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Implementation Procedures for Puerto Rico's Environmental Laws

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Abstract

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MA, Universidad del Este, Puerto Rico, 2012

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

In 2004, Puerto Rico's new environmental legislation became part of the penal code with the intention of protecting the island nation's natural resources through criminal prosecution. However, the problem is a dearth of information about the prosecutions of environmental crimes and the law enforcement agent's implementation practices. The purpose of this study was to describe the execution of the law and the few cases prosecuted. Lipsky and Hull and Hjern's theory of implementation were used to help answer the research question: What are the implementation procedures of law enforcement agents on Puerto Rico's environmental crimes law, and what can be done to improve these practices? This qualitative case study included semistructured interviews with police officers and 3 district attorneys who were selected based on their involvement in environmental crimes cases. Document analysis such as court files were analyzed to reveal the implementation practices of the law. Data were analyzed using NVivo software. Results revealed that police officers and prosecutors possess little knowledge of the environmental crimes and this was not a barrier for execution of the law. However, court judges did not uniformly interpret the meaning of the law in the adjudication process which suggests that failure to successfully prosecute is due to lack of understanding of these environmental crimes by legal counsel. Enhancing the training of police, prosecutors, and judges is needed to improve policing and implementation of the law. Successful implementation practices can promote better legislation and prosecution in order to reduce environmental degradation of the island.

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Dedication

I dedicate this investigation to Gaia, for being the forest, the wind, and the waterfall of my soul.

Acknowledgments

Mom, you loved for me since the day you knew I was inside you. You taught me to never give up when you supported the house, your two children, and finished your bachelors' degree. That day when we walked beside you at your graduation to receive your honors, you gave us your achievements, this day I give you mine. You are my inspiration, because although your life has not been easy, you have always stood up and became a great woman, professional, and friend. Lobiu!

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Chapter 1: Introduction to the Study

Introduction

The Commonwealth of Puerto Rico enacted numerous environmental laws for the purpose of protecting the island's natural resources and human health. From local legal statutes to federal regulations, Puerto Rico receives guidance and has been enforcing natural conservation since 1970. Furthermore, the 1952 Constitution of the Commonwealth of Puerto Rico states the government's responsibility to promote effective public policy for environmental conservation and common benefit (P.R. Const. art. VI, § 19). Former legislation, before the approval of the Constitution, established crimes related to the environment but with a focus on human safety not on nature.

Puerto Rico amended its penal code in 2004, thereby abolishing the 1974 version. The current code defines crime as the actions or omissions prohibited that carry criminal consequences if found guilty in the court of law (Nevares, 2005). This codification of legal violations also includes penalties. Many researchers have discussed the inclusion of offenses towards nature in the code of 2004 (Fontanet, 2006; Montalvo, 2011; Rangel, 2005; Rodríguez Rivera, 2005). These debates began in 2004 although some environmental crimes appeared in the version of 1974. The emphasis of the crimes added in 2004 relies on providing intervention alternatives for environmental harm besides administrative indictments (Fontanet, 2006; Montalvo, 2011; Rangel, 2005; Rodríguez Rivera, 2005).

There is little information about the effects of these environmental crimes in terms of enforcement and prosecution. The lack of investigation of these crimes limits

implementation within Puerto Rico's criminal justice system. The limited data about this topic leaves an information gap regarding the implementation policies and practices of environmental crimes. This makes difficutl to investigate the execution of the law and its effectiveness.

Background

In 1902 a penal code was drafted and approved using California's code as a reference (Nevares, 2005). The first mention of the environmental issues within the code of 1902 was unintentional because the primary focus of this law was to human health and life (P.R. Penal Code §.XIV, 1902). The penal code was amended to include the mandate of the Commonwealth to protect the environment in 1974.This new code included offenses like arson, aggravated arson, forest fires and plantations, and serious damage or destruction (P.R. Penal Code art 195-198, 1974). Thirty years later another code was enacted. This law was revised to consider several additional issues including environmental crimes. Nevares (2002) developed a series of analyses regarding environmental crimes, including a comparison of the code of 1974 with laws from the United States, South and Central America, and Europe. Nevares suggested a series of recommendations for the new proposed penal law based on other countries' codes and local rulings regarding crimes toward the environment. An example she gave was of the crime of poisoning public waters which was derived from the codes of Germany and Colombia.

Until 2005, the environmental crimes were discussed administratively (Rodríguez Rivera, 2005). The government created agencies to handle exclusively environmental

harms. Besides the environmental crimes stated in the code of 1974, the new legislation included poisoning of public water, environmental pollution, and aggravated environmental pollution. The inclusion of the crimes mentioned above or new environmental crimes caused concerns and controversies within the public sector and Academy. After 2004, amendments in 2010 and 2012 to the law were enacted. The criminal justice system currently relies on the penal code of 2012 and the amendments made in 2014. The changes to the criminal law affected the substance of the environmental crimes, adding some minor changes related to sanctions and application (P.R. Penal Code § III, 2012). A legislative discussion of a possible new penal code took place beginning 2014 (Banuchi, 2014), but on December of that same year, the law was instead amended (Álvarez, 2015) and included modifications to the environmental crimes (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014).

Environmental harm is protected by local agencies such as the Environmental Quality Board and the Environmental and Natural Resources Department, created to protect Puerto Rico's natural resources (Ley sobre Política Pública Ambiental, 2004). These regulations involve pollution practices and the administrative sanctions for violators of these statutes. The common practice for violations of these laws is to process them through the administrative forums. Each environmental agency prosecutes law violators with fines, licenses suspension or removal, and others administrative remedies (Ley de Procedimiento Administrativo Uniforme, 1988). Unlike the administrative procedures, the code's purpose is to criminally sanction offenses committed against

nature (Rodríguez Rivera, 2005). The distinction between administrative prosecutions from criminals is that the last one provides harsher punishment for law violators (Rodríguez Rivera, 2005).

When the code was enacted in 2005 researchers discussed its creation, importance, as well as the new environmental crimes (Chiesa & San Miguel 2006; Fontanet, 2006; Rangel, 2005; Rodríguez Martín, 2005; Rodríguez Rivera, 2005). Researchers additionally discussed possible contradictions and controversies and denounced imperfections within these offenses related to content, enforcement, implementation, and jurisdiction (Chiesa & San Miguel 2006; Fontanet, 2006; Rangel 2005).

However, researchers have not analyzed the enforcement of these crimes. In spite of this scenario, Fontanet (2006) communicated that the enforcement of these crimes needs attention while Rodríguez Rivera (2005) discussed the inefficiency of the environmental legislation of the island. Moreover, Rangel (2005) voiced the inexistent manifestation of the government's commitment towards the application of the new environmental crimes. Given that their articles were published shortly before the law entered into force, their observations were perceived as untimely. On the other hand, Montalvo (2011) criticized the ineffectiveness of implementation six years after the incorporation of the environmental crimes. Furthermore, Montalvo asserted that the environmental crimes are not objective in identifying the obstacles limiting law's possible effectiveness. Again, the author did not provide data to support this argument.

Fontanet (2006), Rodríguez Rivera (2005), Rangel (2005), Montalvo (2011), and Marrero's (2014) explained the law and its creation but failed to cover its extent, limitations, and application of the island's criminal law and criminal justice system. In this study I used these articles as guidance and acknowledged the perceptions and work experiences of the domestic agents responsible for the penal code's implementation. Additionally, I described the elements of execution of the law at the level of the agents' understanding and enforcement of these environmental crimes. My goal is to expose the practices of the criminal justice system in response to the mandate to protect the environment as established in the Commonwealth of Puerto Rico and its penal code.

Problem Statement

The emphasis of the code's environmental crimes is to deter any person who intends to commit a crime or is polluting the island's limited natural resources and endangering citizen's health (Rodríguez Rivera, 2005). Legislators explained that magistrates can also impose restitution as a sanction, which embodies the purpose of prevention, sanctioning the offenders, and protecting people and nature for this and future generations.

The enactment of theses environmental crimes in terms of execution and its implementation is unclear because of the poor information regarding these offenses (Montalvo, 2011). After nine years the code's enforcement, Marrero (2014) criticized the lack of prosecution for these crimes in Puerto Rico. Another important legal issue to highlight is the ambiguity in terms of jurisdiction and competence application that can obstruct the prosecution of these crimes. This concern can become possible due to

mismanagement of cases. From this issue I can denote poor communication efforts between agencies, and violators can not face the consequences of their actions.

The description of the elements of these environmental offenses does not help to explain its ambiguity to facilitate its enforcement. Legislators incorporated these environmental offenses in the penal code as crimes without doing any changes to other relevant environmental laws, making it confusing and difficutl for law enforcement agents to implement the law and prosecute the offenders (Chiesa & San Miguel, 2006). Legislators did not elaborate or suggest protocols for the regulatory agencies or law enforcement officials to make possible the enforcement and prosecution of these crimes. It seems that legislators did not conduct an exhaustive comparative research to analyze how other countries prosecuted these crimes and how the state would implement them in Puerto Rico. Nevares (2002) did provide the government's decision-makers comparisons of several codes used to include environmental crimes and modify the current ones of Puerto Rico's code. Besides this legal comparison, no available information about the inclusion of these crimes and the means to implement the law are available.

The purpose of this dissertation is to describe and analyze the perception and work experiences of personnel of the criminal justice system regarding environmental crimes as stated in Puerto Rico's penal code. I focused the analysis on the bottom-up perspective derived from policy implementation theories. Through street-level bureaucracy and local network framework delivered from the former view, I observed elements such as acknowledgement and significance of the law. Using these theories, I explored cases, work experiences, protocols, the possibility of collaboration between

agencies, and other variables I could identify about the law's application. It is essential to understand the extent and effects of the current laws. Lawmakers must analyze if the current laws fulfill their purposes through the implementation performances. So far the consequences of the law are not recognized, which does not allow the possibility of improving the law and satisfying citizens' best interests and nature's protection.

Purpose of the Study

The purpose of this dissertation was to describe the implementation process of the environmental crimes typified in the penal code from 2005 to 2014. I obtained the necessary information to fulfill purpose of conducting this study through the work experiences of the local law enforcement personnel and district attorneys in charge of executing the law.The practices of these officials gave me insights into the implementation of responses to these crimes. A descriptive investigation offered me data from these officials' knowledge of the law to the protocols used to manage these actions that violate the law. Testimony from police officers and prosecutors revealed me the practices of these positions. The data's analysis consisted in its interpretation through the street-level bureaucracy and local network theories derived from implementation principles. I conducted interviews to obtain detailed information to examine the purposes and content of the articles that typify the crime. This data provided me evidence of implementation in responding to environmental crimes and the extent to which the law is enforced. I also intended to detect implementation practices as described in the theories mentioned above. As a consequence of this investigation, I observed the gaps presented in Puerto Rico's literature review. Using the findings I elaborated a series of

recommendations to the criminal justice system to improve implementation performances, accomplish the intent and letter of the law, and protect nature.

Research Question

The objective of this dissertation was to describe the environmental crime's implementation process through the work experiences of law enforcement officials. The environmental crimes I analyzed were from the Puerto Rico's penal code from 2005 until 2014 using the codes of 2004 and 2012, as amended. The street-level bureaucracy and local network theories served me as the theoretical framework from the actor's perspective to analyze the data collected. Also, I examined the law as part of the analysis process. Through the following research question I gathered information and it served as a guide to develop the investigation towards its purposes.

Research Question: What are the implementation procedures of law enforcement agents on Puerto Rico's environmental crimes law and what can be done to improve these practices?

Theoretical Framework

In this dissertation I used an approach from the policy implementation theory for its analysis. Policy implementation theory studies the manifestation of intention and goals of legislation through different mechanisms (DeGroff & Cargo, 2009). A series of authors defined policy implementation as the process between the performances and the goals' accomplishments and the resources to achieve them (Berman, 1978; Hupe, 2014; Paudel, 2009; Pressmand & Wildavsky, 1973). From this theory, the top-down and bottom-up models emerged. The first approach states that the application of the law is

through the rational management view. This perspective perceives control, coercion, and compliance as the promoters of the policy's goals achievements (Mazmanian & Sabatier, 1989 cited in DeGroff & Cargo, 2009, p. 49). This model focuses on bureaucratic management (Mazmanian & Sabatier, 1989 cited in DeGroff & Cargo, 2009, p. 49) incorporating tractability of the problem, ability of statute to structure implementation, and non-statutory variables affecting implementation (Matland, 1995, p. 146).

The bottom-up perspective states that the comprehension of a policy's application is through the perceptions of the people who provide and receive the policy's offerings (Berman, 1978; Hjern, 1982; Hjern & Hull, 1982; Lipsky, 1969). The approach helps the researcher view the policy implementation from the bottom of the hierarqui to the top of it (Revuelta, 2007; Vieira, 2012) in a macro and micro-implementation scope (Berman, 1978 cited in Matland 1995). The bottom-up model embraces Lipsky's (1969) street-level bureaucracy, which states that the actors who provide the programs or policies' services decide how to implement the policy. These performers become significantly responsible for the practices and execution of the policy that has already defined its purposes and outcomes (Lipsky, 1969). Law enforcement personnel adjudicate meanings to a law through their understanding of the statutes and the available tools for implementation. These actors can strengthen the purpose and implementation of a policy or change its values and application practices. Hull and Hjern (1982) gives an additional emphasis on this viewpoint. These two authors stated that the analysis of local networks help investigators to identify the implementation process' issues at the local level (Hull & Hjern, 1982; Paudel, 2009, p. 42). The local network theory suggests that policy

implementation's outcomes can result different from what expected due to the local actors' routines (Paudel, 2009; Vieira, 2012). It is important for me to recognize the impact of internal and external factors that could affect the execution of the law to make a better interpretation of the investigarion I am conducting. Possible scenarios such as jurisdictional ambiguity, interagency miscommunication, and daily routines could have an impact on the implementation of a policy. Sabatier (1986) cited Hjern's contribution to the bottom-up perspective stating that the analysis of policy implementation should go from the bottom of the structure to the top. This view also examines the structure that involves actors of different intergovernmental levels (Vieira, 2012).

Using the policy analysis from a bottom-up approach, specifically street-level bureaucracy and local network theories I was able to interpret the data obtained and fill the gaps in the literature. The law enforcement personnel offered insights regarding the practices to accomplish the environmental crimes' goals. Based on the findings, I identified the implications involved in the process of implementation and the effects of the policy. From this model, I viewed the application process based on the perception and work experiences of law enforcement officials and the law's content. The intention was to search for details about their practices to understand their performances through their vision of the law and identify elements that intervened in this process as suggested by the framework. The identification of law application practices helpes in the analysis of the policy's goals, activities, problems, and contacts (Matland, 1995, p. 149). Therefore, it was necessary for me to detect the perception and performances of the actors that implement the law to make it better as well as to improve its application.

Nature of the Study

The design for the development of this dissertation I choose was useful to describe the information acquired. I needed to establish a methodology to analyze, understand, and answer the research questions. For this purpose, I carefully chosen a qualitative research design because I can explore societal phenomenon in a deeper perception using this approach (Creswell, 2013; Hernández, Fernández, & Baptista, 2006). Patton (2015) and Yin (2013) explained that a case study focuses on obtaining a more profound look of one case or several cases investigated. A researcher can analyze events, activities, processes, cases, and programs using a case study design (Creswell, 2013; Hernández, Fernández, & Baptista, 2006). Since there was no information regarding the implementation activities of environmental crimes, I choose a descriptive study to fit this investigation using more than one data collection techniques to explore the how and why of the contemporary phenomenon (Yin, 2013). I described the unknown application of the law using the work experiences and perception of police officers and district attorneys involved in environmental cases. The information given by these law enforcement officials provided me insights of their knowledge of the law and practices in cases of environmental crimes they have handled. Officials gave their understandings about protocols, training, interagency cooperation, and any other element regarding the execution of these crimes. I used street-level bureaucracy and local network theories to structure the investigation's data analysis and to observe the law enforcement personnel's performances. The work experiences of these officials allowed me to understand how these agents enforce the legislation based on the letter of the law. I also identified

elements of concern related to the processes in a local, central, and state level to analyze it through the theoretical framework chosen.

I focused this dissertation on law enforcement officers from the Police Department of Puerto Rico and district attorneys from the Department of Justice. Both officials were the population for this investigation. I choose officers and district attorneys that have had experienced environmental crimes' investigation. I decided to investigate all the population because there are few cases prosecuted. The sample I reached provided the information needed about the practices carried to handle environmental crime cases. These professionals gave me details of their and the government's actions to enforce the mentioned law. Individual interviews I conducted with police agents and district attorneys helped me capture information regarding their vision and involvements on environmental crimes. A semistructured interview was the instrument I used to ask about their knowledge of the penal code's environmental crimes. Through this interview I inquired around their worth of the law, existing protocols, trainings received, performances carried, and interagency cooperation. I not limited the interview was to the prepared questions. Also, I made the interview available in Spanish since it is the official language of Puerto Rico. The aim was to cover every step they took when intervening with the environmental case they handled. With this investigation I exposed the activities of police agents and district attorneys and identified strengths and weaknesses of the implementation process of these crimes. Also, I used the court cases files to reinforce the analysis of their responses.

Moreover, I made a scrutinized analysis of the law that typifies the crimes concerned appears in this study. The content of the environmental crimes' articles became part of the analysis. This examination of the law and the officials' narrated work experiences provided me the needed data to unveil differences and similarities based on the theoretical framework. Street-level bureaucracy and local network theories states that domestic actors are the ones who give meaning to the law based on the law enforcement practices. From this statement, the analysis of the data using this theoretical framework determined the practices that did and did not tempered to the law's purposes.

Definitions

The following definitions where used in this study:

Attempt: The action of initiating the commission of a crime, which is halted due to situations beyond the actor's control (Penal Code 2012, n.d. Article 35).

Criminal law: The conjunct of juridical norms related to criminal behavior (prohibited or directed actions by the State or government) that carries legal consequences if violated any of its statutes (Nevares, 2005).

Concurrent jurisdiction doctrine: Authority of the federal and local courts to hear trials simultaneously. The exception to this doctrine is if a federal ruling or law claims exclusive jurisdiction over a specific matter (Ortega, 2008).

Dead letter of the law: An existent regulation that is not in use (Hodgson, 1999).

Environmental crimes: A continuum ranging strict legal definition through to broader harm perspectives (Brincknell, 2010), viewed throughout traditional criminological standpoints (O'Brien & Yar, 2008), that encompass the acts or omissions that violates an environmental harm statute, subject to criminal prosecution and sanctions (Situ & Emmons, 2000).

Environmental Criminal Law: A series of norms that regulate environmental infractions (Bordillo, 2011).

Environmental harm: Viewed in an eco-global criminology, it refers to a criminological approach that is formed by ecological consideration and by a critical analysis that is worldwide in its scale and perspective. If based upon the eco-justice conceptions of harm, environmental harm includes transgressions against the environment, non-human species, and humans (White, 2011).

Negligence: A crime is deemed to be committed negligently when performed without intent, but imprudently. Also, when not observing the standard care that a reasonably prudent person would have observed in the same situation as the author in order to prevent the result (Penal Code, 2012, n.d., Article 23).

Penal code: A compendium that contains the actions prohibited or required by the state or government and the sanctions and/or punishment to impose as well as its purposes to promote the constitutional rights related to human dignity (Nevares, 2005).

Perception: a. "Awareness to one's environment through physical sensation"; b. "Ability to understand, comprehend" (Webster's, 2001).

Primary jurisdiction doctrine: determination of which court shall intervene first to resolve a particular matter in controversy or to allow the agencies to solve within its functions as stated by law (Ortega, 2008).

Procedural law: Laws that establish the protocols and processes of law implementation (Malavet, 2003).

Quasi judicial: A term that applies to the actions of an administrative public official who investigates' facts, determines its existence, draws conclusions, as a basis for their official function and exercises a judicial nature discretion (Rivera, 2000).

Quasi legislative: the function to promulgate rules and regulations of an administrative agency (Rivera, 2000).

Substantive law: Primary norms that determine the essence of the law (Trías 2000).

Ultima ratio: The last resort; the last remedy; the last argument (Rivera, 2000).

Assumptions

Because governmental information is public, it was supposed that I had access to the necessary information regarding governmental statistics. Therefore, I expected that law enforcement agents and district attorneys became available when asked to participate in this investigation. Because of the sample's occupation, I scheduled appointments to conduct the interviews. Another assumption was that police officers and prosecutors interviewed discussed similar work experiences related to the implementation practices.

In addition, I foreseen as possible that the interviewees might had the same knowledge of these environmental crimes insofar as they worked on some cases. I also thought possible that the interviews could take more than expected because the intention was to recover all the experiences they had in the field with these cases.

Scope and Delimitations

I identified the scope and delimitations of this study based on the objectives of this dissertation. There is an inadequate understanding regarding the implementation process of environmental crimes within Puerto Rico's jurisdiction. Because of the lack of information, the focus was to reveal the implementation process, using the work experiences of law enforcement personnel. I described and analyzed these experiences based on the bottom-up implementation's street-level bureaucracy and local network theories.

I selected police officers and district attorneys as participants who handled environmental crime cases. I considered the work experiences of these officials indispensable because they provided the information that is necessary to understand the implementation performances in these cases. Law enforcement agents of the Natural and Environmental Resources Department were not part of this investigation because of their work within the administrative sphere. The Coast Guard and the Environmental Protection Agency handles federal regulationwere not involved because they do not handle State environmental crimes. Also, I did not include in this dissertation did not because the aspects of prosecution were not to investigate in this research. The selected

law enforcement officials responded to this investigation since they handled the intervention of crimes, investigation, and enforcement of the law within the state.

For the analysis of the interview's content, the bottom-up perspective from policy implementation theories suited this investigation. Using this approach I acknowledge the enforcement practices of this policy, what the policy states, and the proposed achievement of the policy's goals. There were other theories to use as the theoretical framework for this dissertation such as the top-down model. The mentioned approach emphasizes on top-level bureaucrats and the administrative processes of policymaking, regulations, and control (Matland, 1995). This approach would made me difficult to reveal the performances in the implementation process which takes place on a domestic level. This model inhibits me from identifying the environmental crime's application by the law enforcement actors.

Limitations

The limitations for this investigation stemmed on the possibility of bias. Bias would have influenced the participant's expressions during the interview. To avoid bias, I explained the purpose of the investigation to the interviewees so they did not feel judged or exposed them to problems at their workplace. They would have felt invaded and would not offer all the information available for analysis. There was concern about the risks of confronting the possibility that the sample influence their expression. It was indispensable to corroborate the information with all the data collected, including court documents such as judgments and identify patterns and incongruences to eliminate potential bias. Regarding my possible bias, I handled it by being objective and impartial

in this process. The focus relied on the investigation's purposes no matter what information or expression they made during the conversation. Another aspect I used to avoid bias was to fairly code the data because the intention of this research was to know what happens in the policy implementation process of the environmental crimes stated in the penal code.

Significance

This dissertation relies on a legal, academic, practical, and ecological contribution through the analysis of environmental crimes in Puerto Rico. The analysis I made of this policy provides lawmakers and researchers a new perspective on the implementation processes that had no studies in our jurisdiction until this research. After the approval of the environmental crimes, as stated in the penal code of 2004, no study was conducted to explore this aspect of the law's application, which is necessary to identify its efficiency or failure. With this study I gathered work experiences of real law enforcement officials that scholars had not research or display to date. From the implementation analysis, I brought together the parts of the law and its enforcement practices based on the work experiences of police and district attorney that handled these type of cases. Putting together the pieces of activities and performances, gave me a better understanding ofthe performances when implementing the law that criminalizes acts that endangers nature.

Through these experiences, I suggest alternatives to improve and reinforce the implementation processes as well as address any other gaps within this public policy's application. Policymakers can use this study to apply the suggestions and conduct studies from the findings exposed throughout this investigation. The aim is to make lawmakers

aware and help them acknowledge the importance of researching the effects of their decisions. It is important to discover the effectiveness or failure, strengths and limitations of the laws, and with these types of investigations legislators can improve the law to fulfill its purposes. In addition, it is imperative to identify the perception of law enforcement officials who manage the execution of the policy and determine their impact on the law. Moreover, with this study I intend to empower the island's citizens to defend and protect the environment that is indispensable for human survival as stated by White and Heckenberg (2011).

Nature, as indicated by Bordillo (2011), is a crucial element for living species. Humans are responsible and must commit to the protection of the environment and everything that conforms it. Because of the advances of civilization and the evolution of industries and technology (O'Brien & Yar, 2008; Walters, Westerhuis, & Wyatt, 2013) the environment has deteriorated at a rapid pace. Nature's destruction has caused concern and alarm in countries all over the world. In consequence, countries such as Germany, England, Australia, Spain, the United States, and Puerto Rico (Nevares, 2002) have adopted regulations to control pollution and protect nature. Because of the importance of the environment in our lives, governments approved policies to ensure the secure use and conservation of natural resources. It is necessary to use every mechanism possible to defend and guard our only environment, and criminalization is one of the methods. The significant attention given to the environment is supposed to demonstrate and generate consciousness in society towards the protection and value of our planet's conservation.

Summary

Nature's concern has increase recently within the criminal justice system due to the importance it has gained after the contamination effects that endangers human survival. In Puerto Rico, a series of environmental crimes were adopted within its penal code to help other regulations in the deterrence process (González, 2010; Rangel, 2005). Although these crimes have been in force since 2005, authors such as González (2010) expressed that it seems there are no prosecutions for any of the environmental crimes stated in the code. My aim with this investigation responds to the need for unveiling the implementation performances and views of the environmental crimes in the local scope. To carry out this research, I choose the theoretical foundation conformed by the bottom-up perspective's street-level bureaucracy theory (Lipsky, 1978) and local network theory (Hull & Hjern, 1981). This theoretical framework structured the basis for the analysis of the acquired data from a qualitative methodology approach. A case study design is the most suitable approach for me to obtain and examine the needed data to understand the implementation processes and perceptions about these crimes from 2005 until 2014. I intend to reveal with this investigation the elements involved in the application of these environmental crimes in Puerto Rico and the actual practices of law enforcement personnel. Whit this dissertation I purse to impact different areas of society looking forward to provoking consciousness of the importance of nature and its protection through all means possible. The next chapter incorporates a review of the literature available regarding environmental crimes. Chapter 2 includes research conducted and scholarly articles elaborated related to environmental crimes implementation.

Chapter 2: Literature Review

Introduction

In the process of creating Puerto Rico's Commonwealth between 1950 and 1952, there was a discussion about including the island's natural resources as a constitutional good. In the meetings, members of the constituent assembly argued in favor and against the measure (Senado de Puerto Rico, 1951). The Constitution of the Commonwealth of Puerto Rico was adopted on July 25, 1952. In its 19th Section it declared that "it shall be the public policy of the Commonwealth to conserve, develop and use its natural resources in the most effective manner possible for the general welfare of the community…" (para. 120). After the United States' occupation, a penal code came into force in Puerto Rico back in 1902 that established crimes, not directly stated as environmental harms. Nonetheless, these crimes did focus on actions that could cause physical and health problems on citizens as a result of nature's contamination. An example of these crimes is that because of the production of excessive steam from factories or railways human life could be in danger (P.R. Penal Code § XVI, p. 601).

In the decade of 1970 and onward, the government demanded control of environmental pollution through a series of regulations in the federal jurisdiction, also adopted at the local level. These rules allows the government to prosecute administratively those who violated the law. Although arson, forest fires, and serious damage or destruction come from the penal code of 1974, it was in 2004 that it caught academics' attention. The available literature reivewed focus on four of the eight environmental crimes written in the last code. In 2012, a new code was adopted making

just minor changes to the environmental crimes and again, the attention was over the following same articles: serious damage or destruction, poisoning of public waters, environmental pollution, and aggravated environmental pollution. After this adoption, lawmakers have amended the code, including the environmental crimes (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014). Few academic articles were published regarding this topic and the information available was not clear enough to understand the extent of its application in Puerto Rico's jurisdiction. Because of the scarce material, this investigation refers to peerreviewed academic articles from other countries to seek for the basis of environmental crimes' enforcement and implementation processes.

Research Strategy

I collected the literature for this section through the use of several techniques and from different sources. For the searching process, I searched for on a series of online databases, official government websites, governmental agencies' documents, laws, local news publications, and academic articles. For peer-reviewed search, I accessed the following: Political Sciences Complete: A SAGE fullText Collection, Criminal Justice Periodicals, and Thoreau, available at Walden University's databases. Governmental official websites consulted at the local level were the following: Environmental Quality Board (Junta de Calidad Ambiental), Natural and Environmental Resources Agency (Departamento de Recursos Naturales y Ambientales), Puerto Rico Police (Policía de Puerto Rico), Office of Court Administration (Oficina de Administración de Tribunales), and Office of Legislative Services (Oficina de Servicios Legislativos).

In this investigation I made use of published books related to the fields of criminal justice, procedure laws, criminal law, and penal code to establish Puerto Rico's law authority. For law access, Puerto Rico's juridical websites such as LexJuris and MicroJuris were sites I searched. Lastly, this section contains articles from the following academic journals published in Puerto Rico: Revista Jurídica de la Universidad Interamericana de Puerto Rico, Revista de Derecho Puertorriqueño, and Revista Jurídica de la Universidad de Puerto Rico.

For literature examination, I used a series of keywords to guide me in the research process: green criminology, environmental crime, environmental law, and environmental crime prosecution was used as well as public policy implementation and policy implementation process. Moreover, I used the following words to find supporting information for this study: top-down and bottom-up perspectives, Lyspky's "street-level bureaucracy," environmental crime implementation, penal code, Puerto Rico, Caribbean, Europe, United States, and South America.

Review of the Literature

For this investigation, I included a brief history of the criminal law statutes. This chapter encompasses the first penal code dating back to the transition process of the United States' occupying Puerto Rico's government and subsequent legislations until today. I discussed in this section the legal and jurisdictional implications regarding environmental laws and the environmental crimes in the penal code as well as a brief comparison of the two latest codes and amendments. Further, I offer a summary and analysis of the articles that several Puerto Rican academics published about, as they

stated, the new environmental crimes of the 2004 and 2012 penal codes and the latest amendments. Also, because of the lack of information found in Puerto Rico, I included a series of articles to explain the legal framework of the established in the island as well as procedural materialand Moreover, I incorporated articles published worldwide about environmental crimes to strengthen the literature found of this crimes in Puerto Rico.

Background of the Environmental Crimes in Puerto Rico's Penal Codes

After 1898, the invasion of Puerto Rico by the United States generated a series of changes of our Spanish heritage, governmental, and legal aspects (Nevares, 2005). One of those alterations was the governments' organization consisting of the executive, legislative and judicial branches (Malavet, 1998). Nevares (2005) explained that this transition created a coding commission with the responsibility of reviewing, compiling, and codifying a law system for Puerto Rico in 1901. Nevares also added that the penal code that became law in 1902 had California's code content, which was derived from New York's legislation as well.

In regards to environmental harm, in the code of 1902 there was no particular crime that intended to protect the environment. Although, the code did exposed behaviors that legislators of New York and California criminalized and were related with environmental pollution. The crimes associated with harm towards the environment were and appeared as water contamination, forest fires, and obstruction to firefighters in extinguishing fires, and explosions that could cause harm or death (P.R. Penal Code § XIV, 1902).

The first Puerto Rican penal code following the approval of the Constitution of the Commonwealth of Puerto Rico in 1952 was in 1974, also known as the Law No. 115 of July 22nd. This penal code collected laws from the code of 1902 and tempered to the reality of those years Environmental crimes included in the code of 1974 were arson and serious damage or destruction, with the backup of the Constitution of Puerto Rico' mandate to protect the island's natural resources. Legislators developed a series of laws to regulate and prohibit actions that endangered nature as crimes in the code to enforce this constitutional command. In the code of 1974, one of its sections was titled Crimes against Public Safety (Delitos contra la Seguridad Pública) and it included arson, aggravated arson, forest fires and plantations, and serious damage or destruction (P.R. Penal Code art. 195-198, 1974). These crimes included the penalties to impose and a margin to adjudicate the sentence based on aggravating and mitigating factors. The court also had the discretion to impose restitution.

During a political campaign, a new penal code was drafted to derogate the former law of 1974, which had been in force for 30 years. The Law No. 149 of June 18th of 2004 created a code, later postponed to review the new environmental crimes (Rodríguez Rivera, 2005, p. 994). Through the Law No. 338 of September 16th, the code became legitimate that same year. For clarity and effectiveness purposes, the governor from 2001 to 2005 created a special commission to draft the new code. This special committee included representatives of the Department of Justice, the Environmental and Natural Resources Department, the Senate and House of Representatives' Judicial Commission. Moreover, this commission included one assessor of legislative matters to work on the

environmental crimes revision (Rodríguez Rivera, 2005). The new law intended to temper the legislation, crimes, and sanctions to Puerto Rico's reality (Rodríguez Rivera, 2005), including the concerns for the environmental damages occurring on the island. Although there are regulations that sanctioned environmental harms, legislators included environment related crimes in the code to use the government's most powerful tool, the criminalization of a conduct (Rodríguez Rivera, 2005). The codification of 2004 typified a few environmental crimes from the version of 1974 such as arson, aggravated arson, forest fires, and serious damage or destruction which appeared in the code of 1902.

Today, the new penal legislation operates through Law No. 146 of July 30th, 2012, effective since September 1st of the same year. The code suffered amendments that alter the environmental crime's definition in 2014 (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014). Nevertheless, this new law kept the same environmental crimes of 2004 but modified a series of details, most of them regarding sentence imposition. In the process of evaluating this law, drafters analyzed the 2004 penal code, interpretative jurisprudence from Puerto Rico's Supreme Court and Federal Courts. Further, the Legislature held fourteen public hearings, in which many local agencies participated, including professional organizations (Senado de Puerto Rico, 2011). In this Session Diary it was explained that the new law aimed to establish a balance between the citizen's constitutional rights and the legal goods that must be preserved by the State (Rama Judicial, 2011, p. 40076). This legislative record evidence the few changes made by the Legislature, without amending the environmental crimes.

Comparison of the Environmental Crimes under the Penal Code of 2004 and 2012

Title III of the penal code of 2004 and 2012, on the subject of *Crimes against Collective Security*, has two sections. On both codes, the first section is named *On Arson*, which typifies offenses related to fires. The second section, *Catastrophic Risk*, incorporates other environmental harm including danger to a great extension, water contamination, soil, and air pollution. Because the code of 2012 derogates the 2004 law (see Appendix A), I analyzed the initial legislation and the modifications made to the Catastrophic Risk section. Moreover, a series of amendments were made by the state lawmakers in 2014 to the 2012 code, (see Appendix B), and in this section I display these changes.

Article 240, serious damage or destruction is defined as:

> any person who endangers the life, health, bodily integrity or safety of one or several persons, or who causes environmental damages by provoking an explosion, flood or landslide through the demolition of real property, or by using toxic or asphyxiating gas, nuclear energy, ionizing elements or radioactive material, microorganisms or any other substance that is hazardous to health or has destructive capacity shall incur a second degree felony. If the acts listed under this crime are performed recklessly, the offender shall incur a third degree felony. The Court may also impose restitution. (P.R. Penal Code, 2004, p. 90)

The changes in 2012 included renumbering the article from 240 to 234, and a fifteen-year imprisonment punishment. Further, legislators added the violation of the law, regulations or permits, and provided the definition of toxic substances as written in the

Environmental Quality Board and Environmental Protection Agency ruled (Junta de Calidad Ambiental, 1998, p. 52; 40 U.S. Code § 261.31; 40 U.S. Code § 261.32). Finally, legislators established in the article an imprisonment term of three years for reckless offenses. The amendment in 2014 states that for an action executed by a citizen with the intention of causing the act the sanction is a fine of up to $50,000. Law makers added to the article that for reckless behavior, the court will impose a fine of up to $10,000 (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014).

> Article 241, poisoning of public waters forbid:
>
> any person who endangers the life or health of one or several persons by poisoning, contaminating or otherwise dumping substances meant to destroy human health into wells, deposits, bodies of water, pipelines or watercourse used for human consumption and supply shall incur a second degree felony. If the acts listed under this crime are performed recklessly, the offender shall incur a third degree felony. The Court may also impose restitution. (P.R. Penal Code, 2004, pp. 90-91)

For the code of 2012, the article's number was changed by the legislature to 235. Another modification made was the inclusion of the elements of the offense, rulings or permit violations. In terms of penalties, legislators included incarceration for up to 12 years and three years for negligent conduct (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014). The last modification made on 2014 stated that the sanction for the violation of this law with intention is a term of

imprisonment of fifteen years. If a person commits this crime, he/she carries a punishment of up to $50,000 in fine. If the offense occurs from reckless conduct, the penalty could be up to $10,000 fine (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014).

Environmental pollution - Article 242 states that:

> any person who unlawfully performs or provokes, directly or indirectly, emissions, radiation or spills of any sort on the ground, into the atmosphere or into superficial, underground or maritime bodies of water seriously endangering the health of persons, the balance of ecological systems or the environment shall incur a fourth degree felony. The court may also impose restitution. (P.R. Penal Code, 2004, p. 91)

In 2012, this article was renumbered by Puerto Rico's legislators to 236 and changed its fixed term of imprisonment of three years. The current version of this crime states that the judgment for a citizen is up to $50,000 fine. Lawmakers also enhanced by including acts that violates the law, regulations or permits (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014).

Article 243- aggravated environmental pollution occurs when:

> the environmental pollution crime established in Article 242 is carried out by a juridical person without the corresponding environmental permit, endorsement, certification, franchise or concession, or is carried out clandestinely or has failed to comply with specific provisions issued by the environmental authorities for the correction or suspension of any unlawful act, or if it submits false information or

> omits information that is required to obtain the corresponding environmental permit, endorsement, certification, franchise or concession, or otherwise hinders or interferes with an inspection conducted by the authority with jurisdiction, said juridical person shall incur a third degree felony. The Court may also suspend the license, permit or authorization and impose restitution. (P.R. Penal Code, 2004, p. 91)

The code of 2012 renumbered this article as number 237. Legislators changed the juridical person or legal person concept for person only, which allows prosecuting individuals for this crime. Moreover, the article now includes an eight-year imprisonment if found guilty (Ley de enmiendas significantes a la Ley Núm. 146 de 2012, Código Penal de Puerto Rico, 2014). The 2014 adjustments made specifications of the offenders. The changes states that a citizen found guilty faces an eight-year imprisonment punishment. A legal person could confront a fine of up to $30,000.

Brief Puerto Rico's Substantive and Procedural Laws

The procedures and practices of Puerto Rico's political and judicial system work and are regulated by the United States government since the end of the Spanish-American War. Spain gave Puerto Rico to the United States through the Treaty of Paris in 1898 ratified in 1899. In this process, the United States Congress gained control over Puerto Rico's political condition and the inhabitants' civil rights. In the transition from the Spanish to the United States rule, a federal Organic Act was implemented, known as the Foraker Act of 1900, which created the Three Branches of Government. Later in 1917, a second Organic Act superseded the Foraker Act. The Jones-Shafroth Act granted Unites

States' citizenship to Puerto Ricans and created the Senate of Puerto Rico, among other things (Malavet, 1998; Ramos, 1979).

As part of the powers granted by the Commonwealth of Puerto Rico to legislate within the island's jurisdiction, the legislature developed a series of governmental agencies to protect nature. The surge of environmental legislation intended to enforce a constitutional statute. Article VI, Section 19 of the Commonwealth of Puerto Rico of 1952, says that the government shall conserve and use the island's natural resources (López, 1999). Puerto Rico's Supreme Court cases support the mentioned constitutional statement. In Bordas & Co. v. Secretario de Agricultura (1963) establishes that the public power of the local government includes flora and fauna. Also, in Colón Ventura v. Méndez (1992) stated that the protection of the environment and the natural resources of Puerto Rico comes from the Constitution (Malavet, 1998). Furthermore, Malavet also cited Arenas Procesadas, Inc. v. ELA (1993) case to explain that the State can approve regulations in defense of the communities' health, security and wellbeing (Malavet, 1998). This jurisprudence sets precedents to show the authority the Commonwealth of Puerto Rico has to create laws and regulations in favor of the environment and human health.

From this constitutional mandate, Law No. 9 of 1970 titled Environmental Pubic Policy Act, was created to maintain environmental quality and human development. The act's intention was to encourage harmony between humans and nature by incorporating public and private practices while fulfilling societal needs for present and future generations (Ley sobre Política Pública Ambiental, 2004). This law established the

Quality Environmental Board, which is the agency responsible for the protection and conservation of the environment and regulates pollution emissions on the island. After the creation of the Environmental Public Policy Act, a series of agencies were built to address pollution control regulation practices, as well as environmental issues and crime prosecutions such as the Natural and Environmental Resources Department.

These governmental agencies are administrative and organized under the Uniform Administrative Procedure Act of 1988. This act structures the agencies at an administrative level ensuring a series of procedures within the organization that allows quasi legislative authority because it can create internal laws and quasi judicial power because it can solve disputes within the agency. The Uniform Administrative Procedure Actstated that every agency of the Government of Puerto Rico must establish regulations and protocols. The purpose of these guidelines was to provide informal resolution to controversies regarding aspects related to the agency's expertise. In this manner, Puerto Rico's Supreme Court in Hernández Montero v. Cuevas, Director (1963) ruled that the due process of law also applies to the administrative sector (Malavet, 1998).

The Quality Environmental Board in 1988 approved the Administrative Process Hearing Rule and the Natural Resources and Environmental Department in 2002 authorized an Administrative Procedure Rule. These official agency's rules were created, according to the Uniform Administrative Procedure Act, to structure the administrative organization and practices to solve controversies. Both rules contain quasi judicial guidelines in terms of the components and faculties of an Examination Board. This board hears and makes determinations regarding a situation for which the agency has expertise.

It also creates procedures and order of evidence presentation, witnesses' interrogation, and sanctions' imposition (Reglas Procedimiento Administrativo Uniforme, 1988; Reglas Procedimiento de Vista Administrativa, 1998).

Parallel to the administrative procedures of governmental agencies, Puerto Rico's criminal law focuses on the intervention, investigation, and prosecution of law offenders (Nevares, 2005). Nevares indicates that two of the criminal law's purpose are deterring citizens from committing crimes and punishing any criminal behavior established in the penal code or special legislation. Puerto Rico's criminal coding contains environmental harms such as arson, aggravated arson and reckless arson, and forest fires since 2004. Further, serious damage or destruction, poisoning of public water, environmental pollution, and aggravated environmental pollution are also covered under the code. These environmental crimes incorporated in the penal law tries to prevent and deter actions against nature and human health and criminalize offenders as a last resource. For the government's intervention, law enforcement agencies personnel must follow the legal guidelines of prosecution stated in the Criminal Procedures Rules (Reglas Procedimeinto Criminal, 1963).

Within the public and administrative scenarios, there is a doctrine called primary jurisdiction, which establishes what governmentl agency shall intervene first to solve a particular matter in controversy. This primary jurisdiction depends on the subject matter to address or relies on the competency of the case based on the agencies' expertise and their administrative capability to see and rule over the controversy (Ortega, 2008). Ortega explained that the doctrine has a twofold meaning because the court may have exclusive

primary or concurrent jurisdiction. In both, the administrative or judicial forum, a party could initiate the process to solve an environmental dispute (Ortega, 2008). The primary jurisdiction doctrine is closely related to the exhaustion of administrative remedies doctrine. The exhaustion of the administrative remedies states that every party must first use every administrative procedure before any judicial intervention (Padilla Falu v. Administración de Vivienda 2001). Administrative remedies can avoid court litigation when the matter in controversy can initiate and conclude within the agency's parameters (Ortega, 2008). Ortega added that when all administrative remedies have been exhausted, the court will have a better-documented file for a fundamental decision-making process.

These substantive and procedural laws are what constitutes Puerto Rico's structure in competencies and jurisdiction for the administrative and penal operation. From the Constitution of Puerto Rico, the supreme right for the conservation of the natural resources was granted. After this constitutional disposition, agencies were created to address environmental regulation and protection structured by the Uniform Administrative Procedure Act. Later in 2004, environmental crimes were included in the penal code. The intention of explaining the primary jurisdiction and exhaustion of administrative remedies doctrine was to make clear that there are more than one authority to initiate and prosecute any regulation or law offender.

Environmental Crimes of 2004 and 2012 Puerto Rico's Penal Code

Several scholars and student researchers from Puerto Rico have published articles related to the inclusion of new crimes that focus on the environment. The legislation of these crimes has produced different perspectives in favor of its creation and approval as

well as concerns and criticism to this legislative decision. These articles exposed the authors' viewpoint regarding the environmental crimes, as well as their explanations of these crimes based on federal and local legal statutes from 2004 until the last publication in 2014.

Rodríguez Rivera's (2005) an Associate Professor of the University of Puerto Rico's Law School favored the inclusion of the environmental crimes within the recent 2004 approved penal code. He stated that the new environmental crimes are the beginning of a philosophical transformation in the relationship between human beings and the environment (p. 1018). Rodríguez Rivera mentioned several construction projects that had been compromising and damaging the island's natural resources. Here, the author argued that it is necessary to regulate the behavior of society in terms of environmental protection. He claimed that Puerto Rico's delicate ecosystem, overpopulation, and the development of industries and construction continuously destroy the environment (p. 1019). His deposition supported the inclusion of the environmental crimes within the criminal law for its intention to modify the behavior of offenders through criminal sanctions (p. 1019). Furthermore, Albin Eser, a German jurist stated the significance of the legislation of environmental crimes in the code. He expressed that this inclusion allows citizens to notice that environmental affairs are important for the government.

However, other articles criticized the creation of environmental crimes in the penal law saying that it arouses confusion in terms of the real focus of these offenses. Several authors indicated that the environmental crimes aim to deter acts against the

environment through criminal prosecution of those who break this law (González, 2010; Marrero, 2014; Rangel, 2005). Consequently, its purpose will promote changes in people's intention of occurring in this type of behavior (Rodríguez Martín, 2005). Deterrence may become effective when the sanction diminishes the earnings or benefits when found guilty of violating the law (González, 2010). An example is when industries violate these laws since it could be more expensive to make the arrangements to avoid pollution than to pay the state's sanctions for violating the guidelines for toxic materials disposal. González also added that the actual prosecution and punishment of the offenders would generate a deterrence effect.

These authors recommended alternatives to avoid criminal sanctions. Fontanet (2006) used the legal principle of *ultima ratio* for the state to use in the criminal law's application scenario. This terms refers to the use of a last resource, in this case the criminal prosecution. Another recommendation was to practice *minimum intervention* (Renta 2013). Fontanet (2006), González (2010), Montalvo (2011), and Renta (2013) stated that the criminal prosecution should take place after the administrative or civil mechanisms have failed. This process allows the agencies with expertise in environmental situations to address and solve the cases before making use of the court proceedings, known as *primary jurisdiction* (González, 2010). The criminal law did not provide regulatory or management guidelines, only criminalize and produce deterrence effects. For this reason, as González (2010) and Renta (2013) explained, the criminal law shall and can be used to support the enforcement of the regulatory statutes.

Chiesa and San Miguel (2006) and González (2010) disapproved in the inclusion of the environmental crimes in the penal code because of the extensive regulations available. The federal and local legislation have developed laws to address environmental harm and to criminalize offenses to the environment as well as to regulations, licenses, and permits. These authors stated that the laws and regulations of the local and federal sphere already cover what the environmental crimes in the code intent to sanction. They also deemed unnecessary the inclusion of these crimes in the coding legislation. Further, the authors explained that Puerto Rico's Environmental Quality Board is an exact reproduction of the federal ruling as required by the own federal law (Chiesa & San Miguel, 2006, p. 544). Fontanet (2006) expressed his concerns about the application of the environmental law and suggested that special legislation and the code's crimes could lead to double jeopardy. The existence of particular and general law towards the criminalization of the same practices may generate confusion and division in the process of implementation (Renta, 2013).

Not only has the multiple environmental legislations been the object of critics, but also the content of these crimes. The legislation of these environmental offenses is ambiguous about its reach and application (Fontanet, 2006; González, 2010). Chiesa and San Miguel (2006) called it a catastrophe (p. 531). An example of these issues is the definition of serious damage in Article 242 of 2004 penal code and Article 236 of the version of 2012. Neither of the two codes exposed a clear definition of what serious damage is. Also, it limits the pollutants that endanger the environment (González, 2010)

since the existence of other numerous contaminants not stated in the articles could carry damage to the environment and human health.

Implementation of Environmental Crimes in Puerto Rico

Scholars expressed their concern and points out several reasons why the environmental crimes stated in the penal code cannot be enforced and prosecuted. Rangel (2005) indicated that Puerto Rico needs a clear and complete public policy that establishes when to implement a criminal or administrative procedure. There is an ambiguity of when to apply a criminal prosecution since the general and special laws carry penalties for the same offenses (Rangel, 2005, p. 110). Therefore, Chiesa and San Miguel (2006) agreed with this argument. The authors explained that the process could be arbitrary since the State's action can start in the administrative area or in the criminal sphere. This uncertainty can cause procedural obstruction due to the unclear reach of the similar penal code's environmental crimes and special legislation sanctions. González (2010) expressed that although there is a vast local and federal environmental law, the environmental laws are inefficient in fulfilling its purposes (p. 1198).

Moreover, academics argued that the inclusion of these environmental crimes in the penal code has been, rather than unnecessary, a *dead letter* (González, 2010; Montalvo, 2011). González cited a newspaper report (Rivera, 2008) that informs about the investigation of 12 environmental cases and one prosecution. Using this information, the author stated that there is no significant jurisprudence of these cases to shed light of its implementation. The author also added that after the creation of these environmental laws, there is no available evidence of the deterrent effect. Marrero (2014) went further

when she assured that there has been no individual or legal person prosecuted for these crimes (p. 96). Her statement is incompatible with the information recovered by Gonzalez (2010) who mentioned that there is at least one case prosecuted for an environmental crime.

González (2010) identified another situation regarding the environmental crime's implementation. She emphasized the difficulties in coordinating and achieving harmony between the general environmental law and the specialized environmental legislation. This struggle might be a reason there are no prosecutions for these offenses against nature typified in the penal code, González said. Rangel (2005) called for the attention of the criminal justice system, specifically the Department of Justice of Puerto Rico, to decide its competency and to address and implement environmental crimes (p. 115). González (2010), as well, indicated that the environmental agencies or the Department of Justice in Puerto Rico have not adopted guidelines to attend and prosecute environmental crimes (p. 1209). Fontanet (2006) suggested that the criminal justice system and the environmental authorities give prompt attention to the enforcement process. As soon as prosecution guidelines are established, confusion about enforcement of these laws may fade and allow law enforcement agents to intervene and district attorneys to put on trial these offenders. Moreover, González (2010), Marrerro (2014), and Montalvo (2011) stated that the lack of prosecution of environmental crimes does not allow Puerto Rico's courts to express their opinion regarding these type of offenses and their enforcement. The poor information available from the court system makes it difficult to corroborate or at least

identify any sign of the effectiveness of environmental crimes' application (González, 2010).

For implementation purposes, it should be noted that federal legislation does not limit or prohibit that lawmakers of each local government create laws to address a particular subject. Although Puerto Rico is not a state, for judicial matters it is (González, 2010). In the cases where federal and state law penalizes identical actions, *concurrent jurisdiction* may proceed (Ortega, 2008). Concurrent jurisdiction means that both courts, federal and local, may continue their course over one single case unless the federal ruling expresses exclusivity, Ortega explained. Jurisdictional implications do not interfere with the implementation process of the penal code's environmental crimes in Puerto Rico. Hence, federal and local legislation would not be an obstacle to the application of these crimes.

Authors have made several statements about the misinterpretation of the general criminal law in terms of its application. Fontanet (2006) argued about the existence of contradictions in the implementation through error and negligence of the penal code's environmental crimes prosecution. He stated that these crimes are not apparent since they do not specify the circumstances of error and negligence in the commission of this offense. To make the analysis, the author must review the entire code and its general principles that clearly define the legal concepts of error (Art. 29) and negligence (Art. 23). Also, identify the elements of error that states that any person who commits an act in response to an essential error that excludes intent and negligence shall not be held liable (P.R. Penal Code art. 29, 2012, p. 13). Fontanet's arguments are not valid since the code

established the circumstances that must occur to determine the presence of a negligence or an error.

Similar to Fontanet's perception, Chiesa and San Miguel (2006) also criticized that the environmental crimes of the penal code did not include attempt and intention. The authors mentioned this concern because a person that attempts an environmental crime is punishable as if the crime was commited with intention. What applies here is the penal code's general aspects that also establishes the concept of attempt (P.R. Penal Code, art. 35, 2012, p. 14). The totality of the circumstances of the act will determine, through these definitions of intention or attempt of the offender, to prosecute.

Likewise, Chiesa and San Miguel (2006) expressed that two of the environmental crimes can carry a sanction of murder even if committed by negligence. Again, the crimes do not have to specify the criminal mind state. For all crimes, the assumption is that in every act committed the individual has the intention to cause it. However, the circumstances will determine whether it was a negligence, error, or attempt, clearly defined in the general law. The legal aspects discussed above need further explanation since they relate to the implementation process of the environmental crimes. The lack of transparency of these legal terms can lead to misunderstanding of the concepts, which can turn into an obstacle in the prosecution of the offenses towards nature.

Within the recommendations to improve the articles of the penal code, these authors offered some superficial suggestions to develop social, economic, policy, and legal transformations. One of the ideas proposed was to create a balance between social development and natural resources (Rodríguez Rivera, 2005). This statement leaves us

clueless regarding the methods to achieve this proposition as well as the results the author wants to obtain. Meanwhile, Fontanet (2006) and Rangel (2005) stated that lawmakers must give immediate attention to the implementation process and make clear the strategies to apply this law. Furthermore, these authors did not provide specific modifications or methods to help the enforcement personnel attend the environmental crimes' prosecution. Also, Rangel (2005), as well as Renta (2013) and Marrero (2014), proposed that public policies about environmental laws need to determine the competence of criminal or administrative sanctions precisely. Neither of the two authors made clear how to define the jurisdiction of both implementation sources. From Renta (2013), I can assume he suggested as an alternative to practice the primary jurisdiction principle. Also, Rangel (2005) recommended primary jurisdiction as a start in solving the jurisdictional issues, although, there would be procedural problems in identifying criminal and administrative offenses.

Chiesa and San Miguel (2006) presented specific amendments to the articles to avoid misinterpretations. The authors considered modifications to these environmental crimes, adding intention and negligence, as well as tentative within the definition of each. These academics added a new article that included and described the elements of error and due diligence to avoid mistrials. Another important issue Chiesa and San Miguel (2006) and Fontanet (2006) highlighted was that legislators need to define the extension and the damage caused by committing these crimes. The damage must be specified and established by law to prosecute reasonably and impartially these crimes respectively.

Moreover, authors suggested to temper the crimes of the penal code and the offenses of the special laws and regulations (Chiesa & San Miguel, 2006; Renta, 2013).

Collaboration between agencies, specifically the police and Department of Justice (Fontanet, 2006; Rangel, 2005) and the natural resources agencies (González, 2010), was suggested. The creation of prosecutors and police divisions with expertise in the area of environmental law and crimes (Fontanet, 2006), trained in the investigative and prosecution process (González, 2010) was also recommended. Furthermore, González said to implement what is being practice in other jurisdictions, that personnel of the criminal justice system receive training and become qualified in criminal investigations and proceedings, in the federal and local level. Moreover, she emphasized in the creation of interagency groups integrated by the Department of Justice, environmental agencies, and Police Environmental Departments as in Massachusetts.

Implementation of Environmental Crimes Around the World

New Orleans, United States

Uhlmann (2014), an Assistant U.S. Attorney ("AUSA") of the U.S. Department of Justice's Environmental Crime Section, made reference to a talk given by Attorney General Richard "Dick" Thornburgh, at that Environmental Law Conference in 1991, where Thornburgh spoke about environmental enforcement efforts (p. 162). The author expressed that the Congress provides unclear guidance regarding the processes of the administrative, civil, and criminal spheres of prosecution. The AUSA provided scope to interpret that Congress' lack of specificity of prosecution relies on allowing the prosecutorial discretion of judges (p. 164). For this reason, Uhlmann developed a three-

year study involving 120 students from the University of Michigan Law School that reviews EPA cases from 2005 to 2010. He interpreted the findings and said that within these cases there were one or more aggravating factors present in the prosecutions, and the ones with no aggravating factor did not result in criminal prosecution.

The author stated that environmental laws are too extensive and uncertain in terms of prosecution, and there was ambiguity in the academics' responses to those concerns. There is also ambiguity over jurisdictional decisions due to the lack of laws' clarity and specificity and the fact that the same acts can go through the civil, administrative or criminal action. He highlighted the fact that Congress can be more precise about environmental crime cases jurisdiction, prosecution, and the level of mental state to make the offender responsible for the crime. Moreover, the author indicated that criminal procedures depend on which agency the cases are submitted first rather than based on the presence of criminal conduct.

To conclude, the author said that the identification of one aggravating factor can be helpful in the jurisdictional decisions and process these cases through the criminal apparatus system. Through this investigation, Uhlmann proposed alternatives to improve the understanding of criminal enforcement in environmental cases. He suggested the prosecution of offenses that involved one or more aggravating factors such as *significant harm*. The author defined significant harm as serious injury or death, knowing or negligent endangerment, animal death, clean-up costs, evacuations, and emergency responses (p. 197). Other aggravating factors he mentioned weredeceptive or misleading conduct, operating outside the regulatory system and repetitive violations (pp. 198-203).

New York, United States

Periconi (2009) characterized New York's environmental crimes legislation as "well developed", in which the state and local authorities possess adequate resources to investigate and prosecute these types of offenses. Although, only four counties of New York have active programs for environmental crime's attention, Suffolk, East End of Long Island, Nassau, and Westchester these have dedicated resources to prosecute environmental offenses. The majority of environmental cases are assigned to these counties since they have attorneys devoted to the prosecution of these crimes. An example is Westchester that has one assistant district attorney with almost three decades of experience in charge of two veteran investigators. Moreover, these prosecutors had the knowledge to review each case before any juridical, civil or administrative actions to segregate them and assigned them to the apparatus system that best suits the offenses.

Periconi indicated that the fact that, to found an accused person guilty, it is required to proof beyond a reasonable doubt the offender committed the crime, the prosecution process becomes more complicated. Another issue that affects trials is the lack of attorneys assigned to environmental cases. There is only one prosecuting attorney for the entire state. An additional situation that enhances difficulties to prosecuting these crimes is that there are very few, or no resources destined to investigate and indict these offenses. The author expressed that, unlike previous decades, there were attorneys assigned of charging felonies and pursuing actions against these offenses with available resources to accomplish this objective. Furthermore, juries were educated about how to evaluate environmental crimes. A concern associated with the decline in environmental

crime prosecution, as the author explained, has to do with the ambiguity of the law and the uncertainty of criminal, civil, and administrative jurisdiction.

In New York, there are no jail sentences for environmental crimes. Consequently, Periconi argued, judges and society perceive environmental crime as less harmful in comparison to traditional crimes such as murder or robbery. This perception seems to influence judge's decisions when imposing sanctions for these crimes. Also, the author mentioned a possible political impact in the process of prosecution and distribution of resources. The author associated the direction of former governor George Pataki, known for being business friendly, with the decline in prosecution of environmental crime during his administration (p. 16).

The author recommended that civil enforcement take charge of the imposition of substantial fines, in proportion to the damage caused. Also, he suggested that the state set a goal for environment compliance in which the offender signs a commitment to restore the damage caused. This compliance is followed by continuous surveillance to make sure the offender is fulfilling honoring the signed commitment. The agreement may be possible with the civil and administrative direction since these two have the trained personnel for environmental cases. In addition to these references, Periconi explained that the publication of the industries prosecuted for an environmental crime would help to decrease the commission of environmental crimes and achieve a deterrent effect.

Oregon, United States

The editor of the *Journal of Environmental Law and Litigation,* interviewed Attorney General John Kroger to learn about his experience in the prosecution of

environmental crimes in the State of Oregon. Long (2011) cited Kroger when stating that the mission of Oregon's Department of Justice. Kroger said that the purpose of the department is to investigate and prosecute environmental crimes as well as to protect nature. In the interview, Kroger talked about the difficulties the Department of Justice confronted before he became attorney general. One of the challenges encountered, he said, was the fact that there were no fulltime prosecutors committed to environmental crimes, which lead to the examination and trial of very few cases. He highlighted the inapplicability of the stated laws, which also was happening in the other 36 district attorney's offices. Moreover, Kroger explained that environmental crime investigation and prosecution need extensive resources, often not available, as well as expertise in the area because of the complexity of the field. This issue leads to unprepared personnel to address environmental crimes. Further, the ineffectiveness of prosecution worsens due to the lack of resources and budget for the investigations and judicial processes.

To address these issues, the Attorney General Kroger organized two teams under his supervision, one to focus on litigation and court processes and the other to work in collaboration with state's organizations. The two teams collaborated in the investigation and prosecution of environmental crimes through the dialog of agencies and the law and procedural expertise in court. His direction concentrated on intentional wrongdoing rather than on accidents. This focus helps in the process of criminal trials as well as in identifying and prosecuting repeated patterns of offenses. The other cases go through civil or administrative proceedings for its best attention. The decision whether to prosecute criminally or proceed with cases within agencies depends on the conversations

between agencies and the lead environmental crime district attorneys of the U.S. District Attorney's Office. Agencies and prosecutors must communicate because, as Kroger stated, sometimes a case seems to be criminal but after analysis, it is better addressed by the administrative structure. Regarding budgetary challenges, Kroger established a fund destined to provide economic support for investigations and prosecutions of environmental crimes in his district.

In Oregon, the majority of cases resulted in fines and probation, rather than in imprisonment, which is mostly imposed by the federal government. This state's environmental guidelines do not support the imposition of jail for environmental crimes convictions. Although there have been very few imprisonment sentences, Attorney General Kroger believed his project promotes and achieves a deterrent effect. He explained that his persistence, structure, personnel, monitoring, enforcement funds, and focus on intentional offenses had provided a strong presence to the Department of Justice in Oregon. Kroger commented that the criminalization of this conduct is for people who know what actions to commit and avoid. Therefore, there is a need to prosecute environmental crimes for the purpose of reducing their commission. On this subject, he expressed that people in the community have stated that many industries now operate strictly by law and based on environmental regulations after their intervention. It means that Kroger's project carries the deterrent effect expected from the criminalization of offenses against nature.

Australia

Rob White (2010) detailed the limitations and possibilities of nature's harm prosecution and sentencing through the description of environmental crimes and nature's protection in Australia. The author defined environmental crime as an unauthorized act or omission that violates the law, subject to criminal prosecution and sanctions. The offense harms and endangers people's physical safety or health as well as the environment itself (p. 366). The intention of the inclusion of environmental damage into the criminal law is to transform society's behavior towards a positive ecological direction (p. 366). For this reason, Australia operates at the federal and state or provincial levels in environmental protection legislation, community education of environmental issues, constant observation and examinations for environmental quality. In terms of implementation, the government protects and conserves nature, promotes sustainable use in terms of producing-consuming and exchanging resources laws, ensures a clean environment, and the protection of biological diversity.

Australia's government has guidelines to get involved in environmental harm issues. Protocols lead over aspects of precise legislation, the gravity of the environmental harm, recidivism, inter-agency coordination, and actions to promote deterrence, society's perception of environmental crime, and others. Furthermore, these guidelines estaclishes that government agencies' personnel must meet goals in terms of establishing alliances with executives of industries and community leaders. The purpose of this partnership is to compel in helping the state to prosecute environmental crimes using an economic and social view. Australia justice system processes environmental harm, besides criminal

prosecution, through administrative and civil practices. Of both procedures, civil actions work faster and more efficiently since there is a low burden of proof required for trial (p. 371).

White explained that the governmental efforts have been inadequate to acomplish the states principles. In terms of surveillance, the monitoring has failed within agencies because of the occasional observation. Also, the author communicated that although there are extensive regulation and enforcement guidelines already in force, environmental offenses have increased. Another issue White found was the insufficiency of human resources and instruments to detect environmental pollution. The author also denounced the lack of tools to investigate and identification of offenders on these cases. Law enforcement personnel had limited knowledge to determine and handle environmental crimes as well as to identify pollutants and the effects to human health. Moreover, crossjurisdictional and interagency collaboration seems difficult to harmonize.

White cited an analysis of law enforcement practices in Brazil, Mexico, Indonesia, and the Philippines that found a common denominator in terms of intervention and prosecution issues. The problems in these countries relate to reduced interagency cooperation, inadequate budgetary resources, and technical deficiencies in law (p. 376). Also, agency policies, and procedures, insufficient technical skills and knowledge, lack of performance monitoring and adaptive management system impedes an effective criminal action (p. 376). Australia is confronting the same dilemmas as the countries studied in the mentioned analysis.

Another issue presented by White responds to the judgment of magistrates. He stated that adjudicating sentences relies on judges and they do not impose severe sanctions. The author suggested that magistrates' performances depend on the fact that they are not aware of the seriousness and consequences of environmental crimes. Consequently, the imposition of low amounts of fines does not promote the desired deterrent effect, specifically involving corporations.

The Australian government uses alternative sentencing mechanism depending on the circumstances of the environmental harm. One of these options relies on the publication of the offense that is described as a powerful deterrent effect on the person who commits it and for society in general (p. 370). Further, the state makes use of projects of restoration accompanied by monitoring activities that help the community affected by the damage caused. The author mendtioned an important aspect to highlight, which is that there is no imposition of jail time for environmental crimes in Australia. For alternative punishment, the state suggestes to put into practice a voluntary, negotiated written promise for the offender to compel restoration as well as a commitment to change behavior (p. 374). On the other hand, New South Wales has developed a sentencing database with detailed information on judgments, laws, publications, and conferences. Moreover, archive provides convictions, offenses, and penalties statistics, as well as characteristics of the seriousness of the crime and an offender's profile.

White suggested a series of methods that would help in the process of intervention, investigation, prosecution, and sentencing. The author recommended a proportional sanction against offenders that will depend on the damage to nature and the

juridical person, as well as other considerations. Also, he supported vigilance's expansion and the establishment of trained personnel with technical knowledge equipped with proper tools to intervene and investigate environmental crimes. These practices will increase arrests, provide quality evidence, and intensify prosecutions. White explained the importance of the justice system's development of capacity to prosecute environmental crimes, determine when the act should undergo criminal, civil or administrative proceedings. The state must enforce the compliance of sentences by monitoring through the court, civil or by administrative personnel, also an adequate combination of criminal and civil penalties with alternative sentencing. For this subject, the author mentioned that the United Kingdom established a guide for judges to identify the gravity of the environmental crimes. The protocol's aim is to guide judges in the process of sentencing by determining the criteria to impose sentences and what to do for specific cases such as an environmental code of practice (p. 368). Also, one aspect that White accentuated is that the social perception of environmental crimes affects the trial process by the judgments of the magistrate.

South Eastern Europe

Eman, Meško, Docovšek, and Soltar (2013) analyzed the responses of South Eastern Europe governments towards environmental crimes, as well as the advances of green criminology in the region. The authors mentioned that the countries they explored were the former countries of the Socialist Federal Republic of Yugoslavia, featuring Bosnia and Herzegovina, Croatia, Kosovo, Former Yugoslav Republic of Macedonia, Serbia and Slovenia (p. 343). The authors highlighted that the environment is being used

as a method to acquire profits. One of the factors the authors suggested involved the practices of the "powerful and rich's" influencing legislation approvals to fall in favor of their interests. *Green criminology* studies these performances. Green criminology is defined as the study of environmental harm, environmental law, and environmental regulation made by criminologists (p. 342). The academics explained that in South Eastern Europe these concepts introduced by Lynch back in 1990 are still in the development process and expanding towards different areas of research.

The authors analyzed separately the countries of the Socialist Federal Republic of Yugoslavia to detail the environment resources being impacted and the responses towards these harmful activities. To summarize their investigation, I identified the most important denounces. The authors explained that almost all the districts have problems with air, water, and soil pollution, deforestation, and timber traffic. Other issues include: animal torture; coal and natural mineral mines exploitation; illegal logging; excavation of minerals; illegal and excessive hunting and fishing; illegal animal, plant, mineral and fossil trafficking. Furthermore, they recognized the inefficiency of waste management, hazardous waste burning, organized crime, and corruption featured as problems in these territories. The investigators made clear that industries are the major polluters of the environment.

The authors underlined five groups affecting the environment is Slovenia: individuals, rich and powerful, interest groups, transnational and the state or ruling authority. Theyconcluded that crimes against nature are related to anthropocentric attitudes towards the environment (p. 350). Law enforcement agents in Slovenia

investigated approximately 145 cases of environmental crime a year. However, exploring the issues surrounding police practices, and prosecution, the difficulty is collecting evidence that can be effectively used to accuse and to identify the offenders. Another problem faced by the authorities of Slovenia is the poor cooperation from citizens who do not report environmental crimes. People do not alert the local authorities of these crimes due to lack of knowledge of what is an act against the environment or because of fear of retaliation. Moreover, criminal law, as the authors expressed, limits the performance within the environmental protection area because of the unclear definitions and processes. Additionally, law enforcement personnel also claimed lack of cooperation from experts in the field and environmental protection agencies, as well as a low budget for these investigations and procedures.

On the mentioned concerns, these academics suggested cooperation with other agencies to solve enforcement and prosecution procedures. The recommended developing in detail the concepts of environmental laws and establishing the consequences of committing these type of crimes, as well as intervention guidelines. They proposed avoiding the duplicate and constant changes of the law that can interfere with the investigative and court processing practices. In addition, they envouraged the cooperation of agencies and experts to help in the intervention and judicial stages. Furthermore, these authors advocate for adequate and suitable investigation and procedure methods as well as education for law enforcement officers, environmental protection inspectors, and state's attorneys.The authors affirmed the importance of cooperation with the scientific community. Also, their suggestions were towards the creation of university courses as

well as the development of collaboration between society and non-governmental organizations and interactions with international experts on the environment. With all these alternatives, the authors advised that the most important practices to achieve are raising awareness, prevention, and deterrence (p. 346).

Spain

Álvarez and García (2009) conducted a research to analyze a series of variables that influences the jury of a trial in the deliberation process of environmental cases. In Spain, forest fires not only affect human health and ecological balance, they also have an economic impact that has exceeded €2,000 million euros. Almost 60% of forest fires have been attributed to arson and environmental crime established in Spain's penal code, amended in 1996. The code defines arson as an individual deliberately initiating a fire with a motive such as pyromania, revenge, organized crimes, religious rites, and others specifically expressed in the law's article. Legislators in Spain placed the environment and natural resources as an interest legally protected by the state. These came from the fact that almost every country has adopted the right of a healthy environment in their respective constitutions. On this subject, the authors expressed that environmental issues have exceeded both science and technology to become a political problem (p. 513).

Spain's penal code criminalizes those conducts that can result in serious danger to nature's balance. The law established that a person convicted of a forest fire can be sanctioned with up to 20 years in prison, although, many have escaped this sentence. The authors stated that environmental crimes can become invisible because these offenses are not recognized or perceived by society as severe and harmful actions. In the case of

arson, it is difficult for investigators to find the causes and even more challenging to find a suspect.

Investigative complications rise because perpetrators often make use of methods that allow them to initiate fire and easily escape or not leave traces. The authors mentioned statistics from 2005 in which there were 5,942 cases of forest fires investigated and out of the 3,302 that were considered a crime, only 381 were prosecuted. Regarding these statistics, Álvarez and García affirmed that there are poor administrative practices of statistical data that do not allow a proper analysis of the elements for a prosecution or unprocessed cases. The authors argued that a factor affecting these prosecutions has to do with the juries' verdicts. They stated that people perceive arson as a less serious crime (p. 515).

In Spain, the AngloSaxon model was implemented within its judicial system. Nine members of the jury reach a verdict without any legal knowledge, different from other countries in Europe where the composition of the panel consists of individuals who have and do not have legal knowledge. From this perspective, the authors insisted that jury's personal attitude in the trial can serve as bias in the prosecution process. For this reason, they created an investigation using the Likert-type scale with 20 items and the Revised Legal Attitudes Questionnaires to interview 624 individuals qualified to serve as juries in the Andalucía region. In this research, the authors selected a case of a forest fire that they explained it to the interviewees. The results of the study indicated that factors such as the influence of personality and attitude of an individual can affect the jury's decisions.

The researchers concluded that the fact that people have ecological concerns did not meant that they can feel environmentally responsible. This interpretation revealed the inability of individuals to understand that harm towards the environment is a social problem (p. 522). Consequently, more than a lack of concern of a jury's verdict, there is a deficiency in social consciousness regarding the importance of the environment. Juries do not perceive nature's ecological value since, in regions where the environment has a socioeconomic worth, fewer forest fires unleash. The authors suggested that people do not recognize the value of nature. Instead, they put an economic value to the natural resources which does not give the environment the respect it deserves.

Summary

Puerto Rico's government has concerns for the environment, evidenced in the Constitution and laws adopted towards the island's natural resources conservation. So far, the environmental crimes within the penal code have a teleological focus on developing people's consciousness of nature's importance (Renta, 2013). Moreover, these crimes demonstrates people the government's commitment to the protection of the environment. The public system's care for the natural resources carries criminal consequences if citizens violate the code's statutes. As Rodríguez Rivera (2005) stated, the criminalization of conduct is the most powerful tool the government has over society. The purpose of using the criminal law against any offender that harms nature is to achieve deterrence.

This literature review indicates a lack of monitoring, evaluation, or investigation to measure the effectiveness of the environmental crimes in the penal code from 2005

until today. González (2010) and Marrero (2014) stated the inexistence of environmental crimes' prosecution without any support, not even a study performed by their authorship. Puerto Rico's academics did not explain the implementation process; they accentuated that enforcement needed to be clearer (Chiesa & San Miguel, 2006; Fontanet, 2006; Rangel, 2005). Rangel (2005) exposed that there are no established protocols for implementation of these environmental crimes. Moreover, González (2010) claimed lack of cooperation between agencies. None of the two academics supports their arguments with a reliable source.

Decisionmakers used the version of 1974 to drag the environmental crimes into the code of 2004, which ended up in the 2012 penal code with no guidelines for enforcement of these offenses. The amendments made in 2014 only focused on specifying the sanctions to impose on natural and judicial persons. Based on the literature review, there are no established procedures in terms of a jurisdictional stipulation, enforcement personnel, and district attorneys training. Moreover, either legislators or environmental agencies made disclaimers about the pollutants prohbited by these crimes, as well as the techniques or tools to discover and proceed with these offenses. Furthermore, Puerto Rico's legal system needs protocols for agencies' cooperation as well as economic funding to support investigation and prosecution, and other implications that would eliminate the gaps found in the literature (Long, 2011; Periconi, 2009; Uhlmann, 2014; White, 2010).

Regarding in countries of the East, the authors demonstrated that their laws, implementation, and legal breaches are similar to those of Puerto Rico. For example, in

New Orleans, New York, and South East Europe legislations are unclear in terms of jurisdictional application (Eman et al., 2013; Periconi, 2009; Rangel, 2005; Renta, 2013; Uhlmann, 2014). Another issue present by several authors is the reduced collaboration between agencies (Fontanet, 2006; González, 2010; Long, 2011; Rangel, 2005; White, 2010). An indispensable aspect of effective enforcement and prosecution relies on specialized personnel dedicated to prosecuting environmental crimes (Fontanet, 2006; González, 2010; Long, 2011; Periconi, 2009; White, 2010). There are no experts for these crimes in several jurisdictions such as New York, Oregon, Australia, and Puerto Rico, and where these protocols existed, the obstacles were in the implementations efforts (Periconi, 2009; White, 2010).

The lack of funds is a factor that obstruct prosecutions in the case of South Eastern Europe, Australia, and Oregon (Eman et al., 2013; Long, 2011; White, 2010). The authors focused on Puerto Rico did not provide information regarding monetary aspects (Chiesa & San Miguel, 2006; Fontanet, 2006; González, 2010; Marrero, 2014; Montalvo, 2011; Rangel, 2005; Renta, 2013; Rodríguez Martín, 2005; Rodríguez Rivera, 2005). They did not cover problems explained by the investigations on other countries, such as monitoring and surveillance (Long, 2011; Periconi, 2009; White, 2010). Chiesa and San Miguel, Fontanet, González, Marrero, Montalvo, Rangel, Renta, Rodríguez Martín, and Rodríguez Rivera did not even comment on community cooperation, evidence collection difficulties as Eman et al. (2013) denouned. Moreover, the authors on Puerto Rico's environmental crimes did not discuss any possible lack of consciousness in

the criminal justice system's personnel and society as Álvarez and García (2009) and White (2010) did.

Only a few authors made specific recommendations for implementation procedures for Puerto Rico (Chiesa & San Miguel, 2006; González, 2010; Fontanet, 2006). Meanwhile, authors that investigated envitonmental crimes in other countries elaborated a series of specific advice towards the criminal justice systems. Uhlmann (2014), for example, enunciated a series of aspects to determine which cases can go through the criminal system. Periconi (2009) suggested a public exposure of the mentioned factors would result in more cases prosecuted for environmental crimes, creating the deterrent effect that it is supposed to accomplish. White (2010) recommended public exposure, besides restitution, as a criminal sanction, sentencing databases and the creation of an environmental code of practice. Eman et al. (2013) and Álvarez and García (2009) sponsored education to promote consciousness within society.

I used the literature review to identify the best research approach for this investigation. Developling a qualitative study served to the purpose of understanding and clarifying these issues identified in the literature and on environmental crimes' implementation. This investigation became feasible using the case study approach to obtain insights about the environmental crimes and its performances from the law's practitioners. Moreover, official governmental documents figure as part of the data for this study to support the information collected and corroborate the content of the literature reviewed. The next chapter details the research aspects of this study such as the sample, data collection techniques, and data analysis.

Chapter 3: Research Method

Introduction

This dissertation was to examine the law enforcement implementation process related to environmental crimes contained in Puerto Rico's penal code from 2005 to 2014. With this investigation, I intended to identify the practices involving the application of these crimes within the local jurisdiction from a law practitioner's work experience. Also, I wanted to analyze court reports to support and give better understanding of Puerto Rico's criminal justice procedures for these environmental crimes. Using the collected data I noticed missing information about the implementation performances of these offenses as stated in the island's criminal law.

It is important to delineate the methodology I used to gathere the data as well as the structure used to analyze the findings. Therefore, this chapter incorporates in detail the research design to develop this study and my role in the investigation process. In this section I described and justified the population and sample selected for examination. Also, in this chapter I included the methods and instruments of the data collection as well as recruitment procedures. Moreover, with this part I offered the data analysis plan and the techniques to interpret the findings.

Research Design and Rationale

For the purpose of identifying the implementation of the environmental crimes at the local level, the following question served me as guidance to conduct this investigation. What are the implementation procedures of law enforcement agents on Puerto Rico's environmental crimes law, and what can be done to improve these

practices? With this inquiry I unveiled the legal aspects and investigative performances involved in environmental crime cases. The research question was important because with it I aquired the necessary information for examination of the application measures based on law enforcement officials' work experiences.

Qualitative methods are excellent approaches to explore a social phenomenon in a deeper perspective than quantitative techniques (Creswell, 2013). Also, a qualitative inquiry allows researchers to analyze documents and conduct interviews that will provide information in detail (Creswell, 2013). From the qualitative approach, the case study design helps investigators to study in depth a particular or multiple cases, processes, and programs (Creswell, 2013; Hernández, Fernández, & Baptista, 2006; Patton, 2015) as well as to investigate individual and social phenomenon (Yin, 2013). This research design suited best my investigation since this study focuses on the examination of Puerto Rico's penal code and the implementation experiences of the environmental crimes involved. I inquired about the work experiences of police agents and district attorneys regarding the phenomenon of these crimes and the application of the law through this exploration. I was able to obtain data from multiple sources because of the focus of a case study design (Yin, 2013). From the gathered information I obtained the practices of law enforcement officials when implementing this policy in terms of investigation, protocols, referrals, interagency collaboration, and more. Further, the development of this dissertation incorporated data collection techniques of document analysis to strength its trustworthiness.

The inspiration for using this methodology came from the articles on environmental crimes and Puerto Rico's penal code. This literature I acknowledge aspects of law implementation that do not appear in said publications. For example, Rodríguez Rivera (2005) stated that environmental law is inefficient, but he does not explain his statement using implementation practices as evidence. Fontanet (2006) presented the same argument when he expresses the need to give attention to law application activities. He did not give any suggestion of what should be focused. Likewise, Rangel (2005) insisted on the lack of indicators that the government concentrates in enforcing these crimes, yet he does not support his argument with evidence. Moreover, González (2010) and Montalvo (2011) called *dead letter* the creation of these environmental crimes. González (2010) said that there are no significant jurisprudence of these environmental crimes (p. 1191) based on a newspaper report (Rivera, 2008). The reporter states that there were at least 12 investigations of environmental crimes and only one prosecuted case. If there are investigations towards these crimes then the law is active, the contrary of what dead letter means.

Because no academic has led a proper investigation of the environmental crimes' implementation, I focused this dissertation in obtaining the evidence of the existing practices. The emphasis was on identifying and describing the investigation's process of these crimes against nature as stated in the penal code. I made use of interviews to support this research. This was possible with the use of a case study design of the qualitative approach. With these interviews and the court cases files I identified the current activities surrounding these crimes. Moreover, with the data I unveiled the

practices for execution as well as the interpretation of the law by enforcement officials. The data I recovered through these techniques answered my research inquiries and revealed the implementation performances of these offenses at the local level. The information obtained supports and contradict the statements raised by Puerto Rican academics (González, 2010; Montalvo, 2011) that the law is a *dead letter* and that no implementation practices are performed to intervene with these offenses (Chiesa & San Miguel, 2006; Fontanet, 2006; Marrero, 2014; Rangel, 2005).

Role of the Researcher

As part of the research process, my role consisted in acquiring the data through interviews and documents. I conducted the interviews with the selected sample. My performance included the explanation of this dissertation's intention to the volunteer participants, their collaboration in the study, and the significance of the consent form. I developed an empathic connection and made the interviewees feel confortable after describing their contribution to this investigation if they participated. This connection was necessary since I have no prior professional or personal relationship with any of the participants.

After their acceptance, the first step I carried covered an interview of a series of semi-structured questions, without being inflexible in any way, connecting one question to another. The focus was on the participants' communication to acquire more information. Using street-level bureaucracy and local network theories I supported the analysis of the findings. I was the only one who participated in this investigation process in acquiring the data, transcribing the interviews, and interpreting them. Therefore, while

transcribing and interpreting the information obtained, there was a possibility that I influence the process with my bias. Former ideas of a subject or a situation can alter any investigation's data and results that can change the reality of the phenomenon in a study. Further, the following is an explanation of my views on this topic so that readers can know my position and confirm the prevention of biases.

I am a person who loves, respects, and promotes the protection of the nature, from flora to fauna. My life revolves around reducing waste, reusing and recycling all kinds of material to help lower solid contaminants. Currently, I enjoy a pesco-vegetarian nutrition, and I am looking forward to becoming entirely vegetarian. It is obligatory for me to serve as an example and talk about the importance of nature for us to survive in this world. It is understandable to perceive my lifestyle and belief as bias, but this is not the case. My desire with this investigation was to reveal the law enforcement's implementation practices of the environmental crimes, which is unknown. Hence, I identified the strengths and weakness and made suggestions for the law's proper implementation. No matter what the findings were, the emphasis relied on strengthening the law enforcement's application of the law through recommendations of execution methods and empowerment of the State. Furthermore, an important aspect of credibility was describing the data collection procedures and analysis to confirm my integrity, impartiality, and objectiveness.

Another possible bias to face is when I conducted the interview process. Law enforcement personnel could felt invaded in their workspace or become uncomfortable and gave different and unreliable responses. It is important that I explained the consent

form, the purpose of the investigation, and the participant's role in this study to avoid any possible bias. A clear explanation of the intention of the interviews as well as the confidentiality of the process helped avoid any misunderstandings and provided feasible information. The description of the process gave them the confidence to voluntarily accept being part of this investigation.

Methodology

Participant Selection Logic

The eligibility of participants to contribute to this investigation relied on concrete and limited requirements. The sample came from Puerto Rico's criminal justice system. These participants were police officers and district attorneys. They handle the investigations and enforce the environmental crimes' policy. Those agents were the sample needed for this research. Puerto Rico's Police Department has the calling to prevent, detect, investigate, and prosecute crimes within the island's jurisdiction (Ley de la Policía de Puerto Rico, 1996), while the prosecutors have the authority to investigate and prosecute criminal acts (Ley Orgánica del Departamento de Justicia, 2004). The participants were police agents and state's attorney from each of the judicial districts of Puerto Rico. This sample provided the legal and policy implementation aspects of the environmental crimes necessary to develop this investigation. The criteria for choosing the sample was determined based on the involvement of these officials with environmental crime cases. Puerto Rico Police Department's agents are capable of initiating investigations and criminal prosecution for environmental crimes on their own.

Likewise, district attorneys indict suspects of committing offenses against nature as stated in the penal code.

The environmental crimes in the penal code are serious damage or destruction, poisoning of public waters, environmental pollution, and aggravated environmental pollution. Arson, aggravated arson, forest fires and reckless arson are included in the Crimes against Collective Security section of the codes, but these last four do not appear in this study. The reason is that the criminal justice system already handles fire related crimes. Based on the statistics of the Office of Court Administration from 2004 to 2014, approximately 70% of fire brelated cases were solved (Oficina de Administracion de Tribunales, 2011; 2012, 2013, 2014, 2015). From this statistical data I draw the conclusion that the implementation process for arson and fire offenses is working. It is important that I explain that there is the interagency collaboration between firefighter and police offiders. The first are the subject matter experts, and the second are the ones who initiate the criminal prosecution.

On the other hand, there are poor statistical reports on serious damage or destruction, poisoning of public waters, environmental pollution, and aggravated environmental pollution. These numbers show the following cases that were under investigation: one case of serious damage or destruction and one attempt of this crime, one of poisoning of public waters, and five of environmental pollution. The disaggregated conviction cases exposed were: one case of serious damage or destruction, one of poisoning of public waters, two of environmental pollution, and three of aggravated environmental pollution (Oficina de Administracion de Tribunales, 2011; 2012, 2013,

2014, 2015). These reports, the newness of these crimes, and the statements of Puertorrican academics became the reason for studying the implementation of the four mentioned environmental offenses. With this choice, I narrowed the investigation and focused over the law enforcement official's performances in applying the law.

Through the case study I delineated and choose the sample for this investigation. The sample I selected compiled officials that have handled environmental crime cases in Puerto Rico. Participants' selection came from court cases solved between 2005 and 2014 within the 13 judicial districts of Puerto Rico (see Appendix C). Settled controversies provided me the names of the officials involved in these type of cases for the interviews. The agents and prosecutors that handled environmental crimes answered the inquiries related to this investigation. The sample consisted of each police agent and state attorneys that appeared in the court's archived cases. The interview that I conducted was designed to gather the practices of environmental crimes based on the work experiences of these officials. I searched in all judicial districts to find every available case prosecuted which represented the population of this study.

Once the police agents and prosecutors involved in environmental cases in those areas were identified, I followed to contact them. After the communication with them, it was important to introduce myself as a doctoral student at Walden University and explain to them the need for information on environmental crime cases. The agencies required a request letter with specificities such as purpose, participation details, and participants to contact, and also, evidence of my enrollment in the course and in Walden University. To resolve this, I provided an Invitation to Participate (see Appendix D) and an Informed

Consent Form. I wrote the Informed Consent Form in English and Spanish to be able to communicate the purpose and details of the study for the participants' comprehension of their involvement in it. The majority of the population in Puerto Rico are speakers of Spanish as first language and it was my responsibility to give the participants all the information in ways they can best understand.

Through the first conversation, conducted in Spanish, I explained the purpose of the study and the role of the participant, and asked for their volunteer participation. The consent form became accessible when I handed it to them. The consent form gave details of the intention of the research, role of the sample in the investigation, and other clauses such as voluntarily participation and confidentiality. Moreover, they were encouraged to contact me without commitment for any questions about the research or the interview process. The officers and district attorneys that volunteer to participate could contact me by electronic mail or phone. We scheduled a meeting in a public place of their selection as well as the convenient hour for the participant to conduct the interview. I suggested the meeting be in a place where they felt comfortable and with minimum distraction and interruptions, and they choose their offices.

Instrumentation

I collected the data through the use of two instruments. One of them was the examination of legal documents. The materials I analyzed included court case files. These are official governmental documents from the criminal justice system, which are created and preserved for reasons such as evidence, criminal prosecution, statistical data, and analysis. These official records are regulated by different agency protocols and ethic laws

to ensure reliability and credibility. The content of those documents provided information regarding implementation processes of the environmental crimes in question.

The other instrument I used in this study was interviews. The interviews with police agents and district attorneys provided me information regarding the implementation activities of the environmental crimes of the penal code. They, through their experiences in the investigation and prosecution of these types of cases, offered significant insights about their performances, as well as the state's tools to help investigate and indict these crimes. For me to understood the perception of the executors of the law based on the street-level bureaucracy theory and analyze more in depth the experiences of the implementation process I needed to use these sources and data collection instrument.

These instruments were sufficient for me to gather the data needed to answer this research's inquiries. With this study's questions I intended to reveal the current enforcement and prosecution of environmental crimes. For this purpose, interviews were a significant tool I used to obtain the experiences of implementation of the law. Meanwhile, through the analysis of documents I corroborated the practices of police and district attorneys, as well as other elements important for this invesigation. The instruments for this investigation's data inquiry were adequate for the sample's size and targeted towards serious damage or destruction, poisoning of public waters, environmental pollution, and aggravated environmental pollution.

Research Developed Instrument

Through a series of queries I was able to obtain the participants' work experiences (see Appendix E). With these questions I identified important aspects about the performance of these police officers and district attorneys when enforcing the environmental crimes. Also, by using these questions, I had knowledge about the views these law enforcement officials had before and after their involvement in these categories of offenses. Moreover, I asked their recommendations to improve the application of this public policy based on their skills and knowledge. With the interview I was able to unveiled elements not included in the law or in official governmental reports. These questions were open-ended, which promoted unrestricted expressions and an uninterrupted dialogue between me and the interviewee.

Procedures for Recruitment, Participation, and Data Collection

The environmental crimes court cases files contained information that I used to in the recruitment of the participants. In these cases appears the names of the law enforcement personnel that investigated each situation. The participants I needed to interview for this investigation must had experiences involved in the investigation of environmental offenses. To begin the recruitment process I called police headquarters and the Department of Justice to ask for these identified agents and prosecutors. Once contacted, I explained the intention of this investigatin and scheduled a meeting. The day I arranged to meet with police and prosecutors, I hand them the invitation to officially informed them of the purpose of this research and their participation in the study. I gave to them a hard copy of the Informed Consent Form that contains more information about

the investigation in Spanish as well as my contact information. After the officials volunteer to participate in this study, the interview process began.

The meetings took place in their offices, which are public because are state's property and were places in which they felt comfortable. The discussion consisted of approximately fourteen questions regarding the implementation process of the environmental crimes cases they handled. I did not limit the communication to the prepared interview (see Appendix E). The conversation took from 30 to 45 minutes, more than the expected 15 to 20 minutes to complete. During the dialog, I made notes that served me to recall the dialog in detail. I proceed with the interview with one volunteer at a time, and no follow-up interviews took place for this study. I explained the informed consent's content to the participants once last time after the meeting to ensure they understood the purpose of the investigation and the confidentiality of their contribution. Also, I sent a copy of the transcription to each interviewee for their approval and credibility of the interview's content. The revision of the written interview was not a follow-up process; just an important element to corroborate a correct interpretation of the ideas and expressions of the interviewees. Their approval of the transcription gave validity and trustworthiness to the data.

I obtained the information for this investigation, as mentioned earlier, from interviews as well as from official documents. The official information came from the State's court archives from Puerto Rico's judicial districts. Examining the solved court cases I identified the police agents and prosecutors for this dissertation. Also, those documents have the elements of the crime, the people and agencies involved, and the

prosecution's resolution. It is important to establish that I was the only person that acquired the information, contacted participants, conducted the interviews, and gathered the official governmental records. I collected all the information without any assistance outside the criminal justice system.

Data Analysis Plan

The information collected had the necessary information for me to answer the research inquiries of this study. The research question was: What are the implementation procedures of law enforcement agents on Puerto Rico's environmental crimes law, and what can be done to improve these practices? The findings I obtained through this inquiry emanated from the interviews conducted with police officers and district attorneys. The queries I prepared for the interviews was developed to identify themes in the literature review and I recognized the following: *knowledge* (Eman et al., 2013; Fontanet, 2006; González, 2010; Periconi, 2009: White, 2010), *jurisdiction* (Eman, et. al., 2013; Periconi, 2009; Rangel, 2005; Renta, 2013; Uhlmann, 2014; White, 2010), *perception* (Álvarez & García, 2009; Eman et al., 2013; Periconi, 2009; Uhlmann, 2014; White, 2010), *collaboration* (Fontanet, 2006; González, 2010; Long 2011; Rangel, 2005; White, 2010), *protocols* (Periconi, 2009; Uhlmann, 2014; White, 2010), and the *content of the law* (Chiesa & San Miguel, 2006; Eman, et. al., 2013; Fontanet, 2006; González, 2010; Periconi, 2009; Renta, 2013; Uhlmann, 2014; White, 2010). Through the work experiences and perceptions of the interviewees and the documents collected, I observed the existence of elements influencing the implementation process of these crimes.

Through the coding analysis instrument I conducted a complete scrutiny of the interviews and document's findings. The first step in the examination plan was to organize all the collected information. From separate analysis of the court's cases, articles of the penal code, and the interviews I identified the themes for examination. I did the same with police and district attorneys' interviews. The second stage consisted in transcribing the interviews using the handwritten notes. I used a computer word processor to store these transcriptions as files on my personal computer as well as NVivo software for qualitative analysis. I made the translation of all interviews from Spanish to English, avoiding any bias by making clear what the participant meant.

The third phase encompassed the analysis process. For the beginning, I performed a review of all the documents and transcribed interviews. During the examination, the first part of the coding process took place, which was my duty of identifying and describing possible categories for deeper study. This step included the detection of concepts, definitions, meanings, ideas, and other elements important to for me to understand the implementation process. I obtained the content to analyze from the interviews, court cases, and the articles that define these crimes. I meticulously handled the review process. I did not exclude any significant evidence from this investigation. The analysis of the participant's interviews involved the isolated organization and individual examination of each question to later analyze the whole transcription. Regarding document data, each paragraph consisted of a scrutinized analysis in which I highlighted the content that I considered as significant elements for this investigation.

The second part of the analysis process consisted of coding into categories the content identified in the collected data. The step relied on gathering into groups themes and patterns related to the implementation of the environmental crimes such as ideas, knowledge, perception, and practices. I analyzed these topics and patterns and individually identified them and the categories that related to one another. With the interviews, I inspected, question by question the conversation with the police officers to observe any patterns in the dialogue, providing patterns for further analysis. My intention was to look for differences and similarities between each inquiry, each sentence, and of the entire interview. Accordingly, I conducted the same analysis with the district attorneys' categories and the document data groups, searching for connections and variances between each court case and the crime article's content. I maintained separate the interviews and documents in this part of the process.

During the second part of the analysis, it was necessary to reduce categories into themes that covered the central elements of the data for their analysis. Once I identified the groups within the interviews and documents, which fluctuated from five to ten groupings, I offered a complete description of each. After every theme was organized, I developed a relationship between categories. I generated new topics after the analysis of the possible connections between the interviews and documents individually. Also, the analysis extended to the comparisons of both data collection methods. It was necessary to see how police and district attorneys performed and executed the law. Further, I used triangulation to support the credibility of the data obtained and, through this technique, I identified the relations between the interview's data, court cases, and the law.

I made use of a software for qualitative analysis assisted the data analysis process. NVivo is a computer program designed to help researchers in the process of analysis and interpretation of the collected data. This program is design for investigators to contribute in the organization and storage of the obtained information. NVivo was useful in the insertion of documents to the program to search for themes, gather them into one structure, made a visual display of the findings, and record the insights.

Issues of Trustworthiness

Qualitative investigations involve a social phenomenon to study. Society's issues, concerns, and curiosity and the development of a research encompass issues of trustworthiness. The processes and data collected by the research must show credibility, transferability, dependability, and trustworthiness for it to become a reliable investigation. With triangulation I demonstrated credibility and dependability. This technique is used to confront and corroborate the data obtained through different collection methods making the study stronger (Creswell, 2013; Hernández, Fernández, & Baptista, 2006; Patton, 2015). Triangulation consists in using different sources to collect the data (Patton, 2015). I used court case files to verify the information given by the participant. The intervention and implementation process of the law exposed in the official court documents and the work experiences I recovered during the interviews was what I used to for triangulation of the study. Moreover, I used the content of the articles that typifies the environmental crimes and analyzed them with the court case reports and the participants' interviews.

Meanwhile, transferability required an exhaustive description of the processes of participant selection, interview protocols, and the role of researcher and interviewees. To fulfill this important element, I clearly explained the analysis process of the documents and the identification of categories and themes. With the theoretical framework I supported the analysis and coding process of the acquired data. The purpose of this aspect of trustworthiness is for other researchers to reproduce this study, and by doing so, they can corroborate the validity of this investiation (Creswell, 2013; Hernández, Fernández, & Baptista, 2006). Further, detailing the study's processes allows researchers to use the same data collection and analysis methods in their field studies (Creswell, 2013; Hernández, Fernández, & Baptista, 2006; Patton, 2015). Additionally, describing the analysis processes ensures intercoder and intracoder reliability. The comparison of interviews, the law, and court cases' content provided intra and intercoder trustworthiness. The analysis I made through the lens of the chosen theoretical framework gave strength and reliability to the examination process.

Though the explanation of my beliefs I assured the elimination of any bias from this investigation (Creswell, 2013; Hernández, Fernández, & Baptista, 2006). I am conscious of the environment's importance. My lifestyle is as consonant as it can be with nature's protection and its conservation. The idea of conducting this research was to describe, analyze, and improve the implementation activities, whether the environmental crimes law is effective or not. The aim was to strengthen the mechanisms of this legal system that can help in the process of creating consciousness and generating nature's

protection practices by the government and society as a whole. I remained objective, ethical, and neutral.

Ethical Procedures

For this research, it was crucial that I stayed alert to any ethical concerns regarding the instruments of data collection, participants, collected information, and analysis. The interview questions did not inquired information regarding sensitive, personal, or confidential information of active investigations or cases. This investigation did not disclose the names of the offenders, victims or any other person involved in the cases. The information provided by the interviewees will remain confidential and not discussed with any other person. Participants had the right to leave the interview process and return whenever they felt to. Fortunately, no participant left this investigation process.

Other situations that could occur before, during, and after the interview process was to deal with the possibility of interruptions during the interview which happened. The best way I handled this situation was to continue with the line of conversation. Moreover, another obstacle considered was whether the participants made it to the appointment. I gently ask to reschedule the meeting at least two times with one of the participants. Also, there was a risk that a participant could react adversely due to discomfort by any of the questions asked or by uncomfortable memories. No one racted adversily after the interviews. The questions, the process of recruitment, and they ways of conducting the interviews went through the sieve of the Institutional Review Board

(IRB). They gave me the final approval of the instrument, procedures, ethical structure, and allowed me to conduct this investigation.

Concerning document collection, I choose solved cases to analyze. These cases are public unless the parties ask for the confidentiality of that record. Names of people involved in these I did not include them in this research. The essential data for this study was of implementation practices. These documents and interviews transcriptions remains in a safe box that only the researcher has access to and stored for five years as Walden University requires, and, after that time, all the participants' information and transcriptions will be destroyed.

Summary

In this chapter I described the procedures to obtain the data I needed to answer the research questions. I explained in this section of the study why the qualitative approach was the one that best suited this investigation. With this methodology I acquired detailed data for understanding the implementation of environmental crimes in Puerto Rico. The design for this research was case study because I was able to invesigate more than one case of this political manner (Yin, 2013). In this study I examined the cases of the environmental crimes: serious damage or destruction, poisoning of public waters, environmental pollution, and aggravated environmental pollution. Also, through this design I used different data collection techniques to better the investigation, develop a more in-depth study, and triangulate the study (Yin, 2013).

I extracted the information for this investigation from official governmental documents and police officers and district attorneys experiences through the use of

interviews. The data I obtained was from volunteer participation and it remains confidential. The coding technique I used as well as the NVivo software helped me in the organization of the data for a better analysis of the documents and interviews. The aspects such as trustworthiness and ethics I handled them, for the purpose of reliability, by using strategies of triangulation and reflexology. These techniques strengthen the investigation's sources and analysis methods. Moreover, the IRB became part of the process of the interview instrument revision to make sure it was ethical.

For the next chapter, every element I exposed in Chapter 3 was conducted for the investigation process. Chapter 4 contains the research procedures such as personal or labor conditions that could influence the participants' responses and affect the results of the investigation. Also, in this next stage of the investigation I detailed the number of participants, document the data collection, and described the analysis procedures. Furthermore, to show the credibility of this study, all the process and strategies I used in this stage of the study were documented to ensure this investigation's trustworthiness. This penultimate chapter includes the results of the data and the analysis findings.

Chapter 4: Results

Introduction

The purpose of this research was to examine and evaluate the implementation practices of law enforcement agents when handling environmental crime cases. Because there is insufficient information regarding this subject, I intended to document and analyze the work experiences of government officials that have investigated these types of crimes. The data presented in this chapter was gathered to help me answer the research question for this study: What are the implementation procedures of law enforcement agents on Puerto Rico's environmental crimes law, and what can be done to improve these practices? To respond to this question, I employed a qualitative approach using a case study design that comprised document analysis and semi-structured interviews.

This chapter includes the procedures I carried out to obtain and analyze the data for this research. I detailed the Expert Panel I conducted to determine the validity of the interview questions. Having established the interview questions, I began the the data collection process and its analysis, which is detailed in this section. Also, I explained the results and themes of the data collected for this investigation using the literature review of Chapter 2.

Expert Panel

An expert panel was needed to validate the interview questions. I wanted to ensure that the interview questions allowed the interviewees to disclose the information needed for this investigation. To create this panel, I requested the help of the nearest police department and district attorney's office; one volunteer from each became part of

the panel once I explained to them the purpose of the interview. Rapidly a police man and a state attorney responded voluntarily my request. I handed the Informed Consent Form to the participants before the interview began. The participants were informed about: the focus of the investigation, the expert panel's purpose, and the confidentiality of the process. I used the expert panel to corroborate that the interview questions would elicit the necessary data for this dissertation (see Appendix F). Afterwards, I made no substantial modifications to the dissertation's interview instrument based on this expert panel exercise.

Through the results of this expert panel I identified common themes between the two interviews. These themes were: competence, delegation, human protection, protocols, training, and unawareness. From both interviews I noticed that there was an issue regarding the competence or jurisdiction of this act. There are no available or known guidelines to establish which governmental agency handle these cases. Regarding delegation, I interpreted that police department delegate environmental cases to other police divisions to handle the situations and identify criminal intention. Moreover, the district attorney expressed that there should not be a special division of attorneys to work with these crimes, that they should receive training and make these crimes part of the many offenses they prosecute daily. Also, both participants stated that there are no protocols that establish guidelines to whom and how to implement this law. The police agent expressed that he has not received any training, while the district attorney stated that he had attended seminars on the penal code.

Both interviewees agree that the focus of these environmental crimes is to protect people, not the environment itself. They specifically mentioned human life and citizens' protection as the purpose of the inclusion of these acts as crimes. Based on their notion, I understand that they do not observe nature as an independent element. This could mean that they will focus on these crimes when someone's life is at risk and not the endangerment of the environment alone. In conclusion, both police and prosecutors lack knowledge regarding what the environmental crimes are, what this law protects, who handles investigation, whether there are any cases prosecuted, and, therefore, how to intervene with these offenses. This legislation needs attention and requires seminars as well as expert training to guide law enforcement agents through the new crimes.

Although this legislation is more than ten years old, police and district attorneys know little about these crimes. Both understand that the focus is over people, and not the environment. There is no clear idea of what the crimes are and the steps to follow. They assume that administrative remedies conducted by agencies with expertise in the field will discover the source and then submit the case to the district attorney. Also, they assume that these cases must be conducted as any other crime in terms of investigations, interrogations, chain of evidence, and prosecution. In addition, prosecutors intervene with these crimes when there is criminal intention or recklessness on the part of the one who committed the offense. This means that prosecutors are making their own interpretation of the law. Also, they must carry the investigations and prosecutions based on their lack of knowledge and experience due to the absence of protocols.

Lack of protocols has demonstrated in these interviews that law enforcement agents can get confused when dealing with these cases. The interviewees believed that the agencies with expertise are the ones responsible to handle these crimes, when the reality is that it is not clear when these agencies and police intervene. Legal statutes must be clear, although they are subject to interpretation; they are not supposed to confuse its readers and this is what is happening with this legislation. The law must specify its competence; moreover when there are agencies that address similar actions. The results demonstrated that although the participants were ignorant about the implementation practices this research explores, they gave relevant information about unawareness, lack of training, and the inexistence of protocols (see Appendix G).

Setting

The setting for this research involves three areas of the criminal justice system. Initially, my intention was to incorporate only the state's police force and district attorneys. However, after collecting the data, I noticed that municipal police agents were involved in several pivotal cases for this study. Municipal police agents have the same responsibilities and duties as those of the Puerto Rico Police Department; both enforcement agents are responsible for protecting people and for the prevention and intervention of crimes. The difference between them is that the former respond to mayors and only have jurisdiction within the counties they serve, while the latter's authority extends over the government's territory (Malavet, 2012). Nevertheless, both, municipal and state police, have to present investigated cases to the judicial districts that represent their county. Therefore, municipal and state law enforcement agents have to report to the

same district attorneys' offices and courtrooms. Despite the commonalities within municipal and state enforcement agents, there are important differences.

The municipal police is made up of many police agents as the county can afford to pay. The number of municipal police agents in force is proportional to economic situation of the municipality. Likewise, the training and continuous education of the agents is budget constrained. While the state is in charge of the trainings provided to the Puerto Rico Police, each county is responsible for the training of the Municipal Police. Given the budget restrictions, municipal enforcement agents could be in disadvantage when considering knowledge of crime investigation and prosecution, when compared to state agents. However, the authority of the state police force spreads over the whole island. They have jurisdiction in all the counties within Puerto Rico's territory and over all felonies committed. Although there are more state than municipal police officers, the former are stressed out with the investigation of an alarming large number of cases, court hearings, and other administrative tasks. The above factors can easily explain the lack of accurate details regarding the cases.

The working conditions of the district attorneys are similar to that of the Puerto Rico Police. There are not enough prosecutors, which translates to an almost unbearable work load. Under these conditions, many prosecutors cannot remember all of the cases, while others cannot recall precise situations regarding a particular case. Also, many of the prosecutors are assigned to a specific courtroom regardless of the history of the cases under consideration. Therefore, more often than not, prosecutors will be assigned to cases for which they have no knowledge of the investigative process. This makes it harder for

district attorneys to remember cases they did not initially investigate. Also, several of the prosecutors resigned from their positions. Once the district attorney moves to the private practice, he or she may be difficult to reach. After they resign the agency, they cannot share contact information, which makes it difficult to get in touch with them.

Demographics

The demographics of the participants in this investigation were various, from their selection to their geographical location. I choose the participants directly and intentionally for this investigation. To explore the implementation practices of the environmental crimes of the penal code, I needed to select the police and prosecutors involved in the investigation of these crimes. The sample must have had experience in handling environmental crime investigation cases and I chosen them based on the court files handed by the Court Administration Office and each judicial district visited. Therefore, I made no random or aleatory selection of the participants.

Within the participants, there were eight male officers and one female. From these, eight interviewees were active and currently working as police officers and prosecutors except for one that retired several years ago. The participants were from different areas of the criminal justice system: three municipal police officers, three state police officers, and three district attorneys. Geographically, the interviewees represented the North, West, and Center of Puerto Rico. The next section states the detail of how I collected the data.

Data Collection

I visited seven judicial districts to obtain the case files needed and to conduct the interviews. I originally contacted 16 participants for this investigation. Seven of them were not pat of this investigation for the following reasons: two of them were impossible to find because one left Puerto Rico and the other resigned from prosecutor. Regardless of my efforts, I did not get any information that could help locate them. The other five were contacted by telephone, and they affirmed that they did not remember the case or did not recall prosecuting them even though their names and signatures were in the official documents.

Nine law enforcement personnel participated in the interview process. The interviewee composition was as follows: three municipal police officers, three state police agents, and three district attorneys. By agreeing to answer the interview questions, all of them contributed with their law implementation experiences. I conducted all interviews in the police headquarters of each district and the Department of Justice's offices. Each interview took approximately 45 minutes to complete and they were recorded by handwriting. Six agreed to receive a copy of the Informed Consent Form and the remaining three said they did not want it. The time interval between interviews took approximately two weeks, which prolonged the data collection process.

As it happens most of the time with social science research, exogenous elements that I cannot control, played a significant role. Most interviews were interrupted at least once. It took longer than expected for officers to narrate and detail their work experiences in the crime scene. For the above reasons, the original idea, expressed in Chapter 3, of an

interview length of 15 to 20 minutes proved to be unreal. Besides these elements, I performed everything else as described in Chapter 3 and as approved before this data collection process began (Walden University's approval number for this investigation was 09-22-15-0345455 and it expired on September 21, 2016).

Analysis of the Data Collection Process

It took me approximately one year to access the available files within Puerto Rico's jurisdiction. The pursuit for these cases took more time than anticipated for several reasons. There were issues with having access to statistical information. The Division of Statistics at the Office of Court Administration's kindly sent a table of available environmental crime cases that were subject to trial (See Appendix H). Unfortunately, the data was not fully disaggregated. The table listed the crimes, how many were convicted, not guilty and archived, and showed the years of these trials. What this document did not include was the judicial districts where these files were stored. To have access to the files, I requested information about their physical location. After multiple phone calls, electronic mails, and letters, I finally received this information one year later.

It is a well known that, despite the fact that the agencies' personnel was willing to help, bureaucracy complicates what should be an easy process. Going back to the aforementioned problem, it is helpful to detail my experience, for it is eloquent of how bureaucracy can delay a research project. On December 2014, I sent an electronic mail to the Statistics Division of the Office of Court Administration, and they shortly sent me the table mentioned above. On January 2015, I requested information regarding the location

of the available cases and, if possible, the cases identification number. They replied that I had to send a petition to the Administrative Director of the Office, which I promptly did. Afterwards, they communicated that administrative problems like lack of personnel, excessive work load, and the queue of requests that the office had accumulated before mine, would slow down the process. In fact, they did. My petition was answered a year later. On February 2016 I received a letter through the postal service which included all the cases, identification numbers, and judicial districts (see Appendix I). For the reader's benefit, this Appendix discloses all the data I used to find the cases. However, the information that could reveal the participants' identity was covered to remain loyal with the confidentiality agreement.

While I was waiting for the arrival of the needed information, I started searching for these cases in each of the 13 judicial districts of Puerto Rico. It was a desperate move in the face of what felt like an institutional immovability. I had to try to get the data even if I was lacking the information needed to locate the cases. Not knowing where the cases where, I started with the courts near my area (i.e. Arecibo and Utuado). This strategy proved to be productive at the Utuado court. I contacted a former employee of the mentioned court who in turn contacted her coworkers. Although none of them knew about the existence of environmental crimes, they were proficient when it comes to the court search system and finally found one environmental crime prosecuted in that judicial district. That day I had in hand a copy of the available public information. The experience encouraged me to continue with the hunt in other courts.

Unfortunately, not all experiences were as successful as that in Utuado. I found resistance in most of the judicial areas. I tried to replicate the process that took place in Utuado by asking if they could conduct a case search using the same method. The initial reaction in every other judicial district was that for them to do a search they needed either the identification number or the criminal record. I tried to persuade the personnel by explaining that in Utuado I was able to find such cases by doing a topic search. Afterwards, most of them agreed to help me and four more cases were found. However, one court stayed reluctant arguing that they did not know about these crimes, they were not entitled to do that kind of search, and they had few personnel to help me with that request.

I confronted another situation while searching for the provenance of cases and it was the inconsistence of the search system software. Nine of the judicial districts use a software while the other four use a completely different one. The nonstandardized approach to database and its management implies the impossibility to do a comprehensive search that could compromise the whole judicial system given that the two software system are incompatible. During these efforts the needed information from the Court Administration Office finally arrived, and afterwards I was able to find more environmental crime court files.

The metabureaucracy of the judicial system delayed the data collection process. I tried to find the cases without having crucial information needed for their identification (i.e. case documentation number and the location where they are stored) which produced mixed results. I was able to find five cases out of seven. However, it took a year for the

Division of Statistics to provide the information needed for the cases identification, only after having this information I was able to find the remaining four, for a total of seven cases.

Interview Process

Contacting intended interviewees and getting their voluntary participation had its inconveniences. I interviewed two different populations, both with different behaviors. I had the opportunity to interview every police officer involved in the cases, with the exception of one who no longer resides on the island. However, when it came to the prosecutors, it was more complicated. The names of the prosecutors did not appear in the police complaint reports. Although police agents have to consult each felony with them, this process is not included within the case files. The name of the prosecutor initially figures in the formal accusation. In addition, the district attorneys in this part of the process are not necessarily the ones who began the investigation and authorized agents to present the case in front of a judge for prosecution. The norm is that prosecutors are committed to a specific case only on chosen felonies such as murder. The remaining cases are seen by prosecutors assigned to different courtrooms. As a result, most of the contacted district attorneys did not recall the cases regardless of the fact that they had signed those documents. Only three prosecutors could be interviewed who had remembered the case, remained in touch, or continued with the judicial process.

A second issue confronted in this process was that some of the district attorneys agreed to participate in the investigation, while others requested a more formal protocol. I was asked to send a request letter to the prosecutor's area supervisor detailing the scope

of the investigation. The prosecutors that agreed in the first place only requested copy of the Informed Consent Form for their records. This indicates that the system is not unified and the instructions and discretions are different within each district. Several of the contacted district attorneys assured they did not remember the cases they prosecuted. This may respond to the organizational structure of the Department of Justice and to the fact that not enough prosecutors are employed.

Although there were few barriers that eventually I surpassed, it is still necessary to acknowledge them to evidence how frustrating it can be to collect data from governmental agencies. Furthermore, this can help future investigators preprare for what they can expect. The essence of these issues could have been avoided if the following elements were attended to by the agencies. Lack of knowledge among the personnel of the criminal justice system agencies contacted in this study became a significant obstacle. They did not know about the existence of these cases even though they have to make files and keep them up to date periodically. A second issue was the personnel's poor knowledge regarding the computer software that creates and manages the cases' database. If the database is not fully understood by the agency, the personnel will be incapable of finding a public record like the ones I was requesting.

Another element that needs to be addressed is the lack of unification within the Court and Department of Justice Systems. The courts had different computer programs, which made the search more complex, not only for the personnel of the agency but also for me as an individual. Also, the district attorneys are not all working in unison when some prosecutors agreed to participate and others needed permission from their superiors.

All this strengthens the inefficiencies of highly bureaucratic agencies that have the responsibility of helping citizens, as well as of disclosing public records. If I had not insisted and sought other ways of finding information, I probably would have had to wait longer to access the information I constantly requested. It is also important to state that a real concern for these agencies is the lack of personnel which compromises even the daily basic tasks. If the agency does not have enough employees to handle day to day work, it makes it more challenging to help the population with their needs.

Data Analysis

To analyze the data collected I carried out content examination, interview analysis, and a coding process. The varied sources from which the information was gathered strengthened the trustworthiness of the investigation. Also, the description of the examination and coding process ensured transparency. Moreover, though this process I clarify the understanding of the data using the literature review and theoretical framework as the foundation of the documents and interview's content analysis.

Interview Analysis

I conducted the interviews with participants from three different governmental entities: municipal police, state police, and district attorneys. I choose each participant using the available court files of the environmental crime cases. During the data collection process, I observed through the court files that not only Puerto Rico's Police Department investigated these offenses, but the Municipal Police also worked in environmental crime cases. Once I contacted police and prosecutors and they voluntarily agreed to participate, the interview process began. The interviews I conducted were

recorded in handwriting and later transcribed and organized using the NVivo computer software for qualitative investigations.

At first, after more than one reading of the interview transcripts and after inserting them into the software, I found at least nine areas of interest based on the literature review. During the narrowing process, I found that several of the codes were redundant and these categories went from nine to five: intervention, collaboration, protocols, knowledge, and perception of the environment. Finally, I categorized three themes from the analysis that covered each area of interest to answer the research question for this study and consonant with the literature review in Chapter 2: *knowledge* (Eman, et. al., 2013; Periconi, 2009; White, 2010), *investigation* (Eman, et. al., 2013; González, 2010; Long, 2011; Periconi, 2009; Renta, 2013; Uhlmann, 2014; White, 2010), and *perception* (Álvarez & García, 2009; Eman, et. al., 2013; Periconi, 2009; Uhlmann, 2014; White, 2010) of the environment (see Appendix J).

While analyzing the data, identified the outstanding elements participants provided in terms of knowledge, investigation procedures, and the perception of these crimes are described. For knowledge, my intention was to know what, when, and how they knew about environmental offenses typified in the penal code. The purpose of this study moved towards describing the execution process of these crimes. Implementation procedures were unknown until the development of this study. Therefore, I used the investigation theme to capture the participant's practices when dealing with these environmental crimes. I observed that perception carried an important role in the

implementation process as seen in the investigations of Álvarez and García (2009), Eman, et al. (2013), Periconi (2009), Uhlmann (2014), and White (2010).

In this section I also offered significant results of the documents collected. Using court files I interpret important information regarding the formal accusation and the description of the events that were considered as a crime. Also, I identified the parties involved and the magistrates' sentences. Surprisingly, the court files had explicit and implicit information about the offense, the offender, and one judge's opinion of the case he preceeded.

Theme 1: Knowledge

I can argued that, for a social group, the importance of something is directly proportional to the knowledge they possess about it. In this light, I explored how knowledgeable law enforcement agents are when it comes to environmental crimes. To document what they know and how they learned about these crimes shed light on how environmental offenses are understood in Puerto Rico. I interpreted from the data that the overall lack of knowledge, edging on naiveté, reveals how these crimes rank in the minds of those who are called to actually enforce the law.

Several participants were aware of the existence of environmental crimes in the penal code. Conversely, others knew superficially, and others understood the environmental crimes but approached them generically in legal and penal terms just like a regular crime. However, both prosecutors and police officers knew little about these crimes. For instance, "There are very few environmental crimes in the penal code" (Participant 4); "I know there are just a few crimes and that the tools are scarce too"

(Participant 7); “Basically they are few” (Participant 8). Several knew because of training related to the recent code’s revisions in years 2004 and 2012 (Participant 2, 4, 6, 7, and 9). Only one of the participants claimed he did not receive training about environmental crimes” (Participant 5).

A district attorney offered insights about what is a general idea regarding environmental crimes. He said, “these crimes are rarely pursued because the evidence is difficult to find: the court requests experts and scientific evidence” (Participant 8). Some of the participants showed interest in learning about environmental crimes after facing the process. One participant mentioned that, “after the case, I obtained more detailed knowledge about environmental crimes” (Participant 6), and another said that handling the case “initiated my desire to know about environmental laws” (Participant 4). One interviewee expressed that, “it is known that regulatory agencies are the ones with expertise in the area” (Participant 4).

As mentioned above, others used general legal terms to describe their knowledge of the environmental felonies stating that these “intended to make people responsible for their behaviors that affect the environment and society” (Participant 5). “These crimes were created to prevent their commission and to the rehabilitate offenders” (Participant 6). Only a municipal police officer exhibited knowledge about environmental crimes. It is important to highlight that he was part of Cidra’s Municipal Division; this Division was particularly aware about the importance of these type of crimes inasmuch as they collaborated with the Environmental Protection Agency (Participant 1).

I concluded that participants indeed knew little about these crimes. They did not participate in training and have lack of tools to investigate these crimes. One participant understood the investigation was better performed by experts in the field since he did not have knowledge. Other participants, due to the lack of information, pursued the investigation of these acts for no other reason than because they are typified as crimes in the code. Their poor knowledge about environmental crimes can be linked to: lack of trainings, superficial trainings or orientation, unwillingness to educate themselves about the code, and their work inexperience in these cases. With these possibilities I infered that they are not interested in these crimes, except for two participants who looked for more information after their involvement in these cases. Also, that they have not received the proper trainings on identifying and investigating these situations. It is important that I mention that police officers are overloaded with common duties, which hinders them from studying the code. In addition, when the state decides to insert crimes that require specific knowledge, the state itself is responsible for training the personnel to accomplish the purposes of the law. For example, the state gives police agents training on how to investigate fraud, white-collar crime, and cybercrimes. Why not provide training of environmental crimes?

Theme 2: Investigation

This theme concerns the implementation of the law. It is important for this research to document and describe the execution processes of the existing cases for it gives a sense of how these are seen. Furthermore, before this study, the implementation procedures were undocumented. Therefore, here I explore: (a) the previous work

experience of law enforcement agents before facing the cases under consideration here, (b) how those involved in the investigation identified the environmental crime, (c) how they intervened with the offenders, (d) the protocol (or lack of it) to manage the scene, and (e) the collaboration of agencies. My purpose with this investigation moves towards describing the execution process of these crimes. Implementation procedures were known until the development of this study. Therefore, the investigation theme I chosen, based on the data collected and the litetarure review on Chapter 2, captures the participant's practices when dealing with these environmental crimes.

Encounters with environmental crimes. Four out of the six interviewed police officers commented that the environmental crime case under consideration was their first one (Participants 1, 2, 4, 6). The same is true for all three prosecutors (Participants 7, 8, and 9). In fact, two police officers stated that they did not know about cases before and after the one they handled (Participant 1 and 4). On a different note, Participant 7 said, "I know about a case where an owner of a machine shop spilled diesel on the soil that ended in a river", but he couldn't provide more details.

On the other hand, the remaining two police officers mentioned that they were involved in cases before. One declared, "I have been involved in environmental situations such as littering" (Participant 3) and the other said, "I addressed environmental situations when working in the municipal environmental division" (Participant 5). I argue that none of the law enforcement agents were well acquainted with what constitutes environmental crimes nor experienced in prosecuting it. Only two police officers, out of all participants, were superficially familiar with these crimes. None of the prosecutors had any work

experience with environmental crimes. Therefore, none of the participants interviewed had intervened with an environmental crime case before.

Identification of the environmental crimes. The first step to handle a crime scene is to acknowledge that some type of crime was committed. Therefore, if dealing with environmental crimes, some previous knowledge about the offense would be helpful. As seen in the previous section, the degree of work experience with these type of crimes is precarious. Down this path I can say that the majority of the agents interviewed could not have an idea of what an environmental crime could be.

I discarded this idea when police agents, who had superficial knowledge of these crimes, were able to identify damage towards nature and did the necessary arrangements to address the situation. For instance, Participant 2 addressed the call made to the police station complaining about a neighbor that poured diesel on her backyard. The agent went to the scene and perceived the odor of the fuel in the area. Instead of just submitting the case for property damage, he decided that an environmental crime took place as well. In the same fashion, during the investigation process, Participants 4 and 5 became aware of the diesel spill in a river as a consequence of an illegal appropriation act. They both decided to investigate the case further taking into consideration the environmental harm in addition to the illegal appropriation charges.

Meanwhile, the rest of the agents interviewed had knowledge, had to consult, or identified the harm because of the results of the investigation. The case handled by Participant 1 was clearly and easily identifiable for him. He had training about black water discharges and knew what the crime was and what could be done to control the

pollution. Participant 3 did not knew that the act could be typified as an environmental crime, but she consulted with a district attorney. The prosecutor stated that the actions carried by the offender had all the elements of serious damage or destruction crime as it appears in the penal code. This same crime was identified after the investigation was concluded in the case were Participant 6 intervened. Using the victims' testimony and the physical evidence found in the scene, the investigators identified the gas tank that the offender threatened to use as an explosive. This element was also consulted with a prosecutor who decided to prosecute him with several crimes including serious damage or destruction.

Intervention process. The implementation process as described by the police officers is basically the same as with any other crime. Actually, the majority of the complaints were not originally about an environmental offense. Four out of the six cases under consideration took an environmental turn when the agent investigated the scene and understood that a natural resource was harmed. So, two thirds of the cases analyzed in this dissertation were not considered environmental crimes in the first place. For all of these cases (as with any other crime), a call was made to the police headquarters. The complaints that eventually led to environmental crime investigation were varied: violent behavior (Participant 3), illegal appropriation (Participant 4 and 5), and domestic violence (Participant 6). The cases investigated by Participant 1 and 2 were somehow different, both were related to property damage, but since the beginning both had clear environmental consequences.

The norm is that once in the scene, police officers iniciate the investigation and proceed to determine if there is a crime through the available evidence. However, in these cases the evidence led to a different path. For instance, Participants 4 and 5 were involved in the investigation of illegal appropriation of diesel in the Water and Sewer Service Agency. During the investigation, they discovered a significant diesel spill in a river and acted accordingly. In another case, the police acknowledged that the offender tried to cause an explosion using a gas tank. This type of behavior is typified as an environmental crime as described in the penal code's serious damage or destruction article. Interestingly, the event that triggered this investigation was a domestic violence complaint (Participant 6).

Moreover, the complaint attended by Participant 3 dealt with violent behavior by a young man in a gasoline station. When she arrived, the men became more violent and threw a lit cigarette between two gas pumps. The agent believed that this act could have caused an explosion. Therefore, the case that originally was treated as violent behavior became a case of serious damage or destruction.

The remaining two cases developed differently for elements that pointed to environmental harm were evident. Participant 1 investigated a scene where a man was discharging his septic tank. The black waters ran through various neighbor's backyards, ending up in a river. Needless to say, the nature of this conduct had obvious environmental pollution implications. Similarly, a citizen called the police to report that a neighbor was spilling diesel on her landscape. Participant 2 got to the scene to investigate

the situation and perceived a strong fuel odor, which later developed into an accusation of environmental offense.

An important aspect to highlight is the responsibility and actions carried after identifying the environmental harm. Right after the agents saw the damage, they called the necessary agencies to address the pollution situation (Participant 1, 2, 4, and 5). Regarding Participant 1, the Environmental Quality Board was called immediately although they arrived from three to four days later as narrated by the agent. In the case intervened by Participant 2, a municipal agency went with diligence and did the cleaning of the affected area. The other two cases involved the Water and Sewer Service Agency and handled the water contamination emergency by extracting the diesel from the river (Participant 4 and 5).

Two cases were processed differently. Participant 3 did not have to call any emergency response team or environment agency since the crime was not consummated. The commission was in the presence of the agent and she was able to stub out the cigarette lit in the middle of petrol pumps and stop it before the foreseen consequences occurred. Participant 6 narrated that Firefighters and the Police Department Explosive Division arrived at the scene because a residence was on fire. The significance of these collaborations is the interagency cooperation in this process taking into account that these cases are different to handle because of the pollution elements involved.

Every case must be consulted with a district attorney. Prosecutors analyze the elements of the event and the code's content to determine if there is a crime. If it is a felony, they decide what crime or crimes applies for prosecution. In these cases, the

requirements were related to endangering people's lives and health and the contamination of a natural resource. The prosecutors interviewed for this investigation agreed that the act of the cases they handled were committed in violation of the penal code. Moreover, each assured that their decision to submit the case for trial was based on the available evidence. The three district attorneys who participated stated that they had strong evidence to make the offenders responsible for their actions.

The agents and district attorneys revealed in their interview the intervention and investigation performances they carried out in the environmental case handled. Police officers started their intervention processes thinking the complaint had to do with another crime. The police investigation procedures are basically directed towards protecting people, preserving the scene, collect evidence, develop reports, and notify the district attorney. When performing these practices, they discovered the contamination of the environment and proceed to call the agencies that could help manage this situation. These agencies assisted police in the evidence collection process and manage to control and clean the polluted resource. Afterwards, police consulted with the prosecutors who determined if the event met the requirements of a crime. In summary, the crimes were treated just as any other by police officers and district attorneys.

Protocols. When dealing with situations that could jeopardize the safety of a large number of people (e.g. fire or contamination of a body of water) a protocol gets activated. But what is a protocol? Why do we need protocols in these types of situations? A protocol can be described as a document that standardizes behaviors and actions. Timmermans and Berg (1997) argued that a protocol is to achieve "local universality"

through standardization. Although protocols promote a universal, standardized action, it is put into practice in time and space. Having said that, it is necessary to explore how universal or standard the actions (for instance the intervention processes) of law enforcement were when dealing with these cases. Is there a protocol in place standardizing the environmental crimes' implementation procedures?

An agent and a district attorney affirmed the inexistence of intervention protocols for environmental cases (Participant 3 and 8). They were sure that there are no investigative procedures for these types of cases. Four other interviewees, including a prosecutor, were uninformed regarding the availability of an environmental crime guideline for investigation (Participant 2, 4, 5, and 7). These agents and district attorneys were unclear about what to do.

Although most of the participants were not aware on how to proceed, they used their discretion to handle the cases. For instance, Participant 4 expressed that the most prudent thing to do is to call the experts. In absence of a clear track of action, calling the pertinent environmental agencies seemed for him like a wise decision for this participant. In a different scenario, another agent's discretion took a more proactive turn. Although Participant 1 also called the pertinent agencies, the fact that he had extensive training on environmental affairs, let him take charge of the investigation and carried the needed actions to control the pollution. Participant 1 knew what to do and the protocols for controlling the septic tank discharge. Due to the nature of his former job, he received specific training on how to manage black water pollution.

I conclude that all agents handled the cases as any other crime, regardless of their knowledge about the existence (or inexistence) of a protocol. They followed the common investigative procedures they learned through work experience. Their focus was to unveil the truth about what happened through the identification and analysis of evidence. Another common practice carried by these participants was the discussion of the cases with a district attorney. Each case must have the approval of a prosecutor to file an official complaint. But, attorneys do not seem to be more knowledgeable about these crimes than any enforcement agent.

It is obvious that a protocol standardizing the procedures is not in existence. I understand that, when an agent faces an environmental harm during an investigation, the course of action is discretional. A protocol would be useful because only one agent knew what to do and how to manage the situation. If the agent is investigating environmental crime cases and does not have training in environmental pollution, a protocol would provide them with a standard track of action. In fact, not only agents will benefit from such document, prosecutors would as well.

Collaboration. In a previous section, I explained the apparent bureaucratic nature of the judicial system and its lack of consistency when it comes to documenting and archiving cases. Bureaucracy can make governmental procedures more difficult. When different agencies converge, bureaucracy can become noninstrumental. As I have shown before, most of the enforcement agents understand that the field is occupied or at least shared by agencies other than theirs, which leads to the collaboration of one or more institutions.

Governmental and private agencies, besides the criminal justice system, collaborated in five of the six environmental crime cases. Three environmental related institutions intervened in the investigation and management of the contamination. According to Participants 4 and 5, the Water and Sewer Services agency has the capacity to evaluate water quality levels. The personnel of the agency responsibility of supplying potable water for human consumption to every house in Puerto Rico, use specialized equipment to test water quality. In one of these cases, the aforementioned agency contracted a private corporation to clean the polluted water (Participant 4). This was the only private agency described by the participants that was involved in any of the investigation or pollution management practices.

In the septic tank discharge case, the Environmental Quality Board arrived 3 to 4 days after the event occurred (Participant 1). The Board could not obtain any water samples to corroborate pollution since they arrived days later. As days went by the evidence got lost. The agency's collaboration in this situation was to inspect the area and support with scientific evidence the complaint against the offender. Needless to say, this evidence was never collected.

Another case involved the collaboration of a government's municipal organization when Participant 2 called the Department of Environmental Affairs of the Township where the incident occurred. The participant understood that this agency could help him determine the type of crime committed and with the cleaning processes. This municipal department took care of the investigation procedures and the cleaning of the affected area. Although the participant did not have knowledge about the code's

environmental crimes, he proceeded to call the municipal organization to get their opinion. It is important to mention that municipalities such as Ponce, Bayamón, Caguas, and Carolina have in their legislations environmental affairs and protection divisions.

Three other governmental entities handled two more cases. The Department of Health investigated the sanitary conditions after the septic tank discharge (Participant 1) and Puerto Rico Firefighters intervened in the case of Participant 6 because a house was set on fire. Also, the Explosives Division of the Puerto Rico Police investigated to identify the use of any means to cause the arson. The collaboration of these two agencies helped detect the use of a gas tank to initiate the fire.

Theme 3: Perception

Participants demonstrated interest in environmental affairs and protection. Some participants explicitly talked about the importance of nature and highlighted the deficiencies of the system to prosecute these crimes. Moreover, it caught my attention what they said regarding their satisfaction of the investigation process, agency collaboration, and resolution of the case. The response received by police and district attrorneys over their satisfaction revealed concerns about the law's implementation outcomes.

"The purpose of these environmental crimes is to protect the limited and valuable natural resources that are in danger because of contamination and the misuse of our resources" (Participant 1). This quote conceals the concern of the agent about the vulnerability of our ecosystem and that human beings are negatively affecting it. Participant 6 thought similarly when he stated that "these crimes threatens nature." In the

same line, Participant 5 expressed that everyday people are exposed to an environmental offense. He added the importance of environmental crimes when saying that these felonies intend to protect the natural resources available and the citizens' quality of life. Participant 8 replied the same as Participant 5, expressing that nature is protected from these crimes due to the relationship it has with life. While Participant 9 stated that, because of the proliferation of these actions, legislators included these crimes in the penal code.

Other two agents demonstrated their preoccupation about the application of the law by the criminal justice system. For instance, Participant 3 said, "Police agents do not intervene in these cases because they do not see it necessary; they are not aware of the importance of their intervention and have no commitment to the environment." She perceived that there are no more prosecutions or interventions because police agents do not understand the importance of nature. Participant 4 targeted the implementation deficiencies towards judges. He suggested that, "judges should receive training on these crimes and on the seriousness of environmental damage to nature and human beings." He perceived that judges have a significant role in the implementation of these crimes and that their lack of knowledge can affect their determination in felonies of this type.

The interview instrument included a series of questions inquiring about police and district attorneys' satisfaction with three elements: the process, agency collaboration, and resolution of the case. Four police agents and all prosecutors commented they were pleased with how the case was prepared (Participant 1, 3, 4, 5, 7, 8, and 9). They mentioned that the cases had strong evidence for prosecution. Therefore, the majority

agreed that the intervention process and evidence collection was properly done and the case had the credentials for criminal trial.

Regarding the agencies collaboration, three police officers and all district attorneys were satisfied with the intervention of the agencies involved in the cases they handled (Participant 2, 4, 6, 7, 8, 9). Governmental and private agencies worked in several cases and their cooperation was important for pollution management and prosecution. These participants accentuated the diligence of these agencies of arriving at the scene and making the necessary efforts to control contamination and corroborate environmental harm.

When asked about their satisfaction with the case's resolution, the majority of participants were unsatisfied. Participants 4, 6, 7, and 9 complained about the judge's discretion. Each of the aforementioned participants were surprised with the not guilty decision of the judges. They all agreed that they had the necessary evidence to meet all the legal requirements for the accused's conviction. These participants questioned the judge's decision because they cannot explain the magistrates' determinations.

This uncertainty excludes Participant 7 who expressed that the "judge said that the evidence could not prove harm towards human life". Although the judge made that comment, his perception of what he considered harmful to people is not clear. Another participant received comments from the judge presiding the case. Participant 1 explained that the judge of the case he investigated commented that, "the lack of instruments avoided the conviction of the defendant." He mentioned that there was no scientific evidence that demonstrated pollution. The judge believed that scientific evidence was

necessary to prosecute someone when all the other evidence presented, illustrative and expert testimonies, demonstrated the river's pollution.

On the other hand, three interviewees manifested satisfaction with the resolution of the investigated cases. One agent was pleased because the district attorney and judge received the recommendation she made (Participant 3). The suggestions were regarding the drug addiction of the accused and his need to be treated. The offender was ordered to participate in drug rehabilitation program. Another police officer said he was content with the judge's determination because he was ordered to do community work (Participant 2). This community work sentence was imposed because he was convicted of property damage and not because of the environmental crime he was initially accused of. A district attorney expressed he was satisfied with the case because it was seen in a criminal trial, but surprised with the judge's determination (Participant 8). The judge's resolution was for this case was not guilty although the evidence presented was vast, strong, and demonstrated the responsibility of the accused, as expressed by Participant 8.

Document Analysis

Document content was part of the data collection process and triangulation of the investigation. Court case files and the articles that define the crimes in the penal code are the documents I analyzed in this study. The information contained within these court files corroborated elements of the interviewees' responses. The participants gave facts regarding the components that constituted the actions as an environmental crime, which appeared in the file with fewer details. Another feature corroborated among the two data sources was the circumstances in which the crime was committed. In addition, I

recognized in these cases how many of them were prosecuted and their sentences. These documents detail the focus of the complaint submitted to the court, I used it to reveal the intention of the investigators to prosecute. Also, with the information these cases hold indirectly I observed the profile of the accused.

Court Files Analysis. There are at least 11 cases of environmental crimes in Puerto Rico since 2007. I only gained access to 7 of them. Four of these files were unavailable and the reasons were the following: one case was seized because there was not enough element to continue for trial, a second case was resolved but had a confidentiality clause, a third case is currently on trial, and a forth case one did not appear in the judicial districts I visited nor in the documents handed by the Court Administration Office. Of the available cases, six were prosecuted with the penal code of 2004 and one with the code of 2012. The cases that faced trial were serious damage or destruction and poisoning of public waters and environmental pollution (see Appendix K).

I could not find any court files of aggravated environmental pollution although a statistical document of the Department of Corrections and Rehabilitation stated the contrary. A report on the population in Puerto Rico's correctional facilities demonstrates that there is one person convicted for this crime (Departamento de Corrección y Rehabilitación de Puerto Rico, 2012). There is no consistency between the court's administration and the correctional system. No one can become part of the correctional population without going through a *due process of law*, which means that this case must appear in the court's records. This inconsistency probably is because the court's administration is not managing the cases' files responsibly or the database software is not

efficient. In fact, I found an environmental case file in Arecibo's judicial district that did not appear in the documents received from the court as it appears in Appendix I. This document send by the Court Administration Office's Division of Statistics was supposed to include all the cases that faced criminal procedures in Puerto Rico. Eventhough I faced this discrepancy, from the seven files available for this investigation, I extracted significant information to answer the research inquiry of this study and other important facts that arose in the analysis process.

The first step in the judicial system for a criminal case is to present the elements of the offense to a judge to determine if there is probable cause for arrest or summon. In this process, one case was submitted for the attempt of serious damage or destruction, one for serious damage or destruction, two for poisoning of public waters, and the other three for environmental pollution. The attempt of serious damage or destruction was amended to serious damage or destruction when it faced trial, and one of the environmental pollution cases was reclassified as property damage. Serious damage or destruction involved the possibility of an explosion in a petrol station and an explosion of a gas tank in a residence. The two cases of poisoning of public waters consisted of diesel spill in a river that supplies water to numerous homes. For the environmental pollution crime, one of the situations was the breaking of a gas tank of an air conditioning console that caused the release of Freon 22 gas into the air. Another environmental pollution offense was the emptying of a residence's septic tank that went through several neighbor's backyards and reached a river near the houses. The other case reported of this crime was of a man that

poured diesel on the property of his neighbor that caused the fuel reach the affected residence's pool.

Six of the cases presented the possibility of directly affecting the lives and health of the people involved. One was the risk of explosion in two of the cases. The others were the diesel on the pool, the septic tank water over the neighbor's yard, and the diesel that could arrived to many residencies of the Island through the water services system. The risk of harm was extended to the offenders themselves in the explosion, the release of septic waters, and the diesel spills. Three of the accused, as identified within the files, had drug addiction problems and another was a wealthy person. It is important to state here that one of the offenders was a retired policeman; I acknowledged this fact though the interview, not by the information within the file. In six of the cases the environment was polluted except the gas station situation, because the trigger was a cigarette, that even though it contaminates the environment, it is legal to use.

The majority of the cases were the results of the commission of another crime. The crimes that provoked the environmental offenses were violent behavior, domestic violence, illegal appropriation, and scaling. In two of the cases, the intention was to cause the harm by pouring diesel in the garden of the neighbor and to get rid of the water from the septic tank of offender's residence by pouring it on the ground.

For the execution and investigation's focus and the consequences the acts activated the collaboration of several agencies to address the situations confronted. The agencies that joined forces in the intervention, investigation, and pollution management were the Water and Sewer Services of Puerto Rico, the Department of Health,

Environmental Quality Board, Fire marshal, Puerto Rico Fire Fighters, Explosives Division of the Puerto Rico Police Department, a Municipal Department of Environmental Affairs, the Forensic Science Institute of Puerto Rico, and two private corporations.

While analyzing the conclusion of the trialsI observed important information. First of all, the timeframe of the case's presentation and the sentence were from less than a month to almost two years. The majority of the cases were resolved in two to three months. Only one case lasted one year and nine months to be solved and I believe it was because of the fact that the defendant was accused of multiple crimes at the same time.

Another significant information I captured in the files was related to the accusation and defendant's profile. One case was reclassified from environmental pollution to property damage. The reason why this occurred was not contained in the exanimated file. Other three cases were resolved by sentencing the accused to a rehabilitation program, meaning that three of the seven individuals accused had drug addiction problems. From these three defendants, two violated the conditions established for their therapy and were sentenced to a maximum of three years in prison. The other one successfully completed the rehabilitation program and his case was filed. Identifying the health condition of the accused I identified the motive for the offenders for commiting the crimes. The intention was not to harm the environment, instead they did or almost did by committing another crime.

In other three cases the judge's ruling was not guilty. From two of the files I examined information about the judge's thoughts, reason or perception about the case

that sponsored their not guilty determination. One of the files had the judge's comments regarding his decision. In one of the documents, he stressed the following:

> this magistrate has presided environmental cases for many years, but pitifully the State has to provide the resources to present these crimes to the court. The means and instruments to analyze these cases must be at hand. It is needed expert material and drive it to the administrative area… The board (meaning the Environmental Quality Board) is the organic law that has jurisdiction… It was necessary to present sampling or study about (referring to the environmental damage caused). The board has the resources for studies. (Pueblo de Puerto Rico v. Hermenegildo Marcano Rolón, 2008)

Another element I identified in these files were the narrative of the event written in the court complaints. This information established the focus of the indictment. Each paragraph summarized the events and the elements surrounding the action that corroborated the act as a crime. All files exposed that these actions put at risk the life and health of the people involved as defined in the penal code.

Two of files read that the act endangered people and added to the statement that the action caused environmental damage. Other two files incorporated in the narrative that the act put in danger the biological balance of the ecological systems of nature. This was added based on the crime's definition as well. The description of the act and the crime's definition in the complaint must become part of the accusation to make corroborate that the elements of the case and the crime's description are a match.

One of the files focused the accusation on danger to human life and health. A problem with this case was that the elements of the act also involved endangering the ecological balance. The complaint did not incorporate the aspect of the crime's definition that includes harm against the environment. Therefore, the accusation was incomplete because the act did harm a river's natural balance.

I was able to reveal through these files that until 2015, a total of 11 cases have faced criminal prosecution. This information discards the reigning idea that these crimes are not in use, which is an important contribution to this area of investigation. Also, the files I scrutinized provided the elements and focus of the accusations. Each case provided the court's determination and each established a sentence. These sentences identified drug addiction problems in several of the accused that could influence their crime commission. Moreover, one of the cases included a magistrate's comment concerning his determination, which revealed important information for analysis, especially in terms of theoretical framework of this investigation.

Evidence of Trustworthiness

Triangulation is one of the alternatives available to evidence trustworthiness. This technique helps investigators corroborate the collected data obtained from different sources (Creswell, 2013; Hernández, Fernández, & Baptista, 2006; Patton, 2015). To ensure credibility, every step of the analysis process was described and explained. The source and justifications of the themes and categories was well detailed in the data analysis section using the theoretical framework. This exercise also corroborates the transferability of this study and I strenghted this aspect with the data analysis section that

narrated the data collection process. Dependability and confirmability are seen in the triangulation process by comparing the court files, the participant's interview and the crimes definitions as stated in the penal code.

Results and Themes

In this section I analyze the primary themes provided by the participants and identified in the literature review. Part of the outcome of the data analysis was represented in the themes covered by the interviewees. The outstanding elements were: knowledge, investigation procedures, and perception of environmental crimes. This section also incorporates a more in depth and detailed analysis of the themes and sub categories indispensable to study in this investigation. What follows is a thorough review of those elements.

Knowledge and Protocols

Environmental crimes have been subject to criticism and controversy among law experts. Only a few authors have written about these crimes in Puerto Rico (Chiesa & San Miguel, 2006; Fontanet, 2006; González, 2010; Marrero, 2014; Montalvo, 2011; Rangel, 2005; Renta, 2013; Rodríguez Martín, 2005; Rodríguez Rivera, 2005) and non of them have conducted any research to sustain their argument related to the implementation practices of this law. The lack of knowledge regarding the execution of these environmental crimes does not allow a proper analysis of what occurs and what should be done to make this legislation actually protect the natural resources of Puerto Rico. Moreover, it is difficult to criticize the law without knowing the implementation efforts and outcomes. González (2010) and Montalvo (2011) stated that Puerto Rico's

environmental crimes are *dead letter*. González specifically argued that there is no significant jurisprudence about these crimes, only a few investigations. She developed her statement based on a newspaper and not a primary source. I found the 2008 press release, and what the reporter stated after three years of the code's ruling was that the Department of Justice had 12 environmental crime investigations (Rivera, 2008). He detailed that from these 12 cases, six were in course and only one was resolved finding the defendant guilty. If we strictly use the definition of the concept *dead letter* to refer to a law (or crime) that is not in use (Hudson, 1999), then these crimes are not in disuse as González (2010) mentioned. Rather, if we take as good González's claimed, that only one case was resolved out of 12, then it is not a matter of the crime being dead, but lack of prosecution.

My intention is to punctuate that even though there are four environmental cases resolved at the time of this study, which can be interpreted as poor, these uncommon crimes have faced investigations and trials. It is significant that there is evidence of nine criminal prosecutions (see Appendix I), seven of which I had access to in the court files (see Appendix K), and one registered in the Department of Corrections and Rehabilitation statictical reports (Departamento de Corrección Y Rehabilitación de Puerto Rico, 2012). This means that the state considered these crimes important enough to submit them for criminal prosecution. As far as these cases are identified and investigated, the law is not dead and there is room for implementation improvements.

The lack of knowledge among law experts extends to law enforcement personnel. Authors denounced poor clarity in the definition of these felonies (Fontanet, 2006;

González, 2010) and the ones in charge of implementing the law know little about them. Based on interviews, I uncover that many of the police officers and even prosecutors only knew about the existence of these crimes but not about its content. There is no doubt that because these behaviors are unusual to investigate, it is difficult to see cases prosecuted. Agents are not capable of identifying nor even intervene with an environmental crime when they receive superficial or no training. Law enforcement officials cannot recognize harms towards nature when they do not know the essence and intention of the typified crime. Several interviewees said that they knew about environmental crimes after conducting the investigations on one. The case caught their attention and felt interested in knowing about these crimes.

The law enforcement personnel participants never handled an environmental crime case before facing the one used for this study. Therefore, they knew nothing about any implementation procedures to follow. Both police officers and prosecutors were convinced that no protocols exist for investigating these felonies, corroborating what González (2010) denounced. She accentuated that the Department of Justice and environmental agencies have not developed guidelines for the purpose of identification, investigation, and prosecution of these crimes. Therefore, without a protocol it is difficult for investigators to address these crimes or even identify them.

When dealing with environmental crimes, the intervention practices can be speculative. These crimes are rare and require knowledge related to the environment and pollution. For this reason, it is indispensable to develop trainings that provide knowledge to police and prosecutors regarding identification, investigation, and prosecution of these

crimes. It is also necessary to establish protocols to structure the mentioned trainings and solve jurisdictional and collaborative manners.

Jurisdiction and Collaboration

Jurisdiction and collaboration are a source of contention among law experts (Chiesa & San Miguel, 2006; Fontanet, 2006; González, 2010; Rangel, 2005; Renta, 2013). The first concept establishes the competence of a governmental agency to address particular situations. The jurisdiction of each case or social issue is determined by the instruments each agency has to address society's needs or situations. Meanwhile, collaboration is desirable within every government entity no matter the social focus of each agency. The government is entitled to provide society everything it needs to comply with the satisfaction of basic needs and promote social order. Therefore, the state's agencies have the same goal, but as academics stated, it seems that these do not moves forward in unison. The absence of protocols triggers a series of jurisdictional issues that can delay and even jeopardize the prosecution of these crimes. Rangel (2005) argued that ambiguity reigns when it comes to determining which law should be applied. Puerto Rico has regulatory, federal, and criminal laws, that allow a case to go through an administrative, civil, or criminal process in the local or federal sphere, which can generate that ambiguity denounced by Rangel. Renta (2013) mentioned the possibility of confusion and division in the implementation practices because of special and general laws targeting the same element. On this issue, Chiesa and San Miguel (2006) said that the inclusion of these crimes in the penal code was unnecessary. They claim that local and federal laws already cover these manners. The argument is genuine; confusion is

common when it comes to intervening with an environmental pollution scenario. No agency has claimed excusive primary jurisdiction for the acts that appear in the regulatory acts or the penal code.

Fontanet (2006) went further when he commented that different laws focusing on the environment might lead to double jeopardy. The administrative, civil, and criminal procedures have different authorities depending on the subject in controversy. Legislators give governmental agencies the power to conduct a quasi judicial procedure to resolve a controversy for which they have expertise. This does not mean that these agencies have exclusive jurisdiction over the case. Several courts can have concurrent jurisdiction over a case. Therefore, the state can prosecute an offender through the criminal and administrative sphere.

For the purpose of exemplifying another jurisdictional issue, I will highlight the intervention of the Environmental Quality Board, who is responsible for administrative remedies regarding environmental offenders. In one of the cases in study, the agency resigned from the jurisdiction when the Water and Sewers Services of Puerto Rico was already working on the case. The participant that narrated this event expressed that he understood that the Environmental Quality Board did not want to take responsibility for the case. The Board is the agency called to deal with that environmental crime, I can argue that the uninvolvement of this agency was caused by the jurisdictional issues. This situation created a loophole in the implementation process and this gave the agency the possibility of denying its mandate of intervening with environmental affairs.

Just like any other event where the scene must be addressed by experts immediately due to the harm it can cause to people and nature as in the case of arson which is managed by firefighters. Each case must be handled diligently also, because evidence will fade and jeopardize the prosecution process. Without evidence there is no case, just as it happened in one of the cases studied in this research. Participant 1 shared that the Board was not diligent in responding to an environmental situation. The agent alleged that this agency arrived three to four days later to the scene after the complaint was made. Their delay excluded the water collection sample, which is an important piece of evidence. Also, they did not clean the polluted water. No matter whose jurisdiction it is, in the face of situations like this, the pertinent agencies must comply with the state's necessities for the sake of society.

Continuing with the jurisdictional analysis, Participant 4 and one judge's resolution (as mentioned in Chapter 4), narrated that there are agencies that can handle these cases and have expertise in this area. González (2010) expressed that experts in the area are the ones who should investigate environmental situations. She and others also highlight that environmental harm situations should first go through administrative and civil procedures before being presented in the criminal sphere (Fontanet, 2006; Montalvo, 2011; Renta, 2013). Based on the authors' comments and the reponses of participants, I interpreted that police officers feel they do not have the training, work experience, or capability to investigate these crimes. Also, I thought that they simply did not want to work with these cases, given their lack of knowledge. The recognition of the experts'

knowledge and the shortcomings of the judicial system strongly suggest the need for collaboration.

When legislators included these crimes in the penal code, they wanted to make the criminal justice system responsible for the prevention, investigation, and prosecution of environmental crimes. The purpose relied on providing harsher punishment for the pollution of the natural resources. No matter the reasons why these acts were turned into crimes, this does not place the examination of a case solely on police officers. Regulatory agencies can initiate an investigation and afterwards file it for criminal prosecution. The concern here is that it is the responsibility of the state to respond to any situation in which the peace and order of society is being altered. This responsibility includes every agency of the Commonwealth even if they are not part of the criminal justice system. When agencies collaborate, the processes can be managed effectively, the environmental situation can be rightfully addressed and those responsible can be prosecuted.

Therefore, the idea of leaving the investigation to the experts seems like a sound practice because they have the knowledge to asses and handle the environmental situations. However, this approach does not fulfill the law's purpose of providing seriousness to the protection of the environment as suggested by the inclusion of these crimes in the code. The intention of legislators was to comply with our constitution's statutes of preserving our natural resources. Renta (2013) commented in this manner that by criminalizing these acts, the government demonstrates that the state acknowledges the importance of nature. Therefore, it makes sense to rely on the expertise of the regulatory agencies as collaborators in the investigations process.

Collaborative relationships between agencies that manage environmental affairs will provide expert assistance as well as facilitate the collection of scientific evidence for the prosecution of the offender. However, without guidelines it is difficult to make the proper connections with other governmental or private agencies to help in the investigation process. This aspect is crucial for the prosecution of the offender because evidence is needed to demonstrate the case in front of a judge. Well established protocols will allow effective collaboration and a strong political mandate within agencies to investigate and control pollution, and therefore, save the people and the environment's health.

For this reason, agencies must develop a protocol that would identify the personnel that can help in the investigation process. It is important to establish what agencies can provide help in these cases. Fortunately, based on the work experience of the interviewees, private and governmental collaboration took place. All entities, besides the Board, responded with diligence, controlling and cleaning the polluted area and preventing potential harm to people's health and the environment. The experiences of police and prosecutors serve as an argument against what González's (2010) claimed. She stated that there was lack of cooperation between agencies. This investigation evidenced that there is interagency collaboration and responsibility for these situations even though there are no guidelines established. From a bottom-up perspective, collaboration (and any other needed actions to address the situation) is indeed taking place in the field, given the agent's discretion, but a much-needed protocol would be helpful.

The jurisdiction concept can be interpreted as segregation, while collaboration as integration. The coordination between agencies is indispensable to resolve these environmental crime cases. Although there can be jurisdictional issues sounding who has primary jurisdiction of these cases, establishing interagency collaboration can solve this problem. If every agency knows its responsibility in terms of cooperation, each will know if an administrative, civil or criminal remedy is best for an environmental harm situation. For this purpose, I suggest the creation of a task force trained to address jurisdictional controversies. This trained staff will be able to effectively handle these cases using the expertise of regulatory agencies and the criminal justice system. Furthermore, this task force will avoid the common bureaucratic delays faced in governmental procedures.

Perception and Interpretation of the Law

Perception is another aspect indispensable in the implementation process that came up during the interviews and was mentioned by Álvarez and García (2009), Periconi (2009), and White (2010). Surprisingly, none of the publications about Puerto Rico's jurisdiction mentioned perception or awareness as influential for the application of these crimes. In other countries, the relation between perception and criminal resolution has been scrutinized. Scholars have shown that the lack of concern regarding the environment will impact the practices and discretion when judging and enforcing an environmental crime, (see Álvarez and García [2009] for a research conducted in Spain, Periconi [2009] for New York's court trials resolutions, and White [2010] for an Australian case study). When it comes to the participants' perception, the majority of the interviewees understood the importance of these crimes because of their negative effects

on human beings. As soon as police officers identified the pollution in the scene, they immediately did what they could to control and avoid more harm to the environment and damage to people. Police officers were aware of the effects of pollution, and they acted with diligence.

The participants of this study were asked if they were satisfied with the investigation process, interagency collaboration, and case's resolution. The majority of the interviewees replied they were satisfied with the investigation and case's organization. They admitted they did not have expertise but that with the collaboration of other agencies, they were able to prepare the case. The physical evidence and the testimonies of the experts that handled the case made it possible to solidify the file for prosecution. Although these pieces of evidence were available, the prosecutors interviewed expressed the difficulty of obtaining it. To demonstrate environmental contamination requires a series of scientific evidence for which the investigators do not have enough resources. This corroborates what Eman et al. (2013) commented about the difficulties of data collection.

When I asked to the participants about their satisfaction with the resolution of the case, many responded that they were not pleased. Participants were unhappy with the fact that the court arrived at a not guilty decision when the case had strong evidence demonstrating that the accused committed the crime. Based on their work experiences, participants understood that the evidence presented to the court was good. These discrepancies can mean that there are variances in the judge's interpretation of the law, or perhaps differences in the perception of the event or even a singular perception about the

environment, as Álvarez and García (2009), Periconi (2009), and White (2010) stated. These authors understood that the magistrates' or juries' perceptions on environmental crimes are influential when ruling and determining the culpability of an accused.

Magistrates' discretion. I had access to the opinions of two different judges. One was obtained through a participant and the other from a court file. It is important to include them as part of the analysis because the participants adduced the cases were solid and disagreed with the final ruling. Also, because this could mean discrepancies in what the district attorney presented and what the judge interpreted based on his discretion. This examination is also relevant for the analysis based on the theoretical framework.

In one case, the offender was accused of committing several crimes, including an environmental offense. During an interview, one of the prosecutors mentioned the judge's comment on her decision of not guilty over the environmental crime accusation. The case involved a domestic violence incident and arson in the offender's residence. The defendant was found guilty of arson and not of serious damage or destruction as the accusation read. The judge used the pretext of finding him guilty for arson to not prosecute the offender for the environmental crime despite the evidence and the possibility of the defendant having caused an explosion. In this case, the element that could have caused the serious damage or destructions was not carried out and no damage to the environment or people was caused. The problem here centers on the interpretation of the law. It was established that endangering people's life is a crime, and it was clear that it happened in this case. Apparently, the judge did not estimate that the act carried out the possibility of risking peoples' lives. This is alarming. If the magistrate could not

see this notorious act, how can she identify an environmental harm when it is even more difficult to observe. Another reason to establish a protocol and trainings to law enforcement agents and extend it to judges. In addition, in judicial matter, this not guilty determination prevents the precedent this case could have created. The resolution of this case exposes that the law is not being applied and all the elements of the case are not taken into account by the magistrates in the court of law (i.e., law's content and evidence).

The information in the file that has the judge's comment of the case was basically a summary of the trial process. Here, the magistrate commented several prosecution practices. He stated that it is necessary that the environmental expert prosecute these crimes. The judge emphasized that the Environmental Quality Board has the means to do it. Indeed, the Board has authority to impose sanctions but not to criminally process an individual or a legal person intentded by the environmental crimes. Regulatory agencies have a quasi judicial structure for administrative procedures as established in the Uniform Administrative Procedure Act. Unless the laws that these agencies administer states the contrary, when they need to impose criminal penalties, the state takes part and determines the culpability of the offender. Such is the case of the Puerto Rico Water Act, which indicates that the court has the authority to impose the criminal penalties for any violation of that law.

This judge adds that the jurisdiction in this case responded to the regulatory laws and agencies. The judge's reaction suggests that he understands that the prosecution of these crimes is not for the criminal justice system to attend. I say that if the state wanted

to pursue these actions through the administrative sphere, they would not have typified these acts in the penal code. Certainly, it is important that agencies address situations for which they have the training to handle, but not to delegate a criminal manner to a regulatory agency. If this was the case in every other situation, then the Puerto Rico Department of Family Affairs should have sole jurisdiction on all the cases reported of neglect and child abuse, for example. Instead of delegating jurisdiction of the environmental crime cases to an administrative process, the magistrate should have recommended the expert's investigation analysis as part of the evidence. It seems that the magistrate believes that no matter if the act is considered a crime and typified on the penal code, the regulatory agencies must see these cases. It is my contention that this perception was essential for his decision.

Continuing with the perception theme, the court files include a narrative summarizing the elements of the crime in the complaint and accusation. Analyzing the acusation provided me insights about how the case was seen when formulating the complaint. It renders the interpretation of police and prosecutors when submitting the case. Both the police officers and prosecutors must be in accordance with the narrative. For instance, one case involved the pouring of contents of septic tank to a river. The case was submitted stating that life and health of people were at risk. What the complaint did not include was that the action caused environmental pollution and alteration to the ecological balance. Not including this aspect in the accusation may have limited the judge's interpretation of the events. He could have confined his thinking to the accusation, not taking into consideration what the crime's definition states. It seems that

the focus of the law has been interpreted as if the act, for it to become a crime, must interfere with citizen's wellbeing and not the environment itself. Environmental pollution crime's description involves the risk of human beings and the threat to ecological balance, and the scene photographs presented as exhibits in the trial demonstrated that the septic water discharge got in contact with the river. With these exhibits and the content of laws and regulations the court could have taken *judicial notice of adjudicative facts*.

Judicial notice of adjudicative facts is a legal concept that allows the admissibility of certain evidence without sustaining it in trial (P.R. R. Evid., 2009). A judge can take judicial notice of adjudicative facts on his/her own and if a party requests it and the court is supplied with the necessary information (Fed. R. Evid. 201, 2015; P.R. R. Evid., 2009). Moreover, the judges must have judicial notice of law affairs, which includes the constitution of Puerto Rico and United States as well as rules and regulations of both jurisdictions (P.R. R. Evid., 2009).

The magistrate should have taken judicial notice of the law's definition of concepts in controversy; for example, water, pollutants, and the negative impact of contamination. The Law for the Conservation, Development and Use of Water Resources of Puerto Rico states that the bodies of water include any surface and within the jurisdiction of the Commonwealth's waters, groundwater, and the coastlands (Ley para la Conservación, el Desarrollo y Uso de los Recursos de Agua de Puerto Rico. 1976). On the other hand, the Regulation of Water Quality Standards of Puerto Rico states that the Environmental Quality Board recognizes that water pollution is detrimental to health and public welfare…it is harmful for wildlife, fish and, aquatic life, and impairs domestic,

agricultural, industrial, recreational, and other beneficial uses of water (Environmental Quality Board, 2010, p. 1). This same ruling defines pollutant as:

> any material introduced to the environment including but not limited to: dredge waste, garbage, solid waste, waste from incinerators, washed filter, gray waters, black waters, waste waters…and other substances that have been induced by human hand carried by rain runoff. (Junta de Calidad Ambiental, 2010, p. 9)

These laws and regulations provide the necessary information to acquire judicial notice and precede trial with better knowledge and using legal statutes such as the abovementioned ones. Neither the judge nor the prosecutor used these legal tools. The magistrate found the accused not guilty making an uninformed decision.

Another fact that can influence the prosecution process and possibly the use of judicial tools is that the district attorneys that investigated the crimes are not the ones in the trial. Since there are few prosecutors, the Department of Justice allocates them periodically in different courtrooms. The reason for this organization is that the state's attorneys have many active cases at the same time, and makes it difficult for them to be present in each hearing. This situation can jeopardize the defense of the case by losing its essence and the ideas that emerged from the investigation. Also, the workload of the prosecutors can make the case's focus to fade.

The other two cases did not mention ecological balance in the complaint even though the water pollution with diesel was notorious. I can explain using the fact that the definition of poisoning of public waters does not include harm to this natural and limited resource. Although this crime involves water resources, it only targets damage to life and

health of people. This focus may confuse prosecutors since the crime itself is called *poisoning of public water*, but the definition criminalizes the harm towards human beings and not the water resources. Moreover, the poisoning of a water source will affect human health indeed. Polluted water will end up being consumed in the forms of potable water or via the food we eat. Therefore, there is always the possibility of harming someone's health with any type of contaminants.

People make decisions and provide meaning to situations based on their experience. Our mind always generates judgment of what we hear, read, see, and feel. Judgments are preconceived perceptions of persons, objects, or events that we construct. We constantly use our perception to influence our decision-making process. This same process happens to the criminal justice system's staff. Therefore, it is important to identify the law's perception to know what kind of interpretation can be performed regarding environmental crimes and the prosecution of these.

Environmental Crime Articles

The four environmental crimes in which this study is focused were described in Chapter 2 (also see Appendix A and Appendix B). I described each, including the amendments made until 2014. I analyze the law's content and the existing critiques exposed in the literature review. The examination I made covers from the acts that constitute the crime to modifications to better the understanding and prosecution of the law.

Environmental crime's focus. The penal code typifies four behaviors as crimes, namely: serious damage or destruction, poisoning of public waters, environmental

pollution, and aggravated environmental pollution. For the first three, the code states that the mere possibility of affecting human life and health constitutes a crime. There are two elements to analyze with these offenses. First, it seems that these environmental crimes focuse on people and not on the environment itself. Therefore, why are they called environmental crimes if they focus on people? Secondly, the definition can provoke confusion in terms of interpretation and prosecution because *endangering* human life or health is difficult to acknowledge (Peña, 2013). Even more, law enforcement agents are the ones responsible of determining which acts can endanger human life and health as stated in the code's revision by the House of Representatives of Puerto Rico (Rama Judicial, 2012). This allowes me to understand that the crime's definition is vague and that the state is imposing to the agents and prosecutors the duty of interpreting aspects that are the responsibility of lawmakers. Regarding this aspect, Nevares (2010) explained that the state can accuse, for example, of serious damage or destruction, if the act puts in danger one or more persons. This could mean that any forms of commission, regardless of not harming anyone, can be considered a crime because the act itself endangers people's wellbeing. After this analysis, it is not yet clear what an endangering act is, and the difficulty increases when untrained law enforcement agents are entitled to discretionally state what actions can endanger people's lives and health.

Confusing concepts in the law. Regarding the environmental pollution article, the law states that the offender must put people's health in serious danger. Needless to say the meaning of *serious danger to people's health* is open to debate; the subjective character of this expression leads to ambiguity. The law states that the crime applies for

prosecution when the harm is serious, however, it does not explain how the seriousness of the action can be identified (Rama Judicial, 2011; Rama Judicial, 2012). Similar to *endangering*, stating *serious endangerment* of people's lives and health is difficult to establish and even more when the identification relies on the law enforcement agents' criteria. For the purpose of identifying *endanger* and *serious endangerment in a case*, it is necessary to state what elements or situations can be considered as either one. Clearly defining these concepts would be of help for prosecution. At a minimum, agents, prosecutors, and judges should be trained on how to determine when human life and health is *endangered* and on what can be considered *serious danger*. The vague definitions of the articles preclude the prosecution of these crimes.

Another aspect that caught the attention of scholars was the intention/attempt divide. Chiesa and San Miguel (2006) argued that these crimes do not include a proper definition or distinction between the two. The authors sustain that putting at risk people's lives or health is the same as attempting to do so. The penal code establishes which situations can be considered for an attempt accusation. It establishes that an attempt exists when a person acts or incurs in omission unequivocally and instantaneously directed towards initiating the commission of a crime that is not consummated due to circumstances beyond the control of the person (P.R. Penal Code, 2004, p.18). Endangering people's lives or health and the attempt of endangering through environmental pollution have distinctive elements. For instance, discharging a black water tank into a river is not the same as in the process of discharging the tank the machinery got stuck and because of a situation out of his/her control, could not conduct

the discharge. The first example can get people sick if the water is consumed, and the latter, if the machinery worked properly, the discharge would have been accomplished and the act would have endangered lives and health. It is important to identify all the elements of the crime as written in the law and the evidence collected in the scene to identify the attempt of an act.

Ambiguity between environmental crimes. Serious damage or destruction and environmental pollution address the contamination of the environment, while poisoning of public waters does not include this type of damage. This difference could have been the reason why the judge did not take into account the damaged caused to a water source. The case involved the spill of diesel in a river. This judge found the defendant not guilty of harming people's lives and health, as the accusation and the crime' definition stated. Probably the magistrate did not consider the damage caused to this water resource and even less that the water can cause people's sickness if someone drank the water. The judge did not consider the water pollution, not the possibility of harming people.

Curiously, both serious damage or destruction and poisoning of public waters provides description of how and with what pollutants a person can commit this crime, but the latter does not incorporate damage to the environment. Poisoning of public water focuses on the possibility of harming people by polluting the water of public use and excludes the damaged caused to this resource. If legislators wanted that water pollution figured as a crime in itself, then they should have stated it clearly. An offender can be prosecuted for negligent homicide if a person dies from the water contamination, but it cannot be prosecuted for the act of polluting the water.

Inconsistency of environmental crimes with other laws. The concept of *public water* as used in poisoning of public water crime is not consonant with the available environmental laws. It is unnecessary to state the public water distinction. Puerto Rico has stated in the Water Act that every body of water in the territory is property of the Commonwealth (Ley para la Conservación, el Desarrollo y Uso de los Recursos de Agua de Puerto Rico, 1976). This declaration clearly establishes that no matter what water source gets polluted, it will be of public use. It is not necessary to maintain this crime typified when there is another crime available that prohibits acts that endanger people's health and contaminate water sources. This is the case of environmental pollution crime that typifies water pollution and incorporates endangering human life and health. It does not make sense that two crimes prohibit the same conduct.

Environmental crime's content limitations. Another aspect regarding the crime's definitions, Fontanet (2006) and González (2010) criticized the limited pollutants that could contaminate the environment as typified by the law. In the code of 2012, serious damage or destruction and poisoning of public waters included a list of toxic substances as defined by the Environmental Quality Board and the Environmental Protection Agency. The advantage of listing the pollutants that are against the law is that it specifies instances in which a person can cause an environmental damage, leaving no doubt about the commission and no room for discretion. The disadvantage is that a prosecutor could choose only these pollutants and ignore other forms of contamination. It is necessary to specify that pollutants are not limited to those provided by the Board.

Sanctions for environmental crimes. Fortunately, the amendments of the code of 2012 included a sanction for negligent behaviors and established fines for legal persons. A legal person can be an agency, corporation, or industry, and sanctions are only established in serious damage or destruction and poisoning of public waters. The penalty for any legal persons is a fine in both crimes, which I believe does not make the convicts responsible for the harm caused. Establishing a specific amount of fine for intentional or reckless behavior will not respond to the restoration of the polluted resource. Although restitution appears as a sanction for this crime, the magistrate has the discretion to impose it or not. No one can interfere with the magistrates' decisions to impose discretionary sanctions. Therefore, there is no assurance that this punishment will be imposed. For this reason, I believe that restitution should become a compulsory penalty for these acts.

For instance, in the cases examined in this investigation, the only one convicted did nothing to repair the damage caused. The state had to carry the burden of paying for the cleaning of the polluted area. His only involvement was to comply with the magistrate's orders, which were of the rehabilitation program. I have to make clear that this convict had, as interpreted in the court's file documents, drug addiction problems. This means that he could not have the economic resources to pay for the cleaning of the environment. A community service sanction in which the convicts help in the cleaning of the damage they caused or help in any other environmental affair could be a good measure for offenders of lower socioeconomic strata. The idea of imposing restitution is to make the offenders responsible for the damage caused by their behavior, and help in the cleaning process, either by paying the costs or by doing it themselves. I argue that the

collaboration in the restoration of the environment will promote environmental consciousness and avoid recidivism.

Unproportioned sanctions. From this article I also observed that this crime sanctions a convicted natural person of an Eight-year-term imprisonment sentence while it gives a $30,000 dollar fine for legal persons. I believe that the $30,000dollar punishment will suit best a natural person instead of imprisonment because he/she violated governmental permits. Imprisonment is a harsh sanction. These sactiocs are unproportionate and does not respond to restore the damage caused or the responsibility with the state.

A legal person must be aware of the state's requirements when becoming an organization, corporation, industry, or agency. They must comply with the permits and responsibilities drawn by the government to ensure the best practices of the activities to perform. When these legal persons fail to fulfill these regulations, they mock the state's ruling, which is an offense to the government's trust. Corporations and industries produce more income than a natural person. Therefore, a severe fine will be more in proportion with the effects of this crime, than only $30,000 dollar penalty. Corporation and industries have a stronger economic activity than a natural person, and also they typically have the structure (e.g. environmental division office, lawyers, and secretaries) to comply with the state's requirements and permits. In this scenario a severe fine will be more in accordance with the fault.

Regulatory expertise. Continuing with aggravated environmental pollution cases, because I could not find any court file, it is impossible to analyze the

implementation practices of this crime. Although, based on the crime's description I can interprete that it is more likely that regulatory agencies identify these offenses than police officers. This crime prohibits conducts that revolves around permits that state's regulatory agencies grant to individuals and entities. Regulatory agencies' personnel periodically carry out inspections about the compliance of permits requested by any natural or legal person. In this process, the agencies can take notice of any permits violation and submit the case for criminal prosecution. It is difficult for a police officer to identify such offenses that requires regulatory law's expertise, unless it arise from the investigation of an environmental pollution case in which the police officer has to have knowledge on permits. Either way, the agencies that grant the permits are the ones familiar to these affairs. This is another reason why it is indispensable to establish a protocol that organizes the state's agencies collaboration since interagency partnership will support the state's investigations and vice versa.

Discrepancies in the Database of the Criminal Justice System

Within the data collection process, I notice several discrepancies in the information I found doing research and visiting governmental offices and what the Court Administration Office handed to me. For example, regarding aggravated environmental pollution, the court did not include any case prosecuted for this crime based on the information sent by the Court Administration Office (see Appendix I). The absence of this crime in the court's files is inconsistent with the information recovered from the Department of Corrections and Rehabilitation. This agency documented the confinement of one person convicted for aggravated environmental pollution (Departamento de

Corrección y Rehabilitación de Puerto Rico, 2012). Unfortunately, since the case is missing from the Court Administration Office files, it does not figure in this dissertation. Another discrepancy is that I found one case filed in Arecibo's judicial district that was not included in the documents sent by the court. This generates distrust over the information handed by governmental agencies. There must be several reasons why these two cases that I am aware of were not included in the list of environmental cases seen by the court as it appears in Appendix I. Perhaps there are communication problems between agencies affecting the file process of the cases. Also, there can be issues regarding the different databases used in the judicial districts that prevent finding the information needed. I can assume that there are mismanagement of the cases' files due to the work overload and lack of personnel in the court system. Regardless of the reasons why some cases did not figure in the court's list, I cannot entirely trust the information handed. There are 11 cases, of which I could analyze seven, but I cannot discard the idea that other cases may exist in the bureaucratic maze of court institutions. In fact, this strengthens the point that the law is not dead. To my knowledge, there are 11 cases, but after learning how inconsistent the system is, a handful of other cases is possible.

Summary

The research question was elaborated to describe the implementation process that has not been document or identified within the criminal justice system. With the interviews and document analyses I obtained information to construct the implementation practices that police and district attorneys carried out to manage these crimes. Moreover, I included an element of perception that became an essential aspect for identification,

investigation, and prosecution. Through the data collected I recovered the work experiences of police and prosecutors, their knowledge, law execution performances, as well as the collaboration of other entities. I used the acquired information to disclose the resolution of each case and one comment made by a magistrate that ruled one of the trials. In addition, the procedures applied by police and district attorneys corroborated the bottom-up theory perspective of the law implementation practices.

In short, from the results I unveiled that there is lack of knowledge concerning implementation practices for these crimes. Police officers and prosecutors performed the investigation as if it was an ordinary crime. The unawareness of these crimes did not preclude their intervention duties nor hinder the proper management of the scene. When agents saw the environmental pollution caused by the offense, they called the pertinent agencies for support. There was interagency collaboration from the public and private sector in the intervention, investigation, and pollution management. These performances ensured pollution control and cleaning of the harmed resources as well as scientific evidence and expert testimonies for prosecution.

The majority of the interviewees were conscious of the importance of the environment. They mentioned that people must be aware of the significance of nature and its connection with society's wellbeing. Their awareness helped them identify pollution in the scenes because the majority of the cases were initially investigated as another type of crime. Moreover, the public and private entities' collaboration and prosecutor's advice helped to analyze the evidence and laws to determine that the cases were an environmental crime.

More than half of the cases were ruled as not guilty. The concern of participants with the magistrate's determination relied on the evidence presented. Police and prosecutors were confident that the necessary evidence was offered in the trial, and the judge found the defendants not guilty. The judge's discretionary decision merit further research because they could be changing the meaning of the law based on the theoretical framewrok of this research. In Chapter 5 I disclosed the findings and my interpretation light of the bottom-up and local network theories. This next chapter contains the limitations and social change implications of this study. In this section I also provided recommendations for future research in this area.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This dissertation was designed to discover the implementation process law enforcement agents carry out to investigate and prosecute environmental crimes. Environmental offenses were typified as crimes in the penal code of 2004 and until 2015 there are no studies about their application. Experts in the legal field have written about these crimes and criticized them (Chiesa & San Miguel, 2006; Fontanet, 2006; González, 2010; Marrero, 2014; Montalvo, 2011; Rangel, 2005; Renta, 2013; Rodríguez Martín, 2005; Rodríguez Rivera, 2005). Moreover, a few authors commented about the inactivity of these crimes (González, 2010; Marrero, 2014). With this investigation I revealed the implementation procedures and the use of these felonies from two different perspectives, the police and the district attorneys. I identified these perspectives using the bottom of the criminal justice system's hierarchy as suggested in the theoretical framework.

Through the analysis of the findings I identified lack of knowledge regarding the implementation for environmental crimes. Interviewees revealed the prerogative of investigators to conduct the scene search based on their basic routine knowledge. Although police and prosecutors knew little about environmental crimes, they were open to seek collaboration and guidance. Several governmental and private corporations helped in the investigation and in the cleaning of the affected area. Even though the cases were well prepared, four out of six cases found the defendant not guilty. In this final chapter I provided the interpretation of these findings, the limitations of the study, as well as recommendations and implications for social change.

Interpretations of the Findings

This research I developed itended to explore the implementation practices of environmental crimes typified in Puerto Rico's penal code. Through the collected data I distinguished significant information about the law's execution process by the enforcement agents that handled these crimes. Within the results I highlighted valuable elements that describe the application performances of these crimes. To detail these findings, I interpreted the interviews and documents using the literature review of Chapter 2, the street-level bureaucracy, and the local network theoretical framework.

Knowledge and Protocols

Law enforcement agents did not know about the environmental crimes of the penal code. Only one had knowledge due to past training in a municipal agency that worked with environmental affairs. This is basically an important concern to address since lack of knowledge results in lack of prosecutions. A police officer or prosecutor cannot identify any environmental harm if they are not aware of the existence and definition of these crimes.

One aspect I identified during the analysis was that the majority of the cases that went on trial were initially investigated as another crime. It was in the investigation process of another crime that police officers took notice of the environmental harm that occurred. The environmental damage happened as a consequence of the commission of another crime. It was in those events where an environmental crime was considered for prosecution.

This lack of knowledge is derived from no training efforts to rise the police and district attorney's awareness of these crimes. None of the interviewees, except for one, knew how to identify or handle the situation of an environmental harm. There is no protocol that law enforcement agents could refer to as a guide in the event of an environmental crime. Protocols are indispensable because it is required a more profound knowledge of the environment due to the complexity of identifying these crimes. Environmental pollution can be difficult to observe (Ibarra, 2014). Because of this aspect, there must be some training or manual for police officers and prosecutors to understand the seriousness and significance of identifying and handling these cases.

Furthermore, no investigations were made of these crimes in terms of implementation or effectiveness. Without these studies lawmakers cannot observe if the law needs revision, what can be done to improve its execution, or even know if it is useful at all. In the literature review, several authors (Chiesa & San Miguel, 2006; Fontanet, 2006; González, 2010; Marrero, 2014; Montalvo, 2011; Rangel, 2005; Renta, 2013; Rodríguez Martín, 2005; Rodríguez Rivera, 2005) mentioned issues in the implementation aspects of the law, but none developed an investigation in this direction. Therefore, academics, lawmakers, and even I cannot see what they took into consideration for saying that implementation efforts must be addressed or that these crimes are *dead letter* (González, 2010; Montalvo, 2011).

Even though there are no training efforts from the state or guidelines for law enforcement to follow, there are at least 11 cases that faced trial for the commission of an environmental crime. This means that police officers and prosecutors used their limited

resources to address the harm caused to the environment and make the offenders face trial for their actions. These cases were seen in court eventhough police officers' investigation efforts and prosecutors' were unaware and lacked of training. What would have happened with a well established structure based on trainings, protocol, and interagency collaboration? How many cases would have been investigated and prosecuted with the proper guidelines?

This investigation only covered the aspect of implementation, which limits the findings to the execution process, but it is important to know whether these environmental crimes in the penal code are necessary or not. I interpret that these crimes can be effectively used for prevention of environmental harm. The issue here is that there is lack of prosecution, which can be mostly due to the unawareness of these crimes and lack of training or protocol that serves to guide law enforcement agents.

Jurisdiction and Collaborations

Jurisdiction is a problem that was discussed by several authors (Fontanet, 2006; Rangel, 2005; Renta, 2013). Academics were right about this concern. Law enforcement agents interviewed understood that the Environmental Quality Board was the governmental agency that should handle the cases. The Board, in one of the investigated cases, gave the jurisdiction to another agency. In another case, this same agency came to the scene three to four days after the incident, which not allowed the collection of pollution evidence.

Moreover, there already exist state and federal legislations that regulate activities similar to what these environmental crimes describe. This makes the jurisdictional issue

more complex. No one knows which agency is responsible for the investigation of these crimes and which law apparatus should see the case. The totality of the circumstances of the offense must determine the jurisdictional aspects in concern, but no one has this clear.

This jurisdiction issue exist for several reasons. The crimes are not clearly defined and law enforcement officials do not acknowledge these crimes. Also, there is no protocol to establish either how these offenses are identified, who handles them, or how these cases must be investigated. In addition, there is no collaboration agreement between agencies to help in the management of these cases, which is necessary due to the complexity and dangerousness of dealing with pollution. Therefore, other agencies' collaboration is indispensable in theses manners. Until the jurisdiction if these cases is not solved, the state will encounter difficulties in assuming the investigation of environmental crimes.

The collected data showed that several public agencies and private corporations intervened in these cases, most of them for controlling and managing pollution. Their collaboration was possible because the agents investigating the scene did not have the necessary equipment or skills to manage pollution. The Environmental Quality Board has these needed instruments and training, but they did not arrive on time or give jurisdiction to another agency. Pollution would have arrived to hundreds of houses and made important natural resources unusable if these other entities would have not collaborated in managing the contamination developed from the offenses committed.

Through this study I confirmed the concerns of several academics that there is no agreement in the jurisdiction of environmental cases (Fontanet, 2006; Rangel, 2005;

Renta, 2013) and that there are no established collaborative covenant between agencies (Fontanet, 2006; González, 2010; Rangel, 2005). As I mentioned in Chapter 4, the concept *jurisdiction* can be interpreted as *separation*, while *collaboration* infers unity. The partnership between public and private entities makes more viable and it could even save time and costs. A well structured protocol will solve the current jurisdictional dilemma. It will be effective to develop a guideline that settles which are the agencies that can collaborate in different situations and which tools should be used by each entity to address pollution and manage evidence collection. This is just an example of how a protocol can solve the issue of who responds to environmental harm.

Perception and Interpretation of the Law

None of the academics studied mentioned *perception* as an element of discussion and even less when the authors do not study the implementation process of the environmental crimes. I considered perception in this investigation because several authors, not realted to Puerto Rico, mentioned it as significant in the study of the implementation process of environmental crimes (Álvarez & García, 2009; Periconi, 2009; White, 2010). What these authors suggested is that perception plays a crucial role in the adjudication of the law. Since I was investigating about the implementation process of these crimes in Puerto Rico, I understood that this aspect should be considered.

Perception can be strongly related to the identification, investigation, and prosecution of an environmental crime. It can be a determinative element in whether an agent should investigate or not, or in whether a judge should prosecute or absolve. All participants had a degree of knowledge of the importance of the environment, either for

nature itself or for what its conservation means to humans. This aspect made possible that the entities capable of managing a pollution situation were contacted as soon as police officers noticed the environmental harm. Meanwhile, I had the anecdote of one participant in which the judge ruling the cases decided to not prosecute the offender for the environmental crime because another crime in that case absorbed it. This judge's discretion, based on her perception, did not allow a precedent for this crime.

Also, through the comments made by a magistrate in a court case file, I understood that this was an indispensable aspect in the ruling process. He mentioned in several ocations that environmental crime cases had to be prosecuted through another mean. I cannot make solid conclusions with his expressions using only a single case file document, but I can infer he believed that criminal courts are not the scenario for adjudicating responsibility for these crimes. I can interpret, as mentioned earlier, that his perception influenced the ruling process. I say that his opinion on these crimes was a reason why he did not find the defendant guilty when the police officer who investigated that case revealed that the evidence was strong based on his years of experience in the law enforcement field.

I cannot arrive at a conclusion with such a limited data of the judge's interpretation. Therefore, I suggest the development of an investigation about this aspect. I believe that, because magistrates have discretion when adjudicating a case, their life experiences, perception, interpretation, and even feelings have a tremendous influence on their ruling process. It is important then to investigate the perception and discretion of magistrates when ruling an environmental crime case.

Environmental Crimes Article

It was indispensable for this investigation that I analyze the content of the articles that define the environmental crimes that were being studied. Several authors stated that these definitions were unclear and ambiguous (Chiesa & San Miguel, 2006; Fontanet, 2006; González, 2010; Renta, 2013). This aspect of the law impedes the effective identification and prosecution of these crimes. The law must be written so that it cannot be misinterpreted or cause any confusion.

After revising over and over the definition of these crimes, I agree with the cited authors. These crimes are not written with clarity. There are keywords that are important for prosecution but are not well established or explained such as; endangering, serious endangerment, and serious danger to people's health, for example. These concepts are very ambiguous and subject to individual and multiple interpretations and confusion. For this reason, it is important to make a clear statement of the meaning of these words, provide training to law enforcement personnel, and establish a protocol that exemplifies and specifies the concepts concerned.

Also, these crimes could be confused with one another. I saw that poisoning of public waters does not focus on the pollution to the water resource. It rather targets the damage that by polluting this source can cause to people. Therefore, the court will prosecute for endangering or harming people's health or lives and not the damage caused to the water resource. Meanwhile, *environmental pollution crime* incorporates the possibility of prosecution for the damage to the resource alone and a disposition for endangering human life. Environmental pollution declares prosecutable the pollution act

that reaches different natural resources without the need of endangering or affecting people directly. Moreover, poisoning of public waters is redundant since the state's Water Act has already established that every water resource is part of the Commonwealth. This means that every water source contaminated is an offense to the public. It seems that these crimes were not completely tempered with the current legislations and with the other environmental crimes legislated at the same time.

The sanctions of these environmental crimes are not in proportion with the typified act. Legislators believed that by incarcerating offenders the contamination activity is solved and consequently the environment is protected. It is important to acknowledge that there are few environmental cases prosecuted to establish any strong precedent. Also, the cases prosecuted have not been made public for the people to know that the state is taking the protection of the environment seriously. Moreover, there has not been any investigation conducted to know if prison is the best alternative for prevention. In addition, after the incarceration of the offender, the environment continues polluted. None of the judges who convicted an accused used the alternative sanction of restitution to reverse or at least control the damage caused. Restitution is more appropriate in cases where the environment gets harmed. These aspects must be addressed so that prevention takes effect and the environment is protected.

One of the environmental crimes, *aggravated environmental pollution*, needs to be handled by experts since it relates to regulatory and state permits violations. This is specifically for the agencies that provide permits that involve or may affect the island's

natural resources. Therefore, it is important to establish through who should investigate this and who can collaborate in the process.

These observations made through these last two chapters must be addressed and tempered to the reality and the already established laws. The law needs clarity as well as a protocol to guide the implementation process. The inclusion of environmental crimes in the code is a good legislation and can be effective in preventing environmental pollution if it is properly implemented. For this reason, later in this chapter I included a series of recommendations to better the law and its execution.

Discrepancies in the Criminal Justice System

During the course of the data collection process, I recovered enough data to understand that there are discrepancies in the database of the criminal justice system. In the report provided by the Court Administration Office, two cases I found through other sources were absent. I had access to one case by personally visiting a judicial district and the other by searching for data in the correctional system's statistics. This situation can cause incredulity when accessing the government official documents. I can also infer that there could be other environmental cases that faced trial but because of this issue I could not reach them.

Street-level Bureaucracy Theory Analysis

The bottom-up perspective was indispensable for me to use for the comprehention of the implementation of these crimes. I analyzed the practices of the people who executed the law (Berman, 1978; Hjern, 1982; Hjern & Hull, 1982; Lipsky, 1969). Through the performances carried out by the law enforcement personnel interviewed I

identified the implementation process and their opinion of these crimes. The street-level bureaucracy theory states that police and prosecutor's perceptions can change the meanings of the law (Lipsky, 1969). I considered this aspect while analyzing the findings.

Police officers and district attorneys were ignorant about these crimes when they started their investigations. Their response to the environmental situations was to perform discretionally based on the elements of the case. They did what they knew best; they investigated. In the investigation process they discovered evidence to identify the ones responsible and make them face trial in a court of law. Even though these agents knew little about these crimes, they followed the common practices to investigate a scene. As police officers, their number one responsibility is to protect life and property and to prevent, investigate, and pursue crimes, as they did in these cases. They used their work experiences as guidance to develop the investigation. Also, they knew that their skills alone could not help in the management of the case, and for this reason, they contacted agencies to control pollution. In this process, law enforcement agents were diligent in their proceedings and reached to the pertinent agencies to attend each case. On the other hand, district attorneys were called to consult the cases. Prosecutors corroborates what crimes are committed based on the scene's evidence and the criminal law. They determined the existence of an environmental crime in each case consulted. Through the interviews with prosecutors, I understood they acknowledged that in each case there was enough admissible evidence prosecute these crimes in the criminal court. Perhaps they did not know how to handle these crimes, but they proceeded as any other crime supported with evidence.

Although there was no protocol for the intervention and investigation of these crimes and no interagency collaboration was established, the interviewed agents executed parallel with the law. They handled the cases based on the investigative common practices they perform in a daily basis. In the cases analyzed, police and prosecutors interpreted the law keeping its meaning intact. Police agents and district attorneys maintained the legislators' purposes of executing the law as well as protecting lives and the island's natural resources. Law enforcement agents did not alter the meaning of the law as the street-level bureaucracy theory stated even though they had to perform without guidelines and by their discretion.

I identified in this investigation that judges are the ones modifying the law's meaning, as suggested by the street-level bureaucracy theory. One of the cases available included a judge's opinion over environmental crimes. Although the focus of this analysis is on police and district attorneys and not on judges' resolutions, I could not let this valuable information go unnoticed. The magistrate's comments underscored the competence of the State's environmental regulatory agencies, in this case the Environmental Quality Board's jurisdiction. He claimed that these cases should be seen in the administrative sphere. I interpreted that this vision could have biased his decision in the adjudication process. His point of view could have caused him prejudice in this case and affected his discretion in taking judicial notice. These cases are unusual, and, as a state's representative referee in judicial processes and expert in legal manners, this judge should have searched for rulings and laws related to the environment. Magistrates

must have judicial notice of law affairs, for which there is no reason that can justify him not revising the existing laws.

The comments made by this magistrate revealed that to rule this case, he only used the work experience he claimed to have over environmental crimes prosecution. If he had taken judicial notice of the laws and regulatory documents that establishes what is considered water and pollutants, his comments would have been different. For instance, there is no need for expertise over a polluted river case when prosecutors had evidence of the event and the law establishes the acts and the pollutants that can contaminate the environment. In this case, the evidence was photographs that demonstrated the contaminated path of black waters and its contact with the river. Not taking notice of the existing laws made it impossible to issue a wise and informed judgment. The fact that magistrates have open discretion when making decisions can lead them to change the meanings of the law.

Regarding a comment referring to evidence, the judge mentioned that there was no scientific evidence that demonstrated environmental damage in the case he preceded. In Puerto Rico's Rules of Evidence there are five types of evidence, including demonstrative and scientific ones (P.R. R. Evid., 2009). One type of evidence is just as important as the others, and he ignored the photographs presented and only paid attention to the absent scientific evidence. What the law requires is that the evidence presented in court is authentic, admissible, and proves the act beyond reasonable doubt. A magistrate's decision is based on the quality not the quantity or the type of evidence offered. As mentioned, the prosecutor provided demonstrative evidence to the court that

illustrated the river's contamination and the expertise of the regulatory agency that intervened in the scene. A magistrate has to consider all the available and admissible evidence and is supposed to rely on the evidence presented, not on the ones not included. The absence of scientific evidence does not absolve the case when the state has other types of evidence that proves the controversy.

Local Network Theory Analysis

I used for the analysis of this investigation the theory of local network. Using this framework I detected the issues involving the implementation practices within the local level (Hull & Hjern, 1981; Paudel, 2009). I observed ambiguity and confusion regarding the criminal justice system and regulatory agencies' jurisdiction. Through the local network theory I saw the discrepancies within the local organizations' collaboration and competence. The cases were investigated by police officers and consulted with prosecutors. At this point, there is communication between dependencies of the criminal justice system. Several agencies (i.e. Water and Sewers Services of Puerto Rico, Fire Marshals, and the Forensic Science Institute) were contacted for pollution management and investigation purposes; all of them collaborated diligently. In contrast, the Environmental Quality Board did not address immediately the septic tank discharge in one case and in another resigned jurisdiction over a river's contamination with diesel. This demonstrates the incongruities regarding the work of agencies outside the criminal justice system. The Board, because of its expertise, should have intervened with diligence in every environmental case, given the agency's expertise on the environment and on

pollution management. They are the most capable agency to investigate and manage pollution.

This agency's expertise presupposes their involvement in these cases, either to claim jurisdiction or to assist in the investigation process. The Board's calling is to respond in soil, water, and air pollution and provide an expert team to deal with these emergencies (Ley sobre Politica Pública Ambiental, 2004). The agency did not pay attention to the cases they should have addressed even if there were other agencies investigating the scene. Legally, there is no jurisdictional delimitation established between agencies when dealing with these environmental crimes. Therefore, their pivotal participation in the investigation, evidence collection, and damage repair is not impaired by the presence of another agency.

In summary, the data collected for this investigation and the subsequent analysis revealed significant aspects of policy implementation practices. I used the theoretical framework as a guide to examine police and district attorneys' performances. I concluded that they were committed to investigate these cases even though they were unaware of these crimes. These law enforcement agents carried out the investigations as they would have done in other cases, including calling for assistance from other governmental or private agencies. The support received in these investigations was significant, and the private and public agencies performed in conformity with the law.

On the other hand, one court file included comments made by the magistrate that ruled the case, in which I observed modification of the implementation of the laws by this judge. As suggested earlier, the judge made his comments based on his experience, and

not on what the regulatory agencies expressed, the crime's definition stated, the rule of evidence's code establishes, and what the proof presented demostrated. This scenario displays that he changed not only the crime's definition but also the evidence and what the special law's stated. Even though magistrates have discretion when ruling, they have to be aware of the state's rules and laws to make wise and informed determinations. I conclude that police and prosecutors performed according to the law while the judges changed the meaning of the law, as the street-level bureaucracy theory suggests. In terms of the local network theory, the criminal justice system has issues regarding the data organization but not concerning interagency collaboration. The subject of matter is the collaboration of the Board, which I identified in this investigation as a jurisdictional problem.

Limitations of the Study

The limitations I predicted in Chapter 1 were focused on the interviewees' expressions. The idea came from the possibility of provoking discomfort when I inquired about the practices of law enforcement agents. I intended to avoid biases by explaining the purpose of this study and ensuring their confidentiality. Also, I inferred the probability of involving my biases in the data collection and analysis process. To confront this limitation, I suggested the corroboration of the information with the different available sources. This recommendation was performed when using the court files to corroborate the interviewees' responses and using the code's articles to analyze the crime elements within the cases' complaints.

Another limitation confronted was that I was not able to conduct every planned interview. It was difficult to contact each participant. Two of them could not be reached and four prosecutors did not remember the case. One district attorney stated he did not work with the case although his signature was in the accusation document. Also, the names of the prosecutors who investigated or were consulted for these cases do not appear in the court files. Moreover, three files could not be accessed because one was seized due to lack of evidence for trial; the other had a confidential clause, and a third is an active case. This limited the investigation to seven court file cases, six police officers, and three district attorneys.

Recommendations

Clarify Penal Code

I suggest updating these environmental crimes in the penal code. Typifying these offenses does not preclude the operation of other agencies that work directly with the environment. There is just a jurisdictional confusion and this is not supposed to obstruct any administrative or civil processes of a case. Eliminating these felonies would demote and diminish the importance of crimes that seeks to protect the island's limited natural resources. The state recognizes the environment's significance, and for this reason it decides to criminalize any acts against its balance. Legislators want to attend these cases as any other crime that threatens the healthy coexistence of society. For this purpose, I have made a series of recommendations to improve the law and its implementation (see Appendix L).

Legislators should make several modifications to the definition of environmental crimes for more clarity. I begin recommending the elimination of human harm as an element of this crime. These offenses, to be called environemtnal crimes, shall focus on the environment and not on people even though the act affects their health. If someone got hurt by the contamination of the environment, the State shall prosecute the offender using a crime that typifies that specific harm (e.g.homicide) or file a civil process (e.g. damage).

I also suggest the removal of the article of *poisoning of public waters*. This crime can be confusing when identifying the elements of the offense and the event that polluted the water resource. One can think that by solely contaminating a river, poisoning of public waters applies when the requisite here is to endanger people's lives or health. If this requirement is not found within the elements of the event, then people cannot be charged with these crimes. In this case, the crime at hand is environmental pollution that targets water contamination itself. Therefore, I suggest eliminating poisoning of public waters to avoid misinterpretation and because it is redundant since the code has a crime that covers the contamination of the same resource.

Poisoning of public waters, as mentioned in the Definition of the Crime found in this same chapter, inside the Interpretation of the Findings' section, lacks clarity, does not cover harm to nature, and is the same as another environmental crime. For this reason, I propose that legislators make the following modifications to *environmental pollution*, which criminalizes the acts of poisoning water, air, and soil. The purpose is to make this crime more effective in terms of the multiplicity of ways someone can contaminate the

environment. I recommend eliminating, besides human endangerment, the need for *serious danger* to allow the prosecution of individuals who incur in any degree of damage to people and the environment. In addition, I recommend the inclusion of sanctions if the act was committed by recklessness. For example, if a natural person commits this crime recklessly, the penalty should include restitution or community services, and a three-year imprisonment sentence when the convict cannot comply with the other sanctions.

Fortunately, the amendments of the code of 2012 improved the 2004 version, including the sentences. They included punishment for natural and legal persons who committed serious damage or destruction and poisoning of public waters recklessly. The penalty for natural people is imprisonment, and for legal persons a fine. Regarding the fines for legal persons, I believe they do not make agencies, corporations, or industries responsible for the harm caused. Establishing a specific fine amount for intentional or reckless behavior will not respond to the needs of the polluted resource. Legislators stated restitution as a discretionary sanction, and because no one can interfere with the magistrates' decisions, there is no assurance that this punishment will be imposed. For this reason, I believe that restitution should be considered a compulsory punishment for their acts.

For instance, in the cases examined for this investigation, the only one convicted did nothing to repair the damage caused. The state had to carry the burden of paying for the cleaning of the environment. His only involvement was to comply with the magistrates' orders. The offender was alienated from the restoration of the environment process. I have to make it clear that this convict had, as I interpreted from the court files'

documents, drug addiction problems. This means that he could not have the economic resources to pay for the cleaning of the environment. Therefore, what could be beneficial in this type of cases is a community service sanction in which the convicts help in the cleaning of what they caused or help in any other environmental situation. The purpose of imposing restitution is to make the offenders responsible for the damage caused by helping in the cleaning process, either by paying or by doing it themselves. This will make the convicts that caused the damage with intention or recklessly collaborate in the restoration of the environment, make them conscious of the harm caused, and avoid recidivism.

Imprisonment only will serve to ensure that the offender (i.e. natural and judicial person) is being punished for their behavior but not for the purpose of the nature's restoration. Also, in the penal code's Purpose of the penalty (P.R. Penal Code, 2012), imprisonment shall promote prevention and rehabilitation. What this sanction does not provide is justice to the crime's victims, which in this case are people and the environment. Therefore, I suggest that restitution is ordered when a person is sentenced and not as a possible sanction as it is currently established.

The State should quantify the damage caused so the court can order the convict to pay for the harm and cleaning costs. This alternative allows the offender to respond monetarily for the environmental impairment he/she produced and pursue the restoration of the affected resource. Along with this sanction, community service is recommended. The court can sentence the convicts to help clean the damaged cause by their actions. They will help in manners that will not be harmful to their health and life, and they will

not be required specialized skills. As an alternative, the magistrate could order them to work in any environment related program available. The contact hours for community work will depend on the extent of the damage or the completion of the community organizations' tasks.

I also recommend public exposure (Periconi, 2009; White 2010), which serves multiple purposes. Society will know about the commission of these crimes, and the convict may feel public shame. These two effects will cause deterrence of the convict to reoffend and society to not seek to commit these crimes to avoid these consequences. The public exposure can be pursued using the massive communication media: television, radio, newspapers, and government websites. In addition, this will tell citizens that the government is taking the conservation of the environment very seriously, just as they do any other crime such as murder or burglary. Regarding the current sanction for these crimes, I would impose imprisonment when all the available alternatives fail. This is the harshest punishment to impose and does not help to repair the consequences of contamination nor restore the spoiled resources.

Regarding *aggravated environmental pollution* crime, there were no files acquired of this offense, but I recommend modifications to the definition of this article. The conducts typified in this crime are clear and detailed. The data collected for this study did not provide any insights about its implementation, but I infer from the crime's description that regulatory agencies are essential for the prosecution these offenses. A protocol can provide collaboration between regulatory agencies and the criminal justice system in discovering the conducts typified in this crime. Besides the recommendation of a

guideline for interagency cooperation, I suggest the modification of the sanctions to impose the conviction of a natural and legal person. A natural person should carry a fine sanction first instead of imprisonment. The fine could be between $20,000 to $30,000 dollars, and if the convict fails to comply, then imprisonment should be the last resource. Concerning a legal person's sanction, it should be a fine consisting of 30 percent of the last fiscal year earnings. For legal persons, a $30,000 to $50,000 fine is laughable, if it is a pharmaceutical industry, for example. Therefore a percentage of their earnings will produce a deterrence effect (see Appendix M for a summary of the law modification recommendations). Also, the fines will be used in retoring the damage caused to the environment. The idea is to deter natural or legal persons from committing an environmental harm. Therefore, punishments shall be significant and in proportion with the offense, in this case the breaking of the state's trust.

Task Force for Investigating Environmental Crimes

Another recommendation is the creation of a new organism of police officers and prosecutors focused only on environmental crimes. I suggest initiating with the training of police officers, district attorneys, and judges, to assure they have the necessary knowledge of the laws related to the environment. After these trainings, it should be easy to identify in each police headquarters' and judicial districts at least one of each state's representative for this duty. The capacitation of the selected police, prosecutors, and judges on how to investigate, take legal action, and rule a case acknowledging the requisites of the law to prosecute an offender will guarantee a more effective enactment of the law.

González (2010) recommended creating an interagency group incorporated by the criminal justice system and governmental regulatory agencies that can help in an environmental crime situation. Developing around Gonzalez's idea, I suggest the creation of a task force with full authority to analyze each environmental case and determine the corresponding legal actions. This group will decide what complaints shall be seen at the criminal court or go through administrative procedures depending on the elements of each event. This team must incorporate the police officer that investigates the situation, a district attorney, a representative of the Environmental Quality Board, and an expert in the alleged affected resource. They will have the legal, administrative, and environmental expertise to identify a criminal or regulatory violation.

Protocol

A protocol should be created to organize and state the responsibilities and authority of the task force. This guideline will establish the personnel training for the administration and collaboration of governmental and private corporations in the investigation and management of the scene. This protocol must specifically identify each agency and its cooperation to the criminal justice system when facing an environmental situation. It will also identify the agencies that can intervene with the control and cleaning of pollutants as well as collection samples for the purpose of the investigation. In addition, this guide can promote the development of agreements with governmental and private entities with the purpose of providing community services to those convicted by these environmental crimes. The construction of this protocol intends to organize the

tools available to help in the process of investigation, pollution management, and offender's rehabilitation.

Another implementation aspect that a protocol can structure is the distribution of expenses. The criminal justice system needs a budget to investigate these offenses, for training and for investigative tools. Therefore, I suggest the following activities to lower implementation costs. The available government office spaces should be used to provide the training. After identifying these facilities, every municipality should receive capacitation. The Environmental Quality Board should provide experts on environmental pollution investigation to deliver the training. There should be at least two of these experts to uniformly provide the same training to every agent.

Referring to the investigative instruments, environmental pollution's sample collection and evidence analysis are expensive. However, the costs of these investigations should be performed by the justice system via the Forensic Science Institute whose purpose is to analyze the evidence of criminal scenes. In the investigation of these cases, no delay in the examination of samples can be allowed, which will happen due to institution's lack of personnel and work overload. For this reason, it is important to establish collaborations with agencies that can help with evidence collection and lower the costs. I recommend creating a partnership with the University of Puerto Rico. This collaboration can help lower the expenses considerably; just like the Forensic Science Institution the University of Puerto Rico is funded by the state. The university offers academic programs such as chemistry, geology, soil sciences, and environmental sciences, for instance. These degrees involve sample collection of environmental

resources for study, chemical testing, and analysis. This collaboration will provide students and professors with real life situations for didactic purposes while providing the judicial system with fast scientific analysis of the evidence and substantial economic savings.

Alternative Recommendations

During an interview, one of the participants came up with the idea of developing a school curriculum on the environment (Participant 1). He expressed that environmental courses should be taught from primary school to college level. It is a great idea that kids, teenagers, and adults receive education about diverse environmental topics (e.g. wildlife conservation, biodiversity loss, global warming, solid waste problems, and recycling). A curriculum addressing such topics should cover the essential component of educating the population.

Consonant to school and university learning is education through the state's punitive apparatus. The legislator's intention with the integration of these crimes in the code was to express to society that the state cares for the environment. The state approves laws that promote society's peaceful coexistence. Including in the penal code actions that affect nature's balance intends to orientate people to avoid these acts. The purpose of each crime is to deter the commission of the prohibited act using harsh punishment for its violation.

The only way to prevent behaviors is through education. People must understand the advantages and disadvantages of a conduct to avoid its commission. The prevention of environmental harm is the most important mission to comply with these crimes.

Pollution's effects are irreversible and they are more alarming due to the fact that the environment is an exhaustible good (Mañalich, 2006). Therefore, it is better to avoid these conducts to preserve the integrity of nature. To attain this knowledge, it is indispensable to educate about the pollution effects in schools as well as the effects of the law's violation.

Future Studies

I begin recommending to conduct other studies with the purpose to explore police investigations that did not initiate the judicial procedures. This can reveal the cases that were investigated but did not complete the requirements to initiate a criminal prosecution. With this information, the researcher can compare the investigation of the cases not prosecuted with the ones analyzed in this study. The comparison between the cases that were seen in court and the ones that didn't face a judicial process might be helpful to further understand implementation.

I also suggest a study to compare the administrative and criminal cases in terms of law implementation. Using the information of this research and the administrative implementation of the Environmental Quality Board, researchers should be able to identify the law's application practices of both. In addition, I recommend the investigation of the knowledge and perception of judges regarding environmental crimes. With this investigation I observed that a magistrates' experiences and perception can of a case or the law can influence their decision making process in a trial.

Implications

The implications of this study revolve around law implementation practices. My focus was to explore and describe the unknown application performances of the environmental crimes in the jurisdiction of Puerto Rico. With the selected methodology I was able to collect data that exposed the performances police and prosecutors carried out when they faced these offenses. I identified and organized the investigative, legal, and judicial aspects of these crimes using the data collected from interviews and judicial documents.

Through the investigation I recognized a series of loopholes, and of strengths as well, of the written law and the enforcement practices. For instance, the crime's definitions are in serious need of modification. Also, the jurisdictional issues must be resolved, and it is critical to institute the restitution sanction to cover the cleaning costs and ensure the convicts are repairing the damage caused by their actions. It is also necessary to establish which agencies and in what circumstances have the authority to manage environmental cases.

An important element I found making this study is the lack of knowledge when handling the cases. Lack of knowledge is paired with the inexistence of a protocol that could serve as guide to those involved in the implementation. The lack of guidance generates confusion within the state and regulatory agencies and the collaboration of these with the investigation and prosecution process. In summary, there are no interagency collaboration and no clear jurisdictional borderlines available for implementation effectiveness. Furthermore, with this investigation I saw implementation

issue regarding magistrate's decisions in trials. I became aware that there is a possibility that a judge's determination of a case can be affected by lack of knowledge on environmental affairs.

Even though limitations and weaknesses were found through this research, there are strengths in the implementation practices that I must highligh. For example, the police officers who initiated the investigations of these studied cases knew little about these offenses, and this was not a motive to resign out of the case. Rather, they looked for evidence and made the necessary moves to alert experts on pollution management. They also consulted the cases with prosecutors to help them proceed adequately. These actions demonstrate the agents' commitment to comply with their roles and responsibilities.

To better the implementation aspects of these crimes, I made several recommendations for this purpose (see Appendix L). For instance, I suggest the development of a guideline that establishes interagency collaboration, coordinates the training of law enforcement agents, and creates a task force to manage jurisdictional affairs. I also suggested modifications to the code's crime definition. Moreover, it was indispensable to suggest educational alternatives since the purpose of these crimes is to protect the environment by the prevention of pollution. The education activities shall be from primary school through college and also to society through the deterrent effect of criminal sanctions.

Therefore, the implications of positive social change of this study are towards the improvements of the implementation practices to protect the environment; the purpose of these crimes. The criminalization of these acts promotes the prevention of environmental

harm. The purpose is to make the convicts responsible for their behavior against society's wellbeing, restore the damage caused, and dissuade them and others to commit these crimes. The recommendations made intend to improve the law and its implementation's performances using the findings of this investigation. The effects of this research will not only suppose an effect on lawmakers, it also suggests the enhancement of society's awareness of these crimes. The resolution of this study, ultimately, is towards rising consciousness and empowering Puerto Rico's inhabitants to protect our limited and valuable resources.

Conclusion

My intention with this study was to investigate, acknowledge, and improve the implementation practices of environmental crimes in Puerto Rico. To do so, I developed a theoretical framework conformed by the street-level bureaucracy theory and the local network theory, both suitable for the analysis of the collected data and so that I could answer: What are the implementation procedures of law enforcement agents on Puerto Rico's environmental crimes law, and what can be done to improve these practices? With this in mind, I established the possible limitations I could encounter during the data collection process. Throughout this journey, additional barriers arose but were not significant enough to jeopardize this investigation. To support this study, I used the literature review available from Puerto Rico and other countries. Through the review of this literature I developed the proper methodological approach for the research. Through a case study design and the exploration techniques I choose I was able to collect data from police officers, district attorneys, and the State's court.

In this research, I was able to compile the available data on environmental crimes. I experienced that the data was scattered and that there are deficiencies in the archiving process of the criminal cases heard in court. This situation prevented me from accessing every available case. Through these files, I identified the law enforcement agents involved in environmental cases as well as the crimes prosecuted and their resolutions.

I organized the data results using the NVivo software. With the identification of the themes *knowledge*, *investigation*, and *perception* I displayed strengths and limitations of the law enforcement representatives as well as interagency collaboration. The data analysis revealed that the performances of law enforcement agents were effective despite their work inexperience in these cases and knowing little about these crimes. Even though they executed the investigations properly, these agents must receive training that capacitate them to handle these type of cases. These agents performed appropriate investigations and in the majority of the cases the judge's found the defendant not guilty, which I interpreted as an inefficiency of the law. Through the data gathered for this study I did not identify any information that could disclose the crime's elements that generated reasonable doubt. The only information I obtained was the comments made by two judges who did not explain why they ruled not guilty. I cannot discard that this dissertation reveals that those judges' perceptions about these crimes, eventhough this investigation was focused on police officers and district attorneys. Judge's perceptions can be significant when resolving a case and thus executing the law.

Through this research I make contributions to the field of criminal justice, public policy, and environmental affairs. The description of the implementation practices and

the identification of weaknesses (e.g. lack of knowledge) and strengths (e.g. interagency collaboration) of the law in terms of content and execution, disclose the current performances of law enforcement agents towards these crimes. I make a series of recommendations to facilitate the application of the law. The suggestions were related to law content, identification of environmental crime, task force and protocol creation, training, and future studies. Another contribution is that this study is the only source that compiles the existing cases prosecuted in the court of law as well the only research that investigates implementation efforts of these environmental crimes. Therefore, law makers and the criminal justice system can use this study to shtrenght the implementation practices as well as to improve the law.

The state's purpose when creating and implementing laws is to control human misbehaviors and protect society's citizens. To protect the island's limited natural resources, the state typified a series of actions as environmental crimes. Therefore, when nature is protected by the state, it accomplishes the purpose of guarding humanity's wellbeing since without the quality of our natural resources we cannot exist.

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Appendix A: Penal Code of 2004

SECTION TWO

Crimes Involving Catastrophic Risk

Article 240.-Serious Damage or Destruction.- Any person who endangers the life, health, bodily integrity or safety of one or several persons, or who causes environmental damages by provoking an explosion, flood or landslide through the demolition of real property, or by using toxic or asphyxiating gas, nuclear energy, ionizing elements or radioactive material, microorganisms or any other substance that is hazardous to health or has destructive capacity shall incur a second degree felony.

If the acts listed under this crime are performed recklessly, the offender shall incur a third degree felony.

The court may also impose restitution.

Article 241.- Poisoning of Public Waters.- Any person who endangers the life or health of one or several persons by poisoning, contaminating or otherwise dumping substances meant to destroy human health into wells, deposits, bodies of water, pipelines or watercourse used for human consumption and supply shall incur a second degree felony.

If the acts listed under this crime are performed recklessly, the offender shall incur a third degree felony.

The court may also impose restitution.

Article 242.- Environmental Pollution.- Any person who unlawfully performs or provokes, directly or indirectly, emissions, radiation or spills of any sort on the ground,

into the atmosphere or into superficial, underground or maritime bodies of water seriously endangering the health of persons, the balance of ecological systems or the environment shall incur a fourth degree felony.

The court may also impose restitution.

Article 243.- Aggravated Environmental Pollution.- If the environmental pollution crime established in Article 242 is carried out by a juridical person without the corresponding environmental permit, endorsement, certification, franchise or concession, or is carried out clandestinely or has failed to comply with specific provisions issued by the environmental authorities for the correction or suspension of any unlawful act, or if it submits false information or omits information that is required to obtain the corresponding environmental permit, endorsement, certification, franchise or concession, or otherwise hinders or interferes with an inspection conducted by the authority with jurisdiction, said juridical person shall incur a third degree felony.

The court may also suspend the license, permit or authorization and impose restitution.

Appendix B: Penal Code of 2012, as amended

SECCIÓN SEGUNDA

De los delitos de riesgo catastrófico

Artículo 234.- Estrago.

Será sancionada con pena de reclusión por un término fijo de quince (15) años, toda persona que a propósito, con conocimiento o temerariamente ponga en peligro la vida, la salud, la integridad corporal o la seguridad de una o varias personas, o que en violación de alguna ley, reglamento o permiso cause daño al ambiente, en cualquiera de las circunstancias que se exponen a continuación:

(a) Al provocar una explosión, una inundación o movimiento de tierras.

(b) Al ocasionar la demolición de un bien inmueble.

(c) Al utilizar un gas tóxico o asfixiante, energía nuclear, elementos ionizantes o material radioactivo, microorganismos o cualquier otra sustancia tóxica o peligrosa por su capacidad de causar destrucción generalizada o perjuicio a la salud.

Si la persona convicta es una persona jurídica será sancionada con pena de multa hasta cincuenta mil dólares ($50,000).

Si los hechos previstos en este delito se realizan por negligencia, la persona será sancionada con pena de reclusión por un término fijo de tres (3) años. Si la persona convicta es una persona jurídica será sancionada con pena de multa hasta diez mil dólares ($10,000).

El tribunal también podrá imponer la pena de restitución.

Artículo 235.- Envenenamiento de las aguas de uso público.

Toda persona que, en violación de ley, reglamento o permiso a propósito, con conocimiento o temerariamente, ponga en peligro la vida o la salud de una o varias personas al envenenar, contaminar o verter sustancias tóxicas o peligrosas capaces de producir perjuicio generalizado a la salud, en pozos, depósitos, cuerpos de agua, tuberías o vías pluviales que sirvan al uso y consumo humano, será sancionada con pena de reclusión por un término fijo de quince (15) años. Si la persona convicta es una persona jurídica será sancionada con pena de multa hasta cincuenta mil dólares ($50,000).

Si los hechos previstos en este delito se realizan por negligencia, la persona será sancionada con pena de reclusión por un término fijo de tres (3) años. Si la persona convicta es una persona jurídica será sancionada con pena de multa hasta diez mil dólares ($10,000).

El tribunal también podrá imponer la pena de restitución.

Artículo 236.- Contaminación ambiental.

Toda persona que realice o provoque emisiones, radiaciones o vertidos de cualquier naturaleza en el suelo, atmósfera, aguas terrestres superficiales, subterráneas o marítimas, en violación a las leyes o reglamentos o las condiciones especiales de los permisos aplicables y que ponga en grave peligro la salud de las personas, el equilibrio biológico de los sistemas ecológicos o del medio ambiente, será sancionada con pena de reclusión por un término fijo de tres (3) años. Si la persona convicta es una persona jurídica será sancionada con pena de multa hasta diez mil dólares ($10,000).

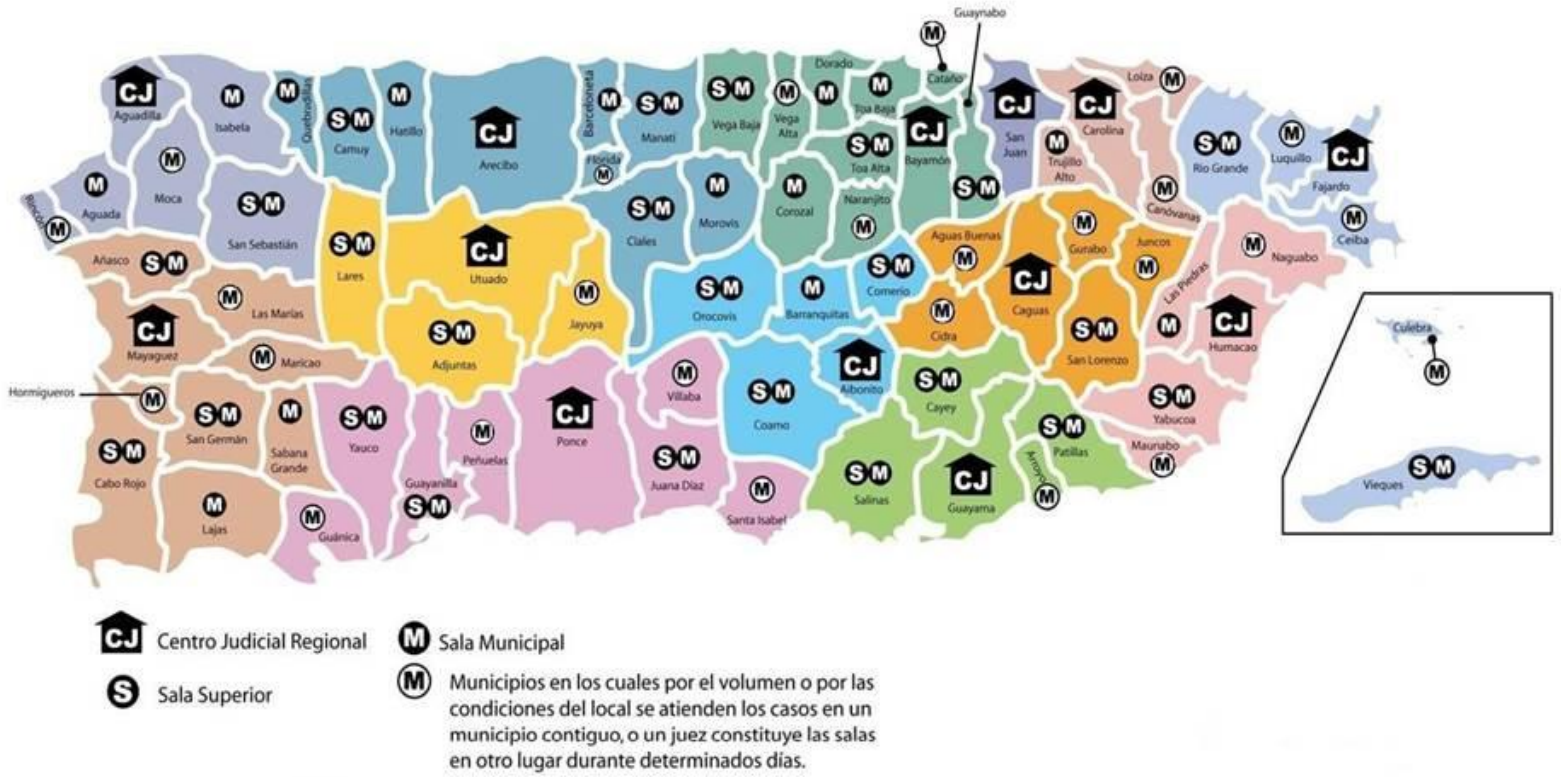
El tribunal también podrá imponer la pena de restitución.

Artículo 237.- Contaminación ambiental agravada.

Si el delito de contaminación ambiental, que se tipifica en el Artículo 236, se realiza por una persona sin obtener el correspondiente permiso, endoso, certificación, franquicia o concesión, o clandestinamente, o ha incumplido con las disposiciones expresas de las autoridades competentes para que corrija o suspenda cualquier acto en violación de la ley, o aportó información falsa u omitió información requerida para obtener el permiso, endoso, certificación, franquicia o concesión correspondiente, o impidió u obstaculizó la inspección por las autoridades competentes, será sancionada con pena de reclusión por un término fijo de ocho (8) años. Si la persona convicta es una persona jurídica será sancionada con pena de multa hasta treinta mil dólares ($30,000).

El tribunal a su discreción, también podrá suspender la licencia, permiso o autorización conforme los Artículos 60 y 78, e imponer la pena de restitución.

Appendix C: Territorial Distribution of Judicial Regions



(Rama Judicial, 2015)

Appendix D: Invitation to participate

Invitation to participate

English version

My name is Sara Cameron. I am a Walden University doctoral student pursuing a degree in Public Policy and Administration with a concentration in criminal justice. I am working on my dissertation titled Implementation Procedures for Puerto Rico's Environmental Laws. To complete this research I must collect information regarding the implementation practices of law enforcement officials, specifically police officers and District Attorneys. My efforts are towards knowing as much as possible of the performances of these governmental representatives in identifying elements that could better the implementation of the law. I focus on the environmental crimes established in Puerto Rico's penal code in 2004. I choose this topic since there is poor information regarding the application of these crimes in the criminal justice system.

The participation consist of a 20- to 30-minute interview that will ask about your work experiences and perceptions with environmental crimes cases.

I invite you to form part of this investigation by accepting to share your work experiences. There is no commitment and the information given as well as your identification will be kept confidential. You participation is important to contribute to the execution of the law and the protection of human health and our natural environment.

If you agree to collaborate in this investigation or need additional information, please contact me via phone at 787-910-0845 or through electronic mail at sara.cameron2@waldenu.edu.

Kind regards,

Sara Camerón

Invitación a participar

Versión en español

Mi nombre es Sara Cameron. Soy estudiante de doctorado de la Universidad Walden para obtener un título en Política Pública y Administración, con una concentración en la Justicia Criminal. Estoy trabajando en mi tesis titulada "Procesos de Implementación de las Leyes Ambientales en Puerto Rico". Para completar esta investigación he de recoger información sobre las prácticas de implementación de los funcionarios encargados de hacer cumplir la ley, específicamente los agentes de la policía y fiscales de distrito. Mis esfuerzos están dirigidos a conocer, tanto como sea posible, de las actuaciones de estos representantes gubernamentales para identificar elementos que podrían mejorar la aplicación de la ley. Me concentro en los delitos ambientales establecidos en el Código Penal de Puerto Rico en 2004. Elegí este tema, ya que hay poca información sobre la aplicación de estos crímenes en el Sistema de Justicia Criminal.

La participación consiste en una entrevista de 20 a 30 minutos que le preguntará acerca de su experiencia y percepciones sobre casos de delitos ambientales.

Le invito a que forme parte de esta investigación, al aceptar compartir sus experiencias. No tiene que comprometerse y la información ofrecida se mantendrá confidencial. Su participación es importante para contribuir a la ejecución de la ley y la protección de la salud humana y el medio ambiente.

Si usted decide colaborar en esta investigación o necesita información adicional, por favor póngase en contacto conmigo por teléfono al 787-910-0845 o vía correo electrónico en sara.cameron2@waldenu.edu.

Saludos cordiales,

Sara Camerón

Appendix E: Interview Questions

Interview Questions

English Version

1. Please share what do you know about the environmental crimes established in the Penal Code in PR?
2. Can you briefly share with me what you know about the purpose of the criminal code for environmental crimes?
3. Have you been involved in any environmental crimes cases and how did you become aware of the existence of these crimes?
4. In what specific case or cases did you work with that involved an environmental crime?
5. Before the case(s) you handled, can you tell me what did you know about the implementation processes? Did you know what to do?
6. How did you realized that it was an environmental crime case? Explain
7. What was the process you went through when dealing with this environmental crime case? Please explain step by step if you can.
8. What protocol references did you use to work with this environmental crime case?
9. What other agencies and personnel were involved in the case and what was their participation? Were you satisfied with their participation?
10. Have you received training regarding investigation and prosecution of environmental crimes?
11. How satisfied were you with how you worked the case?

12. How satisfied were you with the instruments and mechanisms to handle the case, including other agencies' involvement?
13. Were you satisfied with the case's resolution?
14. Do you have any suggestions for improving environmental crimes prevention, intervention, investigation, and prosecution of the environmental crimes on the penal code? Explain.

Preguntas de la entrevista

Versión en español

1. Por favor, comparta lo que sabe usted de los delitos ambientales establecidos en el Código Penal en PR.
2. ¿Puedes compartir brevemente conmigo lo que sabe sobre el propósito del Código Penal en cuanto a los delitos ambientales?
3. ¿Ha estado involucrado en casos de delitos ambientales y cómo se dio cuenta de la existencia de este crimen?
4. ¿En qué casos en específico trabajó usted en lo que involucrara un delito ambiental?
5. ¿Puede usted decirme lo que sabía acerca de los procesos de implementación antes de los casos trabajados? ¿Sabía usted qué hacer?
6. ¿Cómo identificó usted que era un caso de delito ambiental? Favor de explicar
7. ¿Cuál fue el proceso que atravesó cuando se trabajó con este caso el delito ecológico? Por favor, explique paso a paso, si puede.
8. ¿Qué referencias o protocolos usó para trabajar con el caso de delito ambiental?
9. ¿Qué otros organismos y personal estuvieron implicados en el caso y cuál fue su participación? ¿Estaba usted satisfecho con su participación?
10. ¿Ha recibido formación en materia de investigación y persecución de delitos ambientales?
11. ¿Qué tan satisfecho estaba con la forma en que trabajó el caso?
12. ¿Qué tan satisfecho estaba con los instrumentos y mecanismos para manejar el caso, incluyendo la participación de otros organismos?

13. ¿Está satisfecho con la resolución del caso?
14. ¿Tiene alguna sugerencia sobre cómo mejorar la prevención, intervención, investigación y enjuiciamiento de los delitos ambientales que figuran en el Código Penal? Explique.

Appendix F: Expert Panel interview Questions

Expert Panel Interview Questions

English version

1. Please share what do you know about the environmental crimes established in the Penal Code in PR
2. Have you been involved in any environmental crimes cases and how did you become aware of the existence of this crimes?
3. Can you tell me what you knew about the implementation processes before the case(s) you handled? Did you know what to do?
4. Have you received training regarding investigation and prosecution of environmental crimes?
5. What do you think about the environmental crimes?
6. What can you suggest in light of what you know?

Preguntas de Entrevista del Panel de Expertos

Versión en español

1. Favor de compartir lo que conoce sobre los delitos ambientales según establecidos en el Código Penal de Puerto Rico.
2. ¿Estuvo envuelto en algún caso de delito ambiental y cómo supo de la existencia del mismo?
3. Puede contar qué sabía sobre el proceso de implementación antes del (los) caso(s) trabajado(s). ¿Sabía qué hacer?
4. ¿Ha recibido entrenamientos/adiestramientos sobre la investigación y procesamiento de estos delitos ambientales?
5. ¿Qué piensa sobre los delitos ambientales?
6. ¿Qué puede sugerir con el conocimiento que tiene sobre éstos?

Appendix G: Expert Panel Analysis

Expert Panel Analysis

Coding is a process in which the researcher scrutinizes the information obtained through the data collection techniques and identifies themes or topics for better understanding (Creswell, 2013). The following narrative describes the process of analysis and coding of the expert panel interviews with a police agent and a district attorney from the district of Utuado. The process begins analyzing the data as a whole and providing a general meaning of what the interviewees revealed. Then I organized the information by categories using themes from the literature review and from the participant's responses. The topics are interpreted and described based on the literature review and theoretical framework, and developed triangulation to strengthen and validate the findings. Afterwards, I generated the conclusions about the results.

The first analysis is from one of the interviews. I choose agent C.A.'s interview for analysis. The overall meaning of the conversation revealed that police agents are not aware of the environmental crimes stated in Puerto Rico's penal code. Therefore, the police do not know about any implementation practices for these type of offenses. Police receive poor continuing education of the code and trainings demanded by the court such as the complaints for the excessive use of force. The themes derived from this interview were: competence, expertise, delegation, human protection, indirect intervention, interagency collaboration, protocols, unawareness, untrained, and uselessness.

The second analysis is from a district attorney from Utuado. A general meaning of the interview describes that he knows about one of these crimes because he studies the

code and through several training effort for prosecutors. Although, he did not knew in detail about the one environmental crime he had knowledge, he expressed that no protocols have been developed to intervene with these cases but their role is to identify the evidence to prove criminal intention in the court of law. The themes drawn of this interview were: communication, criminal intention, delegation, human protection, protocols, training, and unawareness. See table 1 for the categories drawn from the interviews.

Table 1

Categories from the interviews

Police agent interview themes	**District attorney interview themes**
Competence	Communication
Expertise	Competence
Delegation	Criminal intention
Human protection	Delegation
Interagency collaboration	Human protection
Protocols	Protocols
Unawareness	Trained
Untrained	Unawareness
Uselessness	

Appendix H: Court Administration Office Statistics

Crimes against Health and Public Security Cases

TRIBUNAL DE PRIMERA INSTANCIA
MOVIMIENTO DE CASOS CRIMINALES, POR DELITO CONTRA LA SALUD Y SEGURIDAD PUBLICA Y CONTRA LA SEGURIDAD COLECTIVA
AÑOS FISCALES 2004-2005 AL 2008-2009*

Año fiscal / delito	Pendientes al inicio del periodo	Casos presentados			Casos a resolver	Casos resueltos					Pendientes al final del periodo
		Originales	Otros*	Total		Convicciones	Absoluciones	Archivos	Traslados	Total	
2004-2005											
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	**24**	**32**	**2**	**34**	**58**	**21**	**3**	**10**	**1**	**35**	**23**
Alarma falsa	-	4	1	5	5	2	-	-	1	3	2
Incendio	3	1	-	1	4	4	-	-	-	4	-
Incendio agravado	18	20	1	21	39	10	1	7	-	18	21
Lanzamiento de desperdicios	1	1		1	2	-	1	1	-	2	-
Tentativa de incendio agravado	2	6	-	6	8	5	1	2	-	8	-
2005-2006											
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	**21**	**12**	**-**	**12**	**33**	**7**	**1**	**10**	**-**	**18**	**15**
Alarma falsa	2	-	-	-	2	-	-	2	-	2	-
Incendio	1	1	-	1	2	-	-	-	-	-	2
Incendio agravado	17	6	-	6	23	6	1	5		12	11
Incendio de bosques o plantaciones	-	2	-	2	2	-		2		2	-
Tentativa de incendio agravado	1	3	-	3	4	1	-	1		2	2
DELITOS CONTRA LA SEGURIDAD COLECTIVA	**-**	**17**	**-**	**17**	**17**	**2**	**-**	**3**	**-**	**5**	**12**
Incendio	-	1	-	1	1	-	-	1	-	1	-
Incendio agravado	-	13	-	13	13	2	-	1		3	10
Incendio forestal	-	1	-	1	1	-	-	-	-	-	1
Incendio negligente	-	2	-	2	2	-	-	1	-	1	1
2006-2007											
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	**9**	**2**	**1**	**3**	**12**	**5**	**-**	**4**	**-**	**9**	**3**
Alarma falsa	-	1	-	1	1	-	-	1	-	1	-
Incendio	1	-	-	-	1	1	-	-	-	1	-
Incendio agravado	7	1	-	1	8	3	-	2	-	5	3
Tentativa de incendio agravado	1	-	1	1	2	1	-	1	-	2	-
DELITOS CONTRA LA SEGURIDAD COLECTIVA	**10**	**22**	**-**	**22**	**32**	**15**	**-**	**3**	**-**	**18**	**14**
Incendio	-	1	-	1	1	-	-	-	-	-	1
Incendio agravado	9	16	-	16	25	14	-	1	-	15	10
Incendio forestal	-	1	-	1	1	-	-	-	-	-	1
Incendio negligente	1	1	-	1	2	1	-	1	-	2	-
Tentativa de incendio	-	1	-	1	1	-	-	-	-	-	1
Tentativa de incendio agravado	-	2	-	2	2	-	-	1	-	1	1
2007-2008											
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	**4**	**1**	**-**	**1**	**5**	**-**	**-**	**1**	**-**	**1**	**4**
Incendio agravado	4	1	-	1	5	-	-	1	-	1	4
DELITOS CONTRA LA SEGURIDAD COLECTIVA	**9**	**27**	**-**	**27**	**36**	**15**	**1**	**5**	**-**	**21**	**15**
Contaminación ambiental	-	3	-	3	3	1	-	-	-	1	2
Incendio	-	5	-	5	5	3	-	1	-	4	1
Incendio agravado	6	15	-	15	21	7	-	4	-	11	10
Incendio forestal	2	1	-	1	3	1	-	-	-	1	2
Incendio negligente	1	3	-	3	4	3	1		-	4	-
2008-2009											
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	**3**	**-**	**-**	**-**	**3**	**-**	**-**	**-**	**-**	**-**	**3**
Incendio agravado	3	-	-	-	3	-	-	-	-	-	3
DELITOS CONTRA LA SEGURIDAD COLECTIVA	**8**	**29**	**-**	**29**	**37**	**20**	**2**	**4**	**-**	**26**	**11**
Contaminación ambiental	1	-	-	-	1		1	-	-	1	-
Envenenamiento de las aguas de uso público	1	-	-	-	1	1	-	-	-	1	-
Incendio	-	7	-	7	7	7	-	-	-	7	-
Incendio agravado	5	11	-	11	16	3	1	4	-	8	8
Incendio forestal	-	1	-	1	1	-	-	-	-	-	1
Incendio negligente	1	5	-	5	6	6	-	-	-	6	-
Tentativa de incendio	-	1	-	1	1	1	-	-	-	1	-
Tentativa de incendio agravado	-	4	-	4	4	2	-	-	-	2	2

* Datos obtenidos de la publicación de Anuario Estadístico de la Rama Judicial.

Fuente de información: Oficina de Administración de los Tribunales, Directoría de Operaciones, Oficina de Estadísticas
5 de diciembre de 2014

Crimes against Health and Public Security Resolved Cases

TRIBUNAL DE PRIMERA INSTANCIA
CASOS CRIMINALES RESUELTOS POR DELITO CONTRA LA SALUD Y SEGURIDAD PÚBLICA Y CONTRA LA SEGURIDAD COLECTIVA
AÑOS FISCALES 2004-2005 AL 2012-2013*

Año fiscal / delitos	Regiones judiciales													
	Aguadilla	Aibonito	Arecibo	Bayamón	Caguas	Carolina	Fajardo	Guayama	Humacao	Mayagüez	Ponce	San Juan	Utuado	Total
2004-2005	2	4	2	6	2	1	-	1	-	1	4	4	4	31
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	2	4	2	6	2	1	-	1	-	1	4	4	4	31
2005-2006	3	3	4	1	-	1	2	-	-	5	3	-	1	23
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	2	3	3	1	-	1	1	-	-	4	2	-	1	18
DELITOS CONTRA LA SEGURIDAD COLECTIVA	1	-	1	-	-	-	1	-	-	1	1	-	-	5
2006-2007	2	-	6	6	1	4	-	2	1	-	2	5	1	30
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	1	-	1	4	1	3	-	-	-	-	1	1	-	12
DELITOS CONTRA LA SEGURIDAD COLECTIVA	1	-	5	2	-	1	-	2	1	-	1	4	1	18
2007-2008	2	2	3	8	-	1	1	2	-	2	2	-	-	23
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	-	-	-	1	-	-	-	-	-	-	-	-	-	1
DELITOS CONTRA LA SEGURIDAD COLECTIVA	2	2	3	7	-	1	1	2	-	2	2	-	-	22
2008-2009	1	-	1	4	5	-	-	1	4	3	3	1	3	26
DELITOS CONTRA LA SEGURIDAD COLECTIVA	1	-	1	4	5	-	-	1	4	3	3	1	3	26
2009-2010	2	1	3	2	3	-	1	-	2	-	2	1	-	17
DELITOS CONTRA LA SEGURIDAD COLECTIVA	2	1	3	2	3	-	1	-	2	-	2	1	-	17
2010-2011	2	2	3	4	1	3	3	1	-	2	4	-	-	25
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	-	-	-	1	-	-	-	-	-	-	1	-	-	2
DELITOS CONTRA LA SEGURIDAD COLECTIVA	2	2	3	3	1	3	3	1	-	2	3	-	-	23
2011-2012	6	-	5	5	-	2	-	2	2	1	3	2	2	30
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	1	-	-	2	-	-	-	-	-	-	-	-	-	3
DELITOS CONTRA LA SEGURIDAD COLECTIVA	5	-	5	3	-	2	-	2	2	1	3	2	2	27
2012-2013	1	3	3	3	1	-	1	2	1	2	1	4	-	22
DELITOS CONTRA LA SALUD Y SEGURIDAD PUBLICA	-	-	-	1	-	-	-	-	-	-	-	1	-	2
DELITOS CONTRA LA SEGURIDAD COLECTIVA	1	3	3	2	1	-	1	2	1	2	1	3	-	20

* Datos hasta el 5 de diciembre de 2014.

Fuente de información: Oficina de Administración de los Tribunales, Directoría de Operaciones, Oficina de Estadísticas
8 de diciembre de 2014
drv

Appendix I: Environmental Crime Resolved Cases Report

ESTADO LIBRE ASOCIADO DE PUERTO RICO
ADMINISTRACIÓN DE LOS TRIBUNALES
DIRECTORIA DE INFORMATICA

CASOS RESUELTOS DELITOS AMBIENTALES
SISTEMA SIAT

CAUSAL/DELITO	REGIÓN	NÚM. CASO	FECHA PRESENTACIÓN	FECHA RESOL/SENT	DEMANDANTE	DEMANDADO/ACUSADO
A242E-CONTAMINACIÓN AMBIENTAL	CAGUAS		28/04/2008	16/06/2008	EL PUEBLO DE PUERTO RICO	
236M-CONTAMINACIÓN AMBIENTAL	AGUADILLA		07/12/2015	00/00/0000	EL PUEBLO DE PUERTO RICO	

Lucía I. González Rivera
Directora Auxiliar

Information Source: Court Administrative Office, Directory of Computing. January 28, 2016.

ESTADO LIBRE ASOCIADO DE PUERTO RICO
ADMINISTRACIÓN DE LOS TRIBUNALES
DIRECTORIA DE INFORMATICA

CASOS RESUELTOS DELITOS AMBIENTALES
SISTEMA SIAT

CAUSAL/DELITO	REGIÓN	NÚM. CASO	FECHA PRESENTACIÓN	FECHA RESOL/SENT	DEMANDANTE	DEMANDADO/ACUSADO
A240E-ESTRAGO	AIBONITO		05/01/2010	22/02/2010	EL PUEBLO DE PUERTO RICO	
A240E-ESTRAGO	HUMACAO		06/05/2008	18/12/2008	EL PUEBLO DE PUERTO RICO	
A240E-ESTRAGO	MAYAGUEZ		28/02/2011	19/12/2011	EL PUEBLO DE PUERTO RICO	
A240E-ESTRAGO	PONCE		21/11/2008	19/02/2009	EL PUEBLO DE PUERTO RICO	
A240E-ESTRAGO	MAYAGUEZ		29/12/2011	20/09/2013	EL PUEBLO DE PUERTO RICO	
A241E-ENVENENAMIENTO DE AGUAS USO PÚBLICO	UTUADO		02/04/2008	28/04/2008	EL PUEBLO DE PUERTO RICO	

Information Source: Court Administrative Office, Directory of Computing. January 28, 2016.

ESTADO LIBRE ASOCIADO DE PUERTO RICO
ADMINISTRACIÓN DE LOS TRIBUNALES
DIRECTORIA DE INFORMATICA

CASOS RESUELTOS DELITOS AMBIENTALES
SISTEMA TRIB

CAUSAL/DELITO	REGIÓN	NÚM. CASO	FECHA PRESENTACIÓN	FECHA RESOLUCION SENTENCIA	DEMANDANTE	DEMANDADO/ACUSADO
IR07 A242/CONTAMINACION AMBIENTAL	BAYAMÓN		20/08/2007	24/10/2007	EL PUEBLO DE PUERTO RICO	
IR07 A242/CONTAMINACION AMBIENTAL	BAYAMÓN		20/08/2007	01/11/2007	EL PUEBLO DE PUERTO RICO	
IR07 A242/CONTAMINACION AMBIENTAL	CAGUAS		24/06/08	23/09/2008	EL PUEBLO DE PUERTO RICO	
IR07 A242/CONTAMINACION AMBIENTAL	CAROLINA		29/07/2010	26/10/2010	EL PUEBLO DE PUERTO RICO	
IR06 A241/ENVENENAMIENTO AGUAS DE USO PUBLICO	UTUADO		05/05/2008	08/07/2008	EL PUEBLO DE PUERTO RICO	

Lucía I. González Rivera
Directora Auxiliar

Information Source: Court Administrative Office, Directory of Computing. January 28, 2016.

Appendix J: Code Summary

Node Summary

Node Summary
Environmental crimes
3/16/2016 3:52 PM

Source Type	Number of Sources	Number of Coding References	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Node					
Nodes\\Investigation\Cases handled before					
Nickname:					
Classification:					
Aggregated: No					
Document	9	9	162	9	
Nodes\\Investigation\Collaborations					
Nickname:					
Classification:					
Aggregated: No					
Document	7	10	328	10	
Nodes\\Investigation\Identification of Environmental Crime					
Nickname:					
Classification:					
Aggregated: No					
Document	9	13	521	13	
Nodes\\Investigation\Intervention process					
Nickname:					
Classification:					
Aggregated: No					
Document	9	9	1,703	23	

Source Type	Number of Sources	Number of Coding References	Number of Words Coded	Number of Paragraphs Coded	Duration Coded
Nodes\\Investigation\Protocols					
Nickname:					
Classification:					
Aggregated: No					
Document	9	15	496	16	
Nodes\\Knowldge\After working with the case					
Nickname:					
Classification:					
Aggregated: No					
	0	0			
Nodes\\Knowldge\Before working with the case					
Nickname:					
Classification:					
Aggregated: No					
Document	7	8	258	8	
Nodes\\Perception of the environment					
Nickname:					
Classification:					
Aggregated: No					
Document	9	21	1,260	30	
Nodes\\Perception of the environment\Satisfaction with the results of the investigation					
Nickname:					
Classification:					
Aggregated: No					
Document	9	27	803	27	

Word Cloud


reasonable
contained
indicated
connected
police
prevent
investigated
place
presented
control
located
cause
going
moved
beings
criminal
existence
quality
pollution
part
take
end
arrived
state
change
unit
communicates
found
think
event
knowledge
thought
resources
call
concept
condition
judge
involved
operators
area
affect
point
aaa
get
material
officials
property
act
training
individuals
agencies
management
workers
collected
satisfied
crime
periodically
protect
tools
authority
environmental
turn
case
actions
substance
work
provide
prosecutor
spilled
covered
situation
happen
know
used
process
engine
proceeded
committed
received
department
instruments
evidence
information
carried
water
statement
defendant
laws
environment
features
need
determined
make
give
positively
identify
elements
quickly
municipality
contaminated

Appendix K: Table of Court Files Summary

Summary Table of Court Files

CRIME	REGION	INITIAL INVESTI-GATION	COMPLAINT	OFFENDER	AGENCIES INVOLVED	SENTENCE
ART 240 Serious damage or destruction ***Attempt*** **Amended to Serious Damage and destruction**	AIBONITO	Violent behavior in a gasoline station	Endangered life and health of people by causing damage to the environment	Homeless Drug Addiction	Municipal Police	***Therapeutic restriction*** (Hogar Crea and Teen Challenge) Abandons the privilege and it is ordered his imprisonment for year and a half
ART 240 Serious damage or destruction	MAYAGUEZ	Threaten to burn his house with a gas tank Domestic Violence	Endangered life and health of people by causing damage to the environment		Police (Domestic Violence and Explosive Division) Firefighters, Fire marshal	***Not guilty for the*** Art 240 ***Guilty*** of the other cases related to Domestic Violence

(table continues)

CRIME	REGION	INITIAL INVESTI-GATION	COMPLAINT NARRATIVE	OFFENDER	AGENCIES INVOLVED	SENTENCE
ART 235 Poisoning of public waters	ARECIBO	Illegal Appropriation of the Water and Sewer Service station's diesel	Endangered life and health of people		P. R. Police, Water and Sewers Services, Environics engineering, Forensic Chemist	***Not guilty***
ART 241 Poisoning of public waters	UTUADO	Illegal Appropriation of the Water and Sewer Service station's diesel	Endangered life and health of people	Drug Addiction	Puerto Rico Police, Water and Sewers Services	***Suspended sentence*** Violates conditions and ***declares himself guilty*** three-year prison sentence
ART 242 Environmental Pollution	BAYAMON	Scaling Break in the air conditioning system	Endangered life and health of people and the biological balance of ecological systems or the environment	Drug Addiction Convict for aggravated scaling	Puerto Rico Police, Tecnol air	***Case Filed*** for completing treatment in Administration of Mental Health and Anti-Addiction Services

(table continues)

CRIME	REGION	INITIAL INVESTI-GATION	COMPLAINT NARRATIVE	OFFENDER	AGENCIES INVOLVED	SENTENCE
ART 242 Environmental Pollution	CAGUAS	Septic tank discharge that ran through the neighbor's backyards	Endangered life and health of people		Municipal Police, Department of Health	***Not guilty*** Judge: no scientific evidence proved environmental damage
ART 242 Environmental Pollution	CAROLINA	Diesel Spill over neighbors' backyard vegetation	Endangered life and health of people, the plants, and the biological balance of ecological systems or the environment		Municipal Police, Municipal Department of Environmen-tal Affairs	***Guilty for Property Damage*** Fine $200.00 Restitution $3,712.00 Environmental Improvement course of 30 hrs in 4 months.

Appendix L: Recommendations list

1. Law Modifications (see Table 1 in Appendix M)
2. Task force (DA, Environmental Quality Board, Environmental Expert)
3. Training of police (one in each police region), DA's and judges (one for each judicial district)
4. Protocol to establish jurisdiction and collaboration between governmental agencies and private organizations
5. Budgets saving through the students of UPR
6. Scholar and university curriculum on environment, fauna, and recycling
7. Study of knowledge and perception of judges
8. Study of police investigations that did not initiated a criminal procedure
9. Study to compare administrative and criminal cases in terms of implementation

Appendix M: Law modification recommendations table

Serious damage and destruction	**Poisoning of public waters**	**Environmental pollution**	**Aggravated environmental pollution**
Keep it on the code	Eliminate	Keep it on the code	Keep it on the code
Eliminte *endangering people's life, health, corporal integrity ad security of one or more persons*		Eliminate *seriously endangers peoples' health*	Include a $30,000 dollars fine for natural persons
Begin the definition, *anyone who violates this or any other law…*		Eliminate s*eriously* of *…put seriously in danger the biological balance…*	Include a fine of a 30% of the last fiscal year earnings for legal persons
Include restitution as a sanction for natural and legal persons		Begin the definition, *anyone who violates this or any other law…*	Include community services as a sanction for natural and legal persons
Include community services as a sanction for natural and legal persons		Include restitution as a sanction for natural and legal persons	Include public exposure as a sanction for natural and legal persons
Include public exposure as a sanction for natural and legal persons		Include community services as a sanction for natural persons	Specify that imprisonment is the last sanction to impose for natural persons
Specify that imprisonment is the last sanction to impose to a natural persons		Include public exposure as a sanction	
		Specify that imprisonment is the last sanction to impose	