

A STUDY OF LOCAL STAKEHOLDERS' ATTITUDES VIS-À-VIS THE
LEGISLATION REGULATING OVERFISHING IN THE RED SEA

by

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A Thesis
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
Of
Master of Science
Conflict Analysis and Resolution
Master of Arts
Conflict Resolution and Mediterranean Security

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Date: _____ Fall Semester 2017
George Mason University
Fairfax, VA
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Valletta, Malta

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Overfishing in the Red Sea

A thesis submitted in partial fulfilment of the requirements for the degree of Master of
Science at George Mason University, and the degree of Master of Arts at the University
of Malta

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Fall Semester 2017
George Mason University
Fairfax, VA
University of Malta
Valletta, Malta

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ACKNOWLEDGEMENTS

This journey would not have been possible without the support of my family, professors, and friends. To my family, thank you for inspiring me to follow my dreams and encouraging me in all of my pursuits. I am especially grateful to my parents, who supported me emotionally and financially. I always knew that you wanted the best for me and believed in me.

I must thank all the professors whom I have worked with over the last year for showing me what it means to be dedicated, each in their own unique way. Each of you have given your time, energy, and expertise. I would like to extend a special thanks to Dr. Athanasios Gatsias to whom I owe a debt of gratitude, for his time and careful attention to detail, his door was always open whenever I ran into a problem or had a question.

To my friends, thank you all for listening, offering me advice, and supporting me through this entire process. Special thanks to Jessie Rosati for the constant encouragement and answering my dozen daily questions, this thesis would not have been possible without her inspiration and support. I would also like to express gratitude to my friend Raguia Mostafa, for always being there for me when I needed support throughout the year.

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LIST OF ABBREVIATIONS

Common Pool Resource	CPR
Marine Protected Area	MPA
Egyptian Pound	LE
World Wildlife Fund.....	WWF
Zoological Society of London	ZSL
Food and Agriculture Organization	FAO
Convention on Biological Diversity	CBD
Not in My Backyard.....	NIMBY
Multi-Person Prisoner's Dilemma	MPD
The Hurghada Environmental Protection and Conservation Association	HEPCA
General Authority for Fish Resources Development.....	GAFRD
European Union	EU

ABSTRACT

A STUDY OF LOCAL STAKEHOLDERS' ATTITUDES VIS-À-VIS THE LEGISLATION REGULATING OVERFISHING IN THE RED SEA

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George Mason University, 2017

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The purpose of this research is to explore how fishermen in the area of Hurghada, Red Sea, Egypt perceive legislation regulating overfishing and marine environmental protection, as well as how they perceive the impact such legislation may have on their lives. This research sheds light on stakeholder's perceptions (focusing on fishermen) and attitudes vis-à-vis legislation that regulates their sources of income while aiming at environmental conservation in this area. Eleven semi-structured interviews were conducted with the aforementioned group and thematically analyzed. The findings generally include negative perceptions with a few positive ones. In light of existing literature, the discussion recommends the inclusion of the fishermen in the government's relevant decision-making processes as well as allowing the fishermen to deliberate existing legislation that has a negative effect on their livelihood.

INTRODUCTION

The purpose of this research is to explore how fishermen in the area of Hurghada, Red Sea, Egypt perceive legislation regulating overfishing and marine environmental protection, as well as how they perceive the impact such legislation may have on their lives. This research sheds light on stakeholder's perceptions (focusing on fishermen) and attitudes vis-à-vis legislation that regulates their sources of income while aiming at environmental conservation in this area.

Overfishing is defined as “catching too many fish in an area of the sea, so that there are not many fish left there” (Cambridge University Press, n.d.). Overfishing is simply the act of catching so many fish from one place that the population can't reproduce enough to replace the existing population. In extreme cases, overfishing leads to severe depletion or extinction of fish populations. There are three types of over fishing: 1. ecosystem overfishing, which happens when a predator fish, like tuna or billfish, experiences a severe decline in the population, thus allowing smaller marine species to overpopulate; 2. recruitment overfishing, which occurs when a fish is caught before it is old enough to reproduce; and 3. growth overfishing, which happens when a fish is harvested before it reaches its full size. When the first type of overfishing occurs and small marine species overpopulate, this greatly it affects the whole food chain (Kennedy, n.d.).

Overfishing has been happening for centuries; some of the earliest examples of this phenomenon occurred in the 1800s when whale stocks were decimated for the production of high demand items such as lamp oil, candles and whalebones. Next, in the mid-1900s, there was a collapse in the sardine population due to overfishing, combined with climate factors; luckily the stocks rebounded by the late 1990s (Kennedy, n.d.).

According to the report “Living Blue Planet” by World Wildlife Fund (WWF) and Zoological Society of London (ZSL), the index for all exploited fish species implies a fifty percent decline in the population numbers globally between 1970 and 2010. Exploitation is classified as the main threat in the majority of cases and other threats listed in the index include habitat loss and degradation as well as climate change impacts. (WWF & ZSL, 2015)

According to the Food and Agriculture Organization (FAO) of the United Nations, the world’s fish stocks today are under huge pressure, with 61 percent classified as fully exploited and a further 29 percent as overfished (as cited in WWF & ZSL, 2015, p.26). While this research focuses only on the perception of “small-scale” artisanal fishermen in Hurghada, Egypt, it’s important that one understands how widescale and devastating overfishing can be. Additionally, overfishing is a huge problem for the future global food security. Overfishing doesn’t only affect the interaction and balance of the marine life, but also the economic and social wellbeing of the coastal communities that depend on fish for a living (FAO Fisheries & Aquaculture, 2007).

Small scale fisheries are not immune to overfishing or destructive fishing practices. In some cases, the small-scale fleets' activities have been the primary cause of environmental degradation. In many other cases, the struggles faced by small-scale fleets have been caused or compounded by the arrival of industrial scale fleets. In many developing countries, fishermen continue to have open access to waters without any effective controls on the techniques used or the quantities of fish harvested (WWF & ZSL, 2015). This is also the case in the present research – the Hurghada fishermen are blaming the industrial scale fleets for the depletion of fish stocks and degradation of the marine ecosystem. There are laws and restrictions from local and national government to control and govern the resources, but according to the studied group, the laws are creating conflicts, which are presented and discussed in depth later in this research.

The intention of this research is to identify fishermen's concerns vis-à-vis their income, lifestyle, and identity needs, as pertaining to existing legislation. Additionally, this research attempts to explore the relationship between resource dependency and environmental conservation within the existing population of interest (fishermen in the Hurghada, Red Sea). The present study is informed by concepts and theories including the following: stakeholder's theory, which explain who a stakeholder is and how they can affect or become affected by conflict; tragedy of the commons, which is an economic theory regarding a common pool resource where individuals act independently according to their own self-interest against the common good of all users by spoiling or depleting that resource through their collective action; legal pluralism, which is the occurrence of multiple legal systems within one human population; legal consciousness, which refers to

what people say, as well as do in response to the law; and finally, forced compliance theory, which is the idea that authorities can force an individual to behave in a way that violates their better judgment. All concepts are discussed in depth in the “literature review” chapter.

After the literature chapter, the researcher offers detailed information about the area and participants being studied, identified in the case-study. Key information is included in this section such as: statistical data about the fishermen and the depletion of the fish stock in the designated area, as well as what has been done by the government to control the issue and also what the local people as well as government officials have said about the issue. This nuanced information is intended to give a deeper and more meaningful understanding of the conflict.

After this, the methodology chapter explains how this qualitative research was designed by conducting eleven semi-structured interviews with the above-mentioned group. The chapter also offers detailed information about how, when and where the interviews were conducted and the techniques used to do so. The interviews were thematically analyzed into themes and subthemes to offer a more organized presentation of the data as well as to reveal key points and patterns in the fishermen’s perspectives. Some of the themes that were included are: the insider connection, safety, security, lack of knowledge from the authorities and finally, environmental knowledge. The difference between safety and security is discussed later in the analysis section under the relevant theme.

Next, in the discussion chapter, the researcher points out the main findings and discusses them in the light of the literature previously mentioned, in an attempt to answer the research question. Then finally, there is a concluding chapter to summarize the study and indicate what further research may be needed.

LITERATURE REVIEW

This chapter provides a review of academic sources that are utilized to help the reader gain more in-depth knowledge about the topic being studied. This was done through the use of credible secondary source such as scholarly articles and papers with meaningful findings that were beneficial to the concept studied. This chapter includes sections that are arranged in a logical order and review concepts such as stakeholders, common pool resources, and overfishing. In the first section, the author will introduce three concepts as subsections to help the reader understand how the studied group understands and behaves in response to the law. The literature review will start by explaining the main concept that is stakeholders which will allow the reader to review a variety of information on this concept.

Stakeholders

Research was conducted on how stakeholders in this area of Egypt perceive the laws regulating fishing in Hurghada, a Red Sea town in south-east Egypt. This study also focuses on how they perceive the effect of the legislation on their lives and how they understand the legislation changes as well as its perceived impact on the local environment.

First and most importantly, what a stakeholder actually is needs to be identified and properly defined. In the book “Mountaintop Mining in Appalachia: Understanding Stakeholders and Change in Environmental Conflicts,” the author draws examples from the protests in regard to coal energy and uses a vignette from the protest to define what a

stakeholder is. Commonly, a stakeholder is anyone with “interest to gain or lose in something, such as a conflict, a business venture, or a policy issue.” In the present research, the stakeholders at hand are the local fishermen, the divers and the authorities. They are each involved in the conflict for different reasons and each have their own agenda. The fishermen are the stakeholders who “will be directly affected economically, physically, emotionally, or socially by the issue,” the authorities are those who are “able to shape how an issue is articulated and who can prevent or make possible a resolution of that issue,” and the divers and the tourist fall into the third category of stakeholders, “those who have declared interest in the issue but actually might themselves have little directly at stake relative to those in the first category” (Hirsch & Dukes, 2014, p.28-29).

The three categories of stakeholders, according to the authors, capture the extent to which each group of stakeholders is invested in the conflict, by demonstrating the potential gain or loss for each group, their degree of interest and the extent of their influence. Another way to look at the conflict is to frame stakeholders via their understanding and ability to frame the conflict rather than based on their role in the conflict. One study from this perspective categorizes stakeholders only based on whether they see the conflict negatively or positively (Hirsch & Dukes, 2014).

This book assists in setting the parameters and framework for the definition of a stakeholder. The role of the stakeholder in this current study goes beyond simply the fishermen. Stakeholders often have many roles and these roles channel the original stakeholders towards a compromise or a resolution. If successful, these roles can also give credibility to a party that may have lacked credibility beforehand (Hirsch & Dukes,

2014). This chapter reflects all the dimensions of being a stakeholder including, the potential for gain or loss, the degree of interest and investment and the likelihood of that interest changing over time, and the different levels of interest. For instance, stakeholders that have very high levels of interest could burn out after a long time. Others can be affected by external relationships and some might find it difficult to speak up about a certain topic (Hirsch & Dukes, 2014). With that knowledge, when one is dealing with multiple stakeholders it's important to pay mind to all different perspectives and interests. In other words, this chapter is essentially the backbone of how one needs to approach a situation with many stakeholders and how to properly manage them.

This categorization of stakeholders helps the reader classify the fishermen under a certain category and consequently will be useful to the coming parts of the literature which discuss marine areas and biological diversity that is threatened by overfishing as well as illegal fishing. This phenomenon has an impact not only on the fishing industry but the whole environment and the costal people who make their living from this resource, by fishing and otherwise.

In the article, "What Stakeholders Think About Marine Protected Areas: Case Study from Spain," the author delves into the topic of protected marine areas. The Convention on Biological Diversity (CBD) committed in 2006 to protect at least 10% of the world's marine and coastal regions by 2012. In this article, the author explains that stakeholders "exercise their power in continuous negotiation about values, norms, principles and goals in order to advance their interests" (Jentoft et al., 2012). It is also explained that often, stakeholders are met with skepticism and outright rejection, despite

their stake, knowledge and status. The author references a NIMBY (not-in-my-backyard) attitude, implying that while sometimes groups of stakeholders share interests and get along, other times they do not. The latter occurs in this case, in which they want the marine protected areas (MPAs) located elsewhere and don't want other's opinions or contradictory interests interfering with their personal affairs (Jentoft et al., 2012). On page 186, the author elaborates:

“If stakeholders have an image of the MPA as ecosystem protection, which will be to their benefit, the likelihood that they will support it is high, thus increasing its potential. If, on the other hand, they have a negative image and expect it to fail, the likelihood that it will do so is high. How the image fits with the reality at the outset, as well as after having been implemented, is a matter of investigation.” (Jentoft et al., 2012, p. 186).

In other words, as Kooiman (2003:29-45) puts it, good governance isn't possible without positive images. If the stakeholders – in this case, the Red Sea fishermen – aren't told why these laws are important, why they're implemented and why they matter to them, there is little hope in resolving the conflict. As long as one group of stakeholders does not understand the full picture and isn't given context as to why certain things are expected to be the way they are, governability problems will likely occur (as cited in Jentoft et al., 2012).

The good governance studied links the connection between the fishermen participants and the legal environment as a macro-environmental factor; this affects the other stakeholders via laws that fishermen are obliged to comply with and consequently creates a conflict. Such an environmental conflict is highly visible and as such, the government believes that it is important to ban fishing at the Red Sea in particular seasons which results in a negative perception from the fishermen in this research. The

authorities in Hurghada had never explained the impact of overfishing to any of the stakeholders, who tend to find themselves fighting a law they don't understand, and finding their earning potential threatened. This ambiguity makes it much more difficult to reach a consensus among the parties or solve the conflict.

In Jentoft et al. (2012) article, the importance of images is explained. It is not just the MPAs ideas that determine how stakeholders react to or feel about the conflict, but also the image the stakeholders have of the MPAs. In this study, the stakeholders have completely lost trust in the legal system in Egypt, since the law makers have never been transparent or proved themselves to have these stakeholder's best interest in mind. In this article, the authors conclude that exploring images about MPAs among stakeholders is essential to putting the conflict into context and understanding ways it could be resolved. It is important to note that MPAs are not politically neutral participators and that their rules and decisions interfere with individual's livelihood and should therefore be handled with utmost contextual sensitivity.

To better understand what governance is in a fishing context and its impact on the stakeholders, the article, "Participatory Issues in Fisheries Governance in Europe" by Pita, Chuenpagdee, & Pierce (2012), provides necessary insights. The article defines governance in this context, stating that it is a "systemic concept relating to the exercise of economic, political and administrative authority." In a broad way, fishery governance covers the social, economic, administrative and political frameworks in which the fisheries operate. In this article, the author explains the European Union's (EU) governing system, the importance of the images each stakeholder holds of the other side

of the conflict, how fisheries are regulated in the EU, the advantages and disadvantages of involving stakeholders (Pita et al., 2012).

Stakeholders, as discussed earlier, are closely effected by the organization's decisions; thus, their engagement in the decision-making process will be beneficial. Because they are able to provide the decision maker with valuable information, they can be used as significant inputs that will build up consensus. The fishermen have the ability to assist the decision makers through increased reliability and that will increase the rate of transparency and assist in eliminating the conflict.

In their article, "From User-Groups to Stakeholders? The Public Interest in Fisheries Management" Knut H. Mikalsen and Svein Jentoft tackle the notion that fisheries are solely the concern of the fishing industry. The authors suggest that the issue of over-fishing is a problem that affects more than just the fishers or the lawmakers, but rather affects almost everyone. The authors call for a more inclusive discussion when it comes to fisheries. In some cases, the United Nations (UN) acts as a representative for the stakeholders who have a legitimate stake in the management of living marine resources. Because of the pressures of legitimacy, power and urgency, it is difficult to align presumably diverse interests and concerns to be adequately represented without undermining the need for efficient decision-making (Jentoft et al., 2012). According to Mitchell et al., two issues are at the core of stakeholder theory: first, the question of stakeholder identification, who has a legitimate claim on the attention of managers and should therefore be considered a stakeholder; and second, the question of stakeholder salience, who is actually considered a stakeholder, having their claims and demands

attended to by management. Any attempt at addressing these issues will have to start with the concept itself (as cited in Jentoft et al., 2012). What does it mean to be a “stakeholder?” Originally coined by students of business administration and corporate management, it has been defined as “any group or individual who can affect or is affected by the achievement of the firm’s objectives” (Jentoft et al., 2012, p. 25).

There are, according to the authors, other definitions for “stakeholders” that are narrower than this one and are divided into definitive stakeholders, expectant stakeholders, and latent stakeholders. Definitive stakeholders are those who possess power, urgency and legitimacy over the issue; expectant stakeholders are those who only possess two of those three attributes; and latent stakeholders are those who only possess one of the three attributes. The authors also address the need for transparency in fish stocks, as these were more important to discuss than the relevance of stakeholder theory. The authors emphasize that it is difficult to apply a stakeholder theory to fisheries management because a stakeholder map is needed which is hard to draw with fisheries, because everyone is technically, at minimum, a latent stakeholder (Jentoft et al., 2012).

“A Survey of Alternative Livelihood Options for Hong Kong’s Fishers” tackles the economic and biological decline of Hong Kong’s fisheries and talks about how fisheries worldwide are being exploited in explicit ways and how any trials to regulate them tend to backfire, as well as alternative options for fishermen to earn a living. The study explores the willingness of fishermen to find alternative careers, their capacity to do so, the government’s role in helping them find alternatives and the feasibility of reducing the damage. This literature tackles many sides of the conflict between

stakeholders regarding fisheries and their sustainability (or lack thereof) (Teh, Cheung, Cornish, Chu, & Sumaila, 2008).

In this research, there is a conflict between all different stakeholders and the governmental legal compliance because it is important to serve a wide range of interests. Good governance also helps to make sure that the fishermen consider the interests of coming generations and the importance to save the scarce resources. It is also very important to understand and accommodate all stakeholders' needs, especially those ones that are largely affected by the decisions and at the same time have little to no power to affect the decision.

Related Concepts

There are many concepts that can help one understand how individuals perceive, speak and behave in response to laws, as well as how they comply to them, but due to the broad scope of the research, the researcher chose three concepts to help the reader understand why fishermen may perceive and respond to the law in the manner they do. In order for one to understand how the studied group perceives and responds to the law, one should examine the following concepts, which will be grouped together under the stakeholder's theory. The three explored concepts are legal compliance, legal consciousness and finally, legal pluralism.

Legal Compliance

This topic is important throughout the study and focuses primarily on the sanctions' severity as a vital determinant of individuals' compliance aiming to help the

reader to understand stakeholders' compliance behavior and understand the linkage between actions of stakeholders and enforced compliance with the governmental rules and regulations in Hurghada, Red Sea.

A study by Sutinen and Kuperan (1999) explained that individuals often have a continuous willingness to comply in order to meet both moral and social obligations, that is known as (*inter alia*) due to the higher level of legitimacy power that the authorities and governments impose over the citizens. Although the study concluded that the fairness of the governmental legitimacy power is a key determinant to the successfulness of such legal environment, the overall citizens' perception of fairness with the established policies and practices are of great importance and such regulations should meet the stakeholders' expectations as well. For instance, sanctions and civil penalties that the government imposes should be comparable to the value that the majority of people gain or lose with such regulations. In other words, it is important for the government to consider stakeholders' thoughts in order to treat the individual with a suitable level of dignity and respect that will facilitate the government's work. This is because the stakeholders will believe that it is a justifiable decision and that it makes sense, otherwise the policy will not be able to achieve its goals, and stakeholders will feel dissatisfied (Jon G. Sutinen & K. Kuperan, 1999).

In this research, fisheries are a scarce resource that are needed to be monitored and governed in order to reduce the level of decline that such industries may suffer from. Therefore, the governments and key personnel impose legitimate rules in order to sustain the environment, although these rules will require short-term sacrifices, and stakeholders

need to have a strong commitment towards the actions taken and comply even if against their individual interests (Jon G. Sutinen & K. Kuperan, 1999). Thus, and as discussed earlier, the level of stakeholders' engagement will facilitate the governmental intervention and help them to cope quickly with the imposed regulations by having procedural equity towards the new fishing regulations.

Legal Consciousness

Another phenomenon that will help the reader to gain knowledge about the legal aspects of the present research topic is the importance of legal consciousness, as it is essential for participants and stakeholders to be conscious of the changing rules and regulations. Research by Dave Cowan (2004) defined legal consciousness as a domination power that explains the enclosure and dependency in order to eliminate the participants' level of resistance that make regulation recipients demand recognition of their individual identities (Cowan, 2004). The researcher classified legal consciousness as one of the most vital concepts that institutions and stakeholders need to consider in order to have suitable relationships with the target audience. The concept has an old history and it is illustrated by Susan Silbey (2005) that legal consciousness was initiated in the 1980s in order to address legal hegemony and explain how the law is able to sustain its legitimate power, although there is an increasing gap between the law and implementers (as cited in Cowan, 2004, p. 323). The study added that the government is able to use reputable businessmen and media in order to increase citizens' level of consciousness with the revealed information and make them aware of the perceived fairness across the new regulations. Also, media helps to disseminate information and ideas aiming to

improve the public understanding because it can be used as bullets which help to directly affect the target audience with the needed ideologies that would support the policies in their interests. It also puts them within the stakeholders' expectations and with their interests that will lead to higher percentage of success and make them vulnerable to accept the legitimate governmental rules with minimal, if any, level of resistance (Cowan, 2004). In this case it's about standards of fishing.

Conan (2004) and Silbey (2005) agreed that the level of law recipient's resistance is correlated with the perceived fairness within the law itself. The stakeholders are those who are affected by the designated regulations, thus the studies explain that it should not be optional to consider stakeholders' perspectives and their relations with exercised power.

Legal Pluralism

The third element that correlates with the legal perspective of this study is legal pluralism that constitutes main two academic disciplines which are laws and social anthropology. According to a study by Jentoft et al. (2009), it is explained that with absence of governmental intervention, citizens' will be eager to produce chaos that enforces the legislative parties to conduct efforts aiming to monitor the citizens' performance and such efforts that are governed by law, fine or penalty will be applied in case of any law violation (Jentoft, Bavinck, Johnson, & Thomson, 2009). The fishing sector is one of the most vital industries that many communities depend on and that forces the government to take punishing actions for any resources' violations from any member of stakeholders. Communities and user groups are eager to comply with the

regulatory systems, although some areas in Egypt the Bedouins form their own custom law. However, an article by Jentoft et al. (2009) explained that the state legislative system is less successful to meet the participants' expectations than their ability to manage their own affairs.

Within application of the fishing sector, local and elderly people are the decision makers and they don't often respond to the governmental laws and are able to maintain order within their custom law. Because they don't wait for the government's precautionary rules, they are eager to make efforts to maintain suitable rules that help to reduce the level of community threats they may experience; thus, legal pluralism gives a chance to use locals as legislators to avoid the expected negative consequences. But the issue is the incongruity between tradition/custom and civic laws, and such conditions cause conflict for the stakeholders. They abide by laws contradictory to custom and represent different legal systems such as systems that govern the resources. In sum, through the use of legal pluralism, the fisheries as groups of stakeholders comprised within the fishing sector, established certain norms that became part of the social systems within the operated areas (Jentoft et al., 2009).

Common Pool Resources (CPR)

Common pool resources (CPR) is the second concept that is covered in the research, which aims to explain the use of common resources by different stakeholders. This concept explains the resources through excludability, where the consumption of such resources decreases the usability for others. Examples of CPR include fisheries and freshwater resources.

This research sheds light on the ideas and theories of “common property” or “the commons;” how to deal with the commons, the tragedy of the commons, fisher regulations and most importantly, about theories, practices and policies on how to make the commons work for all parties involved.

“Making the Commons Work – Theory, Practice and Policy” by Daniel W. Bromley defines the commons as collections of diverse global factors that are shared across people, the earth’s atmosphere, oceans, forests, etc. All of these environmental components are part of the common life, and people have the right to use; but this concept explores unlimited lack of control of common consumption proves selfishness and that there must be a control mechanism which governs use of CPR aiming to maintain sustainable life. In his book, Bromley explains the importance of crafting a new resource management regime that will be beneficial to change individuals' behavior and encourage them to protect the global commons for coming generations. Bromley explains what that the commons are, how scholars don’t have a clear definition for what the commons are and that the understanding thereof is lacking. “The mischief that arises from the continuing failure to understand common property is perverse in both scholarly discussions and public policy formulation” (Bromley, 1992, p.3). For instance, the author talks about how on the one hand tree and fish are controlled and managed as if they’re public property, on the other hand, they’re managed like private property and other times, they’re not managed at all and instead used by anyone who so desires. The author also underlines the fact that writers have failed to understand the concept of property and fail to see that some “successful” natural resource regimes exist (Bromley, 1992).

The confusion of the common property comes from the effect of government and people's actions in one location which will affect people and government in another location. In other words, the use of Common Pool Resources threatens others' interests (stakeholders) and thus there is a tradeoff between concern for sustainability and users' genuine selfishness.

In "Common Property and Collective Action in Economic Development" by C. Ford Runge, the author discusses how "many localities still maintain complex arrangements of joint tenancy. Common-property institutions continue to be observed, for example, on Swiss grazing lands and elsewhere in Europe" (Netting 1978; Rhodes and Thompson 1975 as cited in Runge, 1986) and discusses their successes and lack thereof. The author presents arguments as to why common properties can be viable as private property. "Rather than representing an atavistic arrangement of rights that inevitably results in inefficient resource use, common-property institutions may actually contain much that is valuable, and new institutional arrangements with common-property characteristics may also be worthwhile" (Runge, 1986, p.18). In other words, Runge is suggesting that common property can be managed in a variety of ways. He also highlights that the distribution of land and space is often done at random and not executed fairly which leads to an uneven distribution of resources. He also explains how this leads to poverty, especially in developing economies.

The author also touches upon the free-rider problem, where individuals shirk responsibility because of narrow self-interest making contracts unstable. This issue is one of the causes of the "the Multi-Person Prisoner's Dilemma," (MPD) which is described as

agents all with the same binary choices and payoffs. MPD's main features are inferior outcome, strict dominance of individual free-rider strategy and need for enforcement. This view of the commons has been used to justify overgrazing, deforestation and other abuses of natural resources. The policies of privatization and their negative results have been more often than not justified by MPD. The author also explains the shortcomings of this, including how individuals with low levels of income can't afford some resources like others. Another shortcoming is how the survival and utility of common property depends on natural conditions and unpredictable natural events (Runge, 1986).

The connection between the Multi-Person Prisoner Dilemma and the Common Pool Resources are significant to present the difference between the individual rights and collective outcomes. The lesson learned from MPD is that the level of stakeholders' willingness to defect is more than their likelihood to cooperate. As a result, there is a need to keep positive relations between all stakeholders to maximize all parties' benefits from the use of Common Pool Resources. The best way to achieve this balance is to place strong incentives that will help fishermen as stakeholders to break the defect which will increase cooperation.

“Analyzing the Commons: A Framework” by Ronald J. Oakerson (1990) tackles the diversity of the common: from forests to seas and from freeways to shared facilities, such as something as simple as the light from a street lamp. “The commons are like a factory that produces, not a series of differentiated products, but a stream or pool of undifferentiated "products" from which individuals take a portion for their use – hence the term "common-pool resource," preferred by some analysts and equivalent to "the

commons" (Oakerson, 1990, p.42). In this chapter, the author explains the commons by categorizing them in four types. The physical and technical attributes mean that there are many interdependent attributes that arise due to nature related transactions; jointness means the ability to examine a differential affect between individual performance and expected outcome, that is defined as "transaction outcome relationship;" exclusion is defined as the potential users' easiness to be excluded from the goods' access; and indivisibility means that the resources have physical attribute that affect the production system as whole, not amenable to an individual division and the resources are eager to be mobile over large territory (Oakerson, 1990).

The framework was adopted by the Panel on Common Property Resource Management, organized by the Board on Science and Technology for International Development (BOSTID) at the National Research Council, and used to organize the presentation of twenty case studies at an international conference held at Annapolis, Maryland, in 1985 (National Research Council, 1986).

In his chapter "Success and Failure in Marine Coastal Fisheries of Turkey," Fikret Berkes examines the conditions for success or failure in management of five Turkish fisheries through elaborate case studies. The article explores the conditions under which common-property institutions can exist and function successfully, as opposed to conditions under which they cannot. This chapter studies areas, methods and status of fisheries in Turkey. "Success in the management of fishery commons in these Turkish case studies does not depend solely on the technical-physical nature of the resource, or the decision-making arrangement, or the behavior of the users, but on a combination of

these. The physical nature of the resource, especially excludability (are the users of the resource able to limit the access of others?) is always a problem with common property, and perhaps more so in fisheries than in some other resource types” (Berkes, 1992, p.179).

In “The Rudiments of a Theory of the Origins, Survival, and Performance of Common-Property Institutions” Elinor Ostrom explores the part of the Ostrom framework which refers to technical and physical characteristics of this resource. The majority of the resources discussed by case authors are CPRs. The author explains, “If one is to understand how various types of decision-making arrangements affect patterns of interactions and out-comes, it is important to ascertain in what ways common-pool resources resemble other types of "difficult" environments – such as public goods – and in what ways these environments are different.” The chapter presents the rudiments of a theory of the origin, survival and performance of organizations regarding how they manage shared resources (Ostrom, 1992).

In his article, “Fisher Regulations Along the Coromandel Coast: A Case of Collective Control Pool Resources,” Maarten Bavinck discusses the discrepancy in fishing gear in Coromandel, India between fishers and its effect on marine life. The non-governmental councils were motivated by the environment and the eco-system. The author explains how the theory of the commons, coined by Hardin, influences the future of fisheries. This theory is based on two assumptions – the first being that the common properties are equivalent to unhindered open access; and the second being that every individual will do their best to maximize their own profit regardless of the price nature

has to pay. The Coromandel case is an interesting one because the tragedy of commons applies distinctly. Here, the fisher regulations envelop and affect the economics as well nature. Furthermore, it draws the importance of institutions to attention. In this case, the stakeholders were given a fair offer to make up for what they would lose under the new regulations (Bavinck et al., 2013).

“The Tragedy of the Commons” by Garrett Hardin tackles how as humanity grows, the per capita share of the world’s resources is bound to decrease. An often-used defense, Hardin explains, is that the people do not realize that their resources are finite, and he retorts by stating “in terms of the practical problems that we must face in the next few generations with the foreseeable technology, it is clear that we will greatly increase human misery if we do not, during the immediate future, assume that the world available to the terrestrial human population is finite” (Hardin, 1968, p.1243). Although humanity strives for the maximum good per person, according to Hardin, one person’s definition of good differs from another’s. That being said, Hardin states that the more rapidly growing populations are statistically the most miserable. In the passage “Freedom to Breed is Intolerable,” Hardin explains that parents should have fewer children because considering the decline in resources, they wouldn’t possibly be able to take care of them all. The author also claims that it is not possible to control the breeding of mankind by an appeal to conscience. “If the word responsibility is to be used at all, I suggest that it be in the sense Charles Frankel uses it.” “Responsibility,” says this philosopher, “is the product of definite social arrangements” (Hardin, 1968, p. 1247). When talking about pooled resources or the commons, they have to be mutually agreed upon, necessity has to be

recognized and everyone's needs must be met and most importantly, the preservation of the resources has to be taken care of and put into consideration (Hardin, 1968).

In sum, the Common Pool Resource policy intervention faced many struggles because there is a higher percentage of interdependence between the different actors that use the Common Pool Resources. The previously mentioned studies explain that there are different attributes that are at various management levels, whether local, regional, national and global levels which produce multiple interactions and concern regarding common resources that are available to the public. To combat this, there is often a governmental intervention and place of governance structures in order to educate property users. Still, stakeholders sometimes have a high level of resistance to understanding the key characteristics of resources pooled with a high likelihood to negatively affect the social dilemma.

Overfishing

The third topic is "overfishing," which is explained as exploiting a huge number of fish that the population can't replace through natural reproduction. Although overfishing is a profitable practice, it has devastating consequences that not only affect the marine life balance, but also causes negative social and economic factors, mainly to people who depend on fishing as their income.

“The Political Ecology of Small-Scale Commercial Fishermen in Carteret County, North Carolina” by Susan Andreatta and Anne Parlier explore the events and conditions fishermen must work with, the declining ecology and how protection isn't available in North Carolina, where commercial fishing is an integral part of the economy – and has

been for centuries. Today, these fishermen are struggling to maintain a viable standard of life for themselves and their families. The authors explain “the phrase ‘political ecology’ combines the concerns of ecology and a broadly defined political economy, and together they encompass the constantly shifting dialectic between society and land-based resource use and also within classes and groups within society itself” (Andreatta & Parlier, 2010, p.180). The author states that it is of utmost importance to collectively bring together culture, politics, economics and the environment to operate public fisheries effectively. “It is a complex scenario with no silver bullet solution for all those involved” (Andreatta & Parlier, 2010, p.189). According to the authors, fishermen and everyone involved in the industry are facing challenges that lead to the decline of the quality of the fisheries and the economic situation for fishermen. One of the author’s goals was to find out if the fishermen would agree to using any alternative marketing strategies for the local seafood industry, but they found that international competition was too high and lower in price. The fishermen also indicated they’re paying more for the equipment and the fuel than they’re making selling the fish (Andreatta & Parlier, 2010).

The problem of overfishing has a national effect through the increased prices of goods, such as the needed equipment as well as food and substances. It also has an international impact by the loss of species that will negatively affect the entire ecosystem in countries which share boundaries and resources. This affects many fishermen, through economical risk by loss of food source, and a great risk of stability because fishermen face different challenges including the laws and regulations that affect their lives.

In “The Oceanic Crisis, Capitalism and the Degradation of Marine Ecosystems,” Brett Clark and Rebecca Clausen state that little to no efforts are being made towards saving the oceans, which constitute of about 70% of our planet. Most of the efforts, are focused on terrestrial issues, while 75% of major fisheries are exploited, over-exploited or depleted. “It is estimated that the global ocean has lost more than 90% of large predatory fishes” (Clark & Clausen, 2008, p.91). According to the authors, the situation is only getting worse, in spite of warnings. At this point, there is no area in the ocean that is not affected by outside influence. Furthermore, predatory fish have been coming closer to the coasts and thereby affecting fisheries. The authors explain how humans would previously only hunt and fish as they needed but the rise of capitalism led to the exploitation of the waters. Because of capitalist fish markets and commercial production wheels, specific species had more commercial values than others, which were therefore being harvested indiscriminately. With the rise of capitalism, overfishing depleted the oceans. In “Empty Ocean,” Richard Ellis states, “Throughout the world’s oceans, food fishes once believed to be immeasurable in number are now recognized as greatly depleted and in some cases almost extinct” (Clark & Clausen, 2008, p.95). Factory trawlers would exploit the oceans to the point of putting nets that over a thousand feet long through the ocean, attempting to capture a whopping 400 thousand kilograms of fish in a single netting. They would freeze, preserve and process the fish they capture to make it last longer and use technology to exploit and harvest fish more systematically. According to the authors, capitalist need kept leading to more depletion and exploitation and this led to a fishery collapse. The Food and Agriculture Organization estimates that

the world capture from fisheries more than quadrupled between 1950 and 2005, leading a steep depletion in tuna, cod and marlins. Today, we've moved on to deep water fishing which has caused deep-water fish populations to also plummet. According to the authors, changes in the market could potentially transform the demand for particular species. Another factor that's been causing the depletion of fish populations in the deep waters as well as commercial fisheries is fleets of ships burning fossil fuels. The authors explain how these fuels have exacerbated the detrimental effects on ecosystems. During the 1970s and 1980s, ships became more automated and have been enhanced to capture more fish, faster and their synthetic technical development transformed the competitive framework and property rights (Clark & Clausen, 2008).

“Where Have All the Fishes Gone?” by Carl Safina, discusses how many fish populations are at a historic low due to both overfishing and habitat loss. For instance, the swordfish's population has been halved since the 1970s. Safina also explains that capturing one species unsustainably may in effect starve another species that relies on it for food. Another issue the author explores is how some fish are captured without even being needed for food, commonly referred to as a by-catch. For instance, the Gulf of Mexico Fishery Management Council reported that increased death in juvenile red snapper due to shrimp fishing is leading to a collapse in the red snapper population. According to the authors, the problem is global and much bigger than we can fix alone. They state that limitless marine resources are a myth (Safina, 1994).

“Fishing for Certainties” by Andrew A. Rosenberg, discusses the author's personal experience in policy-making and managing fisheries in the northeastern United

States. The author is an ecologist and noted that advice and regulations come from all sides. Scientists would present data, others would give advice based on opinion and governments would make regulations. The author delves into uncertainties regarding the waters in New England and many other depleting resources, “emphasizing what we don’t know often drowns out what we do know” (Rosenberg, 2007, p. 989). The author claims with certainty that the exploitation of fish needs to be reduced by at least half. He also adds that statements of policy “are still a far cry from implementing policy.” He names the US Marine Mammal Act of 1972 as an example. The Act was passed unanimously in the 1970s and again in the mid-1990s. For the act to take effect, fishing must be reduced since entanglement in fishing gear is the number one cause of death for marine mammals in the region (Rosenberg, 2007).

“The Links Between Resource Dependency and Attitude of Commercial Fishers to Coral Reef Conservation in the Red Sea” by Nadine A. Marshall, Paul A. Marshall, Ameer Abdulla and Tony Roupael (2010) states that the imperative to pressure extractive practices of our resources any more than we already are will fortify as properties reduce through over-use or exposure to climate changes. Here, the authors explore a method to escalate the sustenance for marine conservation among coral reef fishers. They explore the proposal that resource dependency in the Egyptian Red Sea can act as a barrier to conservation. They also administered face-to-face surveys to 49% of the fishing industry identifying the level of obedience to the local marine protected areas, assessing the level of dependency on marine resources in the region and examining the relationship between resource dependency and conservation attitudes. In their study, they

learned that only 11.4% of fishers had been aware of the MPA. Their results suggest that resource dependence “is highly and negatively correlated with conservation attitudes suggesting that management efforts need to seriously focus on reducing dependency if conservation goals are to be met. The solution to poor compliance most often presented is better enforcement.” The authors exclaim that compliance is mostly a dilemma related to a ‘commons resource’ where there are seldom incentives for individuals to practice self-restraint in the harvesting of open-access natural resources (Hardin 1968 as cited in Marshall, Marshall, Abdulla, & Roupael, 2010). Because it is expensive and always subject to corruption, enforcement is not the single, or essentially the most efficient, approach to compliance. While dependency on marine resources is very strong, incentives to continue extractive activities (such as subsistence or poverty) readily outweigh disincentives (such as fines or jail). (Marshall, Marshall, Abdulla, & Roupael, 2010)

To conclude, it is highly important to inform all stakeholders of the environmental effects and consequences of their actions to protect common resources. Additionally, support for the governmental regulations that aim to govern the sustainability of the CPR, especially in developing countries, are needed for legal compliance. However, on the other side of the matter, there is a harmful effect on those with a fishing career due to such regulations which is discussed later in the data analysis section.

It is difficult to govern the physical and institutional means of CPR which exclude the users' beneficiaries of public good consumption within a sustainable boundary paying mind to future generations as well as sharing a responsibility with the other stakeholders

in order to eliminate the environment degradation. Thus, the broad challenge is to coordinate with stakeholders' members and manage the Common Pool Resources and reduce the act of overfishing.

Next is the case study chapter where the researcher offers information about the conflict, the group being studied, the area, what has been done by the government to control the issue, as well as what have been said about the issue by different stakeholders.

CASE STUDY

This chapter offers statistical data about the issue being studied as well as what the people's and government officials have said about the issue, what the government have done, who the main stakeholders are and information about the studied group and how important the issue is to them.

There are approximately 250 thousand fishermen working in capture fisheries in Egypt. Fisheries provide the main income for them and their families. Most of the fishermen's children help in processing, selling and transport of the fish and additionally, the sector creates employment in retailing, net and boat manufacturing (FAO, 2010).

The Red Sea provides about forty percent of the marine capture production in Egypt. The Red Sea fleet consist of 542 long-line boats, 846 boats that use trammel nets and other types of gears, 178 trawlers and 113 purse seine boats. The numbers of fishermen on each types of vessel varies and depends on the type and size – for example the average number of crew on a purse seiner is from 5 to 45, a trawler from 6 to 27, while other boats can operate with a crew of 5 to 15, depending on the size and the engine power (FAO, 2010).

The Gulf of Suez, consisting of flat sandy bottoms, is the only area in the Red Sea suitable for trawling; meanwhile the narrow rich reef continental shelf of the rest of the sea is suitable for traditional (artisanal) fishing with line and hook or set nets used close to shore. The artisanal fishermen exploit coral reefs spread along the coast and in the Gulf

of Aqaba where the fishing grounds are relatively shallow with a maximum depth 70 meters (FAO, 2010).

According to an interview on “egyptindependent.com” with Mahmoud Hanafy (professor of marine biology at the University of Suez and environmental adviser to both Hurghada Environmental Protection and Conservation Association (HEPCA) and the Red Sea Governor), for many generations, local fishermen in the Red Sea have been using traditional fishing methods like hand-lines and hooks or fishing rods to earn their living (Charbel, 2010).

Lately, numerous fisherman, primarily from the Nile Delta who are seen as “outsiders,” have moved to the Red Sea where they use other fishing techniques that can have devastating effects on local marine resources. According to the General Authority for Fish Resources Development (GAFRD) website, the outsiders use nets with narrow holes that capture all types and sizes of fish – from fingerling to mature fish, along with other marine life. Also cases of fishing with electric currents, dynamite, and more commonly poisons, have been reported (Charbel, 2010).

According to “Rosalyoussef” Newspaper, Tamer Kamal, the manager of Hurghada Islands Protected Areas said “Sadly, we have even passed overfishing and now people are illegally fishing and we are scared of depleting our natural resources that can cause an environmental disaster.” He goes on to explain that regularly, and lately more often, he documents reports of illegal activities and sends them to the ministry and the Red Sea governor. Since the 25th of January 2011 revolution, the Red Sea witnessed “wholesale irregularities,” including twenty-eight cases of overfishing and illegal fishing,

which destroys the fish stocks and marine life, threatens the coral reefs, and takes thousands of years to recover and regrow. Some of the damages are estimated to worth two million dollars according to the General and Public Prosecution office (Eid, 2014).

According to Yasser Said, manager of Red Sea protected areas, there are five thousand fishermen who came to the Red Sea from different cities over the past twenty years and “usually a lot of them” are involved in overfishing, as well as illegal fishing, which cannot be applied in the Red Sea due to its nature. These practices create an imbalance in the marine life due to ignorance of the proper fishing methods. Many of these fishers depend on illegal gear like tight fishing nets in areas where there are corals or fishing species that are illegal to fish, which threatens the ecosystem. Said goes on to explain that after the 25th of January revolution, illegal and over-fishing became worse, although there are many laws to prevent and monitor this; however, it’s impossible to control due to the size of the Red Sea, which is longer than one thousand kilometers. There is no way to comprehensively monitor all of it due to the lack of human potentials that work in this field (Essam, 2015).

During a conversation with Arafat Aly, a news reporter from “Al-Ahram Massai,” Al-Shazly Suleiman Moawad, member of one of the biggest families involved in the fishing industry in Hurghada, stated that Hurghada used to have a lot of fish to the point that you could see them floating on the surface of the water and could almost catch them with your hand. He said some types of fish even had more than one season, even “three seasons” during this time. An example of this type of fish was the emperor and striped red mullet fish where the fishermen would go in groups to catch them and then split the

profit. He explains that at this time, the fishermen could catch up to two thousand kilograms in one night and they would sell the kilo from its best fish for only seven piasters to the distributors. But sadly, this is only a distant memory now due to the collateral damage that impacts the marine life and the coral reefs. He states that the main and biggest cause for this are the outsiders who come from other cities to fish in Hurghada, where they anchor their big boats right on the coral reefs, which ultimately destroys it. The implications of this are far reaching as the coral reefs are like houses for small fish to live and also where the big fish lays their eggs (Ali, 2017). The outsiders moved to the Red Sea because at the time because it had a rich ecosystem that is full of fish. They knew that at this time there were no industrial fleets in the area that uses their fishing techniques, moving there was a great opportunity for them to catch and supply more fish.

Due to lack of rivers, rain waters, and floods, the Red Sea is already at a disadvantage for providing a vibrant habitat for fish. Fish stock are wholly dependent on the delicate reef ecosystem that attracts four million tourists to the Red Sea every year. By overfishing their spawning grounds, forcibly removing the fish, by destroying the sea beds and reefs with fishing nets and anchors, they are also condemning the coastal ecosystem and marine pelagic of the Red Sea to certain death (HEPCA, 2012).

According to Mohamed Fathi Chairman of the Coordinating Committee of the Fisheries Development Group on el Bawabah News website, there are many statistics for overfishing in the Mediterranean and Red Sea, where the fishing production have heavily decreased during 2014. At this time, production decreased from eighty thousand tons to

fifty thousand tons in the Red Sea and also drastically decreased in the Mediterranean (which is shared by twenty-two countries) from approximately eight million tons to four million tons – a very low production rate caused by decrease in the fish stocks. It is pointed out that the Red Sea, in particular, is one of the primarily abused spots in Egypt’s territorial waters. Referring to international statistics, it is stated that 2000% of the fishing that occurs on fishing grounds and fisheries is considered “overfishing” (Essam, 2015). Also referring to the many ways to combat this, it is concluded that making the fishing nets with bigger holes would help fishermen to stop catching fingerlings, stressing that in Egypt there is a great interest in relocating fingerlings and small fish of different species to different lakes in fear that they will go extinct (Essam, 2015).

Fatmah Abu-Shouk, the previous First Under Secretary of the Ministry of Environment, said to el Bawabah News website, overfishing is a serious issue that must be taken as a priority because it leads to the extinction of many marine species, some of which the country needs both for tourism, because of their beautiful colors and amazing shapes, and also as a natural resource, which is a main domestic food resource. She pointed out that the government understands the consequences and therefore has very strong and “sharp” laws and sanctions for breaking those laws; however, the fishermen still ignore the laws and overfish without knowing how badly they are damaging the marine ecosystem (Essam, 2015).

In “Red Sea Fish Production by Species and Locations,” a statistical report made by GAFRD in 2005 and 2007, the results show that there is a highly noticeable decline in the fish catches in these two years. The report for 2005 show that the total production for

Hurghada was 7840 tons and dropped to 7559 tons in just two years (GAFRD, 2005, 2007). This proves that there is a strong degradation in the area and that this has a direct effect on the fishermen and their livelihood.

According to the Living Blue Planet Report made by the WWF and ZSL, small scale fisheries are not immune to overfishing, overcapacity or destructive fishing practices. In some cases, the small-scale fleets' activities have been a root cause of environmental degradation and depletion. In many other cases, the difficulties faced by small-scale fleets have been initially caused by the arrival of industrial scale fleets in their traditional waters. In many developing countries fisheries have open access with no effective control on the techniques used or the quantities of the fish harvested. Lack of political will, inadequate human and financial resources and data deficiencies are often blamed for weak management and governance (WWF & ZSL, 2015).

Mohamed Al Sayyed, a former boat captain and a fisherman from the town of Borg Meghezel by the Mediterranean, told Al-Masry Al-Youm Newspaper that there are a number of fishermen from the Mediterranean coast who work in the Red Sea but they are not allowed to go with their boats so they usually work on other people's boats there. They fish everywhere in Egypt's Red Sea and sometimes they go all the way to the coasts of Eritrea and Yemen. Al Sayyed added "In the Mediterranean, we go beyond Egypt's territorial waters into international waters and into the regional waters of other countries, especially around Libya and Malta." Referring to an incident that happened earlier where fifteen fishermen from his town were detained in Tunisia for fishing in Tunisian territorial waters he said the Egyptian water coast is overfished and overcrowded. As a

result, almost everyone wants to head westward where there are more fish. The unfortunate circumstances these fishermen are forced into due to the implications of overfishing are shown in the quote: “The Libyan Navy sometimes fires rounds at our boats when we get too close to their coast” (Charbel, 2010).

Overfishing and illegal fishing are not the only cause for the fish stock degradation; there are many other reasons for it and one of the main ones is pollution. The Red Sea is facing a crisis that could cause its wonderful marine life to go extinct. The Red Sea is no longer the pristine location to see the spectacle of marine life and coral reefs that it once was, largely due to the constant pouring of waste from hotels along the coastal areas. The tourism industry has done great harm by throwing chemicals and other waste products into the Red Sea. The whole marine life is currently under threat in many ways; for example, offshore oil rigs have been in the sea for decades, but little has been done to ensure that the rigs are up to date. The rigs stream constant pools of oil into the Red Sea. Another major threat to the Red Sea are plastic bags which are “a major culprit in the pollution of the water and marine life and biodiversity degradation.” HEPCA launched a campaign in 2009, gathering the support of local Egyptian government in the area to ban the use of plastic bags in markets. Yet, more than seven years since the law was passed, one can go to any market on the Red Sea coast and your purchases will be put in a plastic bag. Those bags make their way into the water later one way or another, leaving the sea life threatened (Mayton, 2010).

According to a study that analyzes four cases of Egyptian fishing ports that are located on the Suez Gulf and the Red Sea coasts, the studied fishing ports that are located

on the Red Sea coast (including Hurghada fishing port) are suffering from many environmental, facilities and planning issues. The spread of liquid and solid wastes form a common environmental issue, while the corresponding fishermen activities and degradation of fish resources are the common catches issues (Sharaan, Negm, Iskander, & El-Tarabily, 2017).

The government is trying to protect the environment and fish stocks by combating over fishing through laws and legislations as well as laws to protect the environment and regulate the resource but most of these laws are very old and barely applied. Some of these laws were ratified more than twenty years ago: Decree No. 124/1983 of the Parliament manages and arranges the fisheries resources in Egypt. The decree describes minimum sizes for target species and technical measures like mesh size for different fishing methods. Consequently, there have been some recent decrees from the national authority for management measures. For example, Law 124/83 makes any form of fishery in spawning grounds illegal as it prohibits the removal and collection from the sea, lakes or any other water bodies. It also prohibits collecting young or newly hatched fish or introducing non indigenous species into the country without having a permission issued by GAFRD (HEPCA, 2012):

“With fish stocks in the Red Sea under serious threat, following the many positive steps taking by South Sinai Association for Diving and Marine Activities “SSDM” since the end of 2007, in association with the National Parks of Egypt, the Minister of Tourism, the Chamber of Diving and Water sports “CDWS” and the Governorate of South Sinai, in 2008 HEPCA joined together with the CDWS and SSDM in an initiative working towards declaring the Red Sea a NO CATCH ZONE. The National Authority of Fisheries issued in the August of that year a decree banning all fishing in the Egyptian Red Sea for a period of three months concurrent with the spawning seasons. Sadly, this decree was not observed and exceptions were taken to allow fishing in parts of the Red Sea” (HEPCA, 2012).

One of the most recent efforts to combat over fishing in Egypt's Red Sea is the "Hurghada Declaration." Signed in June 2009, while not bearing the weight of law, this declaration of principles seeks to ban all net fishing (including trawling) in the Red Sea, with the exception of the northern area of the Gulf of Suez. It also seeks to create a No Take Zone, which are areas free of fishing. The Hurghada Declaration was signed and formulated by HEPCA in cooperation with the Red Sea Governorate, the Suez Governorate, the South Sinai Governorate, along with the Ministries of Agriculture and Environment. The declaration is said to provide a framework for implementing conservation recommendations with the intention to decrease the pressures on the Red Sea marine resources while concurrently addressing the needs of local communities that rely upon these resources for their livelihoods. "Its provisions seek to close Egypt's Red Sea to further encroachments by fishing fleets, to buy back commercial fishing licenses, to retrain fishermen in alternative forms of work, and to assist in relocating those fishermen not legally permitted to fish." The declaration aims to safeguard the biodiversity of the Red Sea as well as the tourism and diving industries by completely banning net-fishing and trawling south of the Gulf of Suez. The declarations also seek to create reserves in important marine areas while designating other areas where amateur or sports fishermen can fish using conventional fishing rods (Charbel, 2010).

Ghareeb Saleh, the President of the Fishermen's co-operative union in Hurghada, sees that there are several reasons for the fish stock fall back. He expresses that the main one is managerial explaining that until today the fishing industry in Hurghada still falls under the authority of the General Administration for Fish Resources Development of

Suez which is a division that falls under GAFRD but is situated in Suez governorate that is in charge of the whole Red Sea area. In fact, there are nine co-operative unions in the Red Sea governorate, while in Suez there are only four co-operative unions. He goes on explaining that also the coast of the Red Sea governorate is much longer than the coast in Suez. Additionally, there is only one small administrative office in the Red Sea, which has only a few employees and they have no power to make any decisions but rather to wait for the instructions that comes from Suez, which they “have to” obey. Saleh explains, “Even when we want to stamp a paper for any reason it must be sent to Suez to get the stamp.” He mentions that during the previous years the governors of the Red Sea put a lot of effort to change this process, alas it never happened. Saleh says that three years ago the minister of agriculture agreed to this and released a decision to split the offices by creating an independent general administration office in the Red Sea, but this also never happened. At present time, “The decision is still locked in the drawer despite the promises of the splitting” (Ali, 2017).

This conflict involves many stakeholders with different wants, needs and priority.

The main stakeholders who are directly affected by the conflict are:

- The fishing industry
- The diving industry
- The tourism industry
- The government

Each of the stakeholders are only looking at their side of the conflict without any consideration to the other parties. Each party is divided to many smaller parties, or

“stakeholders.” For instance, the fishing industry is divided into artisanal fishermen whom are the main focus of the research; there are also industrial fleet fishermen, retailers, transporters and others, such as maintenance people who fix their gear (usually family members), and seafood restaurant owners.

According to the existing literature, organization reports and news reports, artisanal fishermen in Hurghada are latent stakeholders who are directly affected by the degradation and depletion of the marine ecosystem that is primarily caused by the outsiders and their big fleets. The artisanal fishermen from Hurghada use grade three sail boats that are less than four meters long, with a crew of not more than four people, and fish mostly during the daylight (FAO, 2010) and cannot compete with the industrial-scale purse seine and trawlers fleets. With the prices increasing for everything from food and shelter to gas and bait, those fishermen are finding it very difficult to compete in the market. Frustrations increase when the fishermen hear a lot of promises without any actions taken to protect them or their families. As mentioned previously, studies show that resource dependence is highly and negatively correlated with conservation attitudes. Fishing is the only source of income for most fishermen in the area and most fishermen don't have much formal education nor have learned any other profession. Fishing for most of them is a family tradition that they inherited, as well as an identity. Any small occurrence that affects their fishing methods or fishing rights (as they call it) can have a large negative effect on themselves and their families' livelihood. Fishermen in Hurghada and all over Egypt are not considered laborers. Most of them work as freelancers with

their own private boat and gear if not, they work for a private fleet. They don't have insurance or any labor rights.

This research focuses on these specific fishermen, how they perceive the laws that shape their livelihood, and how they generally perceive its impact on their lives and the marine ecosystem. This research also sheds light on the environmental and social aspects that are related to overfishing and which have a huge effect on the Red Sea marine life and the whole countries' interconnected ecosystem. The Red Sea is a main attraction for tourism in Egypt according to "Topics in Middle Eastern and African Economies Journal" and the Red Sea has a unique marine habitat with mangroves, coral reefs and sea grass beds. The ecosystem provides main resources for coastal populations: stabilization, food, shoreline protection, and economic benefits from tourism. The location of the study occurs in a developing country that is highly dependent on tourism as a source of primary income. The Red Sea tourism is largely dependent on water quality and coral reefs which are sensitive to tourist activity with growth in private investments and low government control (Hilmi, Safa, Reynaud, & Allemand, 2012); overfishing, illegal fishing, pollution and other factors all have a huge effect on the fishermen. The fishermen's activities affect tourism and create pollution, and tourism (on land and off land developments) also creates pollution and affects the fishermen – it is a chain reaction in which all stakeholders affect one another.

This chapter offered information about the studied group, the area they live in, as well as what government responses have been, and what has been said by different

stakeholders. The next chapter will explain the methodology used for conducting this research.

METHODOLOGY

The purpose of this research is to explore how fishermen in the area of Hurghada, Red Sea, Egypt perceive legislation regulating overfishing and marine environmental protection, as well as how they perceive the impact such legislation may have on their lives. This research sheds light on stakeholder's perceptions (focusing on fishermen) and attitudes vis-à-vis legislation that regulates their sources of income while aiming at environmental conservation in this area.

This type of research gives a deeper understanding of fishermen's concerns regarding their incomes, lifestyles, and identity needs, as pertaining to existing legislation, and additionally, explores the relationship between resource dependency and environmental conservation within the existing population of interest. In his book, "Social Research Methods," Alan Bryman defines a social research as "an academic research on topics relating to questions relevant to the social scientific fields, such as sociology, human geography, social policy, politics, and criminology. Thus, social research involves research that draws on the social sciences for conceptual and theoretical inspiration" (Bryman, 2015).

The researcher took an inductive approach to the study which involves moving from a specific observation to a broader generalizations and theories, which is sometimes informally called the "bottom up" approach. In his book, Bryman points out that "Research in focus 2.5" is a good example of an inductive research in the sense that it develops a theory out of interview data, beginning with data about men suffering from

chronic illness and leading to what is determined to be successful coping mechanisms for males afflicted with these conditions. In the case of the present study, the researcher examined the fishermen's perspectives, including the examples and stories they provided, as a starting point, and moved towards a broader generalization based off themes present in the data (Bryman, 2015).

Apart from a review of existing literature on the use of common-pool resources, environmental conservation, stakeholder's attitudes and politics, legal compliance, legal pluralism and legal consciousness, this qualitative research involved 11 semi-structured interviews that took place in person with local male fishermen in the region of Hurghada, Red-Sea, Egypt. It wasn't the researcher's intention to interview only male fishermen but due to the demographics of the fishing sector in the region it was unlikely to find female fisherwomen. Interviews took place in person in Hurghada, Egypt, during the month of July 2017. The interviews took place during the yearly ban of fishing, although the local government kept delaying the ban, which happens every year due to protests and boycotting from the fishermen. The interviews took place while the ban was implemented and only a few boats could get permissions to go fishing, which will be discussed later in the data analysis and presentation section.

These interviews helped the researcher gain an improved and in-depth understanding of fishermen's perceptions of the laws regulating fishing and overfishing in the area, as well as on the impact these laws may have on their lives. Although the fishermen discussed a variety of experiences, there were some common perspectives and themes that will be discussed in the next section. According to W. Newton Suter, a

qualitative researcher is often an instrument, and relies on her or his skills to receive information in its natural contexts and understands its meaning via exploratory, explanatory or descriptive procedure (Suter, 2012). Qualitative researchers value case studies while quantitative researchers tend to value numbers and larger sample sizes (Suter, 2012). For this reason, a qualitative approach was best suited for this research. The study of fishermen's attitudes is a very complex issue with many different aspects that cannot be studied by applying a number driven quantitative approach given the time given for the research and also the feasibility. This research is meant to give a detailed and contextually driven understanding of fishermen's attitude vis-à-vis the legislations imposed by the government. Qualitative research is also guided by the philosophical assumptions of qualitative inquiry. To be able to understand a complex phenomenon, one must consider all perspectives, the multiple realities experienced by the participants themselves (the insiders). "Natural environments are favored for discovering how participants construct their own meaning of events or situations" (Suter, 2012).

Hence the interviews were done in person and in their most natural context – the fishermen's boats or in public places where the fishermen spend most of their time when they are not fishing. This locality helped both the researcher and the participants to engage in a deep and relaxed conversation that gave the interview more meaning. Creating an encouraging and comfortable atmosphere in which the interviewees felt safe and respected was essential for the quality of the in-depth interviews. Reflective listening, with a focus on empathy, actively helped to improve the quality of the interview and ensure that it was ethically sound (Hoglund & Oberg, 2011). Creating the most conducive

interview environment likely helped the participants express everything they wanted to say without any major hesitations.

The interviewees even demonstrated their trust by showing the researcher their gear and explaining the difference between their equipment and the “shanshela” and bottom trawling gear. “Shanshela” also uses nets like bottom trawling but they use very large nylon nets to with small openings to circle small fish like bait, which all the participants were against. Fishermen who use these methods are not from Hurghada but rather come all the way from Suez to fish in Hurghada and other southern towns.

On average, different participants had a variety of views on the laws and their impacts, while some had similar views but used different words to express them; therefore, the researcher had to read the transcripts and audio recording more than once to have a better understanding of what was said during the interviews. This enabled the researcher to create the thematic codes for the data and to link different stories together under one set of codes and identify the similarities and differences to create the themes that were needed to answer the research question. According to Alan Bryman, for the purpose of coding the transcripts, the data becomes more manageable if the researcher becomes intimate with the data by listening and re-listening to the recordings. Coding gave the researcher a better understanding of the data and assisted in the interpretation of information in a way that linked the process of making sense of the data regarding the research question as well as the literature (Bryman, 2015).

One of these recent laws that has been controversial was that fishermen can't have more than one goggle and pair of fins on the boat. The researcher witnessed the

enforcement of this law when the army soldier searched the fishermen before they got on the boat and found extra goggles in their back packs and took them from the fishers.

When the fishermen inquired as to why their equipment was taken, the soldiers answered that they are trying to fight the fishers who uses harpoons. Events like this occur all the time and have an effect on the participant's perceptions and answers. This incident had a sympathy effect on the researcher toward the fishermen, which made him realize his potential bias while interacting with the participants. The researcher was acutely aware of his sympathies and actively worked towards neutralizing it throughout the research.

One of the biggest advantages during the study was that the researcher is a native to Egypt and fisher himself, in other words, an "insider," which has given the researcher advantages in terms of language and access to participants due to a better understanding of how the society functions as well as the type information shared due to the higher level of trust between the participants and the native researcher (Hoglund & Oberg, 2011). Another advantage was conducting some of the interviews on the fishermen boats which allowed the participants to be in their natural environment and speak freely, as previously mentioned.

Sampling took place through a combination of purposive and snow-balling technique. The researcher contacted a number of fishermen whom he already knew from the region through fishing, as the researcher spends most his free time sport fishing in the area, and these interviewees gave the researcher contact information for other fishermen from the same population of interest. There were no other criteria for the selection of

interviewees other than the requirement to be local fishermen from the aforementioned area.

Sampling of participants in a qualitative research can be described as purposive, meaning there is less emphasis on generalizing from sample to population and more attention to a “purposely” selected for its potential to provide insight from its illuminative and rich information sources (Suter, 2012). In this case, the participants are the source itself, and the information needed is a part of them since this research is examining their perspective.

By conducting in depth interviews the researcher was able to obtain a rich and insightful understanding of the fishermen’s perspectives and attitudes. The book, “Understanding Peace Research.” by Hoglund Oberg explains how an in-depth interview is conducted: “In an in-depth interview, the researcher gently guides a conversational partner in an extended discussion, simultaneously leading the way with well prepared, thought through questions and following the interviewee through active, reflective listening” (Hoglund & Oberg, 2011). The researcher utilized this technique by asking open-ended questions and gently guiding the participants through them which contributed to the success of the interviews.

The interview questions were created in a systematic way, and contained fifteen questions divided into seven sections. The researcher started by asking about demographic information (first name and area of professional activity). The second section included general questions about fishing (what fishing means to the interviewee and how they got involved). The third section included general attitudes regarding laws

as a concept and knowledge of relevant legislation so that the researcher could compare how the participants perceive laws in general and to their perceptions towards the specific laws imposed to regulate fishing. The fourth section was about perceptions of relevant legislation, which was the main section that was directly related to the research question. The fifth section was focused on the participant's reactions towards those laws. The sixth section was about recommendations and the last section was for any additional comments that the fishermen may want to provide.

The sections and categories were chosen based upon the research question, since this study is focused on the perception of fishermen regarding the legislations imposed by the government to regulate overfishing and protect the environments as well as about their perception of how these laws impact their lives. All sections were created with the intention to obtain the information needed to be able to analyze the answers. By uncovering the themes and patterns in their answers, "The goal of qualitative data analysis is to uncover emerging themes, patterns, concepts, insights, and understandings" (Suter, 2012).

The data that was collected through the interviews were thematically analyzed which means: examining data to extract the core themes that could be identified both between and within transcripts (Bryman, 2015). Themes were identified by coding each transcript based upon patterns and overarching ideas. "A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldana, 2009). The researcher coded the interview responses by breaking down

each transcript in various components and then giving each part a label (Bryman, 2015). There were three main themes included in the interview questions and therefore were the main themes for breaking down and coding the interviews: attitudes, perception and reactions.

Through transcript coding, the researcher could point out both the similar and different answers that were provided by the interviewees. Most participants had similar perceptions regarding the laws but expressed them differently, and each one had different examples or “stories” of why he thought this way. Some data was left out of the analysis because it wasn’t directly related to the research question or an explicit part of the research focus.

During the coding process, the researcher started finding patterns between the codes for some that appeared with similarity (things happen the same way), difference (things happen in different ways) and frequency (things happen often). In all cases the same code was given to all repetitive patterns. This was both natural and deliberate: natural because in human affairs there are mostly repetitive patterns of actions and consistencies and deliberate because one of the researcher’s main goals was to find those repeated patterns and consistencies in human affairs as documented in the data (Saldana, 2009).

The next step taken was codifying the codes. Codifying is to categorize, classify or to arrange things in a systematic order, to make something a part of a system. This happened when codes were applied and re- applied or “segregated, grouped, regrouped and relinked in order to consolidate meaning and explanation” (Saldana, 2009). Since the

researcher was following the same categories and themes of the interview questions, coding happened accordingly using the same three main themes and codifying happened when similarities and differences occurred.

For confidentiality and privacy, no personal identifiers were collected other than names and area of professional activity, which were coded and only the researcher had access to them. Interviews took place in secluded public places in Hurghada, as well as on the fishermen boats to insure confidentiality so that no individuals passing or bystanders could hear what was shared in the interview. The researcher asked all participant to sign an informed consent form verbally for both participating in the research as well as for audio recordings. The informed consent form included fully informing the participants about the research and its purpose, how the data would be sorted, and how the information would be used. This information allowed the potential participants to assess the risks involved and make an informed decision of whether to participate in the research or not (Hoglund & Oberg, 2011). There were no foreseeable risks for participating in this research but to ensure the safety of the participants, a coding of interviewees to corresponding numbers took place by giving each participant a number e.g. (participant 1). All personal identifying information was destroyed upon the completion of the research study.

Limitations

Due to the nature of the research question, some of the participants felt hesitant to respond freely to certain question, when the participants were asked about what they thought about the general legal system in Egypt. The researcher intentionally asked this

question to compare fisherman's responses about their perceptions and attitudes towards the general laws enforced on them as a citizen of their nation to the perceptions and attitudes they maintain about the specific laws that regulate fishing, in order to see if the latter is unique. The researcher had to re-read the consent form multiple times to more than one participant to ensure to them that their names would not be mentioned in the research nor any identifiable information that could connect them to their interview responses.

Another limitation during the study was after the researcher introduced himself to some of the participants, they were shy talking while being recorded – as is called in the media field, they were behaving as though they were “camera shy.” Due to the researcher's undergraduate studies in media and previous profession working in the field of broadcasting he could recognize this specific phenomenon and immediately explained to the participants what he was noticing. As a result, the researcher turned off the recording and asked the participants to continue the interview without the recording device which yielded a great difference. Some other participants refused to be audio recorded but agreed to be interviewed and therefore the interview took more time than what was planned for to allot for time that the researcher needed to write down everything that was said.

Another limitation in the data collection portion of the study was that the researcher knew from experience that some of the participants were potentially exaggerating certain points or making up stories to back up their answers to certain questions. For example, when some participants were asked “Are these laws being

enforced? If yes, how? If no, why not?" some of their answers contradicted the norms of what's really happening in that area. Still the researcher noted everything that was said without interrupting or arguing with the participants to ensure the ethics of this study.

DATA ANALYSIS

The previous chapters have set have set the main pillars for such research by introducing the main theories that will give a better understanding of the fishermen's perspectives, the case study section to give a deeper image of what has been happening to the fishermen and finally, the methodology that is used to attempt to answer the research question.

This chapter offers a thematic analysis for the interviews. The researcher introduces seven main themes with several interconnected subthemes which are combined under the bigger the overarching themes. The following data presented was pulled from the interview transcripts which were all conducted in July 2017, Hurghada. The following are the themes:

The Insider's Connections

All participants had the same perception of the system – that it is dysfunctional. They explained the system is corrupted, the laws aren't applied evenly and how it works pushes them towards engaging in illegal activities and behavior. In all different parts of the interviews, participants used the same term, "insider's connections," to explain how one can get away with anything as long as they know someone who is powerful in the system. The person of power could be someone who works in GAFRD, coastal guards, environment office, a high rank in any law enforcement department or any other powerful person with many connections.

Participant one has been working as a fisherman for over forty years and participant six has been working as a fisherman for thirty years. Both used an old Egyptian saying to express the idea of these insider's connections:

Participant one and six "*El leih dahr maytderebsh ala baton.*"

If someone powerful has got your back, no one can come near you.

Participant nine "*El kanoon msh bytabaa ela ala el daeef.*"

The laws are only applied on the weak.

Participant six "*Shakhlel ashan teady.*"

(An old Egyptian saying from a movie) Shake your pockets so we would let you go.

A subtheme here is the law being applied unevenly depending on how connected one is. The participants explained that the laws are only applied to those who are "weak," and that those who are powerful or rich can get away with almost anything. They explained that even if you know powerful people, sometimes you still have to bribe them to circumvent the laws. Participants stated, "it's not nepotism,"¹ "those people are hungry for money,"² "they don't do charity work"³ and "that's how everything is done, but still, you can't just go and bribe anyone, you have to know someone to bribe otherwise you get in trouble."⁴ They continued by explaining the law is there to help the officials bully

¹ Participant nine July 2017, Hurghada.

² Participant six July 2017, Hurghada.

³ Participant nine July 2017, Hurghada.

⁴ Participant six July 2017, Hurghada.

them, collect fine and bend the rules when they want to. This is another interconnected subtheme showing that they also perceive the system as corrupted.

Other participants said the same things, giving examples such as, “During the seasonal fishing ban, some fishermen are able to get permission to fish while most fishermen cannot get it.”⁵ Other participants talked about catching lobster and how it is supposed to be banned during the whole year and only allowed during October and November, but still some fishermen are able to catch and sell it. They went on to explain that one can see local lobsters being sold in restaurants throughout the year and they wonder how this is possible. They also explained that people who own fish restaurants in Hurghada are well off and powerful and that’s why the law is not applied to them, but only on the fishermen and the poor retailers who work in the local fish market. They said that law enforcement only collects fines and bans fishermen but the law is not uniformly applied to the wealthy and powerful people.

Participant one

“Law adeit al talab el sayad haybatal ynteg ashan ashan mesh hetebaa mestaha bas tool ma fee talab hanefdal nenteg ashan el seear byeala we ehna madyoneen w mehtageen el feloos.”

If you end the demand, fishermen will stop supplying because basically it won’t be worth the trouble, but as long as there is a high demand the price keeps getting higher, we are in debt, we need the money.

Ten participants mentioned incidents of them breaking the law, whether without getting caught or having to bribe an official to get out of trouble; however, they argued

⁵ Participants four, six, five, seven, eight, nine and ten July 2017, Hurghada.

that this behavior is the only way they can survive, which will be discussed later in this chapter. They perceive the law as insensitive to individuals' needs and pushing them towards illegal behavior which is another subtheme that is intertwined with the other subthemes under the overarching theme which is The Insider's Connections.

Another issue that some of the participants talked about is that some government officials who work in GAFRD and the environment offices own fishing boats – others are fish dealers and some have their private business in aquaculture. They argued that people are greedy and biased, and that they would do anything to gain more money, even if it is by breaking the law.

Participant five

“Fe waat el manee byarafo ygebo el tasraeeh lenafsohom wybaa mafeesh had bybee samak bahr gherhom w huwa aala taman. W law mandehomsh marakeb bas leehom masaleh fe mazaree byrazelo fe el tasareeh ashan ybeeo samak el mazaree betahom aw betah marafhom sahl.”

During the seasonal ban, they are able to get the permission for their boats to fish and be the only ones who are supplying wild fish in the market, it's the most expensive. If they don't own boats and are working in aquaculture beside their governmental jobs, they don't allow us to fish so they can easily sell their farmed fish or so their friends can do so.

Participants also discussed licensing: how hard it is to renew their licenses and how it is impossible to get new licenses for boats or fishermen. They explained that without knowing someone powerful or an “insider” in GAFRD it is almost impossible to renew a license and that no one can get a new license no matter who you know. They explained that to renew the license you have to go to at least three different buildings, some of which are more than one hundred kilometers apart. Additionally, at each of the

buildings you are dealing with different government department asking for various papers, and sometimes neither office will stamp the papers unless they see the other department's stamp – it is at this time when one would need to have the insider's connection or “shake your pockets.”⁶

They also made it clear that coast guard officers and employees “DO NOT TAKE BRIBES.”⁷ Participant eight said that coast guard officers and employees are “too classy” to take a bribe but they would do favors for friends, family and higher ranks.

Participant eight *“Haras el hedood malhomsh fe el rashawy bas huma bykhdemo.”*

Coast guards do not take bribes but they do favors.

Another issue regarding licenses was explained by some participants. No one is able to get a new fishing license for their boats and renewing a license now costs one hundred thousand LE, which is the same amount that the cruise boats pay that works in diving and tourism. Some fishermen started applying for the cruise license to use it for fishing instead (which is against the law), arguing that this is the only option they have. One fisherman explained that his whole family is comprised of fishermen, fishing is his core identity that he inherited from his ancestors, and therefore will do whatever it takes to continue the tradition in the family – even if it means breaking the law, because he simply can't do anything else.

Some participants also discussed how the cooperative unions are supposed to support them with new motors, fishing gear, bait etc. and also be the link between them

⁶ Participant six July 2017, Hurghada.

⁷ Participant two, three, six and eight July 2017, Hurghada.

and the government. However, the cooperative unions don't do this, or at least not anymore, and the cooperative union president is actually a government "insider," and if he wasn't, he wouldn't be in this position.

Participant ten *"Raees el gameya tabaahom w ay haga betewsal lel ganya msh betetlaa bel adl dah law telaet kolo bel maaref."*

The president of the union is on the "government" side and anything that comes to the union, like aid, isn't divided evenly, if it is even distributed in the first place. Everything is with connections.

Other issues about the cooperative union were raised by some of the interviewees and will be discussed later in this section.

In this theme, participants talked about corruption in the government which made them lose trust in it and only see it as a "whip"⁸ that is used on the weak people only, which leads to negative perception of the system and regulations.

Security and Stability

Another theme that emerged during the data analysis is security and stability. Here the researcher uses the terms security in a way that is different than safety. Safety is another theme that will be presented and analyzed next. By security and stability, the researcher means the fishermen's and their families' livelihoods while they are on land, while safety is used to describe the fishermen's well-being and safety while fishing.

During the course of the interviews, eight out of eleven participants argued that some of the laws and how the system works is actually affecting their lives negatively,

⁸ Participant three July 2017, Hurghada.

whether it's day to day life or a long-term impact. These participants explained that they make their living on a day to day basis and any small problem can affect not only the next day but the whole year to come. For example, in cases like the seasonal ban, not being able to renew their licenses or when new laws and restrictions seem to appear out of the blue. Six participants argued that the seasonal ban during the emperor fish season affected their whole year. First, they explained that the emperor fish season is their main season throughout the year. According to them, this is the one season that allows them – even the ones with the worst luck, gear, and boats – to make enough money to save and be able to pay for the essentials during the rest of the year such as, rent, school fees, and other bills. Regarding daily expenses, the day to day money they make from fishing is barely enough.

Participant five

“El sheoor dah el kan byftah byotna tool el sana egar wfawateer.”

Emperor fish is the main/only income that lasts throughout the year for rent and bills.

Participant eight

“Mengheir el sheoor hanam fe el sharee w weladna msh hatetalem.”

Without emperor fish, we would sleep on the street and our children wouldn't go to schools.

They went on to explain how this season is essential for their lives and how the whole year depends on it. They said that during this season, in one night, a single boat with only four fishermen can catch up to a ton of fish. However, they also said that this is not the case anymore due to the decrease in the fish stock, which according to them, is caused by the outsiders and “lack of knowledge.” They expressed that they see this law as

essential to protect the fish stock but they think it's applied at the wrong time and on the wrong people. Rather, they think it should only be applied on the people who use the drag and purse seines nets but not on artisanal fishermen who use a line and a hook. This idea will be presented in more depth later in this chapter.

Participants said that the cooperative union is supposed to be there to help and support them, which they used to do, but not anymore. According to participants, the last time the union offered support during the seasonal ban was in the form of three hundred pounds for each fisherman and they refused it. As mentioned earlier in this chapter, only through the insider's connections can one actually get benefits from the union, but even if you do know someone you will still barely get any favors; because of this, the fishermen started refusing the aid because during the emperor season they can make much more money than this and this wouldn't be enough to pay the bills. They said that when the aid comes in the form of gear or bait it's not really aid because they sell it to them for exactly the same price it is sold in any market, while in fact, their products are supposed to be for half the price as it is on the market.

Participant three *“El khetan w eltoam awhash darga wbenafs sear el super fe el sooa.”*

The lines and bait they provide is the worst quality and for the same price as the best quality ones that are sold in the market.

Participant eleven *“Kan zaman huma bydfaao nos taman el motor wehna el nos el tany w momken teasato bas delwaaty mafeesh el kalam dah wala fe motor wala fe taaseet.”*

Back in the days we would only pay half the price for the motor and they pay the rest and we were

able to install the amount we have to pay. Now there is no installment and no motors.

Participants explained how hard it is to live as fishermen, especially without getting any aid from the government. They said it's hard enough to make a day-to-day living and at the same time, they are not allowed to install the things they need. For example, if they only make around fifty LE per day (which is about two USD) – emphasis on the if – they cannot eat and also pay for things they need on their boats. And even if they don't eat, this still means they have to sacrifice a number of basic necessities for years to be able to pay the full amount in cash for the cheapest motor. Some of the participants also explained that since their income is dependent on day-to-day earnings, banks do not allow them to take loans; the maximum they are allowed in a bank is a saving account. “How can I even save any money?”⁹ said participant eleven.

Other participants mentioned that it's not only that they cannot install things while buying from the union but also if they are buying other stuff from public shops.

Participant one *“Law badfaa masareef madrasa aw rayh ashan aard beta telephone beltaaseet msh byrdo yaasatooly.”*

If I am paying my children's tuition fees or buying a mobile phone and both allow installment, they wouldn't let me just because I am a fisherman.

A subtheme here is “labor rights” as participants argued that they don't get any labor rights although they pay taxes for their boats and also for the fish they catch. They explained that they have to pay four hundred and sixty LE as insurance for the boat and

⁹ Participant eleven July 2017, Hurghada.

one hundred and forty LE taxes each year, but they get nothing in return. They said that if something happens to the boat or themselves, they have to pay for it, although they are paying insurance. Regarding the catches, they said that according to the law (or as they call it “the old law”), they were supposed to pay taxes for twenty boxes of fish each month regardless of how many they actually catch. A box of fish is a standard quantity of fish that fills “the box,” which is about twenty to twenty-five kilograms. The fishermen explained they had to fight and protest to change this law because now they barely make ten boxes a month, so they only pay taxes for what they arrive to the dock with. Some of the participants said that when they or their family members get sick they are not able to use the insurance money they pay into. Participant seven said his daughter once needed to have a surgery and he couldn’t pay for it so he had to borrow money from friends and family. According to him and other participants, they only pay insurance for their boat.

Another issue all participants mentioned is the “zewada,” which means the items they buy before they go fishing beside the gear, such as food, water, ice, bait and gas. They explained that with the increase in prices in everything in the country their “zewada” now costs them double or triple the price. And with the decreases in the fish stock they barely make enough money to cover the money they spend on the supplies. They said that this puts them in constant debt, explaining that even if they get enough money to pay for it, they still have to eat and feed their families and the next time they go fishing they have to borrow money to buy the “zewada” which will restart the cycle and put them in debt repeatedly.

Participant three: *“Ehna alatool madyoneen.”*

We are in constant debt.

Participants explained that fishermen now only have two options: 1. break the law, whether regarding licensing or using illegal fishing techniques (which also damages the environment and will be discussed later in this chapter) or 2. find other jobs in tourism, diving or any other job such as working in a shop or as a waiter. Participant one explained that they grew up as fishermen, “We are born on the docks, if not on the boats.”¹⁰ Fishing for them is an identity, family tradition, their passion, and all they know. The participant said they are like fish – they die slowly when they are away from the sea. He elaborated, explaining that they barely have any formal education, didn’t learn any other profession, and they can’t get a decent job with a good wage. He said that even when they fish they don’t catch as much as they used to and don’t make as much money, but at the end of the day they are doing what they love and what they were born to do. However, he emphasized that the government is “torturing”¹¹ them through all the laws and restrictions, and the dysfunctional system is only making it worse.

Other issues they face just for being fishermen, which also affect their livelihoods, were mentioned during the interviews, such as unequal treatment by the police. For example, one participant explained that if they get stopped on the road by police in any regular road block, the police officer would check everyone’s identification cards (ID) and once the police see they are fishermen they ask them to step out of the

¹⁰ Participant one July 2017, Hurghada.

¹¹ Participant one July 2017, Hurghada.

vehicle (usually a form of public transport). Next, they search the fishermen, and sometimes keep them for an extended period, telling them that they are checking their IDs, credibility etc. This happens until the transportation leaves them and this will sometimes happen on highroads where there is no way for them to find an alternative other than to wait for the next bus that comes in several hours.

All fishermen agreed that the laws are essential but they are barely applied, and when they are it's on the wrong people, at the wrong time, which will be discussed later in this chapter. This theme shows how the fishermen perceive the laws and system's effect on them and their families' livelihood. According to them, it's making their lives worse and more unstable.

Safety

Safety is also one of the topics that kept emerging throughout the interviews – all participants argued that some of the laws actually put their lives in danger. Some explained that some of the laws they have are outdated and other argued that some of the laws just don't make sense and they don't understand why they are there. Participant five has been fishing in the Red Sea for more than sixty years and has been living in Hurghada since it was a fishing town, where fishermen lived in tents right on the shore. He explained that most of the artisanal fishing boats in the area have sail boats licenses and therefore are not allowed to have more than one motor on it “just for safety” while in fact all fishing boats depend on their motor. He said, “No fishermen sail here anymore.”¹²

¹² Participant five July 2017, Hurghada.

He argued that only few were able to update their licenses to a motorized one but the rest couldn't. This comment was made by five of the eleven participants some of them said that they don't even have sails on their boats. They explained how dangerous this can get if you are only depending on one motor while you are in the middle of the sea. "The sea isn't as gentle as it seems" and sometimes they find themselves in the middle of a storm.

Participant one *"Fe Jeddah msh bytalaak bahr gheir lama yshoof el motor el tany shaghal w dah le salamet el sayad msh aktar."*

In Jeddah¹³, they don't allow you to leave the dock without making sure that you have a second spare motor and see it working.

Another issue that was raised regarding safety by all participants was a new law that came out banning fishermen from taking more than one goggle and pair of fins on the boat. This law came out at the same time that the interviews occurred. The researcher was there interviewing a participant when a coastguard soldier was searching a fisherman while he was entering the dock. At first, it was thought that the soldiers were doing their regular routine, looking for illegal gear like explosive, harpoons, weapons or drugs, but it turned out they were checking how many fins and goggles the fishermen have. The given explanation was that they are trying to combat the use of harpoon through this new law.

Participant six *"Yaretny kont samaka wyemeloly kanoon yehmeeni aw hata shoaab."*

I wish I was a fish or even a coral reef, if they will put laws to protect me.

¹³ A Saudi Arabian port city on the Red Sea

The participant explained that most, if not all, of these laws are only there to protect the corals and the fish stock but nothing is there to protect the fishermen. He went on to explain an incident that happened to him when he was out in the sea fishing and drove his boat over a long-line that was left behind by the outsiders. He explained that the line was longer than eight hundred meters and had more than two thousand hooks on it. He said luckily it didn't break the gear box as happens frequently in these circumstances. The participant explained that during incidents like this there must be at least two people in the water to be able to fix it by cutting it off the motor. He went on to ask, "How can we fix something like this if they only allow enough snorkeling gear for one person?"¹⁴ Other participants argued that having multiple snorkeling gear is important on the boat for safety and also for their fishing productivity, explaining that sometimes the silk nets they use get tangled and stuck on corals or even on the boat's motor. When this happens, they need more than one person to work in the water, otherwise they either have to break the net and lose money or break the coral and damage the environment, or sometimes both.

Three participants discussed the purpose of a certain law for which they don't understand. According to them it's illegal to return to a dock different than the one they departed from. However, this can be problematic when there are emergencies such as someone gets hurt, sick or caught in a storm, the engine breaks, or something happens to the boat. They explained that if they return to any dock other than the one they departed from, they get detained, the law enforcement takes the boat license from them and the

¹⁴ Participant six July 2017, Hurghada.

captain's license too. If they are lucky the enforcement officers would just make them pay a fine, but sometimes they don't get their licenses back or face imprisonment. They said this might be good for the national security to protect from smuggling but not in cases of fishermen's emergencies.

Safety, security and stability were the main concerns for the fishermen besides the decrease in the fish stock, which also affects the security and stability of their well-being and their families. All participants mentioned those three themes more than once throughout the interviews and for all of them their biggest concern was the well-being of their families. Even when asked about environmental laws and their knowledge of them (which will be discussed later in this chapter), they brought up the well-being of their families. They perceive some of the laws as dangerous which put their lives and their families in danger.

The Outsiders and the Unfair Law

The outsiders and the unfair law is another theme that kept emerging throughout the interviews. As mentioned earlier, most participants think that the laws are essential and necessary to protect the environment and the fish stock. And they also think that these laws are not applied right, and when applied, they are applied in a generalized way which is perceived as unfair.

The participants explained that Hurghada and the whole Red Sea government falls under the authority of GAFRD in Suez governorate. They explained that GAFRD Suez are the ones who make the decisions and come up with the new laws, which they think are only suitable and legitimate for the Suez fishing fleet. They explained those

fishermen use industrial fleets with tens of people on each boat, nets that are longer than a thousand meters, which picks up everything in their pathway; as opposed to the artisanal fisherman in Hurghada who mainly use a line and hook or a very small fixed silk net that is shorter than fifty meters. They also explained that fishermen in Hurghada only target medium sized fish and big ones, but they never take the ones that are too small, meanwhile the outsiders who come with their boats from Suez, target everything, including coral colored fish and, of course, fingerlings and sardines.

Participant ten

“Byknoso w bylemo ay haga w el waaf dah maamool ashanhom ashan el samak yakol ehna malna?”

They swipe and collect everything. The ban is made for them to give a chance for the fish to eat. Why do they apply it on us?

They went on to explain that the ban happens during their most important season of the year – the emperor fish season – without any consideration for their needs. According to the fishermen, they understand that the law is essential for the environment and the food chain to prevent the depletion of the sardines that most other fish feed on, but they don’t understand why is it applied on them too. They explained that when they protested and went to the government to ask for the reason the law applies to them, the government claimed that it is implemented during the season when the fish are carrying eggs and this is to help protect the fish stock. The participants argued that fish do not eat while they are carrying their eggs and they call this “the fasting season,” which happens a couple of months before the ban and not during it. This is the season when the sardines have just hatched or are hatching and therefore the law exist to protect the sardines.

Four participants explained how these laws are essential for those fleets and in their area but wondered why they are applied in Hurghada if those fleets don't actually depart from Hurghada but rather come all the way from Suez. The fishermen want to know why the government does not ban the fleets from departing from their docks while letting the artisanal fishermen fish normally in other locations in the Red Sea. The four participants think that those referenced fishing techniques should be banned forever and not just for one season, explaining that the methods they use are very bad for the marine ecosystem. According to them, other than what they catch, which is everything they can sell, their by-catch is destructive and they kill from sharks, dolphins, manta rays, turtles and even the endangered dugong manatees. Other environmental issues like waste and destruction will be discussed in the next section of this chapter.

According to several participants, the law is unfair regarding other issues, such as the fees the fishermen have to pay for renewing their licenses or to get permission to go fishing. According to them, now they have to pay as much as the tourism yachts pay to renew their licenses and same for the permission.

Participant one *“Benedfaa zay betoo el syaha bas huma byksabo
bel dollar wehna msh laayn nakol”*

We pay as much as the tourism boats but they make their income in dollars while we cannot afford to eat.

The participants explained that the tourism boats usually work under contracts with diving centers or hotels and that they make their income in dollars; additionally, even if the boat doesn't work, they still get paid according to some contracts. But for the fishermen, they make their living day by day and sometimes they are in the sea for three

or four nights without catching one box of fish, which puts them in debt because they can't pay for the "zewada" they need (as mentioned earlier). They said that now they only have one option, which is to break the law: "Our young fishermen now started using long lines and very long and deep nets to be able to compete."¹⁵ According to the fishermen, without breaking some laws, they won't be able to eat or feed their families. Participant eleven said that they have to break the law and there is nothing else they can do. They can't work in other fields and for them, breaking the law and following their custom law (which will be discussed later in the chapter) is better than begging and living in debt. He said they break the law and still stay in debt. He explained that even the young fishermen are supporting their families and without their income the whole family becomes affected: "It's not only the elders who are affected, we all are."¹⁶

This theme explains how and why the fishermen see the laws as essential but also unfair and generalized in a way that affects them negatively. They completely disagree with the methods the outsiders use and think they should be banned globally. They see that the laws are made for the outsiders but instead implemented on everyone.

Lack of Understanding from the Authorities

Participants also argued that there is a remarkable lack of understanding from the authorities, whether it's from the decision makers as presented earlier in the chapter, or from the law enforcement. Regarding the authorities, the fishermen complained that they place the laws haphazardly, without any consideration for the nature of the area or the

¹⁵ Participant four, six, seven and nine July 2017, Hurghada.

¹⁶ Participant eleven July 2017, Hurghada.

fishermen themselves. They also explained that the people who make the decisions aren't educated enough to be in their positions or in that field. Participant ten gave an example of this, when one time he caught two emperor fish that were so small that he fit both in a pack of cigarettes. He took both fish and went to a government official who was in charge of the environmental office in the area a couple of years ago, to show him the "disastrous situation,"¹⁷ as he called it, but the official didn't understand the problem. The fisherman had to explain to him that this fish cannot be that size and that he has been fishing for over fifty years and never saw this size from that type of fish. After explaining, the official's response was that he cannot do anything about it and is actually just a retired law enforcement general and doesn't know anything about the environment, simply because that's not what he studied. According to the participant, having this official title or job means you need to be from the "trustees" and you don't need to have qualifications but "you just need to be the inside man, the one the government trust"¹⁸ he said.

Participant eight *"Fe wahed etamalo adyet ezaag dolphin ashan markeb el beea ada gambo lao el dolphins taht el markeb."*

One had a legal case for disturbing dolphins because the environmental protection patrol saw dolphins swimming under his boat.

Participant eight explained that even the environmentalist patrol isn't really law enforcement, they are just employs in GAFRD. He elaborated that they do not understand

¹⁷ Participant ten July 2017, Hurghada.

¹⁸ Participant ten July 2017, Hurghada.

their job and are not qualified enough to do it. He gave the example mentioned above and wondered how this could be when they see dolphins all the time while they are fishing when they come to and play under their boats. “We even sometimes jump in the water to swim with them if the weather is nice” he said. Also, sometimes when the fishermen are driving the boats, the dolphins come to play with them and the fishermen see them as friends. He explained that sometimes the dolphins come and steal the fish from them while they are fishing: “They let us pull it up all the way for them and they just eat it on the surface” and he laughed. He wondered how they can be disturbing the dolphins if they come to the fishermen on their own and are considered friends.

Participant three argued that the coast guards do not know anything about fishing or the environment and they are only there to enforce the law. He said those people need to be educated before they do a task like this or they should give the job to another department who are well qualified to do it.

Participant three *“Elaskary dah ghalban w bynafez kanoon huwa msh fahmo.”*

The soldiers are poor and they are just applying a law that they don't even understand.

He went on to explain that the coast guard soldiers have to do exactly what they are told or they get in big trouble like in any other military around the world. The participant said the soldiers tell them that harpoons are illegal, and when they see any fish with a hole in it (that looks like it's made by a harpoon spear), they confiscate the fish, take the boat and the fishermen license and hold them in custody. The soldier will just do literally what he is told because he has probably never seen a fish that was caught by a

harpoon before, and if he has he wouldn't know the difference between the spear hole and the gaff mark or another hole. He said an incident happened to him when caught a goliath grouper, "which is a big fish,"¹⁹ and he had to gaff it to get it on the boat because it was too big and the line wouldn't carry it. The gaff is a big hook on a stick that you carry a big fish with. When he got back to the shore he was searched, which according to him doesn't happen every time, it only happens randomly or if someone reported that there was something illegal on the boat. During the search, the soldier looked at the fish and he saw that it had a hole in its back. In reaction, the soldier flipped all the boxes that were on the floor, including the big fish which was on top, to check the rest of the fish; then he searched the rest of the boat, asked for the license, and told the fisherman not to leave. The fisherman tried explaining the situation but the soldier kept saying "This is a harpoon mark, I know it." The soldier said he must apply the law and left the fish on the floor for five hours in the direct sun until the fish went bad and the participant lost his fish as well as all of the other fish he and other fishermen caught over the span of four days. He explained that if this soldier was taught the differences in fishing, which is an essential part of the job, this wouldn't have happened. According to the participant, the coast guard soldiers should know that you can't hunt a fish this size with a spear and hit it in the back because it could kill you or that there is something called a gaff and it leaves a mark that it is similar to a harpoon. The participant thought that instead of using coast guards for a job that they are not qualified for, they should hire employees who studied in

¹⁹ Participant three July 2017, Hurghada.

the field or at least know what they are doing. He said, “We have a lot of unemployment, why don’t they train and use them?”²⁰

Other participants claimed that the law enforcement and the environmental employers don’t know how to apply the law correctly because they are not qualified and they don’t understand the laws themselves. Participant six said, “You can show them illegal sizes of nets and they wouldn’t know that it is illegal, they only know about harpoons and explosives because those are weapons and that’s what the law enforcement here understands. It’s not their fault, it’s what they studied and their field.”²¹

In this theme participants explained what they think of the officials and the law enforcement. They see law enforcement as something that happens randomly and haphazardly without any knowledge from implementers.

Environmental Knowledge

Environmental issues were a key point during the interviews. All participants had something to say about the topic and some even brought it up before being asked about it. Regarding the demographics of the participants and the level of education they have, one would assume that they don’t know much about the environment, such as proper methods to protect it and use it sustainably, however, most of them had a decent understanding. They gained this understanding through their lived experiences in the area and know the environment through growing up around it, rather than through books. They are aware of overfishing, what the causes are, what the impact is, and also the causes of pollution and

²⁰ Participant three July 2017, Hurghada.

²¹ Participant six July 2017, Hurghada.

its effects on the environment. When asked by the researcher, “Do you think that these laws are necessary to protect the environment/these resources? Why?” They all agreed that these laws are essential and without them the whole marine ecosystem could collapse. They also argued that the laws are not enforced, and when they are, they are not enforced correctly. The fishermen blamed the outsiders and the authorities for the fish stock degradation and the coral depletion.

Participant nine *“El fayoumia byknoso el bahr w bydamaro kol haga wehna beneshtekkehohm lel beea welmohafza w benool any markeb amal eih w fein bas mabyhasalehomsh haga w benshoof nafs el markeb tany bymel nafs el haga.”*

The Fayoumi²² fishermen “the outsiders” are swiping the sea and destroying everything, we file complaints to the environmental office and the governorate. We even say which boat did what and where but nothing ever happens, we see the same boat later doing the same thing.

The participants claimed that they do everything on their side to protect the environment and the fish stock by not polluting the sea, releasing all by-catches and small size fish, staying away from the corals and using sustainable fishing methods. They argued that only the outsiders do not use these preventative measures. They explained that they take these measures naturally without guidance and that they learned it from their fathers and grandfathers and not from the government. The younger participants said that they learned most of what is right and legal and what is not through trans-generational knowledge, such as the harm of using harpoons and explosives or breaking

²² “Fayoumi” is what they call people who come from Fayoum governorate who moved to Suez to exploit the Red Sea.

corals. Meanwhile, the older participants explained that people used to come to them in the 1970s and 1980s to educate them about the environment and common pool resources. They also explained that in present day sometimes they hear that there will be conferences or seminars to educate people about the environment, overfishing, and how to fish sustainably, but they never happen. According to them, this is just another way for the government to claim that they are doing something while they are actually doing nothing.

All the participants blamed the outsiders and the government for the environmental damage that has occurred saying, “Before those people arrived, we had a lot of fish”²³ and others said, “Before they created those laws, we were already respecting the environment, those laws are only in place to restrict us and collect fines.”²⁴ They said that outsiders are directly and indirectly damaging the marine ecosystem. The outsiders are causing direct damage by overfishing and in particular, they don’t release the by-catches alive, but instead leave them to die before dumping them back in the sea. They cause indirect damage through pollution and destroying the corals.

Participant one *“Bysraao hata el shamandorat el al shoaab ashan ysabo beeha el ghazl betaahom.”*

They even steal the buoys that are set by the corals to use as floats for their nets.

The participants explained that the government and usually HEPCA provides buoys in all the marine protected areas so that boats won’t have to use anchors to

²³ Participants two, three, four, six, eight, ten and eleven July 2017, Hurghada.

²⁴ Participant one, two, five and eight July 2017, Hurghada.

preserve the coral reefs. The outsiders steal them to use as floats for their nets and long-lines. They went on to explain that the government doesn't regularly check on the buoys and ropes for maintenance but instead they wait until the boats use anchors and then make them pay fines. The fishermen claimed that now sometimes diving safari boats are the ones who conduct the maintenance, instead of the government, and sometimes even provide buoys and wires because this has a direct effect on their diving jobs.

Some participants argued that the government makes a lot of money from licensing and permissions but they don't put any of it back to protect the sea or the fishermen. They claimed that the main source of foreign income in the country comes from tourism and diving in the Red Sea area and that this money should be put back to protect and preserve the sea.

Participant two

*“Byemelo malayen men bas el dolphin house dive w
men el gozr bas wala ehna wala el bahr benshoof
haga men el feloos de.”*

They make millions just from the dolphin house dives and from the islands but we never see anything being put back in the sea or to us.

They claim that the country gains millions from the Red Sea but they don't put any back to sustain the sea or protect the fishermen whose main source of income also comes from the sea. They argued that because of tourism and hotel development, they are now not allowed to go near the beaches which have the best bays to fish close to the shore. They also said that because of the marine protected areas, now they can't fish in most of the places they were allowed to fish before (contradicting their statements earlier that they always stayed away from the corals). They also stated that because of the tourism

industry and the marine protected areas, which they think are only there to create safe diving areas free of fishing, they now have to go further to fish – sometimes even by the country borders or even across the borders illegally. They argued that laws that restrict fishing methods and put measurements for catches are there to protect the environment and the common pool resource “fish stock” but the marine protected areas are just there for the divers without any consideration to them. They said that they won’t mind this if they get something in return.

Regarding pollution, they claim that it is only the outsiders and the tourism industry that directly pollute the sea by dumping waste in it. They said that the outsiders leave “ghost nets” and long lines behind, which keep killing fish for no reason and also polluting the water because it’s made of plastic which is not a natural element to be in the sea nor is biodegradable. They also said that the tourism industry, and mainly the hotels that are built right on the shore, dump a lot of waste including chemicals from their laundry rooms, directly in the sea. They said that the HEPCA and environmental offices try to combat this by making them pay fines but they don’t care because it’s easier and cheaper for them to pay the fines than to change their system as that would cost them even more money.

Participants were very aware of the environmental damage that is happening in the Red Sea whether due to overfishing or pollution, but they think they do not contribute to the issue even though they admit to breaking environmental protection laws. However, their rationale is that it is the only way they can survive, and that is justifiable to them in the environmental context. They think that because everyone else is breaking the laws

that they can do so, saying “We have to do this to be able to compete, we can’t do anything else.” They explained that when they only depend on a hook and line, they are only able to catch a certain amount of fish per month; meanwhile the outsiders are using industrial fleets and more developed techniques (some of which are illegal) and they can’t compete with them simply because the fleets force the price of their product to decline by providing more and more of it (supply and demand). They argued that due to the massive amounts of fish being caught (overfished by the outsiders) and also the increase of the aquaculture lately, the fish prices are going down which is affecting them negatively. They also complained that the prices of everything in the country are getting higher and higher while the fish stocks are declining and the price of fish is decreasing, according to them.

In this theme, fishermen explained how they see the laws that are set to protect the environment and how they react to them, again blaming the outsiders and the unqualified officials for the degradation of the marine ecosystem. They argued that they are doing everything right even when they break the law. From their examples and analyzing the interviews, no one educated them on the laws nor explained the reasoning for them. According to them, the government doesn’t explain further than “don’t do this” and for the fishermen, this is forced compliance in which the government is trying to force them to do something that they don’t think is right or that is implemented in a right and fair way.

The Orf “Custom”

The “Orf” literally means “custom,” which is the generally accepted way for doing things, usually the traditional way. As mentioned before, most participants had stated that they engage in illegal activities but that for them it’s okay to do so. They believe that the formal law is only there to restrict them from exercising their rights, which in this case, is putting restrictions on them that affects their productivity. They explained that they have good faith and believe in the judiciary system, but not in law enforcement in general. They believed that the law enforcement and most government department are corrupted except for judges and the judiciary system. When asked about the laws that regulate fishing, they said it’s essential and it should exist but not in a generalized form in any place at any given time. They stated that still they are able to break most laws because the law enforcement isn’t applied correctly and that they don’t know how to do their job but they have their own law which is the Orf which they never break. Their Orf is a set of unwritten laws that they live by –“the do’s and don’ts” such as methods of fishing, fish sizes, polluting etc. When one of them, usually from the younger generations, breaks the Orf, they tell his family to punish him and if the family doesn’t do so, they ostracize that person. If that person insists on breaking the Orf, then they would inform the coast guards or environmental office about what he is doing. For example, using harpoons is illegal, but the Orf allows the fishermen to use them. The explanation for this is that since the fishermen moved to Hurghada and were living in tents, and until the government law was enacted, it was okay to use harpoons, and therefore it’s okay to

do so now. They explained that no one told them why not to use harpoons other than it increases the chances of breaking the corals and for them this doesn't make sense.

Participant one: *“Ana aslan msh badrab gheir fel ghareek ala samak kebeer msh bagy gamb el shoab.”*

I only use the harpoon in deep waters to catch big fish I don't go near the corals.

This participant claimed that he has been using the harpoon for more than 40 years and he never breaks the corals or even comes near them but rather only targets big fish away from the reefs. He also stated that most, if not all, fishermen in the area who are fit to use the harpoons, still do so even though it's illegal. “We know how to get the harpoons on our boats and depart with them without getting caught.”²⁵ Other participants explained that due to the increase of the prices of everything and also the permissions fees, now they hide fishermen so they don't have to pay the fee for all fishermen on the boat.

They also discussed fishing in the marine protected areas. “We are not stupid, we don't go right on the corals”²⁶ said participant four and he explained that most of the sea around Hurghada is now protected areas or bays that are owned by hotels which they are not allowed to fish in but they do anyway. According to some, they go there at night to fish and sometimes even during the day, but if the environmental patrol passes by, they pull the lines fast out of the water and act as if they are just resting or cooking.

²⁵ Participant one July 2017, Hurghada.

²⁶ Participant four July 2017, Hurghada.

Other acts of breaking the law are against the Orf such as copying the outsiders' techniques. They argued that if any of them start using the very long lines or very long drift nets they will get in trouble. They explained that they use both techniques but not with the same sizes or style. For them, the long lines aren't actually long and they only put big hooks on them to catch exclusively the big fish and it's vertically placed in the water with a maximum of ten hooks on it. Meanwhile, the outsiders use a horizontal net that is longer than eight hundred meters with thousands of small hooks that catch anything. He explained that the outsider's methods are harmful to the environment and are also invading their territory. When one of the fishermen starts adapting the outsiders' techniques, he must be punished, or it could be disastrous for the Orf.

Some of the participants also explained that according to the Orf they are not supposed to deal with the outsiders, but luckily the outsiders mainly live in Suez and not in Hurghada. That is because this is where their fleets dock and when they come to visit the city, they don't mention that they are from the "outside" or that they are fishermen who use those harmful techniques because they know that people wouldn't respect or work with them. According to some old fishermen, when those boats started fishing in the Hurghada area, other artisanal fishermen tried to reason with them explaining that it is their territory but they replied with violence by throwing stones at their small boats or threatening to throw "Molotov cocktail"²⁷ and burn their boats.

²⁷ A bottle that will shatter on impact that is filled with fuel that is sufficiently flammable to catch fire and spread when the bottle breaks. Some also contain small pebbles or nails to cause more damage

Participant six

“Lama etkalemna maahom ramoona bel toob w kano haydefo Molotov.”

They threw us with stones and were going to throw us with Molotov cocktail.

According to some fishermen, incidents like this, where fishermen throw rocks at each other and Molotov cocktail actually have happened before, but not many times using Molotov cocktail. Some of them also claimed that there were incidents where fishermen from Hurghada did the same to each other over fishing spots and blamed this on the degradation of the fish stocks and also the fish ban. According to them it only happened during the emperor fish season and the argument was over anchoring their boats right next to each other or taking someone else’s spot. For the Hurghada fishermen the law is essential but not to be applied on them. They think it’s only applied on them to collect fines and they think that their Orf is better suited for them and for the nature of the area. They justified this by explaining they have been doing things way before the outsiders came or even before Hurghada became a city. At that time, they thought that there were a lot of fish and no conflicts. One participant said, “It only started declining after they started applying the laws and the arrival of the outsiders.”²⁸

As this theme also shows compliance barely exists and when it does it happens in the form of forced compliance, where participants are forced to do something that violates their better judgment and therefore the Orf or their custom law fits best for them. All participants stated that if someone convinced them why they should comply, they will

²⁸ Participant two July 2017, Hurghada.

do so, but if it affects their productivity, then they must offer them compensation in any form.

This chapter offered a thematic analysis of all interviews by dividing them into themes according to what was said in the transcripts. The themes represent how the fishermen perceive the laws, the decision makers, law enforcement as well as the outsiders and the system as a whole. Participants hold a negative perception of the whole legal system besides the judiciary system and judges. They see it as dysfunctional system that threatens their livelihood as well as their families while simultaneously acknowledging that most of the laws are essential for the environment and the whole marine ecosystem. The next chapter will be discussing the findings in depth by applying the theories that were previously mentioned in the literature review chapter to the data collected.

DISCUSSION

The previous chapter offered a detailed thematic analysis of the interviews that were conducted for this study. This chapter includes a discussion of the main findings from the data in light of the previously explored concepts and theories in the literature review chapter as well as the articles and literature that were mentioned in the case study chapter. First, the researcher will start by pointing out the perceptions the participants hold of the government, system, legislation and the outsiders. Then the researcher will explore main problems and issues that the fishermen see as affecting them negatively. Finally, there will be a discussion in an attempt to answer the research question.

Fishermen Perceptions:

- The law is applied unevenly, depending on how connected one is
- The legal system is largely corrupted
- The law is stripping the fishermen of their means of subsistence consequently pushing them toward illegal behavior
- Fishermen and their families are being put in an inexcusable position on a number of fronts and are the victims
- Law enforcement happens randomly and haphazardly without any knowledge from implementers
- Orf custom is better than official law

Problems and Issues for the Fishermen:

- Conflicts of interest
- Importance of identity and family tradition
- The outsiders and lack of knowledge from the decision makers
- No labor rights
- Limited other professional options
- Lack of education
- Not being involved in decision making

As mentioned earlier in the literature review chapter, according to Garrett Hardin, while humanity strives for the maximum good per person, one person's definition of good differs from another's. When discussing common pool resources, they have to be mutually agreed upon, the necessities of stakeholders have to be recognized and everyone's needs must be met. But most importantly, the preservation of the resources has to be considered and put into perspective because every stakeholder will do their best to maximize their own profit regardless of the price nature has to pay (Hardin, 1968).

The issue of common pool resources is also the case in this research, and according to the participants, they are doing whatever it takes to make ends meet even if this means breaking the law and at the expense of the marine ecosystem. Their reasoning behind breaking the laws is that everything is getting expensive and this course of action is the only way they can afford living without receiving aid from the government. The fishermen expressed that they are always living in debt and that their income is never stable as they depend on a day to day income. The main issue here is that the fishermen

really believe that they are not damaging the environment and overusing resources but rather blame the outsiders and government for the degradation in the fish stocks, without noticing that they are a part of the collective action that is threatening the environment. Although they understand the concept of common pool resources and that they are finite, they claim that their methods and behavior don't contribute negatively and that they were better off before the laws were implemented and the arrival of the outsiders. They used examples that they used to catch a lot more fish before the laws were put in place and the outsiders arrived, without noticing that their actions are also a part of the problem. Further research needs to be done to assess the impact of their methods on the environment.

Participants perceive the law as something that is applied unevenly depending on how connected one is this is why they use their Orf instead. According to the participants, no one in higher authority explained the impacts of their behaviors on the environment they are only informed what not to do, often which are things they have been doing for years. The fishermen find themselves fighting laws that they don't understand or that is not made with their benefit in mind and also applied on them in an uneven way, which threatens not only their earnings but the well-being of their families.

According to E. Franklin Dukes and Susan F. Hirsch, in the book *Mountaintop Mining in Appalachia: Understanding Stakeholders and Change in Environmental Conflict*, there are three categories of stakeholder. One of which is directly affected by the issue emotionally, physically, economically or socially but do not have the ability to effect change in the issue. Another of which can prevent or make possible a resolution to

the issue and are able to shape how an issue is voiced. And the third group are “those who have declared interest in the issue but actually might themselves have little directly at stake relative to those in the first category” (Hirsch & Dukes, 2014). Under this concept, the Hurghada fishermen fall under the first category while the government falls under the second category and the tourism industry falls under the third category. As mentioned previously, each party’s definition of what is “right” in the scenario differs than the other’s and conflict and degradation of the environment won’t stop until they can all agree on the common good and every one’s needs are met. Regarding the fishermen’s perspective on their position as stakeholders, participants explained that the government does not communicate with them as necessary and when they do, they do not justify the legal changes. They also stated that they are not a part of the decision-making process although they are directly affected by the laws. As mentioned previously in the research, resource dependence in Hurghada is highly and negatively correlated with conservation (Marshall, Marshall, Abdulla, & Roupheal, 2010). Any laws that have an effect on the fishermen’s productivity consequently affects not only them but their families as well. According to the participants, the law that affects them the most are the ones regarding the fishing ban season which they see as not intended for them and that the government does not explain the rationale or tailor the laws as necessary. When the government does communicate with the fishermen, the explanation violates the fishermen’s experienced judgment and there is no room offered for conversation on the matter so the fishermen can express their points of view. This makes it much more difficult to reach a consensus among the parties or solve the conflict.

The aforementioned experiences of the fishermen confirm the study made by Sutinen and Kuperan (1999) that was mentioned earlier in the literature review chapter under legal compliance. This study shows that citizens' perceptions of fairness with the established policies and practices are in utmost importance and such regulations should meet the stakeholders' expectations as well. The fishermen perceive the law as unfair and only applied on the “weak” and less powerful; they feel unfairly targeted by law enforcers as forcing them to comply with fines, canceling licenses and sometimes even unfair jail time. They also expressed that even if they comply with the laws, there is no incentive to continue, which pushes them towards breaking the law through an informal cost-benefit analysis. Although they know that some of the laws are essential for the environment, they still do break them thinking that it’s only a restriction from the government trying to control them and collect fines. This perception likely stems from the fact that no one has educated them on the topic or explained the impact of their behaviors and their long-term effect. Based upon assessment of the interviews, legal compliance hardly exists among the fishermen, and when it shows, it is in the form of forced compliance where the participants are made (via force, threats, etc.) to do something that contradicts their judgments.

Legal pluralism is visible in the case of Hurghada, where formal laws exist and while the fishermen know about them (or at least some of them), they choose to apply their own customary law “Orf.” According to the study by Jentoft et al. (2009), a state legislative system is less successful to meet the participants' expectations than their ability to manage their own affairs. That’s why in the area of Hurghada locals and elderly

people created their own custom law which they abide – one in which they are the decision makers – and they don't respond to the governmental laws. According to the fishermen, they are able to maintain order within their custom law and believe that the government laws put them in precarious positions; they feel under constant threat. According to the participants, they know better about their environment than most other unqualified officials who create or enforce the laws when it comes to the seasonal ban. The fishermen explained that the laws shouldn't be applied on them in this season but they agree on it being applied on them in other seasons. And they explained that this is due to that the Red Sea governorate falls under the authority and decisions of GAFRD situated in Suez governorate. This falls in place with what was mentioned previously in the case study section that was said by Gharries Saleh, the President of the Fishermen's co-operative union in Hurghada. He also explained that there is only one small administrative office in the Red Sea, which has only a few employees and they have no power to make any decisions but rather to wait for the instructions that comes from Suez, which they “have to” obey. Which is the case discussed earlier the only officials they are sometimes able to reach have no power to take any decisions.

Another reason for the development and need of legal pluralism in this region is a lack of other professional options for the fishermen. This results in a reliance on fishing that puts the fishermen at the mercy of the ever-changing laws, which is a precarious situation in which the fishermen are always living in danger. This is why when given the choice between breaking the official laws and not being able to feed their families or following their customary law and benefitting economically, the fishermen chose the

latter. The fishermen's experiential knowledge about fishing techniques, the environment, and ethics of sustainable fishing created the Orf they abide by.

Additionally, a lack of government credibility pushed the fishermen towards creating their own customary laws. The fishermen perceive the governments officials as corrupted individuals who not only apply the law unevenly but also alter it for their own self-interest. Based on the data collected, there is a conflict of interest between some officials and the fishermen in the area. FAO's definition for conflict of interest is "the interests of two or more parties clash and at least one of the parties seeks to assert its interests at the expense of another party's interests" (FAO, n.d.). According to the participants, some officials are also involved in the fishing industry by owning boats or shares in aquaculture which makes them lose their credibility as they will use their powers for their own interests and gains. According to the Rule of Law Index by the world justice project, Egypt's Global Rank is ranked 110/113 while its ranked 66/113 in absence of corruption.

Regarding legal consciousness, Dave Cowan's (2004) defines it as a domination power that explains enclosure and dependency in order to eliminate the participants' level of resistance that make regulation recipients demand recognition of their individual identities. He classified legal consciousness as one of the most vital concepts that stakeholders and institutions need to consider having a suitable relation with the people or "the target audience" (Cowan, 2004). One can see mixed perceptions from the fishermen when it comes to the environmental laws. As mentioned previously, the fishermen know the laws are essential but they don't want it applied on them, especially

in certain seasons. According to the fishermen, there are many reasons for them to hold negative perceptions of the law. Class and power can affect one's legal consciousness, and the law means different things to various stakeholders. According to the participants, the law is applied on them almost exclusively, and not on the richer and more powerful individuals, such as seafood restaurants owners or wealthy people who owns fleets. Indeed, the "insider's connections" was one of the most commonly cited reason for the fishermen's negative perceptions of the laws. Depending on one's social class and connections, there are very different forms of legal consciousness in Hurghada in reference to these environmental and fishing laws.

Other issues that affect the marine ecosystem and consequently have an effect on the social well-being of the coastal people, are how participants perceive and act toward other laws. Participants explained how they perceive the marine protected areas. They expressed that this was once their fishing grounds, along with the bays that are owned now by hotels. They are "legally" not allowed to fish there anymore. In "The Links Between Resource Dependency and Attitude of Commercial Fishers to Coral Reef Conservation in the Red Sea" by Marshall et al. (2010) that is previously mentioned, the authors found out that only 11.4% of fishers had been aware of the MPAs in the Red Sea. But in this research all participants are aware of the MPAs and are fully aware that they are not legally allowed to fish there but they do anyway. The authors explain that compliance is mostly a dilemma related to a 'commons resource' where there are seldom incentives for individuals to practice self-restraint in the harvesting of open-access natural resources (Hardin 1968 as cited in Marshall et al., 2010). According to the study,

enforcement is expensive and always subject to corruption, it is not the single or most efficient approach to compliance. While dependency on marine resources is strong, incentives to continue extractive activities readily outweigh disincentives (Marshall et al., 2010). This is also the case in the present research, but according to the participants, enforcement happens haphazardly and randomly without any substantial knowledge from the implementers.

Participants claimed that they do everything to protect the environment but admit that they fish in the MPAs. This is similar to the case in the article, “What Stakeholders Think About Marine Protected Areas: Case Study from Spain,” by Jentoft, et al. (2012) “If stakeholders have an image of the MPA as ecosystem protection, which will be to their benefit, the likelihood that they will support it is high, thus increasing its potential. If, on the other hand, they have a negative image and expect it to fail, the likelihood that it will do so is high” (Jentoft, et al., 2012, p. 186). As long as the participants are not informed or educated about not only the impacts of their actions, but also about the benefits of such laws and areas, the tragedy of the common will continue, and the depletion of the marine resources will only get worse. Good governance isn’t possible without positive images. As long as the stakeholders (fishermen) aren’t told why these laws implemented, why they’re important and why they matter, there is little hope in resolving the conflict. As long as one group of stakeholders does not understand the full picture and isn’t given context as to why certain things are expected to be the way they are, governability problems will likely occur (Kooiman, 2003 as cited in Jentoft et al., 2012).

Most if not all the concepts that are used in this research point out that inclusion and fairness are the key factors in solving conflicts between different stakeholders, as well as for achieving legal compliance, and for having a positive legal consciousness. These two key factors are absent in this case according to the participants. The fishermen hold many negative perspectives of the laws and government largely from being excluded from the decision-making process as discussed earlier. According to the fishermen, they also don't have the power to change or affect these laws even though they have a huge effect on them. They explained that when they try to talk or complain to officials, they are usually turned down without allowing them to express any concerns. And when they get a chance to do so, they are dealing with individuals who are not qualified enough to be in the place they are. Both Conan (2004) and Silbey (2005) stated that the level of law recipient's resistance is correlated with the perceived fairness within the law itself. The stakeholders are those who are affected by the designated regulations, thus their studies point out that it should not be optional to consider stakeholders' perspectives and their relations with exercised power.

CONCLUSION

The previous chapter offered a discussion of the collected data in the light of the concepts included in the literature review in an attempt to answer how stakeholders perceive the legislations regulating overfishing in Hurghada as well as how they see its impact on their lives. Participants hold many negative perceptions of the laws, with only a single positive perception, which is the legislation that is set to protect the environment. They don't see the laws as efficient and don't want overfishing legislation applied on them – at least in certain seasons – because they do not see themselves as a threat to the ecosystem. They also think the laws are enforced in haphazard ways. Regarding how they perceive the legislation's impact on their lives, participants feel that it threatens their safety, as well their livelihood, and also puts their families in constant danger.

Even though participants hold a negative perception towards the laws for many multifaceted reasons and think they are not damaging the environment, it cannot be ignored that their behaviors have a negative effect on the marine ecosystem. All concepts and issues discussed in this research are interconnected and all lead to misuse of CPRs. This issue needs further research to be able to investigate the actual extent of threat to the environment that is caused by all different fleets and stakeholders, in order to create policy recommendations for the area. The purpose of this research is to examine how stakeholders (fishermen) in the area of Hurghada perceive the legislations that are put in place by the government related to overfishing. As so, the researcher can only recommend the inclusion of the fishermen in the decision-making process as well as to

make room for negotiation of existing policies and legislation through local committees. These committees can address the needs of the local communities as well as be able to take decisive action to end the present conflict thus combating the degradation of the marine resources.

APPENDIX

Participants	Area of Profession	Date	Years of Experience
Participant 1	Hurghada	July, 2017	40+
Participant 2	Hurghada	July, 2017	30+
Participant 3	Hurghada	July, 2017	30+
Participant 4	Hurghada	July, 2017	20+
Participant 5	Hurghada	July, 2017	60+
Participant 6	Hurghada	July, 2017	30+
Participant 7	Hurghada	July, 2017	35+
Participant 8	Hurghada	July, 2017	40+
Participant 9	Hurghada	July, 2017	15+
Participant 10	Hurghada	July, 2017	50+
Participant 11	Hurghada	July, 2017	50+

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