)	(0.00489)	(0.00503)	(0.00500)
Year1998	-0.00154	-0.00301	-0.00258	-0.00190	-0.00191
	(0.00480)	(0.00520)	(0.00519)	(0.00537)	(0.00536)
Year1999	-0.000975	-0.00261	-0.00207	-0.00135	-0.00137
	(0.00474)	(0.00520)	(0.00526)	(0.00549)	(0.00547)
Year2000	-0.000517	-0.00233	-0.00169	-0.000961	-0.000965
	(0.00442)	(0.00493)	(0.00512)	(0.00539)	(0.00538)
Year2001	-0.000920	-0.00285	-0.00209	-0.00132	-0.00135
	(0.00430)	(0.00487)	(0.00510)	(0.00538)	(0.00536)
Year2002	-0.00101	-0.00304	-0.00220	-0.00138	-0.00141
	(0.00394)	(0.00459)	(0.00496)	(0.00526)	(0.00524)
Year2003	-0.000221	-0.00248	-0.00155	-0.000718	-0.000746
	(0.00382)	(0.00456)	(0.00498)	(0.00531)	(0.00529)
Year2004	-0.0000179	-0.00246	-0.00141	-0.000597	-0.000685
	(0.00351)	(0.00435)	(0.00486)	(0.00520)	(0.00516)
Year2005	0.00124	-0.00137	-0.000237	0.000653	0.000563
	(0.00355)	(0.00449)	(0.00498)	(0.00535)	(0.00531)
Year2006	0.00253	-0.0000147	0.00122	0.00225	0.00216
	(0.00356)	(0.00452)	(0.00515)	(0.00557)	(0.00554)
Year2007	0.00363	0.00104	0.00237	0.00353	0.00345
	(0.00376)	(0.00471)	(0.00543)	(0.00592)	(0.00589)
Year2008	0.00407	0.00129	0.00275	0.00402	0.00391
	(0.00371)	(0.00477)	(0.00556)	(0.00612)	(0.00609)
Year2009	0.00489	0.00215	0.00372	0.00511	0.00499
	(0.00379)	(0.00480)	(0.00577)	(0.00639)	(0.00635)
Year2010	0.00530	0.00250	0.00415	0.00563	0.00549

	(0.00397)	(0.00498)	(0.00607)	(0.00672)	(0.00668)
Year2011	0.00591	0.00310	0.00480	0.00622	0.00610
	(0.00401)	(0.00502)	(0.00591)	(0.00653)	(0.00650)
Year2012	0.00713â€	0.00441	0.00619	0.00773	0.00761
	(0.00415)	(0.00512)	(0.00619)	(0.00685)	(0.00681)
Year2013	0.00796â€	0.00513	0.00697	0.00859	0.00846
	(0.00430)	(0.00532)	(0.00645)	(0.00713)	(0.00708)
Year2014	0.00863*	0.00559	0.00754	0.00922	0.00911
	(0.00440)	(0.00549)	(0.00666)	(0.00737)	(0.00734)
Year2015	0.00914*	0.00611	0.00816	0.00988	0.00976
	(0.00452)	(0.00560)	(0.00671)	(0.00742)	(0.00740)
Year2016	0.0104*	0.00737	0.00950	0.0113	0.0111
	(0.00467)	(0.00573)	(0.00690)	(0.00763)	(0.00762)
Year2017	0.0106*	0.00770	0.00990	0.0117	0.0116
	(0.00485)	(0.00589)	(0.00700)	(0.00777)	(0.00777)
Year2018	0.0102*	0.00730	0.00959	0.0115	0.0113
	(0.00504)	(0.00607)	(0.00716)	(0.00793)	(0.00794)
RegimeType		0.0244	0.0241	0.0240	0.0292
		(0.0157)	(0.0160)	(0.0165)	(0.0288)
EconomicDev.			-0.00179	-0.00358	-0.00349
			(0.00566)	(0.00658)	(0.00665)
PopulationSize			-0.0000359	-0.0000412	-0.0000412
			(0.0000359)	(0.0000340)	(0.0000340)
Trade			0.00000374	-0.00000164	-0.00000157
			(0.0000704)	(0.0000698)	(0.0000698)
Island				0.0285â€	0.0287â€
				(0.0172)	(0.0171)
Latin America				0.0303	0.0300
				(0.0201)	(0.0199)
North Africa & the Middle East				0.0557**	0.0551*
				(0.0212)	(0.0217)
Sub-Saharan Africa				0.0315	0.0312

	(1)	(2)	(3)	(4)	(5)
				(0.0207)	(0.0206)
Western Europe and North America				0.0688^{***}	0.0701^{**}
				(0.0198)	(0.0213)
East Asia				0.132^{**}	0.132^{*}
				(0.0513)	(0.0515)
South-East Asia				0.0709^{***}	0.0701^{***}
				(0.0210)	(0.0210)
South Asia				0.0315	0.0310
				(0.0365)	(0.0366)
The Pacific				0.175^{***}	0.174^{***}
				(0.0228)	(0.0223)
The Caribbean				0.0442	0.0440
				(0.0291)	(0.0290)
StateCapacity # RegimeType					-0.0117
					(0.0541)
Constant	0.789^{***}	0.779^{***}	0.825^{***}	0.821^{***}	0.816^{***}
	(0.0103)	(0.0131)	(0.139)	(0.168)	(0.172)
Observations	2602	2602	2602	2602	2602
Countries	103	103	103	103	103

*Table 11: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

12. Regression Table Flag States with Geographic Controls (OLS)

	(1)	(2)	(3)	(4)	(5)
StateCapacity	-0.0736	-0.191^{***}	-0.189^{**}	-0.166^{**}	-0.0294
	(0.0497)	(0.0398)	(0.0566)	(0.0571)	(0.142)
FlagVulnerability		0.169^{*}	0.164^{*}	0.139â€	0.173^{*}
		(0.0845)	(0.0812)	(0.0797)	(0.0817)
EconomicDev.		0.157	0.163	0.308	0.163
		(0.180)	(0.188)	(0.202)	(0.182)
Eastern Pacific		-0.147	-0.147	-0.137	-0.150
		(0.0917)	(0.0999)	(0.101)	(0.0996)

Eastern Pacific and West Atlantic	-0.119	-0.123	-0.123	-0.120
	(0.0756)	(0.0820)	(0.0816)	(0.0818)
West Atlantic	-0.143*	-0.146$^{\text{â€}}$	-0.146$^{\text{â€}}$	-0.145$^{\text{â€}}$
	(0.0637)	(0.0763)	(0.0762)	(0.0761)
East Atlantic	-0.0989	-0.102	-0.103	-0.0908
	(0.0653)	(0.0726)	(0.0726)	(0.0742)
East Atlantic and Mediterranean	-0.116	-0.119	-0.0976	-0.118
	(0.123)	(0.127)	(0.123)	(0.128)
East Atlantic and Western Pacific	0.135	0.137	0.140	0.146
	(0.0952)	(0.0902)	(0.0920)	(0.0922)
East Indian Ocean	-0.176*	-0.184**	-0.193**	-0.179*
	(0.0674)	(0.0700)	(0.0711)	(0.0716)
East Indian Ocean and Western Pacific	-0.0644	-0.0643	-0.0637	-0.0610
	(0.0807)	(0.0820)	(0.0835)	(0.0822)
East Indian Ocean and West Indian Ocean	-0.194*	-0.197*	-0.252**	-0.203*
	(0.0863)	(0.0902)	(0.0947)	(0.0894)
West Indian Ocean	-0.119$^{\text{â€}}$	-0.121$^{\text{â€}}$	-0.118$^{\text{â€}}$	-0.120$^{\text{â€}}$
	(0.0630)	(0.0619)	(0.0618)	(0.0628)
West Indian Ocean and East Atlantic	-0.236**	-0.235*	-0.223*	-0.241*
	(0.0850)	(0.0933)	(0.0939)	(0.0931)
Mediterranean & Black Sea	-0.148*	-0.151*	-0.139$^{\text{â€}}$	-0.149$^{\text{â€}}$
	(0.0717)	(0.0750)	(0.0759)	(0.0755)
Openness		0.0122	0.135**	0.0125
		(0.0210)	(0.0473)	(0.0213)
RegimeType		0.00146	0.0129	0.134

			(0.0537)	(0.0534)	(0.114)
StateCapacity # Openness				-0.237*	
				(0.0924)	
StateCapacity # RegimeType					-0.246
					(0.192)
Constant	0.0911**	0.210**	0.210**	0.191**	0.123
	(0.0290)	(0.0670)	(0.0669)	(0.0677)	(0.0993)
r2	0.0210	0.465	0.466	0.485	0.473
Observations	104	104	104	104	104

*Table 12: Standard errors in parentheses â€ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*