

Pace University

DigitalCommons@Pace

Dissertations & Theses

School of Law

9-2022

Regulation Weakness and Lack of Public Awareness Has Impeded the Implementation of Environmental Policies in Saudi Arabia

Nada Gurmalla Algamdy

Elisabeth Haub School of Law at Pace University

Follow this and additional works at: <https://digitalcommons.pace.edu/lawdissertations>



Part of the [Agriculture Law Commons](#), [Comparative and Foreign Law Commons](#), [Courts Commons](#), and the [Environmental Law Commons](#)

Recommended Citation

Nada Gurmalla Algamdy, Regulation Weakness and Lack of Public Awareness Has Impeded the Implementation of Environmental Policies in Saudi Arabia, (Sept. 2022) (SJD dissertation, Elisabeth Haub School of Law at Pace University), <https://digitalcommons.pace.edu/lawdissertations/32/>.

This Dissertation is brought to you for free and open access by the School of Law at DigitalCommons@Pace. It has been accepted for inclusion in Dissertations & Theses by an authorized administrator of DigitalCommons@Pace. For more information, please contact dheller2@law.pace.edu.

**Regulation Weakness and Lack of Public Awareness Has Impeded
the Implementation of Environmental Policies in Saudi Arabia.**

By: Nada Gurmalla Algamdy

Under the supervision of Shelby D. Green Susan Taxin Baer '85

Faculty Scholar and Professor of Law

Elisabeth Haub School of Law at Pace University

September 1, 2022

Executive Summary

I. Introduction

Purpose of the Study. The purpose of this research is to assess the gaps in environmental protection in the Kingdom of Saudi Arabia (KSA) and to offer strategies for better environmental outcomes. This is an area of significant need and a great opportunity because in recent years, under the current government, KSA has made considerable advances in environmental laws and regulations under Vision 2030. This vision is a complete overhaul of virtually every aspect of the country. Vision 2030 expands to many sectors of Saudi's economy such as improved roads and infrastructural networks, advanced learning facilities and better health care facilities. One aspect of Vision 2030 pertains to urban life and the environment. The political establishments in KSA are in full support of the environmental laws. Indeed, politics play a critical role in defining the policies of a country. The Saudi's Crown Prince, Mohammed bin Salman, is actively involved with environmental matters. During the Middle East Green Initiative (MGI) in 2021, he unveiled a roadmap to combat the endemic climate change. MGI brought together several heads of states from the Middle East and North Africa (MENA). This meeting defined Saudi's role in the fight against climate change by providing key initiatives that facilitate keeping the environment clean and safe from degradation by hazardous wastes. Principally, the Saudi political class, led by the Crown Prince, actively champions a carbon free world, and intends to bring all other MENA states on board as this effort requires global input. This will be achieved through the enactment of laws passed by either the legislative or executive arm of the government to reform key sectors or institutions within the country. This discussion appears on pp. 7 and 138 of my thesis paper.

What is Missing from the Existing KSA Environmental Regime. The creation of a specialized court to hear environmental complaints is essential for effective enforcement of any laws enacted. An environmental court system could be supported by the KSA Ministry of Environment, Water, and Agriculture (MEWA). The creation of environmental courts would serve to educate the public regarding environmental policies and rules that would vastly improve the chance of success for Vision 2030. Through these courts, the processes of reviewing environmental impact would be enhanced; cooperation and coordination would be encouraged. On the same note, as a court undertakes reviews, they provide the opportunity for the public to learn about pertinent matters of environmental concern. Environmental courts educate citizens about their rights to environmental protection through the direct involvement of members of the public who may bring cases against law violators and attend court hearings. Other than the environmental courts, KSA can improve its environmental protection agenda by framing better regulations and enforcement of these laws, but this should come after an establishing public participation in urban planning. The KSA lacks public awareness of the environmental regulatory regime, thereby limiting people's ability to realize the importance of environmental law and issues.

What This Research Will Contribute to Environmental Policy Studies. This research will generate insightful information regarding environmental regulation and public awareness of environmental issues in KSA. This information will aid researchers as well as assist policymakers in identifying existing gaps in environmental protection policies. In other words, this research will illustrate how the lack of public engagement in urban planning and significantly, the lack of environmental courts, are preventing the

effective implementation of environmental policies in KSA. This research will offer a comparison of relevant parts of the environmental laws-setting and enforcement system in the US. The US system will be considered as a model framework to create a precise comparative analysis with KSA. There is little research on environmental planning in KSA. Most of the writings analyze the environmental states in other countries like the US. Thus, this research will serve as a vital piece that will evidentially reveal prospects of public awareness and public participation in urban planning in KSA. My thesis relies on this research to propose positive impacts on the KSA's environmental state. This discussion appears on p. 52 to 53 of my thesis paper.

The Relevant Parts of the US System. The US legal system, particularly the environmental regulatory system, provides some examples of how KSA's environmental system could be improved. The research concentrates on several models, such as the Environmental Protection Agency (EPA), at the federal level, and a few specialized state environmental courts, in Hawaii and Vermont, and the Shelby County, Tennessee Environmental Court. In addition, this study will examine the role of public participation in urban planning in New Castle, NY (at the local level). Finally, state, and local environmental agencies are instrumental in the enforcement of environmental laws and regulations. However, it is worth noting that the US system involves members of the public on any policy concerning the environment. Courts and agencies serve to settle any disputes pertaining to the environment. The existence of these environmental courts at a decentralized level in KSA would make it easier for the public to play the role of watchdog, especially with companies that engage in harmful environmental practices. KSA should emulate such established systems to succeed in its environmental protection goals as enshrined in the country's Vision 2030.

II. Key Concepts Addressed in this Research and Their Importance

Public Awareness. This term refers to the level of understanding among members of the public about the essence and implications of a specific policy, law, or regulation. Educating the public, therefore, refers to deliberate efforts to develop public recognition and understanding of a particular issue of great concern through channels such as public campaigns, media outlets, and other organized sets of communication strategies. Increasing awareness is not the same as presenting people with instructions about what they should do. Instead, it involves exhaustively explaining and disseminating knowledge to empower the public to generate input regarding the issue. However, such creation of knowledge must always align with specific predetermined outcomes or goals. Public knowledge should first be established before engaging citizens for possible ratification of an environmental policy. In addition to defining the need for public awareness, there should be an increase in educational programs to instruct the members of the public about the proposed environmental regulations. At this stage, policymakers might recruit qualified peer educators who understand the environmental policy details and can deliver the content to the public in a language best understood by the public. The educational program must be all-inclusive and simple so that everyone can understand the content and context of the environmental policy. This discussion appears on pp. 21 to 27 of my thesis paper.

Environmental Regulation and Enforcement. The topic will describe the relationship between the existence and enforcement of regulations. Laws are enforceable by relevant agencies tasked to undertake the mandates. Regulatory frameworks act as guidelines that people follow to ensure that the government's goals are achieved. A regulation is

deemed effective if it is consistently enforced on the people. This prompts the question as to what makes a regulation seamlessly enforceable? Principally, the enforcement of laws and regulations requires robust systems in place to support their adoption. Notably, there is a direct correlation between regulations, enforcement, and public awareness. Regulations that are constructed after proper public participation and awareness are more easily enforceable. A country such as KSA has a weaker enforcement mechanism compared to the US. One reason is that KSA does not have environmental courts. Agencies in KSA such as the Meteorological and Environmental Protection Authority (MEPA) and the Ministry of Environment, Water, and Agriculture (MEWA) have overlapping responsibilities, thereby hampering their effectiveness. This discussion appears on pp. 27 to 29 of my thesis paper.

Environmental Courts. This topic will examine how the creation of environmental courts in KSA will have far reaching environmental benefits for to the country's environmental regime. A missing link in the enforcement of environmental regulations in KSA is the absence of power of a legitimate agency that is authorized to enforce environmental laws; environmental courts will fulfill this role. Successful environmental courts have defining characteristics. They do not depend on the government to administer environmental justice as they are independent of both the executive and legislative government branches. Because their subject matter jurisdiction is limited, the judges can develop expertise that leads to uniformity in decision making. These factors lead to more efficient adjudication of matters. As consistency in case law develops, the chances of appeals are considerably reduced. In the US, there are a few local and state specialized environmental courts that hear matters pertaining to the environment. At the federal level, there are courts with jurisdiction over designated subject matter that pertains to environmental issues. The effectiveness of environmental courts rises in tandem with high levels of public participation in rulemaking and awareness of laws. When people are aware of the laws, they tend to operate within the guidelines and lessen the need for judicial intervention. Conversely, when there is minimal public participation, the opposite is true.

Another important reason why environmental courts might work in the KSA derives from the culture. Saudis respect the concept of the power of the courts more than the concept of an agency or a ministry since the legislative system gives power and prestige to those authorities (courts). The court system and judges in KSA are highly respected and are granted immunity. Therefore, the existence of an environmental court system will shorten the path to the implementation of environmental policies. This discussion appears on pp. 38 to 43 of my thesis paper.

Public Participation in Urban Planning. This section covers how mechanisms for engaging the public in rulemaking will improve environmental outcomes. The research uses the US model of public participation in urban planning. If public participation is present in urban planning, most people in KSA will begin to acknowledge the importance of environmental issues. This participation will also contribute to KSA's 2030 Vision planned goals. Public participation has several benefits. First, public participation increases the population's understanding about community issues. The involvement of the public in environmental policy affords them the much-needed knowledge of environmental laws and empowers them to report any violation by either individuals or corporate entities. Moreover, citizen participation improves the agency's decision-making strategies by generating input and recommendations needed to make necessary reforms on community developments and issues. Issues such as societal

conditions, environmental ills, housing shortages, and the need for new roads are better reported in an administrative atmosphere where citizens are part of urban planning engagement and conserving the environment. Public participation empowers citizens to better plan their urban space for example, by ensuring proper drainage of excess surface water and reducing carbon emissions. Saudi is endowed with both a terrestrial and an aquatic ecosystem that requires constant protection against any form of encroachment. Consequently, public participation produces local solutions to local problems that would otherwise adversely affect the urban space and the surrounding flora and fauna. Consistent with my main argument, when citizens have a say in their community design, they become more aware of the importance of taking care of and protecting the environment. It is necessary for the public to understand the purpose for environmental laws and regulations. Essentially, the consequences do not have an immediate impact on the environment; therefore, the public needs to be educated about long term effects. Hence, through public participation in urban planning, people gain first-hand experience in environmental preservation and increase their knowledge of the environment. This discussion appears on pp. 44 to 51 of my thesis paper.

III. General Comparison of Legal Systems in the US and KSA

At this point, the research will make a broad comparison of the environmental regulatory regimes in the US and the KSA. The research proposes to make the case for borrowing parts of the US regime.

The Framework of the US System. Since the US functions in a federal system of governance, the research mentions environmental institutions in the US at federal, state, and local levels. Although KSA's system of governance is a unified centralized system (the opposite of the US's federal system), relevant aspects of the US governance structure at each level will be compared with its Saudi equivalent. This comparison has been organized as follows:

- Federal Level: US EPA vs. KSA MEPA
- Subnational Level: Two state and one local environmental courts vs. KSA general courts
- Local: Local urban planning regimes in New Castle, NY vs. Dammam, KSA

The KSA Regulatory Regime. First, this research describes the KSA system. The Saudi's legal system is directly anchored to the country's religious and cultural system. Therefore, Sharia is regarded as the fundamental source of this country's legal system. Other sources of law in KSA include Statutory Law and Royal Orders. Notably, there are several reforms currently taking place in KSA's legal system, and all are premised on the principles of Sharia. For example, environmental laws must be congruent with the established codes under Sharia laws.

In the administrative-legal sense, the General Administration for National Parks (GANP) has been established to protect Saudi's environmental areas of wildlife and biological diversity. GANP has a two-tier administrative structure; the first one is tasked with the mandate to manage and develop National Parks, while the second maintains these bodies. The Marine Environment Administration (MEA) is yet another body under GANP that performs several duties, such as protecting the mangroves and open recreational spaces. In a legislative sense, this section mentions a few environmental laws that were enacted in 2020 such as the Forest and Range Act (FRA) that was created to protect ranges, forests, and surrounding lands. Chapter III Articles 12-20 of the General Environmental Regulations Royal Decree No. (M/165) of Dhul

Qada 1441 Hejra. The designation “AH 2020” indicates that this act was enacted under strict guidance to forbid the cutting of trees, shrubs, saplings, and the utilization of such products or resources without due approval by the concerned authority. The FRA equally ensures the enforcement of its terms as well as its by-laws.

KSA’s General Governance Structure. KSA has a central government and local authority, including 13 administrative regions. They are managed under one administrative organization for environmental policies unlike the US, which has a three-tier system. The 13 administrative divisions in KSA are called the provinces, and they act as the immediate centers of power covering various regional headquarters. On the other hand, KSA has just one administrative unit to monitor and address all environmental issues.

In the US, there are three levels comprising the federal, state, and local governments. Each level has limited jurisdiction depending on their respective constitutions and enacted laws. The constitutions define the extent to which a federal, state, or local court can act. These three governmental units have adopted systems for administering environmental laws. This discussion appears on pp. 147 to 150 of my thesis paper.

US Regulatory System. While KSA has a centralized unified governmental system that enables it to enforce environmental laws more easily, the federal system of the US makes implementation of environmental laws more challenging, yet it is far better than the system in KSA. The US environmental regulatory regime is robust and effective for several reasons. First, environmental policies and rules are set by environmental agencies such as the EPA at the federal level and equivalent state agencies, to the extent not preempted by federal law. The EPA is empowered by environmental laws to adopt regulations and policies that aim to protect the environment and ensure public compliance to these laws. It is an independent agency that acts without interference from other bodies.

This research will briefly comment on some of the main environmental laws, under which the EPA operates: the Clean Water Act and the Clean Air Act respectively. The Clean Water Act (CWA), 33 U.S.C §§ 1251 et seq., was enacted in 1972 due to ever-growing public awareness and concern about controlling water pollution. Notably, the CWA was initially known as the Federal Water Pollution Control Act of 1972. The ultimate goal of the CWA was to control pollution and improve water quality in all of the nation’s waterways. This included the chemical, physical, and biological integrity of natural waters. In addition, this law established terms and conditions for the discharge of pollutants into US waters.

This law came in the backdrop of earlier legislations that increased public awareness and the need to control water resources against indiscriminate pollution. Most importantly, the CWA gave the EPA express authority and mandate to control programs such as setting wastewater standards applicable to industries. Other terms in this law include restrictive discharge of pollutants by individuals from a point source into navigable waters. In 1981 and 1990, the EPA’s enforcement powers were improved to institute water control and management guidelines to various states. For instance, the Great Lakes Critical Programs Act, 33 U.S.C. § 1268 et seq., enforced aspects of the Great Lakes Water Quality Act entered between the US and Canada (GLWQA), (H.R.4323 -101st Congress).

The other main statute is the Clean Air Act (CAA), 42 U.S.C. 7401, et seq. This federal Law was stipulated to regulate air emissions. Notably, this law allowed the EPA

to create National Ambient Air Quality Standards (NAAQS) to aid in the protection of the public health and the environment. Also, this law authorized the EPA to regulate the states in developing and implementing their respective plans. Amongst issues listed in this plan were the emission reduction strategies to achieve the NAAQs by the legislated dates. This discussion appears on pp. 68 to 72 of my thesis paper.

Comparison Between KSA and US on Regulation and Enforcement. In this section, I discuss some differences and examples of enforcement of regulations between the two countries and show how each regime can be aided by public involvement. When it comes to enforcement, the EPA's powers are enhanced beyond that of the MEPA. The US federalist government (sharing of power among the states) might pose obstacles to enforcement. Nevertheless, the EPA has overcome this obstacle to some extent. It enforces federal law and has the power to sue states, companies, or individuals who violate federal law. While the MEPA could use similar enforcement power given under the centralized governing system in KSA, MEPA nevertheless has fallen short in enforcement for the reasons stated below. Moreover, the EPA has a board that includes experts. In KSA, MEPA has a three-member committee with no clear regulations regarding enforcement. This discussion begins on p. 86 of my thesis paper.

US. A clear case of public involvement in environmental protection occurred in the US in 1980 regarding the Hooker Chemical Company and the indiscriminate disposal of chemical substances in the Love Canal in 1942. The case was followed by the creation and implementation of a Superfund Law, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §9601, et. seq. This disastrous waste disposal triggered the government to swing into action, with the then-president Jimmy Carter relocating all families from the affected area. The climax of this citizen outcry was the establishment of CERCLA. This act is unique in the world; it was created to regulate environmental harm by all. In this act, people who are found guilty of polluting the environment are heavily fined, and they are liable for the cost of clean-up. For further details on this topic, the discussion appears on pp. 60 to 61 of my thesis paper.

KSA. There are some significant examples of the government's ability to enforce environmental regulations. For instance, the implementation of the regulation to prevent illegal logging, as mentioned above, had a positive impact on the environment and increased awareness within the population. In this situation, the public aided the environmental police by reporting violations. The environmental police strictly enforced this regulation and imposed penalties on anyone who violated it. Consequently, the regulation on the prevention of illegal logging became well known in KSA. This illustrates how enforcement is a critical factor in educating the public and conserving the environment. This discussion begins on p. 137 of my thesis paper.

The Value of Social Movements in Advancing Environmental Protections. In the US, environmental results are significantly improved by the role played by environmental social movements. These movements have led to environmental laws that have served to improve water and air quality and have positively impacted the environment and health outcomes. A social movement has the mandate to involve the public as one of its stakeholders in the environmental advocacy and representation. Consequently, an advocacy group must ensure that the members of the public are actively involved in the monitoring and protection of the environment. In general, social

movements are substantially connected to both public awareness and public participation as they aid in creating public knowledge regarding issues that are of importance to the people. Environmental volunteer groups would help to raise the level of environmental awareness in KSA because it is through this means that the public can get involved in protecting their environments. This discussion appears on pp. 54 to 57 of my thesis paper.

Importance of Urban Planning. Complementing social movements is urban planning that occurs on the local level, as this works to protect the environment for the reasons that were stated earlier. The research will offer two case studies about urban planning. This discussion is described below and studied in depth on pp. 94 to 102 of my thesis paper.

IV. Strategies for Improving Public Awareness of Environmental Issues in KSA.

Public Participation in Rulemaking. An effective administrative regulatory process calls for public participation in rulemaking. The research will begin by providing a discussion of public participation in US at the national level, then on the local urban planning level. The research also discusses the role of environmental courts in US in this vein. On these issues, the paper contrasts the US models with KSA.

US Federal Agency Rulemaking. The Administrative Procedure Act (APA), 5 U.S.C. §551 et seq., sets out the procedures that all agencies follow when adopting established operational rules. The rulemaking process is a critical mandate designated under APA. Indeed, the rulemaking process contains several stages as discussed below:

- The EPA's rulemaking process is an all-inclusive procedure, that starts with an open process of publishing the legislation.
- The second stage involves public participation, in which citizens are allowed to raise concerns about the law and their inputs noted for further action in the subsequent stages. The EPA hears the recommendations given by the members of the public and publishes the comments.
- The EPA may revise proposed regulations based on the comments given before issuing a final statement of the rule. The rulemaking process is a fair platform designated to ensure proper public participation in making key legislation. The members of the public may become obedient to the law if they understand its elements because they participated in the rulemaking process. This discussion appears on pp. 74 to 78 of my thesis paper.

Local Urban Planning. This section describes the opportunity for the public to participate as a compulsory requirement for land use planning in the US. First, there are models of public participation in urban planning in the US that are worth emulating; New castle, NY is one of them. New Castle is the model for comparison in terms of the effectiveness of public participation in urban planning. It is informed by the fact that the town is well known for intensified efforts in urban planning and public participation. New Castle has opened numerous opportunities for its residents to participate in urban planning, through the development of its comprehensive plan. This plan is beneficial to residents to an extent that a collaboration has occurred between New Castle and Pace University Land Use Law Center in NY. This section focuses on the plan's vision for the preservation of the unique strengths of the town while simultaneously addressing

the needs of the town. This comprehensive plan aims to preserve the town's bucolic and historic resources.

The value of public participation has been realized in New Castle. For instance, residents of New Castle rejected proposals by local authorities to create open spaces within the region's urban spaces. Residents cited the uniqueness of New Castle's urban spaces as the reason behind their rejection of the proposed changes. Similarly, the characteristic "gate" houses and two-family houses that stand as single-family homes have been spared of demolition due to public engagement and participation in the hamlet. Public participation is regarded as one of the core principles that control urban planning. This discussion appears on pp. 94 to 98 of my thesis paper.

The Regulatory Process in KSA by the MEPA. There are many structural and political obstacles to an efficient and effective environmental regulatory regime in KSA. This part shows that while MEPA has been extensively involved in key environmental policy legislation and implementation, it has fallen short of achieving its mandates to enforce environmental regulations. There are several reasons for this. First and foremost, there is overlapping authority between MEPA and other state ministries. Therefore, conflicts of jurisdiction have become a common phenomenon between MEPA and these ministries, thereby hindering seamless operations of these bodies. This overlapping of authority, apart from making agency action inefficient, also leads to higher operational costs and increases regulation uncertainties. Moreover, MEPA is not independent in its activities, which leads to interference from other bodies and, hence, slow decision-making. Decisions made by MEPA pass through various competing environmental institutions such as Petroleum, Chemical & Mining Company (PCMCE) which may result in implementation delays. In other words, the proposal passes through the ministries for approval which may defer to the economy rather than conservation of the environment. For instance, the Ministry of Petroleum and Energy develops policies governing the exploitation of oil and petroleum products; these products might have a negative impact on the environment. Therefore, the implementation process is vague and complex, making the agency slow or ineffective in developing and enforcing environmental regulations. Most significantly, there is no institutionalized way for the public to participate in MEPA's proposals. The proposals are drafted and approved by the council of ministers. Most environmental laws that are proposed by MEPA do not pass through the public to generate public input. This discussion appears on pp. 83 to 85 of my thesis paper.

Planning in the Dammam Metropolitan Area Case. This discussion describes the one notable urban planning experiment in KSA—Dammam. KSA has municipal councils, and their objective is to allow Saudi-appointed members to participate in issues concerning city development. The members offer solutions to urban development problems affecting the local society. The case study of the Dammam Metropolitan Area explored opinions regarding the introduction of public participation practices in the urban planning process in KSA. This province holds the largest oil reserve in the world which has led to the rapid urbanization and the development of the Dammam Metropolitan Area. The Saudi government developed this to accommodate urban growth. This "bottom up" approach in urban planning might allow for diversity of ideas and opinions that originate from the public and move up to the government; consequently, this raises the level of public awareness regarding environmental issues. This discussion appears on pp. 98 to 102 of my thesis paper.

Environmental and Specialized Courts to Raise Public Awareness and Improve Protection. As previously mentioned, I believe that KSA needs to adopt environmental courts based on the model that exists in the states of Hawaii and Vermont, and in Shelby County, Tennessee. These courts have various jurisdictions, and their central role is to administer environmental legislation and justice. The specific jurisdiction of these courts depends on their scope. Federal courts have national scope, while local and state environmental courts hear cases within their respective defined areas of operation. The environmental court in Tennessee was created in 1983 in what used to be known as the City of Memphis and later became the Shelby County Environment Court. The court's jurisdiction involved handling violations of health, fire, buildings, and zoning codes. Under the Tennessee Code Title 6. Health, Safety and Environmental Protection, (TN Code § 68-11-301) the Tennessee Environmental Court was codified. Hawaii's Environmental Court was established in 2014. HI Rev. Stat § 604A-2. The statute stated that all processes, including judicial reviews of administrative proceedings and proceedings for declaratory judgment on the legality of agency rules, must fall under the exclusive, original jurisdiction of the Hawaii's Environmental Courts. In Vermont, the environmental court division was created in 1990. 4 Vt.Stat. Ann. §1001. The statute provides for the existence of an Environmental Division consisting of two judges; the role of each judge is to hear all matters in the Environmental division. In 1991, the Tennessee Legislature increased this court's mandates and allowed it to issue conjunctive orders that the environmental court could rule to resolve problems and prevent further violations in the future, in addition to ordering compliance with the law. This amendment has led to continuous improvement in the state of Tennessee courts. For example, the court's autonomy increased following this ruling, making it effective in discharging its roles. These mandates and tasks assigned to environmental courts provide the power and efficacy to properly enforce the laws and regulations to protect the environment while also raising public awareness and compliance regarding environmental policies. This discussion appears on pp. 88 to 92 of my thesis paper.

General Courts in KSA. KSA has an elaborate judicial system with general courts performing in different areas of responsibility. There are specialized labor courts as well as commercial courts, and these have witnessed improved success because of the limited focus of the courts. Most people acknowledge and respect these laws as they see effective enforcement by these specialized courts; however, KSA lacks specialized environmental courts. A specialized court is a recipe for ensuring commitment by members on environmental matters. This same trajectory must be followed when environmental laws are enforced. Environmental protection is well enforced when the members of the public have information about the laws on environmental regulation.

V. Conclusion

This research has uncovered gaps in KSA's environmental regulatory regime and offered some solutions. The essential conclusion is that to improve its environmental regulatory frameworks, KSA should follow in the footsteps of countries such as the US. Laws need to be implemented effectively, and policy makers should increase opportunities for the public to participate in urban planning. KSA can have effective results regarding enforcement by:

- Establishing environmental courts, which considerably enhances the implementation of statutes.
- Developing a transparent system that will provide more knowledge to the public to effectively enforce environmental policies.

- Adopting a public participation in urban planning framework wherein the government incorporates people in its environmental agenda.
- Enhancing education to raise environmental awareness will play a crucial role in increasing awareness regarding the importance of protecting the environment.

**Regulation Weakness and Lack of Public Awareness Has Impeded the
Implementation of Environmental Policies in Saudi Arabia.**

Table of Contents

Table of Contents.....	2
ABSTRACT	5
ACKNOWLEDGEMENTS	6
I. Chapter 1: Introduction	7
A. Research Objective	10
B. Research Questions	10
C. Main Argument	11
D. Purpose of This Research.....	11
E. Significance of This Research	11
F. Research Methodology	12
G. How the data will be collected	12
H. What I intend to do with the data	13
I. Overview of the Structure.....	13
II. Chapter 2: Literature Review:	17
A.Weak regulations and lack of public awareness	17
1. Substantive Weakness.....	17
2. Lax Enforcement	18
3. Lapses in administrative support.....	20
B.Introduction to Public awareness	21
1. Public awareness Through Education	23
2. Prospects of Vision 2030 impact on public awareness.	25
C. Relationship between Strength of Regulations and Greater Public Awareness	27
D. Strength of Regulations and Environmental Outcomes in Other Regimes.....	29
1. Environmental outcomes	29
E. Other Drivers for Strong regulations and greater public awareness.....	31
1. Foreign investment	31
2. Audits.....	32
3. Innovation.....	35
4.Consequences of environmental polluters.....	35
F. New Gaps.....	37
F.1. Introduction to Environmental courts.....	38
2. Advantages of Specialized Environmental Court.....	40
3.Gaps in KSA's case.....	43
F. 2. Introduction to public participation in urban planning.....	44

1. The Value of Public participation in urban planning and for Better Environmental Outcomes.....	46
3. Low public participation in urban planning in the KSA	47
G.Positive Effects of Higher Levels of Public Participation in Other Countries	48
H.Public Participation and Environmental Justice.....	51
I.Summary of Relationship between Public Awareness and Effectiveness of Regulations	52
III. Chapter 3: The Efficacy of Social Movement for Environmental Law	54
A. Introduction.....	54
B. Legal impact of social movement	57
C.An Outrageous Act Spurring Public Action	60
D. An Ideal Environmental system for the KSA.....	62
IV. Chapter 4: Comparison.....	65
1. United States' Case.....	65
A. Federal Level.....	65
a.Environmental protection Agency	67
b.Congressional Statutes.....	68
c. How the EPA works.....	69
d. How the EPA adopts regulations.....	69
e. Enforcement.....	70
f. The Different Types of Enforcement Actions.. ..	70
g. The power, and delegation, of EPA at work.. ..	72
Authorizing legislation for the EPA.....	72
h. Environmental quality impacts attributed to the EPA	73
i.The role of public participation in the EPA	74
j. Rulemaking under the US Administrative Procedure Act.....	74
2. KSA's Case.....	78
a. The powers and roles of MEPA in creating public awareness.	78
b. Environmental standards and roles that MEPA played since its incorporation	79
c. The chart below illustrates the relationship between MEPA and other ministries.	81
d. MEPA's mandates in realizing environmental sustainability in KSA	81
e. Challenges faced by MEPA that limits its operational mandates	83
3. Comparison between MEPA and EPA.....	85
a. How they work:	85
b. How regulations are adopted	85
c. Enforcement:.....	86
B. State Level.....	87
a. State environmental courts in the US: Tennessee and Hawaii courts.	88

Tennessee.....	88
Hawaii.....	90
b. Comparison between KSA and US in the context of Environmental courts’ jurisdictions.....	92
a. Oversight.....	92
b. Data Collection and Record-Keeping.....	93
4. PUBLIC PARTICIPATION IN URBAN PLANNING.....	94
A. Local Level.....	94
a. The public participation in urban planning in The New Castle NY:.....	95
b. Public participation and urban planning in the Dammam Metropolitan Area.....	98
c. Elements of successful comprehensive plan.....	102
D. Comparing public participation in New Castle New York and Dammam Metropolitan Area (DMA).....	103
V. Chapter 5: Results.....	109
A. Introduction to Results.....	109
B. Research Results Obtained from Sources.....	112
C. factors that affect public participation and environmental management in KSA....	113
D. Level of responsibility among People towards the Environment: The Case of KSA Compared to the USA.....	115
A.Comparative Levels of Consumption of Electric Power.....	115
B. Comparative Levels of Water Consumption.....	119
C. Comparative Levels of Waste Production.....	124
D.Comparative Levels of Voluntary Disclosure among Companies.....	126
E. Comparative Levels of Environmental Violations.....	129
VI. Chapter 6: Discussion.....	132
A. Implications of the results.....	135
B. What the KSA needs to do.	137
C. Environmental Police in KSA.....	137
D. Saudi Arabia Vision 2030 for Environmental Conservaion and Protection as an Important First Step.....	138
E.New Environmental Law Movement in KSA.....	143
F.Conclusion.....	147
G. Structural Comparisons.....	147
H. The Way Forward: Mechanisms That Can be used to improve the Results.....	150
VII. Chapter 7: Conclusion.....	154
A.Recommendations for Future Research.....	155
References.....	157

ABSTRACT

This research aimed to substantially illustrate that the weakness of environmental regulations and lack of public participation in urban planning alongside poor public awareness in Saudi Arabia has inhibited the implementation of environmental policies across this region. To study these issues, this research compared the Kingdom of Saudi Arabia (“KSA”) to the United States (“US”) building on numerous studies to illustrate how the identified weaknesses correlate with weak or ineffective environmental policies. It is well known that it would be better to use a European country “because it's known that the EU has tough environmental measures” as a model for KSA regarding environmental protection standards. This is true, but I find it more beneficial to take this gradually, as to use a country that achieved average success in environment protection compared to EU. Also, what is more interesting in choosing the US as a model is that, with its federal system of governance that makes it harder to implement national environmental protection measures, the US has made significant progress in environmental protection compared to KSA. While it has a central unified government system that makes national policy implementation much easier, KSA could not effectively implement environmental protection measures like the US. The main argument I make here is that better environmental outcomes is dependent upon increased public awareness and better enforcement of environmental laws and regulations. The former can be accomplished through public participation in the law-making process and in urban planning decisions. The latter, through the creation of independent environmental courts.

ACKNOWLEDGEMENTS

I am well aware that this individual accomplishment resulted from the efforts of many people, to whom I shall be eternally thankful. First, I'm extremely grateful to have my supervisor Professor Shelby Green. I genuinely appreciate her contribution to my knowledge and experience. I'm so thankful for her help and kind support. She is the advisor who has assisted me from the beginning to the end of this work.

Furthermore, I would like to express my sincere thanks to committee members Professor David Cassuto and Professor Josh Galperin, who provided professional advice and guidance for my research. I am also thankful to my friends Hebah Shaker, Dr. Mamdouh Shouman, and Jawaher Almutairi for helping me throughout this work. No words can be enough to thank them.

Finally, my deepest thanks to my family, the soul of my beloved father, who passed away, my mother, sisters, father-in-law, husband, and daughters. For unfailing love, support, and patience. This work would not have been possible without their great encouragement and understanding throughout this journey. Most importantly, I'd like to express my gratitude to my beloved country, Saudi Arabia, for providing me with the financial support that enabled me to continue my (SJD) studies in environmental law.

I. Chapter 1: Introduction

While there is a strong debate leading to political polarization on the issue of climate change, governments cannot deny any type of protection to the environment. At the very least, any country that neglects pollution, for instance, will pay more in healthcare to the effected citizens by increased pollution. Thus, at the bare minimum of implementing environment protection measures in any country is not controversial for anyone raising this issue.

What I have previously mentioned pertains to governments accepting the importance of environmental protection, which is a top-down approach. A bottom-up approach, where citizens are aware enough to abide by environmental laws and have respect for them is what I am mainly interested in. Specifically, the importance of awareness in matters of environmental concern in a country that relies heavily on oil and gas extraction, the Kingdom of Saudi Arabia. How can Saudi citizens realize the importance of saving the environment?

KSA has an ambitious vision for the country called Vision 2030. This vision is a complete overhaul of almost every aspect in the country. In this vision, there are several “realization programs” among those is a program named “quality of life.”¹

This program is focused on the urban life and the environment. Specifically, it has recently received initiatives in the fields of urban landscape beauty, city humanization, and city services enhancement for the municipal services sector. Such

¹ Vision 2030, *Quality of Life*, Vision 2030 (2022), <https://www.vision2030.gov.sa/v2030/vrps/qol/>.

initiatives will help to focus efforts on all elements of quality of life and ensure that citizens and visitors to the Kingdom enjoy excellent living conditions.

This program is essential in vision 2030,² as my dissertation emphasizes the role of public participation in urban planning in increasing public awareness of environmental protection.

As ambitious as the “Quality of Life” program under Vision 2030 appears for improving the quality of the environment, I cannot see it happening if the following impediments are not addressed:

- Lack of public awareness on the importance of environmental protection.
- Lack of public participation in urban planning.
- Lack of enforcement of environmental laws.

Let us start with lack of public awareness. What I mean by that is, most of the people in KSA are not aware of the importance of protecting the environment. Couple that with lack of enforcement of environmental law and this leads to many environment violations done by individuals without any fear of legal repercussions. To deal with these impediments, KSA has to do the following:

- 1- Create independent environmental courts, because courts have a revered position in the society.
- 2- Allow citizens to participate in urban planning. This is because public participation will more likely make citizens realize they have a stake in the livability and sustainability of the areas they live in and, hence, they will understand how crucial environment protection standards are in their neighborhoods.

² *Id.*

Data provided by The United Nations Environmental Program (UNEP) indicates that “Courts are increasingly holding companies and governments to account for their responsibilities to address climate change.”³

In line with this argument, there is no doubt that environmental courts are having an impact across distinct regions insofar implementation of environmental laws is concerned.

In the recent past, the importance of environmental agencies, courts, and public participation in bolstering the implementation of environmental policies has been studied at a grater scale.⁴ Different scholars have focused on other regions and have thus unearthed the pertinent importance of environmental courts.⁵ On the same note, an appreciable amount of research has also shown how increased public participation reinforces public awareness, translating into effective reinforcement of environmental regulations.⁶

Environmental courts play an important role in implementing environmental laws. However, this is a top-down government action that requires an informed and aware public to achieve this endeavor. KSA lacks both, environmental courts and public awareness in environmental protection. Thus, what other country that can be used as a model for comparison with KSA? I chose the United States.

³ UN environment program, *In battle against climate change, courts become a new frontier*, *UN Environment* (2021), <https://www.unep.org/news-and-stories/story/battle-against-climate-change-courts-become-new-frontier>.

⁴ M. P. Amado et al., *Public Participation in Sustainable Urban Planning*, 3 *International Journal of Civil and Environmental Engineering* 228–234 (2009), <https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.

⁵ Markus B. Zimmer, *Overview of Specialized Courts*, 2 *IJCA* 46, (2009), <https://www.iacajournal.org/articles/abstract/10.18352/ijca.111/>.

⁶ Byungchun so, SJD Dissertation on *Public Participation in South and North Korean Environmental Laws*, 2003, <https://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1004&context=lawdissertations>.

A. Research Objective

This research is based on the following specific objectives:

1. To investigate how regulation weakness and lack of public awareness in the KSA has impeded the implementation of environmental policies.
2. To explore the impacts of strong regulations, an independent enforcement agency such as Environmental Protection Agency (“EPA”) (at the federal level), some environmental state courts (at the state level) and public participation in urban planning (at the local level) on enforcing environmental laws and heightened public awareness in the US.
3. To demonstrate how environmental courts alongside public participation can help KSA strengthen environmental regulations enacted by organizations such as MEPA this will be further discussed in depth in the paper and thus strengthen its environmental regulation enforcement.

B. Research Questions

The following research questions were obtained from the research objectives and will play a vital role in guiding the purpose of this critical study.

1. How has weak regulations and lack of public awareness impeded the implementation of environmental policies in Saudi Arabia?
2. What impacts do enforcement agencies, environmental courts and public participation in urban planning, have on enforcing environmental laws and heightened public awareness in the US?

C. Main Argument

Better environmental outcomes can be achieved by increased public awareness of environmental issues, laws and regulations. Increased public awareness is contingent

1- Environmental courts.

2- Public participation in urban planning.

D. Purpose of This Research

Principally, this thesis will illustrate how regulation weakness and lack of public awareness impeded the implementation of environmental policies in Saudi Arabia. The research will offer a comparison of relevant parts of the environmental laws-setting and enforcement regime in the US.

E. Significance of This Research

First and foremost, it has been shown that although considerable research has been done to uncover the importance of environmental courts and public participation in fostering the implementation of environmental laws, no study has explicitly focused on Saudi Arabia. Therefore, this research examines how Saudi Arabia has relied solely on entities such as MEPA but lacks a more substantial effective body such as an environmental court to back up the implementation of environmental laws. On the same note, the research will display that in KSA, there is total lack of public participation in urban planning. Indeed, the study will comprehensively explore how the US's environmental management system has well impacted the country alongside the substantial public participation in urban planning. In other words, this study will outline the contours of the main federal regulatory agency in the US, the EPA, and about the handful of state environmental courts in the US. By this, this research will demonstrate the critical need for environmental courts and public participation in

KSA. Of most importance is that this research provides arguments that house the most recent evidence, which vitally adds to the existing research. On the whole, this research will serve as the “eye-opener” which will influence policymakers in KSA to adopt the measures taken by countries such as the USA if it wishes to realize profound protection of the environment through creating and enforcing better policies most effectively.

F. Research Methodology

The study involves a comparative analysis of two countries: The Kingdom of Saudi Arabia and the United States. These two countries have distinct frameworks of environmental regulation and public participation. Thus, the United States' case will be considered as a model framework to create a precise cut comparative analysis with KSA. Principally, the US's court system and tribunals can hear matters related to the environment. Besides, the country has different structures of administration that roll out regulatory measures on behalf of the federal government. For instance, state and the local governments complete the structural framework upon which specific implementation are made.

G. How the data will be collected

The validity of research relies on its research outcomes. This statement implies that a suitable methodology must have an inherent ability to meet all the specifics of scientific research. Consequently, this section will rely mostly on primary and secondary data that detail the operation of critical institutions tasked with the mandate of regulating environmental laws.

H. What I intend to do with the data

This research is centered on finding an ideal solution to the shortfalls still witnessed in the enforcement of environmental regulations in KSA. Thus, the data will create an authoritative ground to conclude that KSA still needs to work on issues like public participation and it needs to create environmental courts to effectively enforce environmental laws and get positive outcomes on its environment.

I. Overview of the Structure

The research has been divided into seven chapters to ensure the logical organization of arguments and evidence. Furthermore, the organization of this study into distinct and well-labeled chapters will help the reader point out their point of interest and thus promote readability. Expressly, this research will be organized as follows:

The first chapter of this research started with an introduction and a fundamental foundation. It also includes the main argument and a description of how the research was conducted. The first chapter also contains the research objectives, and two research questions will be validated in the following chapters.

Chapter 2 of this research is the literature review and will be divided into two main parts. The first one will discuss the impacts of weak environmental regulations and lack of public awareness using cases such as China. In this first part, it will be shown that weak environmental laws are closely related to poor public awareness and thus the poor implementation of environmental policies in places like Saudi Arabia. The second part will demonstrate how strong environmental regulations and greater public awareness have helped countries experience better implementation of environmental policies. On the whole, Chapter two of this study will lay a significant foundation

illustrating why Saudi Arabia should consider establishing specialized environmental courts and public participation in urban planning.

Chapter 3 start by discussing the efficacy of social movement for environmental law in USA. The chapter also will describe what defines an ideal environmental system for the KSA and the deficiencies in the existing regime.

By comparing the regulatory structure in the US and the KSA, chapter 4 seeks to establish the case for borrowing aspects of other legal regimes (USA.)

The chapter will examine the roles of key institutions in Saudi Arabia and the United States during the last ten years, as well as the details of overall shortcomings that the lack of specialized courts and tribunals in Saudi Arabia has had in terms of public awareness and enforcement of environmental laws.

Chapter 4 also will generally discuss environmental institutions at the federal (EPA), state (Environmental Courts), and local levels (public participation in urban planning).

To achieve validate the two identified gaps, a part of the chapter will independently discuss MEPA and EPA since their formation, and a general discussion of what each body has been doing will follow. Most importantly, the part of chapter 4 will compare KSA and US-based environmental courts' jurisdictions.

As descriptive research, chapter 5 will be results and this chapter presents what has been obtained from the secondary sources, that the research is limited to sources aged ten years since their publication. Notably, the results chapter will not present new data, but the same will be obtained from previous ones with deep analysis and discussion and linked to the variables in this study. This chapter also will present graphical and statistical evidence that supports the research objective and demonstrate

aspects such as comparative levels of electric power consumption, water consumption, waste production, and voluntary disclosure among companies.

In chapter 6, which is a discussion chapter that forms a considerable part of this study, first, it will demonstrate the implications of the results. The discussion chapter will serve to interpret what has been obtained in the results chapter to help bring generalized conclusions. It will disclose the correlation between the results and the research hypothesis (arguments of this research). Of most importance is that the discussion chapter will rely on the results chapter to identify the gaps in KSA's environmental regulations and what it needs to do to fill the identified gaps. Although the big change movement in environmental law would be close to the main aim of the research, such as environmental police in KSA and its vision 2030 for environmental protection will be tied to the discussion chapter. The chapter will also include the new environmental law in KSA to demonstrate what the country has been doing to preserve its environment. Moreover, it will extend on the Saudi environmental protection initiative to terminate with "the way forward." Notably, the way forward will be a discussion of the mechanisms that can be put in place to improve the results.

There is a need to have a concluding chapter that seemingly puts everything together in every long research. With the conclusion chapter, a reader can know what has been covered. Indeed, it is possible to deduce the meaning of the research in the conclusion chapter since it forms the climax of everything done in the preceding chapters. In this regard, this study will have a conclusion chapter, but it does not only reiterate or repeat what has been done in the previous chapters. Above restating what has been said, it will provide sound inferences based on the obtained analysis. Alternatively, the chapter will indicate what the findings mean and how they can be helpful, and will demonstrate the concerns raised in the earlier chapters. Of vital

significance is that the concluding chapter will illustrate how the gaps identified in this research can be corrected and the most effective strategies that can be used to correct the gaps. Therefore, apart from merging the research chapters, the conclusion chapter of this study will answer the question “so what?” to help concerned parties visualize the natural way forward in a deeper view.

II. Chapter 2: Literature Review:

This literature review will explore extant studies on environmental regulation, environmental courts, public awareness, public participation in urban planning, and the implementation of regulations. The review will start by incorporating studies on how weak regulations and lack of public participation and environmental courts are related to the implementation of environmental regulations. Finally, the strength of regulations, greater public awareness, public participation, environmental courts and the nature of regulations in terms of stringency in different regimes will also be reviewed.

A. Weak regulations and lack of public awareness

1. Substantive Weakness

Several studies, in this section, have investigated how weak environmental regulations are not effective in implementing concerned policies which hinder enforcement of environmental regulations. In China, one study surveyed manufacturing industries in one province and found that compliance with environmental regulations was weak. Poor or non-compliance was attributed to the fact that firms did not understand regulations being enforced leading them to suspect the regulatory agencies and hence lower the firms' commitment to participate in the enforced regulation.⁷ In another study, weak environmental regulations were associated with pollution. Omri and his colleagues used data on CO2 emissions and foreign trade for Saudi Arabia to

⁷ Wai-Hang Yee et al., *Regulatory Compliance when the Rule of Law Is Weak: Evidence from China's Environmental Reform*, 26 Public Adm. Policy Res. 95, 105 (2014).
https://www.researchgate.net/publication/262636335_Regulatory_Compliance_When_the_Rule_of_Law_is_Weak_Evidence_from_China%27s_Environmental_Reform.

investigate how the environment is affected. Based on the models generated from the data, the study concluded that an increase in income and foreign trade led to degradation of the environment since CO₂ emissions were high and these results were due to the unavailability of stringent regulations.⁸ As such, weak regulations create opportunities for environmental pollution since organizations do not fully understand the regulations and that certain economic operations lead to an increase in environmental pollution.⁹

When new technologies are developed to tackle climate change, strict regulations should be made to address their potential effects on the environment. However, countries that have adopted such technologies lack regulations to address environmental concerns. In China, the CO₂ capture technology was adopted to address climate change by capturing CO₂ and utilizing it, but regulatory frameworks were not effective to fully enforce this technological demand on factories. Given this, the public needed the government to enforce regulatory measures specifically addressing the technology to minimize the risks and effectively manage the facilities.¹⁰ Thus, the lack of regulations or the presence of inadequate regulations poses potential risks to the environment given that facilities can pollute the environment with no concern for public welfare in terms of the environment.

⁸ Anis Omri et al., *Determinants of environmental sustainability: Evidence from Saudi Arabia*, 657 Sci. Total Environ. 1592, 1600 (2019), <https://pubmed.ncbi.nlm.nih.gov/30677924/>.

⁹ Wai-Hang Yee et al., *Regulatory Compliance when the Rule of Law Is Weak: Evidence from China's Environmental Reform*, 26 Public Adm. Policy Res. 95, 105 (2014), https://www.researchgate.net/publication/262636335_Regulatory_Compliance_When_the_Rule_of_Law_is_Weak_Evidence_from_China%27s_Environmental_Reform.

¹⁰ Qi Li1 et al., *Public awareness of the environmental impact and management of carbon dioxide capture, utilization and storage technology: the views of educated people in China*, 19 Clean Technol. Envir. 2041, 2055 (2017). <https://link.springer.com/article/10.1007/s10098-017-1387-0>.

In the general construction industry, various laws exist to regulate the industry, but the effectiveness has raised concerns. Mansour studied the response from construction industries in light of eight environmental regulations and found that the participants were unable to accurately determine the implementation of the laws.¹¹ Thus, although environmental laws exist to regulate the construction industries, the lack of definite description concerning the implementation of these laws demonstrate the laxity in the laws.

Globally, nations sign various agreements to protect the environment, but such agreements are usually weak leading to poor implementation. Alzahrani and Alqasmi analyzed Saudi Arabia's domestic laws with respect to international laws as well as marine concerns as a case study and found that marine conservation is still a problem since international laws are weak.¹² In this case, the Regional Organization for the Protection of the Marine Environment gives full authority to Saudi's local laws such as the General Environmental Regulations making the international law ineffective given that the country is unlikely to cede authority of marine conservation to international bodies and the focus on economy at the expense of environment conservation.¹³ The authors asserted that education could serve as an important solution to increase awareness.¹⁴ Thus, the protection of resources such as marine that are shared regionally or globally is challenging since international laws focusing on

¹¹ Mansour M. A. A. et al., *Analyzing the Implementation Of Environmental Laws In the Saudi Arabian Construction Industry*, 17 Appl. Ecol. Env. Res. 3781, 3799 (2019). https://www.researchgate.net/publication/338984738_ANALYZING_THE_IMPLEMENTATION_OF_ENVIRONMENTAL_LAWS_IN_THE_SAUDI_ARABIAN_CONSTRUCTION_INDUSTRY.

¹² D. Alzahrani & Huda Alqasmi, *Protecting the Biodiversity of the Arabic Gulf's Coastal Waters from Agricultural and Industrial Runoff Case Study-Saudi Arabia*, 3 International Journal of Social Science and Humanity 62–65 (2013), <http://www.ijssh.org/papers/195-G10034.pdf>.

¹³ *Id.*

¹⁴ *Id.*

marine conservation lack the authority to force individual countries to comply with such laws.

2. Lax Enforcement

Furthermore, existing regulations may not be effective due to laxity in enforcement. Although the Saudi government had adopted regulations to promote green buildings, research indicates that the regulations have been ineffective. By interviewing experts in the construction and building industry, Moslly noted that existing regulations were the largest impediment to the adoption of green buildings due to their unsupportive nature.¹⁵ The experts noted that the regulations are not mandatory, the existing official council for green buildings is inactive, and that there are no incentives to encourage green buildings.¹⁶ To this effect, Saudi Arabia's regulations on green buildings appear ineffective since they are weak in that they are not mandatory and the body mandated to oversee the construction of green buildings is not active.

3. Lapses in administrative support

Furthermore, several factors within the institution tasked with implementing regulations can hinder the enforcement. For instance, the General Authority for Meteorology and Environmental Protection Authority (MEPA), a body mandated to enforce the General Environmental Law released a report on Saudi's environment and found that lack of adequate funding, incompetence in various departments, lack of special courts to address environmental issues, lack of public participation in

¹⁵ Ibrahim Mosly, *Barriers to the Diffusion and Adoption of Green Buildings in Saudi Arabia*, 5 J Manage. Sustain. 104, 112 (2015), https://www.researchgate.net/publication/285628375_Barriers_to_the_Diffusion_and_Adoption_of_Green_Buildings_in_Saudi_Arabia.

¹⁶ *Id* at 3.

decision-making, and an emphasis on compliance without promoting excellence in environmental performances were key reasons for the weak law.¹⁷ Based on this report, it can be noted that weak regulations are due to a variety of reasons that need to be addressed if the implementation of environmental policies is to be successful.

B. Introduction to Public awareness

Public awareness refers to the level of understanding among the members of the public about the essence and implications of a specific policy, law, or regulation.¹⁸ Creating public awareness, therefore, refers to deliberate efforts to develop public recognition and understanding of a particular issue of great concern through such channels as public campaigns, media outlets, and other organized sets of communication strategies.¹⁹ Public awareness is not the same as giving people instructions on what they should do but instead involves exhaustively explaining and disseminating knowledge to empower such people to make decisions regarding the issue. However, such knowledge creation must always align with specific predetermined outcomes or goals.

Public awareness is an integral component of any public policy development process. The public needs to have a shared understanding and stance about public policies to guarantee smooth implementation. For instance, public awareness is often

¹⁷ The General Authority for Meteorology and Environmental Protection (GAMEP) *The state of the environment responsibilities and achievements*. Chap 7. (2017). <https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>.

¹⁸ Hadi Aliyu & Ismail Kaoje, *PUBLIC AWARENESS AND PERCEPTIONS TOWARDS PHYSICAL PLANNING IN NIGERIA: A CASE STUDY OF TALATA MAFARA, ZAMFARA STATE*, 9 Journal of Environmental Sciences AND RESOURCES MANAGEMENT (2017), <https://www.cenresinjournals.com/wp-content/uploads/2020/01/Page-92-105-0854.pdf>.

¹⁹ *Id.*

used to exert pressure on and encourage policymakers and therefore push them to implement policy changes.²⁰ Principally, public awareness campaigns are meant to educate the public or target population about current public issues to solicit action to implement changes. Members of the public become better placed to comment on, criticize, support, or support policies if they understand the scope, operation, and implementation of the same approach.²¹

At particular points, public awareness campaigns need to go beyond creating awareness and instead focus on making the public act on the message. Unfortunately, most public awareness campaigns are stuck in the awareness creation phases. In essence, they do not motivate the public to act on the issue being addressed. To avoid this, while planning on conducting public awareness, organizations should also plan on how they will move away from awareness campaigns and focus on making people take action on the message. Consequently, if the organization does not call to action, the campaigned information may never attain the desired impact. In sum, successful public awareness campaigns direct and instruct the public to respond to the campaign.

While designing the public awareness campaigns, there are few steps and practices that an organization needs to keep in mind regardless of its type. First, the organization should identify the metrics that it intends to achieve. This includes evaluating the frequency and reach of the campaign. After establishing the campaign parameters, organizations should determine the timeline that incorporates the milestones that will be met while creating awareness. Also, organizations need to understand the level and scope of cost and commitment necessary to design a

²⁰ Kishan Khoday and Leisa Perch, *Green Equity: Environmental Justice for more Inclusive Growth*, International Policy Centre for Inclusive Growth, (2012).
<https://www.academia.edu/4082133>.

²¹ Earth Reminder, How to Conduct Environmental Awareness Campaigns? Earth Reminder (2021), <https://www.earthreminder.com/environmental-awareness-campaign-ideas/>.

successful campaign. After designing the campaign, an organization should determine the best and appropriate channel of disseminating awareness that will reach a broader target group. Public participation is the best way of enhancing public awareness and therefore facilitating the enforcement of environmental laws.

1. Public awareness Through Education

Given that human beings are responsible for environmental degradation, raising their awareness of the importance of the environment aids in promoting a beneficial coexistence between humans and the environment. In a review of environmental education, Sola noted that this type of education should be prioritized in all sectors to conserve the environment. The study indicated that educating and raising awareness can be achieved in a variety of ways including the use of media, formal environmental education, and campaigns targeting certain topics or audiences.²² The study also noted that environmental education allows the public to become aware, knowledgeable, skilled, and to participate in solving environmental issues and develop strong and positive attitudes towards the environment.²³ Thus, education and public awareness appear to be of importance to the conservation and protection of the environment. Therefore, a strong relationship can be established between public awareness and environmental regulation.

Studies from various countries have revealed the important role public awareness plays in environmental regulation. One study used a program for volunteers in universities in cooperation with state authorities to demonstrate how

²² Agboola Sola, *Environmental Education and Public Awareness*, Vol. 4 No. 3 Journal of Educational and Social Research (2014), at 333-336, <http://www.mcser.org/journal/index.php/jesr/article/download/2731/2698>.

²³ *Id.*

environmental awareness led the public to recover oil in the Baltic Sea.²⁴ In this case, a level of public awareness enabled the region to conserve the marine environment by understanding the dangers of oil spillage and how to clean it using directions from the authorities.

In Vietnam, education on environmental issues was associated with awareness and interest in activities to conserve the environment in elementary schools. Hoang evaluated the knowledge of elementary students in regard to the management of solid wastes after conducting an educational workshop. Although knowledge on solid waste management was limited, more than 70% of the students knew about the causes of air and water pollution and the effects of deforestation and that about 90% of students were interested in activities aimed at conserving the environment.²⁵ Similarly, in China, researchers examined the knowledge and attitudes of college students concerning environmental law and found that those with environmental knowledge were aware and hence presented more positive views towards the environment.²⁶ Thus, in these countries, public awareness influences environmental conservation.

The nature of environmental regulation and public awareness in terms of compliance has also been studied by researchers. For instance, in Denmark, one study investigated farmers' compliance with regulations meant to limit water pollution from livestock husbandry. The study found that when farmers were aware of the

²⁴ Ksenia D. et al., *Environmental awareness raising through universities–city authorities' cooperation*, 18 Int. J. Sustain. High. Educ. 39, 48 (2017).
<https://www.emerald.com/insight/content/doi/10.1108/IJSHE-05-2015-0085/full/html?skipTracking=true>.

²⁵ *Id.*

²⁶ Yang Li, *Study of the Effect of Environmental Education On Environmental Awareness and Environmental Attitude Based On Environmental Protection Law Of The People's Republic of China*, 14 Eurasia J. Math. Sci. Technol. Educ. 2277, 2282 (2018).
<https://www.ejmste.com/article/study-of-the-effect-of-environmental-education-on-environmental-awareness-and-environmental-attitude-5429>.

regulations, their tendency to comply with such laws was high.²⁷ Additionally, the study noted that the nature of the regulation affected how farmers complied. That is, regulations that include no-deterrent measures were also effective in ensuring compliance given that public awareness was raised, and farmers were highly motivated to adhere to the environmental regulations.²⁸ This study underscores the critical role public awareness plays in promoting the compliance of regulations.

2. Prospects of Vision 2030 impact on public awareness.

In Saudi Arabia, the GAMEP report notes that existing environmental awareness programs should be intensified such that they include awareness of benefits of preserving the environment, reducing the environmental footprint in learning institutions, using audio-visual strategies to launch informative programs, encouraging a culture of reducing waste, and adopting recycling techniques.²⁹ Vision 2030 is an important framework for the Kingdom and researchers have investigated whether the vision increases public awareness in terms of sustainability. Al Surf and Mostafa compared the findings from the 2016 survey with those from 2013 and found that public awareness has increased significantly such that more than 92% level of understanding was present in the current survey.³⁰ The results indicated that the public

²⁷ Søren C. Winter & Peter J. May, *Motivation for Compliance with Environmental Regulations*, 20 J. Policy Anal. Manage. at 675, 693 (2001).
https://www.researchgate.net/publication/227648066_Motivation_for_Compliance_With_Environmental_Regulations.

²⁸ *Id.*

²⁹ The General Authority for Meteorology and Environmental Protection (GAMEP), *The state of the environment responsibility and achievement*, Chap 7. (2017),
<https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>.

³⁰ Mohammed S. Al Surf & Will the Saudi's 2030 Vision raise the public awareness of sustainable practices? 37 Procedia Environ. Sci. 514, 525 (2017).
<https://www.sciencedirect.com/>.

was aware of the importance of sustainability as set out in the roadmap such that people were able to recognize the importance of environmental protection in achieving sustainability.

However, other studies have found that the level of public awareness of certain environmental issues is low in Saudi Arabia. For instance, Ouda and colleagues surveyed residents in Riyadh city and found that consumer awareness in regard to energy conservation is still low despite the presence of energy efficiency regulations.³¹ As such, it can be asserted that existing energy regulations were inadequate to create enough public awareness to allow residents to consume energy efficiently and ultimately conserve the environment.

In regard to sustainability and environmental awareness, some studies have found that the level of awareness is still low even in the existence of Vision 2030. For instance, a survey by Alghamdi found that the majority of public university were not cognizant of the available environmental policies, and that half of them would not change their mode of transport to use public means.³² These findings point to a low level of public awareness of environmental issues not only among residents but also among students in higher learning institutions. However, some studies argue that regulations on the adoption of sustainability may present risks. For instance, from a survey comprising of a majority of students in higher learning institutions, Abdulaziz Albahlal and his colleagues found that adopting sustainability measures leads to an

³¹ Omar K. M. Ouda et al., *Energy Conservation Awareness among Residential Consumers in Saudi Arabia*, 6 Int. J. Comput. Digit. Syst. 349, 353 (2017).

<https://pdfs.semanticscholar.org/2a43/6d3ea4e69403b35667ea72e058c0384dc0bf.pdf>.

³² N. Alghamdi, *Knowledge and Awareness of Sustainability in Saudi Arabian Public Universities*, In *Handbook of Sustainability Science and Research* 123, (2018) Springer, Cham.

https://www.researchgate.net/publication/320291339_Knowledge_and_Awareness_of_Sustainability_in_Saudi_Arabian_Public_Universities.

increase in regulations that then create gaps in compliance and potential breaches.³³

However, it should be noted that another study was supported that based on students' level of awareness which was found to be basic.³⁴ In this case, developing strong regulations on sustainability and enforcing them may be effective.

C. Relationship between Strength of Regulations and Greater Public Awareness

Yahya and Hashim's theoretical model showed that strong environmental regulations and greater awareness about the environment and regulations lead public consumers to consider their levels of consumption such that minimal environmental effects result from household use.³⁵ Although the study does not provide empirical findings concerning the issue, the model appears useful since it can be validated by findings from previous studies. It has been noted from various studies in this review that public awareness leads to better outcomes since people are aware of both the environment and regulations. Additionally, strong regulations translate to effective implementation and therefore, regulations and public awareness are both critical in enforcing policies that ensure conservation and protection of the environment.

³³ Abdulaziz Albahlal, Sulaiman Alqahtani & AL-Hassan Al-Muqri, *Sustainability Awareness in Saudi Arabia*, springerprofessional.de (2017), <https://www.springerprofessional.de/en/sustainability-awareness-in-saudi-arabia/13331080>.

³⁴ Uzma KHAN, Mohammad Imdadul HAQUE & Aarif Mohammad KHAN, *Environmental Sustainability Awareness in the Kingdom of Saudi Arabia*, 7 The Journal of Asian Finance, Economics and Business 687–695 (2020) <http://koreascience.or.kr/article/JAKO202026061031437>.

³⁵ Wan Kalthom Yahya & Nor Hashima Hashim, *The Role of Public Awareness and Government Regulations in Stimulating Sustainable Consumption of Malaysian Consumers*, 2011 International Conference on Business, Engineering and Industrial Application, 105, (2011). https://www.researchgate.net/publication/261393986_The_role_of_public_awareness_and_government_regulations_in_stimulating_sustainable_consumption_of_Malaysian_consumers.

Similarly, Hasan found that strong regulations are also associated with public awareness that leads to better environmental outcomes. The study used case studies to demonstrate the influence of public awareness and strong regulations on the environment. In one particular case study, the research found that one county in the US used public awareness based on Environment Protection Agency regulations to clean up the lead hazard wastes that had accumulated in the area following years of mining. Locals were educated about the dangers of lead and the information was integrated into the K-12 curriculum,³⁶ the strong EPA regulations and public awareness resulted in the active participation of the public in the conservation of the environment indicating how public awareness and strong regulations facilitate the implementation of environmental policies.

Weak environmental laws are related to poor public awareness and hence the inadequate implementation of environmental policies in Saudi Arabia. Globally, states have made laws and regulatory bodies to protect certain natural areas and parks that also serve as tourist attraction sites. However, in Saudi Arabia, one study established that weak laws were responsible for a lack of environmental awareness on the part of tourists³⁷. The respondents argued that there was limited education about national parks and protected areas as well as the regulatory bodies due to weak laws that led many people to be unaware of the importance of the natural environment. Additionally, many non-governmental organizations and citizens were excluded from

³⁶ S. E. Hasan, *Public Awareness Is Key to Successful Waste Management*, 39 J Environ. Sci. Heal, A. 483, 493-91 (2004). <https://pubmed.ncbi.nlm.nih.gov/15027831/>.

³⁷ Abdulelah Al-Tokhais & Brijesh Thapa, *Stakeholder Perspectives Towards National Parks and Protected Areas in Saudi Arabia*, 11 Sustainability 2323 (2019), <https://www.mdpi.com/2071-1050/11/8/2323>.

the decision-making processes. In general, the weak regulations were ineffective in protecting the parks as demonstrated by a continuation in illegal hunting and overfishing³⁸. Consequently, the existing laws in Saudi Arabia concerning the protection of parks are not effective in ensuring the environmental safety of protected areas due to poor public awareness and implementation.

D. Strength of Regulations and Environmental Outcomes in Other Regimes

1. Environmental outcomes

Regimes with either strong or weak regulations also present different outcomes in terms of environmental performance. In one particular study, it was found that some regimes outperformed others due to the difference in the strength of regulations. In regard to regulation, the performance was investigated in terms of pollution control and the management of natural resources.³⁹ By using data from various global organizations as well as from individual countries and grouping regimes into three economic groups depending on their gross domestic product per capita, the study found that Finland and Sweden were the top performers in terms of regulatory quality and that these countries were high-income regimes.⁴⁰ On the other hand, poor performance countries had weak regulations that resulted in increased pollution and poor management of natural resources.⁴¹ Therefore, the level of

³⁸ *Id.*

³⁹ DANIEL C. ESTY & MICHAEL E. PORTER, *National environmental performance: an empirical analysis of policy results and determinants*, 10 *Environment and Development Economics* 391–434 (2005), https://openyls.law.yale.edu/bitstream/handle/20.500.13051/3778/National_Environmental_Performance_An_Empirical_Analysis_of_Policy_Results_and_Determinants.pdf?sequence=2&isAllowed=y.

⁴⁰ *Id.*

⁴¹ *Id.*

regulatory strength of a country determines the level of environmental conservation such that regimes with strong regulations outperform those with weak ones.

However, some studies tend to disagree with the above findings that strong regulations are preferred to weak regulations in terms of environmental outcomes. In one study focusing on the strength of regulations in China, it was found that although the country has gradually been transformed to reduce pollution, this transformation was limited by environmental regulations. This is because strict regulations have huge cost implications, so most industries tend to avoid pollution reduction measures.⁴² Although the study presents credible arguments regarding the dangers of strict environmental regulations on industries, the claims may be disputed on several grounds. For instance, the claim that industries that fail to meet the cost of regulation lead to an increase in environmental pollution only applies to industries with inadequate funds. Furthermore, although costs increase in the short-run, over time, strict environment regulations focusing on the saving of energy lead to the reallocation of production factors that then causes industries with high energy utilization to recover and increase output. This contrasts with the previous claim that industries do not gain from strict regulations.⁴³ Based on these arguments, it can be asserted that strict regulations are critical to the conservation of the environment by highly regulating how industries conform to environmental standards.

Stringent regulations present various benefits to the country as a whole. When organizations adopt stringent programs that seek to protect the environment, they tend

⁴² Junming Zhu & Matthias Ruth, *Relocation or reallocation: Impacts of differentiated energy saving regulation on manufacturing industries in China*, 110 *Ecological Economics* 119–133 (2015), <https://isiarticles.com/bundles/Article/pre/pdf/43198.pdf>.

⁴³ *Id.*

to reduce the levels of pollution. In one, study, the researchers found that in organizations with more comprehensive and stringent environmental management systems program, there were lower toxic emissions even in organizations with the ability to pollute more.⁴⁴ In this case, adopting a stringent program tends to have a desirable outcome on the environment given that organizations enforce such programs. However, for organizations to adopt environmental programs, they need motivation from other sources. Given this, the researchers found that regulatory pressures motivated organizations to make organizational changes in how environmental issues are managed such as the adoption of stringent programs.⁴⁵ Thus, organizations with their own stringent environmental programs tend to adopt them thereby reducing negative impacts on the environment. Additionally, stringent regulations encourage organizations to develop and adopt such programs since strict regulations pressure firms to enforce environmental programs.

E. Other Drivers for Strong regulations and greater public awareness

1. Foreign investment

Several studies that have been conducted have differentiated the nature of strong regulations from weak regulations. Regimes with strong environmental regulations can be differentiated from those with weak regulations in terms of foreign direct investments (FDI). The ability to increase a country's FDI lies heavily on the country's attractiveness to foreign investors. Some studies have compared this

⁴⁴ Wilma Rose Q. Anton et al., *Incentives for environmental self-regulation and implications for environmental performance*, 48 J. Environ. Econ. Manag. 632, 652 (2004).
<https://www.sciencedirect.com/science/article/abs/pii/S0095069603001025>.

⁴⁵ *Id.*

economic aspect by contrasting countries with strong regulations with weak ones. In one particular study,⁴⁶ the notion that industrial countries are attracted to nations with lax environmental regulations is disputed. The study found that since different provinces in China have varying regulation stringency, FDI was affected in different ways. For instance, the study found that FDI from high-income countries was not affected by stringent regulations and that FDI from sources with Chinese ethnicity was negatively affected by pollution levies. In this case, developed countries such as the EU and Japan tend to use environmentally friendly technology such that levies imposed in certain provinces do not affect them.⁴⁷ On the contrary, weak regulations in some provinces do not attract such investors. Furthermore, FDI from sources with Chinese ethnicity was attracted by the level of either skilled or unskilled labor rather than a reduction of regulation strength. Therefore, it can be noted how different areas with varying regulations affect foreign investment.

2. Audits

Another study similar to the above examined the differences between certified firms and non-certified firms in terms of environmental compliance. Globally, certain standards exist to regulate how organizations operate and some of these standards are voluntary ones. One study found that organizations that were ISO 14001 certified reduced their environmental pollutions in contrast to non-certified ones due to the requirement of third-party audits.⁴⁸ Although the standard is voluntary, the

⁴⁶ Judith M. Dean et al., *Are foreign investors attracted to weak environmental regulations? Evaluating the evidence from China*, 90 J. Dev. Econ. 1, 11 (2009).

https://econpapers.repec.org/article/eeedeveco/v_3a90_3ay_3a2009_3ai_3a1_3ap_3a1-13.htm.

⁴⁷ *Id.*

⁴⁸ Matthew Potoski & Aseem Prakash, *Covenants with Weak Swords: ISO 14001 and facilities' environmental performance*, 24 J. Policy Anal. Manage. 745, 763 (2005).

<https://onlinelibrary.wiley.com/doi/10.1002/pam.20136>.

requirement for third-party audits suggests that monitoring and enforcement of the regulatory standards were effective. Therefore, it can be asserted that programs with stringent rules allow organizations to adopt and enforce environment-friendly policies. Another study focused on the adoption of the ISO standard among Saudi companies in Jeddah and found that weak regulations impede the adoption of the standard by the sampled industries and the few that have adopted it are driven by corporate image rather than environmental outcomes.⁴⁹ The absence of strong regulations results in the lack of government support and hence a lack of motivation to become certified.

The above study by Mariotti and colleagues provides insights on the role of audits in the implementation of policies that requires further investigation. Given that strong regulations tend to facilitate the implementation of environmental policies, audits can serve as one of the methods of monitoring the implementation process. An empirical study using survey data from European firms found that countries that have regulations on energy efficiency motivated firms to conduct energy audits.⁵⁰ Furthermore, energy audits proved to be beneficial to firms since they could understand their energy consumptions and savings which enabled them to become energy efficient.⁵¹ The findings alluded to the important role regulations play in

⁴⁹ Francesca Mariotti et al., *Motivations and Barriers Affecting the Implementation Of ISO 14001 in Saudi Arabia: An Empirical Investigation*, 25 Total. Qual. Manag. Bus. Excell. 1352, 1362 (2014). <https://www.tandfonline.com/doi/abs/10.1080/14783363.2014.912038>.

⁵⁰F. Kalantzis & D. Revoltella, *Do Energy Audits Help SMEs To Realize Energy-Efficiency Opportunities?* 83 Energy Econ. 229, 236 (2019). <https://www.sciencedirect.com/science/article/pii/S0140988319302178#:~:text=Energy%20audits%20influence%20positively%20the,investments%2C%20particularly%20in%20support%20processes.&text=Energy%20audits%20help%20to%20overcome,investments%2C%20especially%20in%20small%20firms.>

⁵¹ *Id.* at 236.

enforcing environmental policies. For instance, by asserting that national policies affected how firms conducted energy audits through energy directives, the study demonstrated the importance of regulation in environment protection through effective enforcement of energy directives.

Additionally, the fact that energy directives motivated firms to adopt and conduct audits on energy demonstrated the important nexus between regulation and implementation of energy policies. Principally, strict regulations on environmental factors such as energy can result in firms to ensure efficient use of energy through audits. In this case, even firms that consume a lot of energy can minimize their use of energy by reviewing their consumption and improving their savings. As such, sustainability and conservation of the environment are achieved when firms use energy efficiently as directed by regulations.

On the same note, strong regulations can also affect how buildings are constructed given that land, soil, and water are factors central to real estate development. In Saudi Arabia, first-hand reports indicate that the Kingdom's strict regulations on buildings have been made to conserve the environment. In the report, McCullough uses statements from the manager of the body mandated to oversee the implementation of the regulation, the secretary-general of the forum for green buildings in the Kingdom, and other experts to show that companies are required to abide by the strict building standards or risk their projects being shut down within five years. Additionally, the country has been involved in certain mega projects that are intended to become green buildings per the strict regulations thereby leading to a reduction in carbon emissions.⁵² Taken together, the two sources of information

⁵² D. G. McCullough, *Saudi Arabia's Green Decree Brings Hopes of Sustainability*, The Guardian, (2014, May 12), <https://www.theguardian.com/sustainable-business/saudi-arabia-green-construction-oil-sustainability-environment>.

demonstrate that strict regulations with audits and programs reduce environmental pollution.

3. Innovation

Other studies have also established the importance of strong regulations in regard to their benefits. Popp used patent information from the US, Germany, and Japan to investigate the influence of strong regulations in these countries on innovation. The study found that there were patents on sulfur dioxide control technologies from the US and patents focusing on nitrogen oxide pollution control in both Germany and Japan.⁵³ Domestic innovation in respective countries increased due to strict regulations on particular air pollutants.⁵⁴ Based on this, technologies focusing on environment protection were developed as a result of stringent regulations.

4. Consequences of environmental polluters

Other studies have existing information to predict whether certain environmental objectives will be achieved in the future. China has become an important nation to study environmental issues due to its size and population allowing other countries to gain insights into what China expresses. By using China's existing economic status, CO₂ emissions targets for 2020 and 2030, Cui and colleagues generated models to predict whether the country will achieve the set targets. The study found that existing regulations and the introduction of costs on carbon emissions and other regulations will allow China to achieve the top limits of 2020 and

⁵³ David Popp, International Innovation and Diffusion of Air Pollution Control Technologies: *The Effects of NOX and SO₂ Regulation in the US, Japan, and Germany*, 51 J. Environ. Econ. Manag, 46, 66-68 (2006).

<https://www.sciencedirect.com/science/article/abs/pii/S0095069605000604>.

⁵⁴ *Id.* at 68.

the bottom limits of 2030. The fact that the country will only achieve the lower limits of carbon emissions for 2030 was due to the slowing economic growth.⁵⁵

Furthermore, the study noted that although the introduction of carbon emissions costs will significantly cut carbon emissions and allow China to achieve its targets, an undesirable effect will be on the economy given that growth will be hampered. However, the rate of economic decline is less compared to the rate of carbon emission reductions.⁵⁶ The study agrees with other similar studies on the fact that strong environmental regulations are effective in protecting the environment. Additionally, strict regulations in the form of pricing carbon emissions where firms pay for certain levels of carbon emissions demonstrate their effectiveness when the level of emissions is shown to be reduced in accordance with the projected targets.

Although the above study notes that China may suffer from a slight economic downfall in the presence of carbon emissions costs, the economic projections also note that the country is expected to have slow economic growth in the general sense. Hence, whether the country continues to enforce carbon emissions costs or not the economic growth will be slowed. Therefore, while considering the importance of conserving the environment, continued enforcement of such regulations will have minimal effect on the economy but present major positive impacts on the environment through a reduction of carbon emissions.

In translating the above findings to the case of Saudi Arabia, it can be noted that strong regulations encompassing costs on environmental pollutants will lead to

⁵⁵ Lianbiao Cui et al., *Can China Achieve Its 2030 Energy Development Targets by Fulfilling Carbon Intensity Reduction Commitments?* 83 *Energy Econ.* 61 (2019).
<https://www.sciencedirect.com/science/article/pii/S0140988319302038#:~:text=China%20is%20likely%20to%20reach,the%202030%20target%20is%20not.>

⁵⁶ *Id.*

beneficial outcomes on the environment indicating the effectiveness of regulations on implementing policies. Alnatheer evaluated various options to meet the demand for energy in Saudi Arabia and found that energy-efficient options such as the use of renewable energy offered important benefits to the country ranging from \$2.4 billion to \$36 billion.⁵⁷ Most of the studies have noted the role regulations play on ensuring energy efficiency although some have indicated that a negative economic outcome might be achieved through such regulations on efficiency. However, the Alnatheer study argues that Saudi Arabia is positioned to gain through the use of energy-efficient options leading to environmental benefits in economic terms.

F. New Gaps

The review of the literature has provided key insights regarding environmental regulation and public awareness in KSA. Weak regulations and the lack of public awareness are critical issues facing KSA. However, two critical gaps have been identified in this review. The first one relates to the importance of having specialized courts to enforce environmental laws and raising public awareness and the absence of specialized environmental courts in KSA as compared to countries such as the US that have such courts and strong independent agency such as EPA. The second one concerns public participation in urban planning that is lacking in KSA leading to the inability of KSA citizens to have higher levels of public awareness demonstrating weak regulations and lack of public awareness.

⁵⁷ Othman Alnatheer, *Environmental Benefits of Energy Efficiency and Renewable Energy in Saudi Arabia's Electric Sector*, 34 *Energy Policy*, 2,9 (2006).
https://www.researchgate.net/publication/223613784_Environmental_benefits_of_energy_efficiency_and_renewable_energy_in_Saudi_Arabia's_electric_sector.

F. 1. Introduction to Environmental courts

Environmental courts refer to government institutions and tribunals with a legal mandate to adjudicate lawsuits and other legal disputes involving environmental issues following the rule of law. Principally, cases and legal disputes are handled separately from criminal, civil, or adjudicative disputes.⁵⁸ Environmental law courts are fully constituted with magistrates and judges to prosecute matters touching on the environment until completion.⁵⁹

Successful environmental courts have defining characteristics.⁶⁰ First, these environmental courts do not depend on the government to administer environmental justice as they are independent of the executive control but coordinate with the relevant government agencies for their daily operations.⁶¹ The independence of these courts imply that they have binding rules and regulations that control their actions and operations.⁶² Besides, successful environmental courts have centralized and comprehensive jurisdiction.⁶³ The comprehensive jurisdiction enables the environmental courts to comprehensively listen, determine, and disseminate disputes from environmental laws. On the other hand, the jurisdiction's centralization in the ecological courts enables the courts to enjoy coherent and integrated ecological

⁵⁸ David M. Driesen, Richard J. Lazarus. *The rule of five: making climate history at the supreme court*, 10 *Journal of Environmental Studies and Sciences* 362–363 (2020), https://www.researchgate.net/publication/342245947_Richard_J_Lazarus_The_rule_of_five_making_climate_history_at_the_supreme_court_Cambridge_Massachusetts_and_London_England_Harvard_University_Press_2020.

⁵⁹ Professors George Rock) Pring & Catherine Kitty) Pring, *Environmental Courts & Tribunals*, (2016), <https://wedocs.unep.org/bitstream/handle/20.500.11822/10001/environmental-courts-tribunals.pdf?sequence=1>.

⁶⁰ B. J. Preston, *Characteristics of Successful Environmental Courts and Tribunals*, 26 *Journal of Environmental Law* 365–393 (2014).

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

jurisdiction.⁶⁴ Besides, centralization of jurisdiction increases the cases that are brought to the environmental courts and, in turn, ensures accountability and prudence in hearing these cases.⁶⁵

In Saudi Arabia, the country's legal system is based on Sharia, an Islamic system of law derived from the holy Quran and Sunnah. Environmental matters and related disputes are handled under the General Environmental law, The Environment Regulation, Royal Decree No M/165 of Dhul Qada 1441 Hejra entered into force on 13 January 2021, superseding the 2011 Regulation.⁶⁶

The fundamental rule in Saudi Arabia states that natural resources are God-given and as such, remain the property of the state under the law. The government, therefore, prescribes specific rules that govern the exploitation, protection as well as the development of natural resources.⁶⁷

Unlike most countries of the world, Saudi Arabia has no environmental courts yet. Countries like Kenya, Gambia, Nigeria and Sudan have such court systems.⁶⁸ the absence of law courts remains a vital issue that hampers environmental protection and conservation in Saudi Arabia.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ Saudi Legal. "Environmental laws." <https://www.saudilegal.com/saudi-law-overview/environmental-laws>.

⁶⁷ Vernon Valentine Palmer, Muhammad Y Mattar & Anna Koppel, *Mixed legal systems, east and west* (2015).

⁶⁸ Deutsche Welle (www.dw.com), *How environmental courts can help Africa* | DW | 13.08.2020, DW.COM (2020) <https://www.dw.com/en/how-environmental-courts-can-help-africa/a-54553765>.

2. Advantages of Specialized Environmental Court

Specialized courts are critical judicial institutions that KSA needs to establish. A specialized court is a branch of the judiciary, independent of both the executive and legislative government branches, has expert judges and a separate budget.⁶⁹ These characteristics distinguish specialized courts from the general courts. Moreover, judges in specialized courts do not hear general cases but focus on specific ones.⁷⁰

Specialized courts are critical for various reasons. For example, they allow the judicial system to be efficient since courts in both general and limited jurisdiction deal with cases more efficiently.⁷¹ Cases that are complex and require a certain degree of expertise makes the judicial system inefficient if they are handled by courts in the general jurisdiction. However, the presence of specialized courts that deal with such complex cases allows all court jurisdictions to deal with cases more efficiently since general courts do not have to spend time learning the particular subject matter varied cases.

Moreover, specialized courts are also valuable since they ensure uniformity in decision making and led to high quality decisions since verdicts are delivered by expert judges.⁷² In this case, consistency in case laws develops and the chances of appeal are greatly minimized in the presence of specialized courts.

Environmental specialized courts also employ a number of tools that allow them to be effective and efficient. In this case, they utilize information and technology

⁶⁹ George Pring & Catherine Pring, *Specialized Environmental Courts and Tribunals at the Confluence of Human Rights and the Environment*, 11 Or. Rev. Int'l L. 301, 314 (2009)

⁷⁰ *Id.*

⁷¹ Markus B. Zimmer, *Overview of Specialized Courts*, 2 IJCA 46, (2009)
<https://www.iacajournal.org/articles/abstract/10.18352/ijca.111/>

⁷² *Id.* at. 47

to hear expert witnesses who are far from the site, have directions hearings, contain traveling courts, and are less costly.⁷³ In other words, such environmental courts facilitate strong environmental regulations since they are efficient, reliable, and less costly. Furthermore, they enforce the regulations through various ways. For instance, civil environmental courts enforce laws through powers such as settlements, mediation, monetary penalties, and interim relief.⁷⁴ Criminal environmental courts are also available and together with the civil courts, they have embraced the use of innovative methods such as community service and mandatory environmental education.⁷⁵

The US has numerous specialized courts in various subject areas—tax, bankruptcy on the federal level, family, and environmental courts on the state level.⁷⁶ The courts allow judges to deal with specific cases laws that require expertise in the subject matter. In addition, since specialized courts have better case management, public access to information is improved.⁷⁷ KSA lacks specialized courts to deal with environmental issues leading to weak environmental regulations. Strong regulation is evident by the availability of specialized courts with special expertise to enforce the law and raise public awareness. However, more likely, the absence of specialized environmental courts might create weak environmental regulations.

⁷³ George Pring & Catherine Pring, *Specialized Environmental Courts and Tribunals at the Confluence of Human Rights and the Environment*, 11 Or. Rev. Int'l L. 321-322 (2009).

⁷⁴ *Id.* at. 319.

⁷⁵ *Id.*

⁷⁶ George Pring & Catherine Pring, *Specialized Environmental Courts and Tribunals at the Confluence of Human Rights and the Environment*, 11 Or. Rev. Int'l L. 321 (2009).

⁷⁷ History of Environmental Court | Shelby County, TN - Official Website, <https://www.shelbycountyttn.gov/2125/History-of-Environmental-Court#:~:text=In%201983%2C%20the%20City%20of.>

In the states of Hawaii and Vermont, there are courts that specifically address environmental matters and also in a political subdivision of a state, Shelby County, Tennessee, there is an Environmental Court. New ones are being created in other counties. The environmental court in Tennessee was created in 1983, in what used to be known as the City of Memphis and later became the Shelby County Environment Court. The court's jurisdiction involved handling violations of health, fire, buildings as well as zoning codes. In 1991, the Tennessee Legislature gave this court more mandates, and allowed it to issue conjunctive orders to protect its independence, thereby allowing it to have powers to order compliance with the law orders.⁷⁸ According to Mandeli, the existing General Environmental Law of KSA requires revision due to a lack of specialized environmental courts.⁷⁹ This revision implies that KSA has a weak environmental regulation as it needs to establish specialized environmental courts to strengthen the regulation.

Specialized courts become effective with strong environmental agencies, however, KSA has weak agencies that do not effectively implement and enforce existing environmental laws. For instance, Mandeli posits that despite the presence of agencies such as MEPA that have the power to impose penalties for environmental law violations, the lack of a clear legal structure for implementing the regulations has led to weak enforcement evident in the continued pollution of ecosystems and exerting undue pressure on vulnerable areas.⁸⁰ Such agencies have been given the mandate to enforce environmental laws but their inability to enforce them

⁷⁸ *Id.*

⁷⁹ Khalid Nasraldin Mandeli, *Sustainable development and governance in Saudi cities*, 47 J. Eng. Sci. 565,576 (2019). https://jesaun.journals.ekb.eg/article_115515.html.

⁸⁰ *Id.*

demonstrates that KSA has weak environmental regulations. Thus, a significant gap in KSA environmental regulations is present since the agencies do not effectively enforce the regulations and there is need to establish environmental court.

3. Gaps in KSA's case

Due to the absence of specialized environmental courts in KSA, agencies tasked with implementing environmental laws are ineffective in accomplishing this goal. One of the reasons for the weak implementation of environmental laws is the presence of overlapping specialties in environmental agencies. Al- Gilani and Filor assert that the main environmental agency, MEPA,(this institution will be discussed in details in the comparison chapter) was unable to implement a coastal conservation plan due to agency rivalry with agencies such as the Environmental Protection Coordinating Committee (EPCC) that had differing scopes of work.⁸¹ In this case, MEPA and EPCC were given different scopes of the same environmental policy that led to conflict in implementing the policy. Furthermore, without a clear decisive authority and resources, MEPA fails to enforce environmental policies.⁸² Additionally, MEPA appears to be in conflict with other agencies such as the Ministry of Environment Water& Agriculture whereby it has been unable to coordinate the monitoring and implementation of environmental regulations across such agencies due to overlap of activities and inadequate resources.⁸³ On the other hand, the US EPA is powerful in executing its mandates such that it can effectively implement

⁸¹ Ahmad Al-Gilani and Seamus Filor, *Reforming the National Framework for Environmental Policies in Saudi Arabia*, 42 J. Environ. Plan. Manag. 253, 258 (1999).
<https://www.tandfonline.com/doi/abs/10.1080/09640569911244>.

⁸² *Id.*

⁸³ *Id.*

environmental regulations since it has clear goals and decisive authority. Thus, with MEPA being the main environmental agency, it should have the power and adequate resources to coordinate, monitor, and implement environmental policies.

Due to an overlap in authority and specialties, MEPA lacks clear environmental frameworks to facilitate the development of environmental policies and laws. As such, the agency is involved in a complex process before any environmental regulation is made and enforced. As clear example of overlapping in authority, the process is complicated because regulation must pass through various competing environmental institutions such as MEPA and Petroleum, Chemical & Mining Company (PCMCE) that may result in implementation delays evident in the refusal to adopt the environmental impact assessment act.⁸⁴ In other words, the implementation process is vague and complex making the agency slow or ineffective in developing and enforcing environmental regulations. Other than the complicated process, MEPA appears to lack long-term planning to monitor and review environmental regulations since financial penalties for violations are hardly applied.⁸⁵ Such examples demonstrate the nature of weak environmental regulations in KSA.

F. 2. Introduction to public participation in urban planning

Public participation has several benefits. However, the advantages are significant only when public participation serves as a two-way process, where both the public and the agency have a chance to gain the benefit.⁸⁶ First, public

⁸⁴ *Id.*

⁸⁵ Ahmad Al-Gilani and Seamus Filor, *Reforming the National Framework for Environmental Policies in Saudi Arabia*, 42 J. Environ. Plan. Manag. At 256 (2010).
<https://www.tandfonline.com/doi/abs/10.1080/09640569911244>.

⁸⁶ Tsuey-Ping Lee & Tung-Wen Milan Sun, *Public Participation*, in Global Encyclopedia of Public Administration, Public Policy, and Governance 5171–5181 (2018),
https://link.springer.com/referenceworkentry/10.1007/978-3-319-20928-9_2720.

participation promotes understanding of the community needs, which improves the potential for strengthening the communities. Besides, public's involvement enhances community understanding of the agency's role through the provision of technical knowledge. Moreover, citizen participation improves the agency's decision-making strategies.⁸⁷ Finally, citizen participation strengthens the relationship between the agency and the public, thus enhances the credibility of the agencies in the community.⁸⁸

While there are various benefits of public participation in decision-making procedures, disadvantages also exist.⁸⁹ If practiced poorly, citizen participation can be time-consuming, forcing the agency to undergo increased costs. Besides, low citizen participation can make the general public lose faith in the agency.⁹⁰ On the same note, low public participation practice can cause negative experiences, which may, in turn, generate negative perceptions that curtail future contributions of the participants.⁹¹ To mitigate the disadvantages of citizen participation, an organization needs to observe most, if not all, the core principles of public participation.

In this task, I will exclusively dwell in public participation as it relates to urban planning. If public participation is present in urban planning, the majority of people in KSA will begin to acknowledge the importance of environmental regulation by directly being part of the urban planning process.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ Brenton Holmes, *Citizens' engagement in policymaking and the design of public services – Parliament of Australia*, Aph.gov.au (2011), https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1112/12rp01.

⁹⁰ Department of Conservation Te Papa Atawabi, *Evaluating public input in National Park Management Plan reviews Facilitators and barriers to meaningful participation in statutory processes*, (2011), <https://www.doc.govt.nz/Documents/science-and-technical/sfc308entire.pdf>.

⁹¹ *Id.*

1. The Value of Public participation in urban planning and for Better Environmental Outcomes

The absence of public participation in urban planning in KSA creates weak regulations as it also fails to motivate public awareness concerning existing environmental laws. Through public participation in urban planning, the level of public awareness increases, however, a failure to involve more people in the planning process results in the public having a poor understanding of the importance of considering the environment in urban planning. Public participation in urban planning creates various benefits to all stakeholders. For instance, public participation allows cities to be transformed and develop since it involves the commitment of the public in urban planning.⁹²

Another critical benefit of public participation in urban planning is the raising of awareness levels of people. Through public participation, people become aware of essential development issues and how they can contribute. For example, Cohen and colleagues found that a public participation tool was successful in raising awareness levels regarding sustainable urban development since the public was actively engaged by the way of interactive discussions.⁹³ Furthermore, Bingsheng and colleagues note that public participation becomes effective partly due to the disclosure of information

⁹² M. P. Amado et al., Public Participation in Sustainable Urban Planning, *3 International Journal of Civil and Environmental Engineering* 228–234 (2009), <https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.

⁹³ Matthew Cohen et al., *Aligning Public Participation to Stakeholders' Sustainability Literacy—A Case Study on Sustainable Urban Development in Phoenix, Arizona*, 7 *Sustainability* 8709–8728 (2015), https://pdfs.semanticscholar.org/4201/051e5b46601035c902719e9019c135949ec4.pdf?_ga=2.29296252.1180691190.1653227395-1944203784.1629681064.

and consultation on urban renewal plans such that the public receives clear information and can adopt the agreed urban renewal policy.⁹⁴

3. Low public participation in urban planning in the KSA

As such, public participation in urban planning is important. However, KSA appears to have such a problem due to the presence of a substantial number of people are unaware of the critical role of environmental consideration in urban planning. For example, Al Surf and Mostafa found that about 52 percent of the respondents in KSA doesn't know the meaning of sustainable cities, and about 73 percent of the respondents in KSA agreed that sustainable buildings should be environment friendly compared to 100 percent that agreed that such buildings should be energy efficient.⁹⁵ This variation in the level of public perception concerning the link between sustainable buildings and the environment demonstrates a gap in raising public awareness levels in urban planning. In other words, while the majority of the public may recognize that sustainable buildings should use energy-efficient materials, a number of them do not consider the environment as a critical factor in these buildings. In turn, the lack of perceiving the importance of the environment in urban planning may lead to a lack of appreciating the environment and ignoring existing environmental laws in urban centers.

⁹⁴ Bingsheng Liu et al., *Critical Success Factors for the Management of Public Participation in Urban Renewal Projects: Perspectives from Governments and the Public in China*, 144 J. Urban Plann. Dev. (2018). <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29UP.1943-5444.0000467>.

⁹⁵ Mohammed S. Al Surf & Lobna A. Mostafa, *Will the Saudi's 2030 Vision Raise the Public Awareness of Sustainable Practices?* 37 Procedia Environmental Sciences 514–527 (2017), https://researchgate.net/publication/315999138_Will_the_Saudi's_2030_Vision_Raise_the_Public_Awareness_of_Sustainable_Practices.

Additionally, in KSA, institutions and bodies tasked with reviewing environmental laws need to include the public in the decision-making process. For example, the Social and Health Committee mandated to evaluate policies and laws related to the environment has not allowed the public to voice their concerns about environmental issues.⁹⁶ In this case, the committee may be in the process of reviewing urban planning and its relation to the environment where input from members of the public may prove crucial. Given that such a body does not appreciate the importance of public participation, the public may fail to understand the importance of various environmental laws related to urban planning.

G. Positive Effects of Higher Levels of Public Participation in Other Countries

Unlike in KSA where public participation is lack in urban planning, in other countries, public participation in urban planning allows the public to play an active role in the planning process. In such cases, strong regulations are available since the public has a voice in determining how the development process will occur without negatively affecting the environment. In certain European countries, the public is central in determining how rural areas will be developed into urban centers. For instance, Amado and colleagues evaluated the contributions made by members of the community in a rural area in Portugal and found that the public forum allowed people to decide which aims urban development aims should be given priority over the

⁹⁶ Al-Gilani, A., & Filor, S. (1997). Policy and practice environmental policies in Saudi Arabia. *Journal of Environmental Planning and management*, 40(6), 775-788. <https://www.tandfonline.com/doi/abs/10.1080/09640569711903>.

others.⁹⁷ In that forum, members of the public were invited to select which goals should be given priority by placing dots on specific urban development aims and goals as either higher, medium, or low priority. The location of public facilities and the conservation of the ecosystem in addition to expanding natural spaces constituted the high and medium priority aims for the development of the community.⁹⁸ By engaging the public in the planning process of urban development, Portugal was able to create a sustainable development plan. Furthermore, the public forum demonstrated the concern by the public for environmental conservation since people voted to include the conservation as a priority in the planning, and indeed, “public participation, supporting the population’s commitment and guidance to urban planning actions, is therefore of utmost importance in the development process and transformation of the cities for the future.”⁹⁹ Additionally, South Korea’s ministry for the environment has a commission that encourages cooperation between religious groups and the government concerning environmental matters.¹⁰⁰ As such, public participation in urban planning facilitates active participation and reveals the hopes and expectations of the public towards the urban development that also values environmental conservation, besides embodying “a guarantee to preserve, in the city, its singular values and the possibility to safeguard the existence of its distinguishable

⁹⁷ M. P. Amado et al., *Public Participation in Sustainable Urban Planning*, 3 *International Journal of Civil and Environmental Engineering* 228–234 (2009), <https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ So, *SJD Dissertation on Public Participation in South and North Korean Environmental Laws*, 13. , [SJD Dissertation on Public Participation in South and North Korean Environmental Laws.](#)

features that identify, value and characterize the spaces we dwell both individually and collectively.”¹⁰¹

Other countries have shown the potential and desire to increase public participation in urban planning through the use of technology. According to Brabham, urban planning initiatives in the US can utilize crowdsourcing to facilitate public participation where people become problem solvers to urban development issues by using the Internet.¹⁰² In this case, the development of urban centers that have certain environmental problems is streamlined because of the input from members of the community who are engaged in online discussions about such issues.

Many countries have significantly benefited from public participation by educating and having members of the public make decisions that affect the environment. In South Korea during the mid-1990s, public awareness resulted in the enforcement of environmental law since the construction of a dam was canceled because it would have violated existing watershed regulations and was planned without an environmental impact assessment.¹⁰³ The fact that the community was able to stop the development of a dam due to their awareness demonstrated how countries with high public participation and public awareness levels can develop while still conserving the environment. KSA has not demonstrated such an impact as

¹⁰¹ M. P. Amado et al., *Public Participation in Sustainable Urban Planning*, 3 *International Journal of Civil and Environmental Engineering* 228–234 (2009), <https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.

¹⁰² Daren C. Brabham, *Crowdsourcing the Public Participation Process for Planning Projects*, 8 *Plan. Theory* 242, 252 (2009). <https://journals.sagepub.com/doi/abs/10.1177/1473095209104824>.

¹⁰³ So, S.J.D. dissertation, *Pace University School of Law*, 22-23., [SJD Dissertation on Public Participation in South and North Korean Environmental Laws.](#)

seen in South Korea where the public becomes a significant force in the implementation of environmental laws.

H. Public Participation and Environmental Justice

Public participation also calls for environmental justice. In this case, the vulnerable and underserved in the community become critical of any developmental policy that may harm the environment and hence endanger their source of livelihood. For instance, indigenous communities in Peru staged protests to stop the establishment of a copper mining operation since it would have destroyed the environment and thus harm their health and source of livelihoods.¹⁰⁴ Since the environment is a common good, how various resources are utilized should be fair. However, when planning development projects that do not consider the impact of such projects on the environment and the nearby communities, the planning puts at risk the quality of the environment as well as the health of people living in the surrounding areas. When people are aware of the impacts of such projects, they become involved in addressing them such as the case in Peru.¹⁰⁵ Thus, KSA needs to establish public participation that demonstrates environmental justice so that it improves strong environmental regulations.

¹⁰⁴ Kishan Khoday and Leisa Perch, *Green Equity: Environmental Justice for more Inclusive Growth*, International Policy Centre for Inclusive Growth, (2012), <https://www.academia.edu/4082133>.

¹⁰⁵ *Id.*

I. Summary of Relationship between Public Awareness and Effectiveness of Regulations

This review presents public awareness and strong regulations as the key determinants of the implementation of environmental policies. All sources agree on the fact that a combination of extensive public awareness and stringent policies supports implementation and increases the efficacy of such rules.

1. Various studies have indicated that weak regulations create opportunities for poor implementation since issues such as exploitation of certain natural resources become favored at the expense of conservation.

2. Moreover, weak regulations do not require organizations to fully comply due to their non-mandatory nature leading to poor implementation. Concerning public awareness, lack of public awareness causes people not to appreciate the environment and also become aware of the regulations.

3. In this case, when the public is unaware of this information or that there is limited awareness, the extent to which organizations and the public, in general, will comply with the regulations become limited.

4. On the other hand, numerous studies have demonstrated that strong regulations lead to the effective implementation of environmental policies. Factors such as pressure to comply, the imposition of costs on emissions, among others, have shown that strong regulations are effective in ensuring that laws are implemented. Furthermore, other environmental and economic benefits are achieved when compliance is high.

5. Greater public awareness causes the public to adopt and comply with environmental regulations due to the availability of information and motivation to comply.

In general, it can be asserted that weak regulations and a lack of public awareness impedes the implementation of environmental policies.

These reviews raise the need for research on the role of strict regulations in Saudi Arabia is warranted. Extant research that involves Saudi Arabia as the country of study concentrates on green building and construction regulations without including other important aspects of environmental protection, such as critical industries and sectors including transport. The present study will contribute to environmental policy studies by bringing insightful information on environmental regulation and public awareness in Saudi Arabia. This information will assist researchers to develop on this issue as well as assist policymakers in identifying existing gaps in environmental protection policies.

III. Chapter 3: The Efficacy of Social Movement for Environmental Law

A. Introduction

A social movement as a sociological phenomenon is a movement with its own properties, processes as well internal logic, and are non-routine forms of collective actions that work toward social change.¹⁰⁶ Consequently, a social movement is a complex, or formal, organization that identifies its goals and attempts to implement those goals. For instance, if the recent civil rights movement is to be perceived in these terms, then it can be argued that the social movement contained a large population that held preferences for change aimed at justice for black Americans.¹⁰⁷

Environmental concern is a multilayer tripartite concept encompassing environmental worldview and commitments. The environmental concern dimensions are further subdivided to include pollution, forestry, as well as diversity loss.¹⁰⁸

Environmental concern is one area that social movements have focused on in America. Notably, deteriorating environmental conditions arising from pollution could cause negative impacts on human as well as ecological health in terms of lost productivity and increased healthcare costs.¹⁰⁹ Social movements are, thus advocacy groups charged with many responsibilities, and whose inputs have greatly impacted

¹⁰⁶ Ralph H Turner & Lewis M Killian, *Social movement*, Encyclopædia Britannica (2013), <https://www.britannica.com/topic/social-movement>.

¹⁰⁷ John D. McCarthy & Mayer N. Zald, *Resource Mobilization and Social Movements: A Partial Theory*, 82 *American Journal of Sociology* 1212–1241 (1977). <https://webarchiv.ethz.ch/soms/teaching/OppFall09/mccarthyald77.pdf>.

¹⁰⁸ Neil R. White & Madalla A. Alibeli, *Gender and Environmental Concerns in the Middle East*, 10 *PERSPECTIVES ON GLOBAL DEVELOPMENT AND TECHNOLOGY* 156–170 (2011). <http://www.ijbssnet.com/journals/Vol. 2 No. 4; March 2011/1.pdf>.

the world. In environmental sense, social movements act as critical players in the creation of solutions for environmental problems.

Social environmental movements have had a long history in the US.¹¹⁰ These movements were first advanced in the 1960s to fight for several civil societies were involved in the fight for equality in America, leading up to mass assembly of such organizations agitating for social liberty.¹¹¹ In 1990, the Indigenous Environmental Network (IEN) was founded to address issues related to environmental and economic justice. The movement was founded to involve activities that support local communities as well as tribal governments seeking to come up with mechanisms for protecting sacred sites, water, natural resources, air, as well as the health of people and other living things to for sustainable communities.¹¹² Later, the Southwest Network for Environmental and Economic Justice (SNEEJ) was formed in April 1994 in Albuquerque, New Mexico. The organization comprised of Latinos, African Americans, as well as Asian/Pacific Islanders seeking to support the work of local organizations as well as empower communities to impact environmental policies and economic justice issues at all levels of governance.¹¹³ These movements led to environmental laws that have served to improved water and air quality and have positively impacted the environment and health outcomes.¹¹⁴ Furthermore, the laws enacted in response to an immediate environmental threat can be used for economic

¹¹⁰ US EPA,OA, *Environmental Justice Timeline* | US EPA, US EPA (2019), <https://www.epa.gov/environmentaljustice/environmental-justice-timeline>.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ National Environmental Justice Advisory Council (NEJAC), *Summary of Public Meeting Albuquerque, New Mexico*, (2011), <https://www.epa.gov/sites/default/files/2015-02/documents/nejac-meeting-sum-1011.pdf>.

sustainability. In particular, property law has been noted to be critical in the development of economic opportunities and conservation of the environment.¹¹⁵

Here, I will highlight some of the particular social environmental movements in the US, in particular, the Sierra Club, which started in early 1900.¹¹⁶ This organization came strong later in the 1960s and 1970s to advocate for cleaner and safer environment.¹¹⁷ On the same note, Sierra Club mostly deal with litigations over environmental issues. For instance, the group staged a litigation against spraying at Long Island.¹¹⁸

The social movements are mainly created to fight for the rights of people, especially environmental rights. For instance, the public has a right to safe environment, and thus, this is one representational agenda that social movements are tasked with. Nevertheless, these groups cannot work successfully without the involvement of the members of the public. As a social movement has the mandate to involve the public as one of its stakeholders in the environmental advocacy and representation. Consequently, the group must ensure that the members of the public are actively involved in the monitoring and protection of the environment. Public education about the environmental rules and regulations is one clear-cut agenda that the movements should impart to the people. This implies that members of the public that are aware about their environmental rights can easily report any violations to the relevant bodies. Besides, the public upon becoming aware will always work closely

¹¹⁵ Helen Ding & Peter Veit, *3 Reasons Property Rights Are Essential for Healthy Ecosystems*, www.wri.org (2016), <https://www.wri.org/insights/3-reasons-property-rights-are-essential-healthy-ecosystems>.

¹¹⁶ Roger E Meiners, Pierre Desrochers & Andrew P Morriss, *Silent spring at 50: the false crises of Rachel Carson* 239 (2012).

¹¹⁷ *Id.*

¹¹⁸ Sandra Postal Sandra Postel, Marjorie Spock: *An Unsung Hero in the Fight Against DDT and in the Rise of the Modern Environmental Movement*, (2021), <https://rachelcarsoncouncil.org/wp-content/uploads/2021/04/marjorie-spock-web.pdf?eType=EmailBlastContent&eId=1545c71f-09a0-495c-ba2e-eed01e3eba01>

with the movement, which will carry along their demands for immediate rectification. The public equally become cognizant to practices that could easily ruin their environments. Overtly, social movements are the greatest actors to the members of the public, and their involvements on matters environment will improve public participation and awareness creation towards safeguarding nature.

The citizen's uproar and awareness creation have led to some environmental regulations and bodies to enforce laws that the people otherwise violate. In the US, the citizens have played a significant role in forcing the government into action, thereby creating environmentally friendly policies.

B. Legal impact of social movement

National Environmental Policy Act was passed by a bipartisan majority to help ring fences over environmental matters.¹¹⁹ Thus, this act was a federal mandate aimed to protect people's health, homes and the environment.¹²⁰ Besides, NEPA's jurisdiction is wide and covers many areas of life, least to the three broad classes mentioned above. The introduction of this act bolstered efforts on environmental conservation because it defined the responsibilities of the people in protecting their surroundings.¹²¹ Before this act was signed into law, the US did not have a formidable platform where ordinary citizens could be integrated into the environmental advocacy crusade. Thus, NEPA was created as a platform for the people to air their grievances over real and perceived environmental violation by industries and individuals.¹²²

¹¹⁹ "National Environmental Policy Act 42 U.S.C. §4321 et seq. (1969)"

¹²⁰ OECA US EPA, *What is the National Environmental Policy Act?*, US EPA (2013), <https://www.epa.gov/nepa/what-national-environmental-policy-act>.

¹²¹ *Id*

¹²² *Id*

The inclusive approach and tendencies to accommodate every voice on environmental issues has given people the voice and courage to agitate any matters of concern.

On the same note, NEPA compels the government to issue a comprehensive environmental report over its projects.¹²³ For example, the environmental impacts of capital projects such as dams, highways or power plant must be disclosed to the public, and the findings be agreeable before such projects are commenced. Consequently, the existence of NEPA has given the US an edge to effectively protect its environment. Indeed, NEPA has led to better decisions and outcomes for everyone, who is incidentally integrated in the environmental management. The operations in NEPA is designed to ensure that public is given an informed access and input into the federal agency decisions, which have direct bearing on human and natural environments. The generation and publication of Environmental Impact Statements (EISs) for major projects have made it easy to administer environmental justice through public information and participation.¹²⁴

Apart from NEPA, the US is privileged to have a plethora of other federal and state laws that aid in the protection of the environment. These laws are focused on creating environmental order at the state levels, thereby complementing the already existing national and federal standards such as NEPA. In this case, the residential, commercial and industrial developments in these states must first pass the approval standards established by these states.¹²⁵ The local land-use regulations have subtly helped in achieving pertinent regulatory measures over projects implementation.

¹²³ *Id.*

¹²⁴ Pepper, Elly. *Never Eliminate Public Advice: NEPA Success Stories*. NRDC. 2015. <https://www.nrdc.org/resources/never-eliminate-public-advice-nepa-success-stories>.

¹²⁵ *Id.*

States have followed the federal lead and have enacted analogues. For example, the New York State Environmental Quality Review Act, SEQR.¹²⁶ contains main mandate is to enhance accountability measures over construction projects. The city contractors must comply with the stated guidelines under this policy framework before they can be allowed to develop any project in New York.¹²⁷ While there have been complaints about this standard as propagating inefficiency, its enforcement has given a significant lifeline in terms of environmental protection. Some of the cited shortcomings of this policy include delays in approvals, and extraneous details that undermine the trajectory of implementing development projects.¹²⁸

Other states like Maryland, despite not having environmental courts have very progressive environmental laws that protect its environment. The three central departments charged with the overall environmental protection include the Department of the environment, whose responsibility involves the implementation of smart growth policies, which generally affect the environment.¹²⁹ The Department of Natural Resources and the Department of Planning are all integrated in the environmental management. All these departments oversee the implementation of proper regulatory standards that maintains both terrestrial and aquatic ecosystems. Other smaller agencies charged with environmental management include the

¹²⁶ E McMahon & Michael Wright, *STREAMLINING SEQR How to Reform New York's "Environmental" Planning Law*, (2013), <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf> <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf>.

¹²⁷ *Id.*

¹²⁸ E McMahon & Michael Wright, *STREAMLINING SEQR How to Reform New York's "Environmental" Planning Law*, (2013), <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf> <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf>.

¹²⁹ Maryland Manual. *MARYLAND AT A GLANCE ENVIRONMENT*. <https://msa.maryland.gov/msa/mdmanual/01glance/html/mdglance.html>.

Maryland Environmental Service, which provides water and wastewater treatment and solid management services. Overtly, the US has several agencies and bodies formed to spearhead the management and enforcement of environmental laws. NEPA is a national act that binds all states, but the majority states do not have environmental courts. Despite the lack of these courts, the states rely on well-established statewide bodies whose mandates involve strict monitoring and enforcement of the environmental laws. To this effect, US has maintained its environmental integrity, thanks to the existence of these bodies.

C. An Outrageous Act Spurring Public Action

A clear case of public involvement in environmental protection happened in the US following the indiscriminate disposal of chemical substances of Hooker Chemical Company in 1942.¹³⁰ This company engaged in the prolonged disposal of toxic wastes in this canal. The landfill near Niagara Falls was later reclaimed and transformed into a children's playground.

Meanwhile, there was extreme leaching and seeping of the underground water into the domestic water supply system leading to a series of effects on the community. It is estimated that the total quantity of toxins dumped in the Love Canal was 21,000 tons.¹³¹ These harmful substances came later to haunt the community, who paid the ultimate price following strange health complications sustained after consuming contaminated water. This disastrous waste disposal triggered the government to swing into action, with the then-president Jimmy Carter relocating all families from the

¹³⁰ Safe Harbor Pollution Insurance, What is CERCLA?, news.safeharborpollutioninsurance.com (2018), <http://news.safeharborpollutioninsurance.com/what-is-cercla#:~:text=CERCLA%20permits%20federal%20authorities%20to.>

¹³¹ *Id.*

affected area. The climax of this citizen outcry was the establishment of the passage of a Superfund Law, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1980.¹³² This act is one of a kind across that world that was created to regulate environmental use by all. In this act, people found guilty of polluting the environment were heavily fined to avoid repeat offending as well as scare potential culprits. Besides, this law acknowledged the communities by protecting their interest in a clean and safe environment. This law issued very strict penalties to those found in violation of the environmental order.¹³³

KSA, unlike the US, does not have a robust history of social movements. Therefore, most environmental initiatives are state sponsored. KSA esteems environmental protection as its primary agenda, aiming to tackle environmental challenges. Moreover, the flagship environmental agenda is poised to act as a springboard for this country to realize its 2030 vision.¹³⁴ Some of the gains in environmental protection have made a quantum leap towards establishing the country's protection agenda.¹³⁵ With the rapid population growth and unending urbanization, environmental challenges are inevitable in the KSA's growth trajectory. This has led to several initiatives to protect the environment from adverse effects associated with these changes. Some of the maiden initiatives undertaken include establishing research funds for the energy environment.¹³⁶ Other initiatives are; the

¹³² *Id.*

¹³³ *Id.*

¹³⁴ Gov.sa, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

¹³⁵ *Id.*

¹³⁶ Gove.sa, *A Sustainable Saudi Vision*, Vision 2030, <https://www.vision2030.gov.sa/v2030/a-sustainable-saudi-vision/>.

institution of the Kingdom's most environmental reconstruction project ever witnessed in the country's history, and the Center for Desert Agriculture works.

These are some of the national and internally instigated programs that KSA has initiated to bolster its effort of protecting the natural environment.¹³⁷

D. An Ideal Environmental system for the KSA

The roadmap to achieving a completely effective environmental regulatory system has prompted most countries to create bodies that are tasked with this work. An ideal system entails creating, implementing and enforcing all the applicable environmental regulatory standards. In the KSA, there is Meteorological and Environmental Protection Authority (MEPA), and recently the Ministry of environment alongside other bodies, but because of numerous flaws in their structure and powers, they are largely ineffective in producing positive outcomes. An ideal system must be able to enforce all the environmental laws and regulations based on the applicable global standards. Thus, public participation and awareness must be given a key priority before implementing a law of public interest. The aim of this section is to establish the existing deficiencies in the environmental law and standards in KSA in comparison to the USA. The absence of these courts and public participation framework, and hence its relatively lower pace in enforcing key environmental laws. On the same note, lack of public participation in the KSA's environmental framework has resulted to poor model in urban planning and participation in KSA. Consequently, this section aims to establish these deficiencies further and their effects on the country's environmental enforcement.

¹³⁷ *Id.*

I propose to borrow from parts of the US's a well-crafted structure running through the federal and the state levels. The USA's system has been impactful in enforcing the applicable environmental standards and regulations. Thus, this methodology will discuss an ideal system of environmental control and regulations and the practical roles tasked with such a system.

The effectiveness of environmental laws refers to the degree or extent to which environmental laws give forth the desired outcomes.¹³⁸

Every country has its unique rules and regulation meant to protect and conserve the environment.¹³⁹ Such laws prohibit specific behavior and actions that are deemed destructive to the environment while encouraging others that promote the protection of endangered species, encourage environmental purity, and collectively contribute towards environmental consciousness¹⁴⁰. However, the ability of such laws and regulations to produce the expected outcomes depends on the level of implementation and the general adherence to the same by the members of the public.

Consequently, the efficacy of these laws differs based on the attached punishments for non-compliance and the nature of the same rules.¹⁴¹

Principally, more effective environmental laws are those that are developed through public participation, and whose penalty for non-compliance is well documented and known to the members of the public.¹⁴² Public participation, in this

¹³⁸ Sandrine Maljean- Dubois, *The Effectiveness of Environmental Law*, Intersentia NV (2017), <https://intersentia.com/en/the-effectiveness-of-environmental-law.html>.

¹³⁹ *Id.*

¹⁴⁰ Cathrin Zengerling, *Greening international jurisprudence: environmental NGOs before international courts, tribunals, and compliance committees* 17 (2013). <https://brill.com/view/title/24158>.

¹⁴¹ Sandrine Maljean- Dubois, *The Effectiveness of Environmental Law*, Intersentia NV (2017), <https://intersentia.com/en/the-effectiveness-of-environmental-law.html>.

¹⁴² *Id.*

case, is meant to enhance moderation in the sense that all the divergent views are captured, making the law accommodative and binding. Creating awareness on repercussions of non-compliance, on the other hand, helps avoid citation of ignorance as reasons for the breach of the environmental laws. Overall, more effective ecological laws are those that are not only stringent and punitive but also well-known among the members of the public.

Environmental laws' effectiveness can be improved by eliminating the issues that act as obstacles to attaining objectives.¹⁴³ These issues include lack of implementation capacities, lack of accountability, and vaguely designed provisions.¹⁴⁴ Problem identification in the effectiveness of environmental laws can play a vital role in improving the rules' efficacy.¹⁴⁵ The identification task incorporates a high volume of activities that include research, technical assistance, and capacity development. Besides, the job requires a multidisciplinary approach to improve efficacy.¹⁴⁶

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

IV. Chapter 4: Comparison

I propose to make the case for borrowing parts of other legal regimes through a comparison of the regulatory structures in the US and the KSA. I will examine the roles of key institutions in the KSA and the US over the last 10 years, besides detailing the general shortfalls that lack of specialized courts and tribunals in KSA have had insofar as public awareness and enforcement of environmental laws are concerned.

Since the United States functions in a federal system of governance, I will mention environmental institutions in the US along federal, state and local levels. Although KSA's system of governance is a unified centralized system (the opposite of the US's federal system), each relevant US institution at each level will be compared with its Saudi equivalent. This comparison will be organized as follows:

Federal Level: US EPA vs. KSA MEPA

State Level: Two state environmental courts vs. KSA general courts

Local: Local urban planning regimes in New Castle, NY vs. Dammam, KSA

1. United States' Case

A. Federal Level

It is important that I describe generally federal, state, and local government engagement with environmental law. When it comes to the federal level, lawyers play an integral part in the various federal agencies responsible for environmental law.

Their tasks range from developing policies, facilitating legislation and regulation to representing their agencies before courts.¹⁴⁷

Federal departments such as the Department of Interior,¹⁴⁸ Department of the agriculture and the Department of Energy, all within their designated duties, have a role in protecting the environment.¹⁴⁹ The most prominent federal agency dealing with all necessary issues in protecting the environment is the Environmental Protection Agency (EPA). Hence, it is important to give a background of environmental issues leading to the formation of the agency.¹⁵⁰

The conversation in America about the need to protect the environment began way back in 1960s, following Rachel Carson's publication and attack on the indiscriminate use of pesticides.¹⁵¹ Later, there was a massive spread of air and water quality concerns following the silent spring environmental catastrophe. Subsequent disasters include the offshore oil rig in California that led to the spillage of millions of gallons of oil to the nearby beaches.¹⁵² There were several other incidents of massive environmental pollution, thereby prompting the nation to act decisively. The mounting pressure from the public following the concerns over deteriorating city air

¹⁴⁷ Thomas O. McGarity, *The Role of Government Attorneys in Regulatory Agency Rulemaking*, 61 Law and Contemporary Problems 19 (1998).

¹⁴⁸ Yale Law School, Environmental Law YALE LAW SCHOOL • CAREER DEVELOPMENT OFFICE, Chapter 1 (2018), https://law.yale.edu/sites/default/files/area/departments/cdo/document/cdo_environmental_law_public.pdf.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ US EPA, *The Origins of EPA* | US EPA, US EPA (2018) <https://www.epa.gov/history/origins-epa>.

¹⁵² *Id.*

quality and general environmental pollution prompted President Richard Nixon to present to the House and Senate 37-point message about the environmental conservation.¹⁵³ Moreover, this time witnessed further action by President Nixon who formed a council and mandated it to oversee the organization of the federal government's programs with the aim of tackling pollution.¹⁵⁴ Consequently, the council several recommendations, the creation of a new Environmental Protection Agency.¹⁵⁵

a. Environmental protection Agency

EPA was formed to respond to the extensive and numerous public environmental concerns ¹⁵⁶. It would be developed to protect and conserve the natural environment while improving human health through research on the impacts of pollution and the right limits required.¹⁵⁷ Over time, its responsibilities would evolve to include regulating air quality levels, water quality levels, regulating the chemicals used in the commercial industry, cleaning out the environmental contamination and developing regulatory criteria to be followed during the management and disposal of all wastes.¹⁵⁸

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ Randy Showstack, *Congressional committee scrutinizes Environmental Protection Agency*, 92 Eos, Transactions American Geophysical Union 443–443 (2011).

<https://eos.org/articles/epa-comes-under-the-gun-in-congressional-hearing>

¹⁵⁷ Yale Law School, Environmental Law YALE LAW SCHOOL • CAREER

DEVELOPMENT OFFICE, Chapter 1 (2018),

https://law.yale.edu/sites/default/files/area/departments/cdo/document/cdo_environmental_law_public.pdf.

¹⁵⁸ US EPA, OEI, *Environmental Topics* | US EPA, US EPA (2019),

<https://www.epa.gov/environmental-topics>.

b. Congressional Statutes

Congress has enacted numerous statutes that assign to the EPA the mandate to establish the right standards, associated programs, and activities to protect the environment. The Clean Air Act (CAA) (which authorizes the EPA to establish the mobile source limits, the air quality standards, the emission standards and the significant deterioration requirements, among other mandates relating to maintaining higher air quality levels.¹⁵⁹

The Clean Water Act mandates the EPA to regulate and enforce the standards and requirements.¹⁶⁰ The Act governs the discharge of waste into the waters in American territory in conjunction with the financial support to be provided for the construction and improvements of the wastewater treatment plants, the conservation of the water resource is also governed by the Ocean Dumping Act.¹⁶¹

and Safe Drinking Water Act.¹⁶² The Act mandates the EPA to establish respective standards required to protect "drinking use, whether from above ground or underground sources."¹⁶³ Other laws include the Solid Waste Disposal Act¹⁶⁴ and Resource Conservation and Recovery Act (RCRA),¹⁶⁵ and the Toxic Substances Control Act (TSCA)¹⁶⁶, among others. These laws have a bipartisan role in safeguarding the independence and transparency of EPA, and other constitutional bodies such as the

¹⁵⁹ "The Clean Air Act, 42 U.S.C. §7401, et seq. (1970)"

¹⁶⁰ "The Clean Water Act, 33 U.S.C. §1251, et seq. (1972)"

¹⁶¹ "Ocean Dumping Act 40 U.S.C.A. §§ 220.1 - 220.4 (LII)"

¹⁶² "Safe Drinking Water 42 U.S.C. §300f et seq. (1974)"

¹⁶³ US EPA,OA, *About the Office of Water* | US EPA, US EPA (2019), <https://www.epa.gov/aboutepa/about-office-water>.

¹⁶⁴ "Solid Waste Disposal Act 42 U.S.C. §6901 et seq. (1976)"

¹⁶⁵ "Resource Conservation and Recovery Act 42 U.S.C. §7401 et seq. (1976)"

¹⁶⁶ "Toxic Substances Control Act (TSCA) 15 U.S.C. §2601 et seq. (1976)"

Congress and the Federal Government. Through these laws, the EPA adopts clear guidelines of enforcing Congressional orders.¹⁶⁷

c. How the EPA works:

The main responsibility of the EPA is to oversee the enforcement and implementation of environmental law. This responsibility is delegated by Congress and, thus, it gives the EPA more authority.¹⁶⁸ Given this authority, the EPA has the ability to monitor the compliance of the regulated community, as to ensure environmental law and regulations are being followed.¹⁶⁹ Therefore, the EPA is a prominent federal agency, backed by federal statutes, that ensures that federal environmental statutes are not violated.¹⁷⁰ In its capacity as a federal agency, the EPA makes sure that individuals, private and public sectors entities comply with federal environmental laws.¹⁷¹

d. How the EPA adopts regulations:

As with any federal agency, the EPA creates rules to help interpret and implement environmental law.¹⁷² The process of making these regulations is as follows:

- Proposal of a regulation
- Consideration of comments and final rule issuance.
- Codification of the regulation in the Code of Federal Regulations.

¹⁶⁷ US EPA,OA, *Laws and Executive Orders* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

¹⁶⁸ US EPA,OECA, *How We Monitor Compliance* | US EPA, US EPA (2013), <https://www.epa.gov/compliance/how-we-monitor-compliance>.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

¹⁷² US EPA,OA, *The Basics of the Regulatory Process* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/basics-regulatory-process>.

(Details on each step in the process will be mentioned later when comparing the EPA with MEPA).

e. Enforcement:

The EPA's Strategic Plan to preserve human health and the environment includes enforcing environmental laws. The EPA strives to guarantee that environmental regulations are followed. When necessary, the EPA will pursue civil or criminal enforcement action against environmental law offenders.¹⁷³

A person can be sent to prison in criminal cases.¹⁷⁴ The possibility of jail is what separates criminal law from civil law the most. In civil cases, a monetary penalty, injunctive remedy (activities required to correct the violation and come into compliance, such as installing pollution control equipment), and/or additional actions performed to benefit the environment may be the result if a civil defendant is held responsible or agrees to a settlement. If a criminal defendant is found guilty or pleads guilty, he or she may be subject to a monetary penalty and/or restitution to the US Treasury.¹⁷⁵

f. The Different Types of Enforcement Actions:

1- Civil Administrative Actions are non-judicial enforcement actions taken by the EPA or a state on its own authority.¹⁷⁶ There is no Judicial court process involved in these actions. EPA or a state agency may take the following administrative actions:

¹⁷³ US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

- A violation notice or Superfund notice letter, or an order (with or without fines) requiring an individual, a business, or another body to take steps to comply with the law or clean up a site.¹⁷⁷

Administrative actions can be appealed within the EPA to Environmental Appeals Board.¹⁷⁸ This board is responsible for hearing all administrative appeals that fall under environmental statutes. Although this board is part of the EPA, it is independent to make decisions. The Board of Environmental Appeals Judges assemble in three-person panels and make decisions by majority vote. The judges are assisted by eight attorneys and two administrative professionals.¹⁷⁹

2- Formal lawsuits are known as civil judicial actions.¹⁸⁰ They are filed in court against individuals or companies who have failed to comply with statutory or regulatory requirements, follow an administrative order, pay EPA cleanup expenses, or commit to doing the cleanup work.¹⁸¹

The US Department of Justice prosecutes these charges on behalf of the EPA. In civil proceedings, they are usually filed on behalf of the states by States' Attorneys General.¹⁸²

3- When the EPA or a state takes a criminal action against a firm or individual, it is known as a criminal action. Criminal charges are normally reserved for the most serious

¹⁷⁷ *Id.*

¹⁷⁸ EPA, *Environmental Appeals Board*, Epa.gov (2020), https://yosemite.epa.gov/oa/eab_web_docket.nsf.

¹⁷⁹ *Id.*

¹⁸⁰ US EPA, OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

¹⁸¹ *Id.*

¹⁸² *Id.*

offenses, those that are done willfully or deliberately. Fines or imprisonment may be imposed as a result of a court conviction.¹⁸³

g. The power, and delegation, of EPA at work

Authorizing legislation for the EPA.

Focusing on *Clean Air Act* (CAA),¹⁸⁴ this statute CAA is an extensive federal regulation that controls air emissions produced by mobile and stationary sources. Besides, CAA empowers EPA with the authority to implement NAAQS to promote public health and welfare. Notably, EPA enforces CAA by approving the plans developed by this organization. On the same note, EPA employs the plans developed by CAA to ensure protection of air quality while limiting needless barriers to business expansion and new manufacturing.¹⁸⁵ Based on actions of Congress on issues regarding air quality, the regulatory authority of EPA provided guidelines for that regard.¹⁸⁶ The CAA seeks to protect human health together with the environment from air pollution. In particular, the act has provisions that specifically address health-focused air quality standards, emissions transport, and restoration of visibility both in parks and in the wilderness.¹⁸⁷ The 1990 amendments to the CAA mandated industrial pollutants to seek operating permits. Title V of the CAA authorize permits, which are intended to improve environmental compliance. EPA issued regulations for the

¹⁸³ *Id.*

¹⁸⁴ Annise Maguire, *Permitting Under the Clean Air Act: How Current Standards Impose Obstacles to Achieving Environmental Justice*, Vol. 14 Michigan Journal of Race and Law 255–284 (2009), <https://repository.law.umich.edu/mjrl/vol14/iss2/3/>

¹⁸⁵ Kate C. Shouse, CRS INSIGHT *White House Directs EPA to Review Air Quality Standards and Permitting Process*, (2018), <https://sgp.fas.org/crs/misc/IN10891.pdf>

¹⁸⁶ US EPA,OA, *Regulations* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/regulations>.

¹⁸⁷ Kate C. Shouse, CRS INSIGHT *White House Directs EPA to Review Air Quality Standards and Permitting Process*, (2018), <https://sgp.fas.org/crs/misc/IN10891.pdf>.

implementation of Title V in 1992 followed by subsequent regulatory revisions and interpretation of regulatory and statutory requirements. These recommendations authorized this body to respond to environmental issues, specifically those relating to air quality.¹⁸⁸

h. Environmental quality impacts attributed to the EPA

EPA has been accredited with some milestones in the environmental quality improvement since its formation. This body has undertaken massive steps in meeting the biggest global environmental challenges in the US and abroad. Apart from its roles in the setting policy priorities and writing as well as enforcing a wide range of laws, EPA's actions have led to tangible outcomes to the community.¹⁸⁹ Besides, this body has inspired scores of foreign countries to spearhead a process aimed at creating their own environmental agencies having similar mandates.¹⁹⁰ Principally, EPA is currently helping most Americans find and implement remedies for the dire global problems from ozone depletion to the climate change.¹⁹¹ Public education has yielded positive outcomes since most Americans have become aware of the need to protect their environment. Acts such as tree planting and personal responsibility in ensuring proper waste disposal are some small yet subtle efforts that have been spearheaded by this body to create environmental awareness besides improving the quality of the environment. The home run initiatives congregated more than 20 environmental leaders who concluded that EPA has been impactful in improving quality of

¹⁸⁸ *Id.*

¹⁸⁹ Scientific American, *Environmental Enforcer: How Effective Has the EPA Been in Its First 40 Years?*, Scientific American (2011), <https://www.scientificamerican.com/article/the-epa-first-40-years/>.

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

environment in the US.¹⁹² Some of the activities monitored and enforced by the EPA include banning the frequent use of pesticide DDT that decimated bald eagles as well as other birds.¹⁹³ Moreover, this body helped in achieving significant goal in reducing Sulphur dioxide and nitrogen emissions that were major water pollutants and leading cause of health problems.¹⁹⁴ This body has equally changed public perception over waste management, and most people see wastes as prime sources of energy. For instance, this body has led an education path of innovation where wastes can be used to produce energy.¹⁹⁵ The EPA has a mandate to ensuring the improvement of air quality and assuring the safety of chemicals used in everyday products.¹⁹⁶

i. The role of public participation in the EPA

In this section, I will state some examples about the EPA in USA. because the role of public participation is a factor in my main argument. The reason why I am focusing on that factor, as stated in my main argument, is based on the fact that public participation in environmental issues is absent in KSA. Hence, the following paragraphs will illustrate the benefits of public participation in environmental laws in the US.

j. Rulemaking under the US Administrative Procedure Act

Under the Administrative Procedure Act (APA), the EPA creates procedures for rulemaking and deals with agency issues, including issuance of licenses, permits, and policy statements.¹⁹⁷ EPA researches issues and propose regulations in what is

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ US EPA,OA, *Summary of the Administrative Procedure Act* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/summary-administrative-procedure-act>.

referred to as a Notice of Proposed Rulemaking (NPRM).¹⁹⁸ Usually, the proposals are included in the Federal Register (FR) where the public can read and comment on it.

EPA considers public participation as a major factor of its operations. The rulemaking procedure applies to all federal agencies under the APA. Thus, the NPRM is intentionally made to ensure proper participation of the members of the public in legislation-making and ruling out a possibility of public not being aware of the key legislation that they are supposed to be aware off.¹⁹⁹ On the same note, the notice gives the public an ample time to read an impending legislation and give their valuable output before the eventual publication of such laws.²⁰⁰

EPA may revise proposed regulations based on the comments given before issuing a final rule.²⁰¹ In addition, the EPA enforces environmental laws and regulations to correct violations. It is important to note that the agency has personnel who are responsible for the implementation of the laws. It is evident, therefore, that EPA is a regulatory and law enforcement agency, especially on matters of the environment.

The EPA, just the like MEPA, issues environmental regulations, but its scope and mandate of operate is more enhanced compared to MEPA. The courts and tribunals then enforce the laws formulated and published by EPA, which currently exist in a

¹⁹⁸ US EPA,OA, *Regulations* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/regulations>.

¹⁹⁹ OP US EPA, *Get Involved with EPA Regulations*, US EPA (2013), <https://www.epa.gov/laws-regulations/get-involved-epa-regulations>.

²⁰⁰ *Id.*

²⁰¹ *Id.*

few states in the USA. The body creates laws after involving members of the public and then courts try those who violate the same laws, they are aware of.²⁰²

EPA's rulemaking is a process that is definitive and follows a well outlined framework. Different rules have been made, and certain formats apply in almost all cases, with differences arising depending on the scope and breadth of the rule under consideration. This study will rely on the way new rules and affecting agriculture are made. The first stage begins by initiation of the rulemaking, but EPA has no mandate at this stage; the initiator can be a private citizen or a private company. The second stage refers to public comment period, which is open to the members of public to give their opinions; this is the public participation stage. EPA issues the Pesticide Product Performance Data Requirements for Products Claiming Efficacy against Certain Invertebrate Pests; this is specific too policies and guidelines touching agriculture. Indeed, EPA codifies product performance, and data requirements.²⁰³ In the second stage, the public comment period is closed, and EPA applies for an exemption under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), among other agencies.²⁰⁴ The final rule is published upon passing through all the relevant stages. The publication of the rules integrates in this category involves; tolerance crop grouping program, pesticide, agricultural worker protection standard, among other rules.²⁰⁵

²⁰² OAR US EPA, *Title V Evaluation Report - District of Columbia*, www.epa.gov (2017), <https://www.epa.gov/caa-permitting/title-v-evaluation-report-district-columbia-0>.

²⁰³ OECA US EPA, *Proposed or New Rules, Policies, and Guidance Affecting Agriculture*, www.epa.gov (2015), <https://www.epa.gov/agriculture/proposed-or-new-rules-policies-and-guidance-affecting-agriculture>.

²⁰⁴ *Id.*

²⁰⁵ *Id.*

The EPA's rulemaking process is an all-inclusive process that starts with an open process of publishing the legislation. The second stage often involves public participation, where members of the public are given a mandate to voice their opinions over the law. The inputs given are integrated, and a fair decision is made after incorporating all these recommendations. Public participation is an important stage in the rulemaking process. In the agricultural rulemaking above, it is evident that the members of the public play a critical role towards informing the enforcement of any policy.

All in all, the EPA is regarded one of the world's leading environmental as well as a human health research organization.²⁰⁶ This organization has regulations that are primarily founded on science and politics.²⁰⁷ Therefore, science guides the formulation of EPA's policies, actions as well as decisions. For instance, the field of engineering is a main subset of science that informs most decisions and policies undertaken by this body.²⁰⁸ Some of the far-reaching implications of science to this body include; adoption of cleaner air and longer lives policies, faster as well as efficient chemical screening, and safer water resources.²⁰⁹ The people, or what is termed as citizen science has greatly bolstered conservation efforts. Indeed, citizen science has led to improvement of natural resource management and environmental protection.²¹⁰ Conservation and policymaking depends on two elements of life; scientific knowledge and informing policy formation. Indeed, citizen science in which

²⁰⁶ ORD US EPA, *Role of Science at EPA*, US EPA (2014), <https://www.epa.gov/research/role-science-epa>.

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ *Id.*

politics is a part forms a major stake in forming policies that are adopted by EPA.

Overtly, EPA relies extensively on science and politics to establish its laws.²¹¹

2. KSA's Case

a. The powers and roles of MEPA in creating public awareness.

The Meteorology and Environmental Authority (MEPA) came during the Eighth Development Plan following the successful development of network of radiation monitoring. Besides, the Development Plan integrated the establishment of the environmental protection, management, monitoring, analysis as well as forecasting and control of projects²¹² These are just a few mandates that PME was tasked to adopt within its operational framework. The enactment of the General Environmental regulation by Decree, No, M/34 of 2001 Article (1) led to the empowerment of the MEPA, and added several mandates to it. Thus, MEPA gained the power to enforce and implement its regulations unless before when it did not have the enforcement powers.²¹³

In the year 2006, MEPA promulgated its Rules, and ascertained its ability to implement the General Environmental Regulation and Rules. Thus, under Article (2) and (19) MEPA would later begin implementing a plan in different regions with the

²¹¹ *Id*

²¹² Ministry of Environment, Water and Agriculture, *National Environment Strategy Executive Summary for the Council of Economic and Development Affairs*, (2017), <https://www.mewa.gov.sa/en/Ministry/initiatives/SectorStratigy/Documents/6.%20BAH-MEWA-KSA%20NES-CEDA%20Executive%20Summary%20v3%2020180221%20ENG.pdf>.

²¹³ General Environmental Regulations and Rules for Implementation. <https://elaw.org/system/files/attachments/publicresource/saudiArabia.General%20Environmental%20Regulations.pdf>.

aim of modernizing and developing ideal environmental standards as well as guidelines to main air and water quality.²¹⁴

Under Article (3) MEPA is charged several roles, and act as a major environmental agency in KSA. Thus, MEPA was structured as a key environmental agency, whose responsibility spans from preparing the environmental standards, undertaking as well as monitoring the state of natural resources, which generally entails environmental compliance and monitoring tasks.²¹⁵

On the same note, MEPA was urgently constituted to expeditiously take care of the natural resources alongside their development. Meanwhile, MEPA's roles have not been limited to its operational perspectives but equally involves coordinating and working in close association with other ministerial agencies in the country. There are several achievements so far accomplished by MEPA.²¹⁶

b. Environmental standards and roles that MEPA played since its incorporation

The KSA has made considerable efforts in meteorology, environmental protection as well as conservation of key resources. Article (322) of the Law of Governance perfectly details the theme of environment and environmental protection. This article states that “the State shall endeavor to preserve, protect, and improve the environment and prevent its pollution.” Thus, MEPA has defining clauses, which control its responsibilities in KSA. Under Article (8) This body has undertaken its activities in full cognizance of the national and national standards, while upholding public awareness creation. One of roles MEPA has so far implemented include establishing the first environment satellite TV channel, thereby expanding the

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ *Id.*

awareness and raising campaigns.²¹⁷ Other mandates include holding workshops on environment and development and establishing National Program for Environment and Sustainable Development Awareness.²¹⁸

Moreover, MEPA has aided in the formulation of the standards in collaboration with other relevant agencies with the aim of creating full environmental protection and management against the discharge of toxic and hazardous wastes in the atmosphere and on land.²¹⁹ Moreover, this body has provided the applicable standards for storing, treatment and transporting the wastes in the country. Thus, the mandates of this body spans to every matter of environmental concern. Another task that MEPA has discharged over the past include preparation of the environmental file (a file which covers issues such as water as well as air quality) for the city of Jeddah.²²⁰ The establishment of such quality benchmarks involved measuring the quality of the ambient air by deploying specialized instruments and determining the sources of pollution to this city.²²¹ The city's file was an elaborate assessment and testing model that aided in creating awareness to the city residents regarding the level of atmospheric, terrestrial and aquatic pollution.

²¹⁷ Abdel- Rahman Hussein, StackPath, [dailynewsegypt.com](https://dailynewsegypt.com/2007/08/03/the-environment-finally-gets-a-mideast-tv-channel/) (2007), <https://dailynewsegypt.com/2007/08/03/the-environment-finally-gets-a-mideast-tv-channel/>.

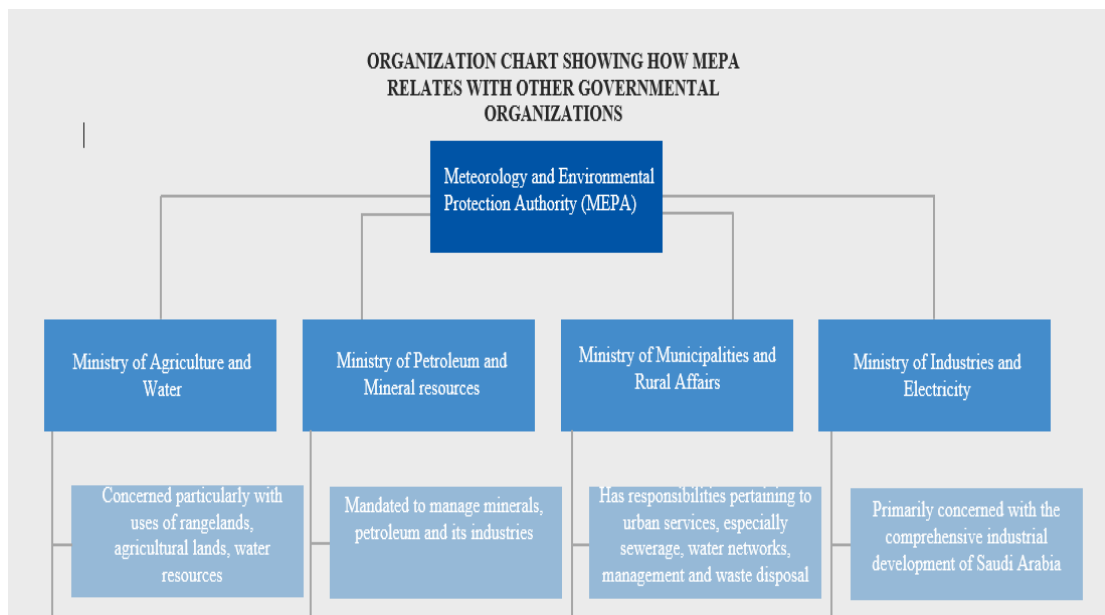
²¹⁸ Fatima Muhammad, *New Environment and Sustainable Development Program launched in Jeddah*, *Saudigazette* (2018), <https://saudigazette.com.sa/article/530011>.

²¹⁹ UN & Government of the Kingdom of Saudi Arabia, *Country Profile - Saudi Arabia*, [www.un.org](https://www.un.org/esa/earthsummit/saudi-cp.htm) (1997), <https://www.un.org/esa/earthsummit/saudi-cp.htm>.

²²⁰ *Id.*

²²¹ *Id.*

c. The chart below illustrates the relationship between MEPA and other ministries.



The agency keenly monitors the meteorological phenomenon by integrating both technical and practical systems, which complies with the internal standards and operations.²²² Ideally, the ministry and the agency have been coordinating to optimize the natural resource utilization of the KSA and rationalize this resource.²²³

d. MEPA's mandates in realizing environmental sustainability in KSA

MEPA has equally played key representative roles of the Kingdom in the recent developments in the field of environmental protection as well as a myriad of meteorological activities. The representation has been done at both the regional and the international frontiers. This implies that MEPA' authority spans beyond the

²²² The General Authority for Meteorology and Environmental Protection, *The state of the Environment responsibilities and achievements, Authority's responsibilities* (2017), <https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>.

²²³ UN & Government of the Kingdom of Saudi Arabia, *Country Profile - Saudi Arabia*, www.un.org (1997), <https://www.un.org/esa/earthsummit/saudi-cp.htm>

national borders but include even intentional environmental assignments. For instance, with the initial mandate to check on weather forecast, the agency's report is quite important because it issues alert warnings of an impending disaster. Besides raising awareness to all citizens, the agency is equally mandated to reflect on issues of national perspectives in terms of dealing with the environment and meteorology. Recently the word environment has been added to Ministry of Environment, Water, and Agriculture. Currently, the KSA has this Ministry whose mandates complement the action of MEPA. Meanwhile, this ministry has higher jurisdiction compared to MEPA, but both work in collaboration with one another.²²⁴

The mandates of the MEWA include regulation as well as implementation of the all the country's policies on environment, water and the agricultural sectors. Besides, the Minister of Environment, water and agriculture chairs very important boards including the presidency of the Metrology and Environment. Other key-boards that the minister controls are the: Saudi Wilde Life Authority, Saline Water Conversion Corporation, The Saudi Grains Organization (SAGO), Agriculture Development Fund and the Irrigation and Drainage Authority.²²⁵ Intuitively, the ministry is the most powerful entity in KSA over environmental conservation and protection. All the mentioned bodies, including MEPA fall and operate under the ("MEWA"). Other roles of MEWA include the implementation of the water production and agricultural plans as well as programs in the entire country. The main aim of such programs is to create sustainability and value creation, and through the intervention of MEWA, its contributions have been widely felt in numerous areas

²²⁴ *Id.*

²²⁵ Minister of Environment, Water and Agriculture announces formation of National Grain Company, a partnership between SALIC and Bahri, *eyeofriyadh.com* (2020), <https://www.eyeofriyadh.com/news/newsdetail.php?newsid=115501>.

such as food security, environmental protection and water preservation.²²⁶ The existing structures allows MEPA to operate under MEWA for the benefit of the country's environmental atmosphere.

The rollout of the environmental awareness and creation programs by MEPA is entrenched on the Islamic religion. MEPA imparts the members of the KSA, who are completely inclined to the Islamic religion, that their core role and association with the environment should be mutually beneficial.²²⁷ The agency's environmental advocacy program infuses a belief that God created man to rehabilitate the land and not to destroy it. Thus, it is the mandate of every citizen to take the issue of environmental conservation more proactively and defend it whenever there is a possibility of encroachment. The agency is so much concerned in both national and international activities with the view of exhibiting that Saudi is highly cognizant of the environment through what is terms as Islamic civilization.

e. Challenges faced by MEPA that limits its operational mandates

While MEPA has been extensively involved in key environmental policy legislations and implementation, it has not absolutely achieved the role of enforcing environmental regulations in KSA. First and foremost, the current framework charged with the dispensation of the national environmental policies in KSA fall short of

²²⁶ Ministry of Environment, Water and Agriculture. *The General Authority of Meteorology and Environmental Protection* (2020), <https://mewa.gov.sa/en/Partners/Pages/%D8%A7%D9%84%D9%87%D9%8A%D8%A6%D8%A9-%D8%A7%D9%84%D8%B9%D8%A7%D9%85%D8%A9-%D9%84%D9%84%D8%A3%D8%B1%D8%B5%D8%A7%D8%AF-%D9%88%D8%AD%D9%85%D8%A7%D9%8A%D8%A9-%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D8%A9.aspx>.

²²⁷ *Id.*

realizing its mandates because of the overlapping authority.²²⁸ Principally, overlapping authorities leads to higher operational costs, increases regulation uncertainties, and creates barriers to competitiveness. This explains why KSA fails to realize its goals insofar as overlapping authority is concerned in terms of environmental regulation. Besides, agencies like MEPA tasked with the enforcement of environmental regulations is still affected by slow decision-making process. Moreover, there are existing gaps of legislation as well as implementation difficulties. Thus, MEPA's operations to legislate environmental laws has been hindered by these existing gaps and general shortfalls. Consequently, the ineffectiveness of MEPA has resulted to slow rate of implementation of environmental regulations and policies as well public participation on matters of environment.

This body equally experiences shortfalls attributed to lack of skilled men and women to undertake the necessary environmental audits and proper legislation. This body has in the past suffered acute shortage of trained human resource due to poor training of its staffs. Other challenges include financial shortage due to the low budgetary allocation to this body to undertake its key mandates.²²⁹ Thus, this body cannot sufficiently run its operations, leading to poor quality service rendition and missed goals. As a result, there is still an urgent need to consider the environmental

²²⁸ Ahmad Al-Gilani, *Reforming the National Framework for Environmental Policies in Saudi Arabia*, 42 *Journal of Environmental Planning and Management* 253–269 (1999), <https://www.tandfonline.com/doi/abs/10.1080/09640569911244>.

²²⁹ The General Authority for Meteorology and Environmental Protection (GAMEP) Kingdom of Saudi Arabia., *The state of the environment responsiveness and achievement*, (2017), <https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>.

issues by establishing competent judicial authority such as specialized environmental courts in KSA.

3. Comparison between MEPA and EPA

a. How they work:

To begin with, the main difference between MEPA and EPA is that the former is not independent and is subject to the council of ministers.²³⁰ This lack of independence makes it difficult to achieve its goals, specifically when it has to deal with a major company that violated an environmental law. Also, this lack of independence complicates its work because it overlaps its authority with other institutions.²³¹

b. How regulations are adopted

In the US, the EPA provide the opportunity for citizens to participate in the agency's proposals.²³² However, in KSA there is no institutionalized way for the public to participate in MEPA's proposals. Those proposals are drafted and approved by the council of ministers.²³³

In contrast, the MEPA does not have such noticing models over its legislation, and thus, the environmental laws and regulations are the preserve of this body and with no public involvement. In the KSA, the public does not participate in the

²³⁰ Gove.sa, *Law Details*, laws.boe.gov.sa (1993), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/93e87aa7-f344-4711-b97c-a9a700f1662b/2>.

²³¹ Ahmad Al-Gilani, *Reforming the National Framework for Environmental Policies in Saudi Arabia*, 42 *Journal of Environmental Planning and Management* 253–269 (1999), <https://www.tandfonline.com/doi/abs/10.1080/09640569911244>.

²³² US EPA, *OA, Regulations* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/regulations>.

²³³ Gove.sa, *Law Details*, laws.boe.gov.sa (1993), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/93e87aa7-f344-4711-b97c-a9a700f1662b/2>.

discussion of environmental laws, thus exposing the weaknesses of MEPA towards the enforcement of environmental laws through the creation of public awareness.

Thus, there is a gap in public awareness creation in KSA, because most laws that are proposed by MEPA do not duly pass through the public for approval. Essentially, the members of the public are unaware of these laws because of lack of participation. On the other hand, EPA by a special issuance of notice, engages the members of the public on an impending environmental law or legislation. Thus, the KSA should adopt a similar standard of law creation, by first issuing public notice to allow members of the public to give their input, ideas, concerns before allowing the law to start operating because the nature of environmental laws requires public knowledge, awareness, especially since the public usually unaware of importance of environmental policy because it doesn't mean to them directly.

c. Enforcement:

When it comes to enforcement, EPA is more enhanced than MEPA in terms of enforcement. EPA works at the federal level; the process of enforcement faces many obstacles.²³⁴ Although this weakness may be considered significant, the EPA's ability to sue states, companies, or individuals and issue fines makes it stronger in enforcement than MEPA. The MEPA should be stronger in enforcement given the centralized governing system in KSA, yet MEPA falls short in enforcement. Moreover, the EPA has a board that includes experts.²³⁵ but, in KSA the Article 39 of the General Environmental Regulations Royal Decree No. (M/165) dated 11/19/1441

²³⁴ Christa Slaton, *Why does EPA Administrator Scott Pruitt still have a job? He's definitely loyal to Donald Trump and effectively pushes his agenda*, (2018), http://eprints.lse.ac.uk/90694/1/Slaton_Why-does-EPA_Author.pdf.

²³⁵ US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

AH 2020 indicates that MEPA has a three-member committee with no clear regulations about enforcement.²³⁶

B. State Level

Now we turn to the state level, which is a different jurisdiction. I will focus on examples of enforcement at the state level. State environmental institutions are responsible for implementing federal statutes and state regulations. Examples of those institutions are as follows:

- Connecticut Department of Energy and environmental Protection.
- Florida Department of Environmental Protection.
- Texas Commission on Environmental Quality.
- Massachusetts Department of Conservation and Recreation.²³⁷

Although those government institutions have an important role in implementing environmental laws in states, I am mainly concerned with the states that have environmental courts. Also, I recognize state environmental courts exists in only a few US states.²³⁸ I believe that a focus on them is beneficial for KSA.

In KSA, culturally, people respect the concept of power of the courts more than the concept of an agency or a ministry since the legislative system gives power and prestige to those authorities (courts). Therefore, the existence of an environmental court system will shorten the way to the implementation of environment policies and create public awareness; the missing link in the enforcement of environmental

²³⁶ Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>.

²³⁷ Yale Law School, *Environmental Law YALE LAW SCHOOL • CAREER DEVELOPMENT OFFICE, Chapter 1* (2018), https://law.yale.edu/sites/default/files/area/departments/cdo/document/cdo_environmental_law_public.pdf.

²³⁸ *Id.*

regulations in KSA is the absence of power for the legitimate agency to effectively enforce environmental laws.

All in all, a functioning environmental court is what KSA needs to enforce environment laws, because courts in KSA are independent.²³⁹ This is because the court system and judges in KSA are highly respected, have independent authority and are granted immunity.²⁴⁰

a. State environmental courts in the US: Tennessee and Hawaii courts.

Tennessee

Shelby County's environmental court has existed since 1983 when it was created as a new division of City Court to deal with violations of fire, building, and health, along with zoning codes. Apparently, the properties contribute to public nuisance. However, the Tennessee Legislature gave the court its authority in 1991 to issue a combination of orders to support its jurisdiction.²⁴¹ The orders issued during this period have played a vital role in strengthening Tennessee's environmental policies. The Environmental Court in Shelby has managed to readily and particularly respond to the environmental needs of the community. The objective of the court is to achieve compliance, and eventually a safer, more livable environment for citizens of Shelby County.

²³⁹ Jeddah, *Our judiciary is transparent, independent: Justice minister*, Arab News (2016), <https://www.arabnews.com/featured/news/861036>

²⁴⁰ *Id.*

²⁴¹ Shelby county Tennessee, *History of Environmental Court* | Shelby County, TN - Official Website, www.shelbycountyttn.gov, <https://www.shelbycountyttn.gov/2125/History-of-Environmental-Court#:~:text=In%201983%2C%20the%20City%20of>.

The Environmental Court established the use of community courts in addressing problems of properties, especially at close range. The community courts are conveniently located to enable various parties in cases attend sessions without traveling downtown. As such, people from the neighborhood get justice on environmental issues.

These courts are located in Fraser neighborhood, Orange Mound, alongside Hickory Hill. Community Courts are divisions of the Environmental Court in Shelby County. The City of Memphis Housing Code Enforcement (CMHCE) brings on cases over correctable issues such as; nuisance from vehicles, which actually cause noise and air pollution. Apparently, handling environmental issues, specifically in remote areas enables the Court to deal with complex environmental problems in the downtown.

Among general session courts, Shelby County Environmental Court holds unique roles because it has dual roles of criminal and civil jurisdictions. Therefore, the court's civil jurisdiction encompasses the suits that are usually brought under the public nuisance code of the state of Tennessee. The public nuisance code is applicable in instances when certain criminal and illegal environmental activities are placed on certain property located in Memphis, which would mean a damaging influence or nuisance to the area.²⁴² For instance, the civil jurisdiction may touch on drug dealing in certain housing, strip clubs where drugs and prostitution occur, or shutting an entire apartment when arrests accumulate over time. The situations are determined when the office of the District Attorney petitions the Shelby County Environmental Court to close the property that has been found to be problematic. Additionally, the Shelby

²⁴² *Id.*

County Environmental Court handles cases touching on the Tennessee Neighborhood Preservation Act (TNPA).²⁴³

It is worth noting that the act permits individuals, Memphis City, groups, and Shelby County to sue owners of property who fail to main property according to community standards or local codes. For instance, when a property owner is not willing to repair his property, then the court has the mandate to appoint someone to oversee the completion of needed repairs. In such cases, the repairs become part of a lien that must be met even if the property itself is to be sold, in what is known as the nuclear option. The Shelby courts settles cases involving civil and criminal matters pertaining to the environment and any other code that fall under the environmental regulations. The court enforces both environmental laws and regulations applicable to this state.²⁴⁴

Hawaii

The creation of the Hawaii Environmental court was amply informed by the need to enforce the existing environmental laws. In the past, many cases of environmental concerns presented before the courts for arbitration often received different outcomes, and so the establishment of this court to handle matters of environment and provide justice whenever there are violations. The key areas of jurisdiction of this court including hearing matters such as historic preservation, recycling, solid waste management, air pollution, ascertaining the quality of drinking water, and litter control.²⁴⁵ The environmental courts have been integral in enhancing

²⁴³ *Id.*

²⁴⁴ *Id.*

²⁴⁵ Lorin Eleni Gill. *Hawaii's environmental court is second established in U.S.* Pacific News. 2015.), https://www.bizjournals.com/pacific/blog/morning_call/2015/06/hawaiis-environmental-court-is-second-established.html.

wealth creation since matters of the environment are critical to the lives of the people. Through these courts, the processes of reviewing environmental effects have been enhanced, and cooperation as well as coordination is encouraged.²⁴⁶ On the same note, the court undertakes reviews, which brings on board opinions of the members of the public regarding a pertinent matter of environmental concern.²⁴⁷ In this regard, the court has enhanced public participation through direct involvement of the members of the public on opinion hearing and deliberation.

On the same note, the Hawaii Revised Statutes, (HRS) Title 12 states:²⁴⁸ conservation and resources stipulate the authorities and discretion of the environmental courts to hear civil and criminal cases involving environmental violations.²⁴⁹ This court has actively been involved in adjudicating several cases involving environmental disputes. It is expected that the members of the public have been receiving justice from this court as opposed to a time before its existence.

Having been established in 2014, and finally put into action in 2015, the Hawaii environmental court has made milestone achievements.²⁵⁰ As studies indicate, the existing courts did not implement environmental laws as expected.²⁵¹ Meanwhile,

²⁴⁶ *Id.*

²⁴⁷ Hawaii state judiciary, *Environmental Court*, www.courts.state.hi.us, https://www.courts.state.hi.us/special_projects/environmental_court#:~:text=Hawaii%20is%20only%20the%20second

²⁴⁸ Hawaii Revised Statutes, *Title 12 - CONSERVATION AND RESOURCES* (§§ 171-1 — 200D-5), <https://casetext.com/statute/hawaii-revised-statutes/division-1-government/title-12-conservation-and-resources>.

²⁴⁹ Hawaii state judiciary, *Environmental Court*, www.courts.state.hi.us, https://www.courts.state.hi.us/special_projects/environmental_court#:~:text=Hawaii%20is%20only%20the%20second.

²⁵⁰ *Id.*

²⁵¹ Lorin Eleni Gill, *Hawaii's environmental court is second established in U.S.*, Bizjournals.com (2022), https://www.bizjournals.com/pacific/blog/morning_call/2015/06/hawaiis-environmental-court-is-second-established.html.

people advocated for the creation of the Hawaii environmental court based on the notion that these courts will be more effective in enforcing the implemented environmental policies.²⁵² Besides, as the people believed that "Environmental courts have proved successful in other places where inhabitants' prosperity and health are dependent on a healthy environment." Hawaii environmental court would be successful in creating sensitive environmental laws, thus the creation of the court.²⁵³

Cases presented before the concerned judges have amicably settled in this court. The first case filed before the court was *Stop Cane Burning vs. Hawaii Department of Health and Alexander and Baldwin*.²⁵⁴ The case related to the longstanding act a company in sugar cane burning in Maui, which the health department deemed as a serious health hazard. Finally, the court intervened, and the judgment compelled the sugar company to limit its sugar cane burning activities, which resulted to the pollution of the atmosphere.

b. Comparison between KSA and US in the context of Environmental courts' jurisdictions.

a. Oversight

The advantages linked with the environmental courts are unparalleled, and they have been involved in settling disputes from individual and public cases. On the same note, these courts have enhanced public participation because their establishments followed a consent from the members of the public. In the US, the

²⁵² *Id.*

²⁵³ *Id.*

²⁵⁴ Teagu Courtney. Chief Justice: *Hawaii Environmental Court 'Very Successful' In First Year*. 2016. P.2<http://blog.hawaii.edu/elp/files/2016/06/Civil-Beat-India-Symposium-article-June-21-2016.pdf>.

courts have been helpful in settling cases, both civil and criminal that involve environmental disputes. Meanwhile, KSA still lacks these courts, and thus, has not benefited from the positive impacts associated with these courts. If KSA will create these courts, then it will have a robust and efficient enforcement of environmental laws. On the same note, KSA will have the opportunity to expeditiously hear and resolve such cases. Finally, being that KSA has no public participation laws, the courts may act as an avenue of engaging the public to participate on environmental issues.

b. Data Collection and Record-Keeping

In comparing the US and KSA on their overall implementation as well as enforcement of environmental laws clearly reveals that KSA has a lot to implement so as to fully realize the overall benefits of a fully managed environment. In the US, the courts help in the enforcement of critical environmental laws, while the agencies such as EPA has made significant progress in the adoption as well as enforcement of these laws over the past century.²⁵⁵ Principally, EPA has thrived due to the availability of reliable and comprehensive data that showcases its advances, and the cases already settled by state environmental courts.²⁵⁶

On the flipside, the KSA lacks proper way of record-keeping coupled with the reservations for making records of cases publicly available will decrease citizen their awareness on the existing laws. Besides, of most importance, the lack of

²⁵⁵ Faisal Alturki, *Promoting Sustainable Development Through Environmental Environmental Law: Prospects for Saudi Arabia*, 2015, <https://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1016&context=lawdissertations>.

²⁵⁶ OECA US EPA, *Civil Cases and Settlements*, [cfpub.epa.gov](https://cfpub.epa.gov/compliance/cases/), <https://cfpub.epa.gov/compliance/cases/>.

environmental courts has hindered chances of creating public awareness in KSA, a thing that is much practical in the US state courts we have mentioned earlier. In the US, special legislation notices issue public education campaigns, and every region targeted by a given regulation is informed about these laws before they are adopted.²⁵⁷

4. PUBLIC PARTICIPATION IN URBAN PLANNING

A. Local Level

This important level has a significant impact on the environment in the communities, as it opens many opportunities for public participation. Public participation here is a local matter, not to confuse it with public participation I mentioned about the EPA, which is at the federal level. This participation will also contribute to KSA's 2030 Vision planned goals. Consistent with my main argument, once citizens participate in urban planning in their communities, this will more likely increase their environment awareness. The reason why I chose urban planning is because I believe that when citizens have a say in their community needs, this will make them more aware of the importance of taking care and protecting the environment. Based on that, it is necessary to provide examples of public participation in urban planning at the local level.

There are some models of public participation in urban planning in the US that are worth emulating and Newcastle, NY is one of them. The use of New Castle will be the model for comparison in terms of the effectiveness in public participation in urban

²⁵⁷ Faisal Alturki, *Promoting Sustainable Development Through Environmental Environmental Law: Prospects for Saudi Arabia*, 2015, <https://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1016&context=lawdissertations>.

planning. It is informed by the fact that the town is well known for intensified efforts in urban planning and public participation.²⁵⁸

In addition, the Town of New Castle was chosen to participate in the Westchester County Department of Planning's Comprehensive Plan Base Studies Program.

²⁵⁹Following the completion of the initial outreach and delivery of the Town's Base Studies, the Town collaborated with the Pace University Land Use Law Center to starts a one-year public outreach process to reflect residents' goals, objectives, and vision for the Town. ²⁶⁰

Based on that, I chose New Castle as a model for my comparison with a Saudi city.

As mentioned earlier, it is obvious that New Castle has opened many opportunities for its residents to participate in urban planning. This plan is very beneficial to residents to an extent that a collaboration has been done between New Castle and Pace University Land Use Law Center. ²⁶¹

a. The public participation in urban planning in The New Castle NY:

The principle of public participation is very important in the United States of America, not only for urban planning and design but for many other issues. The amendments to section 8 of the Community Participation Plan (CPP) made it mandatory for the involvement of the community in planning functions relating to urban development and urban planning.²⁶² Besides, the amendments made it

²⁵⁸ Town of New Castle, *About The Plan*, plannewcastle.us (2018), <https://plannewcastle.us/abouttheplan>.

²⁵⁹ *Id.*

²⁶⁰ *Id.*

²⁶¹ *Id.*

²⁶² Office of Strategic *Planning and Community Development*, City of Somerville, Massachusetts Office of Strategic Planning and Community Development, (2020) <https://www.somervillema.gov/sites/default/files/community-participation-plan-amendment-2020.pdf>.

compulsory for the states to use a well detailed protocol like the one stated in section VI while conducting public hearing.²⁶³ The major aim of the above amendments was to provide the scope of involvement based on the nature of the proposed project and the projected impacts on the public²⁶⁴. This came at a time when the town of New Castle NY was in the process of adopting its Comprehensive Plan Update that set forth specific goals meant to preserve the towns' bucolic residences and historical resources as well promote the multifaceted use of development to meet the housing needs of the residents.

Public participation in urban planning in the New Castle can be tied closely to the elements of a comprehensive plan.²⁶⁵ First and foremost, public participation in New Castle in the current shows the existent efforts of the public to take part in urban planning.²⁶⁶ This is known as the existing conditions which forms the first element of the comprehensive plan. Notably, comprehensive plan was developed in 1989 as a culmination of public participation programs that involved consensus, capacity building and deliberations on what was the best for the city.²⁶⁷ The existing conditions as it applies to the situational and occasional needs illustrates how the community authorities engage the public in ratification, alteration, and revision of sections of the document to align its objectives to the prevailing conditions.²⁶⁸

²⁶³ *Id.*

²⁶⁴ Office of Strategic Planning and Community Development, "*Citizen Participation Plan*," City of Somerville, 2020. P. 10
http://www.thesomervilletimes.com/getnews/tst_10_21_20.pdf.

²⁶⁵ New Castle Town Board, *A FRAMEWORK FOR THE FUTURE OF NEW CASTLE*, (2017), <http://www.wmpf.org/wp-content/uploads/2018/08/Approved-2017-Comp-Plan.pdf>.

²⁶⁶ *Id.*

²⁶⁷ *Id.*

²⁶⁸ *Id.*

Suburban community in The Town of New Castle uses two major initiatives to encourage public participation regarding urban design and development.²⁶⁹

The city operates on the New Castle Comprehensive plan, a document that outlines the community's vision for the preservation of the unique strengths of the town while simultaneously addressing the needs of the town fifteen to twenty years to come.²⁷⁰

The latest version of the New York's environmental agenda is the 2017 New Castle Comprehensive plan. Notably, the 2017 New Castle New York Comprehensive plan has continued to maintain the tradition of societal planning.²⁷¹

The New Castle Comprehensive Plan contains the third element of comprehensive plan, the economy element. Generally, the economy element indicates the inventory relating to the economic stand of a particular community. As it applies in the case of New Castle, there is an intense investment in technology that helps New Castle New York governance to receive public complaints, compliments, and suggestions, which then form the agenda for public participation forums and sessions. The Hamlet is largely considered as a retail destination besides being a residential location with extensive open space.²⁷² Hence, to monitor the huge residents and visitors' traffic, high-speed cameras are monitored at the specific location of hamlet.²⁷³ Similarly, the hamlet operates web-enabled sensors installed in critical manholes to monitor water flow through a smart meter. To keep an updated condition of public infrastructure, the authorities use feedback from the motor vehicle sector and pedestrians.²⁷⁴

²⁶⁹ *Id.*

²⁷⁰ *Id.*

²⁷¹ *Id.*

²⁷² *Id.*

²⁷³ *Id.*

²⁷⁴ *Id.*

Public participation has been pivotal and sustenance of the unique features of New Castle as a hamlet within New York. For instance, despite the population burst in the hamlet amidst housing constraints, the local authorities of the hamlet cannot construct extra housing units in the extensive open spaces within the city. The residents of New Castle hamlet, through public participation forums and engagement surveys, rejected such a proposal arguing that open spaces are what makes New Castle unique from other neighboring hamlets. Similarly, the characteristic “gate” houses and two-family houses that stand as single-family homes have been spared of demolition due to public engagement and participation in the hamlet.²⁷⁵

Despite the efforts to replace such houses with modern units as part of the infill development like the case in most suburban areas, New Castle residents have, through periodic feedback have expressed satisfaction with single-family residential homes, sparing hem of demolition.²⁷⁶

b. Public participation and urban planning in the Dammam Metropolitan Area

King Abdul Aziz in Makkah embraced public participation through the establishment of the Shura system in 1926.²⁷⁷ This system was issued by King Abdelaziz on August 29th, 1926, and it was a new basic law of governance.²⁷⁸ The system has largely been lauded as the driving forces behind the progressive development of citizen participation and legislation in the Kingdom.²⁷⁹ For instance,

²⁷⁵ *Id.*

²⁷⁶ *Id.*

²⁷⁷ The Shura Council, *Majlis Ash-Shura - Historical Background*, shura.gov.sa (1926), <https://shura.gov.sa/wps/wcm/connect/ShuraEn/internet/Historical+BG/>.

²⁷⁸ *Id.*

²⁷⁹ Alshihri, Faez, Adel Bouregh, and Fahad Al-Harigi. "Public Participation In Preparing Urban Plans, Kingdom Of Saudi Arabia: The Case Of Dammam Metropolitan Area. (Dept. A)". *Bulletin Of The Faculty Of Engineering. Mansoura University* 39, no. 2 (2013): P.8 https://bfemu.journals.ekb.eg/article_102872_d7b2cde1b4f88cea49b2d7bf217c9b3f.pdf.

the decision by the Saudi government to declare the formation of municipal councils was mainly necessitated by the need to embrace inclusivity and public involvement in issues relating to city development, and hence offer solutions to some problems affecting the local society by Saudi appointed members not for whole public.

The growth and development of the Dammam Metropolitan Area (DMA) as a tri-city incorporating Dhahran and Al-Khobar and hence the capital city of the Eastern province has been largely due to the design and planning of the metropolitan region. Based on this large metropolitan area, some argue that public participation in urban planning in Dammam is highly important.²⁸⁰ Also, this has to be facilitated through the integration of both men and women alike in the entire planning process. This is a subtle process, yet fundamental in preparing a city like Dammam to effectively engage its residents in the planning process.

The Eastern province of KSA holds the largest oil reserve in the world, a fact that has led to the rapid urbanization of the Dammam Metropolitan Area and hence the subsequent unparalleled efforts by the Saudi government planning authorities to develop plans that can effectively accommodate urban growth.²⁸¹ Urban planning and design professionals in Dammam Metropolitan Area insist that for such plans to be successful, they need to engage the public which not only influences decisions that affect communities but also the environment and personal lives²⁸²

The top-down approach in urban planning that allowed authorities to use powers and authority when planning for cities while segregating the public have been replaced by elaborate planning provisions. Unlike the top-down approach, a bottom-

²⁸⁰ *Id.*

²⁸¹ *Id.*

²⁸² *Id.*

up approach embraces the diversity of ideas and opinions, thereby increasing the effectiveness of the Dammam Metropolitan Area plans to accommodate future expansion as well as adhere to the environment conservation and protection provisions as required by Meteorology and Environmental Protection Authority (MEPA).

Arguing for the importance of public participation and taking Dammam as a case study, Alshiri et al (2014) argues that the general approach is that public participation must always start with the identification of either a social problem or an urban planning issue that requires attention.²⁸³ While the initial identification is done by urban plans, the involved professionals often use public participation to identify more interconnected issues that affect the municipality and hence develop a holistic approach as opposed to piecewise solutions.²⁸⁴ Identification is then followed by panning, which involves a breakdown of the problems into executable tasks and the expected outcomes upon completion. Alshiri et al (2014) asserts that a plan, as per the definition of the Dammam Metropolitan Area planners, is not a personal professional document but instead a culmination of the planning process that brings together such professionals and members of the public.

Public participation is regarded as one of the core principles that control the preparation of urban plans. Alshiri et al (2014) emphasizes that municipal officials often emphasize the positive outcomes of public participation even though such engagements are time-consuming and require extra resources to organize for forums.²⁸⁵

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *Id.*

Based on all the data that the author considers in the effectiveness of public participation in urban planning In Dammam Metropolitan Area, so professionals, municipality official and urban planning, and design experts advocate for equal participation of every resident of the municipality in urban planning.²⁸⁶ As a result, Dammam Metropolitan officials have exhibited their enthusiasm in implementing public participation by involving men and women in democratic processes. Thus, professionals and officials have exhibited great interest in public participation in urban planning.

Alshiri et al (2014) argues that one way in which the officials have ensured creation of public participation is by creating equal platform for men and women to vote and participate in urban planning. Before 2012, women were not allowed to vote, and in the previous elections (2005 and 2011), only men participated in the electoral process.²⁸⁷ Meanwhile, the subtle engagement of the members of public in urban planning leads to creating a formidable ground of creating public awareness. Thus, Alshiri et al (2014) mentions that the officials in Dammam sought to establish plans and benchmarks for the KSA to effectively optimally introduce public participation steps.²⁸⁸

Based on the article about DMA, it is recommended to identify a comprisable position where both the public and the municipality managers agree on the best standards of realizing public participation. Also, all cities and municipalities in KSA should identify best plans for implementing public participation. Thus, there should

²⁸⁶ *Id.*

²⁸⁷ *Id.*

²⁸⁸ *Id*

be well-created legal frameworks that aid in fostering public participation in the entire country.²⁸⁹

c. Elements of successful comprehensive plan

William I. Goodman, a well-known author on the subject of comprehensive planning,²⁹⁰ stipulates six conditions that every plan must fulfill. First and foremost, the plan needs to be very comprehensive, and must exhibit the long-range. Also, the plan should be general and have a focus on physical development. Other elements of a good plan include; having an ability to effectively relate physical design proposals to the community goals alongside social and economic policies. Finally, there needs to be first a policy instrument and later a technical instrument.²⁹¹

Furthermore, Goodman gives detailed procedures that needs to be followed in creating a comprehensive plan. The first requirement is to only adopt an official comprehensive plan. Also, the legislative body must officially adopt the plan, and it must be understandable and available to the public. The public must equally be given a relatively long period to read and adopt the plan. Finally, the plan must be formulated to capitalize on the educational potential. Finally, there are certain elements that must be integrated within a comprehensive plan. However, these elements vary from one community to the other. The first aspect of the plan is to establish and study the existing conditions as well as discussions of the future goals, trends and objectives. Other aspects of the plan studied are; the land use patterns,

²⁸⁹ *Id.*

²⁹⁰ Comprehensive Planning - *Land Use Planning - Local Community Resources* - University of Illinois Extension. <https://web.extension.illinois.edu/lcr/comprehensiveplanning.cfm>.

²⁹¹ *Id.*

population, roadways, and population infrastructures conditions among others.²⁹² In some instances, development of an effective plan requires studies and reviews of educational facilities together with the recreational facilities. Also, the social service facilities are integrated into the plan, which overtly relate to land-use issues.

A comprehensive plan is heavily characterized by the aspect of inclusivity. Initially, the development of the comprehensive plan only involved experts who were responsible for gathering and synthesis of the required data. Besides, the experts were delegated with formulation an evaluation of viable alternatives alongside development and implementation of policies. However, the development of comprehensive plans has significantly evolved over time. In the current, inclusive community participation is considered as the hallmark of effective development of comprehensive plans.²⁹³ Notably, the comprehensive plans play a significant role in analysis of issues, generation of visions, development of plans, and evaluation of outcomes. Also, planners have resorted to engagement of the minority, underserved, and poor groups who were initially excluded form planning process. Comprehensive plan has been successful is achieving its goals at a grand scale.²⁹⁴

D. Comparing public participation in New Castle New York and Dammam Metropolitan Area (DMA)

In New Castle, there are public participation orders and notices on any impending environmental regulation, while in Dammam, there is no law established on public participation. The only formal way of public participation in Dammam is

²⁹² *Id.*

²⁹³ David Rouse, "What Makes a Comprehensive Plan Effective?", 2019 <https://davidrousefaicp.com/what-makes-a-comprehensive-plan-effective/>.

²⁹⁴ *Id.*

through Saudi appointed members in municipal councils. In this municipality, both genders directly participate in decision-making process, while in New Castle, it has established standards of public participation.

The level of public participation is more advanced in New Castle where there is an established culture of public involvement and laws requiring public meetings on proposals and Dammam Metropolitan Area (DMA) where the KSA as a country adopted public implementation policies (without public participation) and hence pushing for the implementation of the same across all municipalities. While Dammam Metropolitan Area (DMA)'s appointed members collect nonbinding opinions, ideas, and criticism for adoption in the creation of urban development plans, New Castle uses binding feedback to adjust the New Castle New York Comprehensive plan.²⁹⁵

This illustrates the different levels of implementation of public participation in the two countries with New Castle New being at a more advanced level than the Dammam Metropolitan Area. Dammam Metropolitan Area is still in the phase of developing plans whose implementation is still subject only to the government.²⁹⁶ However, New Castle is beyond the implementation stage and mainly uses public opinions to establish the effectiveness of the New Castle New York Comprehensive plan and execute the necessary adjustment to increase such effectiveness.

While New Castle seeks to exist as a preferred retail center and residential hamlet with historical attachments within the state of New York. Dammam

²⁹⁵ New Castle Town Board, *A FRAMEWORK FOR THE FUTURE OF NEW CASTLE*, (2017), <http://www.wmpf.org/wp-content/uploads/2018/08/Approved-2017-Comp-Plan.pdf>.

²⁹⁶ Alshihri, Faez, Adel Bouregh, and Fahad Al-Harigi. "Public Participation In Preparing Urban Plans, Kingdom Of Saudi Arabia: The Case Of Dammam Metropolitan Area. (Dept. A)". *Bulletin Of The Faculty Of Engineering. Mansoura University* 39, no. 2 (2013). P.12 https://bfemu.journals.ekb.eg/article_102872_d7b2cde1b4f88cea49b2d7bf217c9b3f.pdf.

Metropolitan Area is on the verge of becoming an industrial hub and a business beehive. Hence, public participation relating to urban planning and design serves different roles in the two regions. For instance, Dammam Metropolitan Area intends to use feedback from resident's forums and platforms to expand the existing infrastructure, redesign initial systems, expand its capacity in anticipation of a robust population and development growth if public participation in urban planning is allowed.²⁹⁷

Located between two other smaller cities, the Dammam Metropolitan Area's focus is to engage the public in the formulation of urban development plans that not only focuses on the current population within the city but also caters to a possible influx from the neighboring cities, again when the public participation law is established.²⁹⁸

Public participation, in the context of New Castle NY, is meant to address aesthetics of the hamlet and compliance to environmental concern. Compliance with environmental protection and conservation policies is a compulsory requirement for all hamlets within the state of New York.²⁹⁹ Hence, New Castle uses public participation to identify some of the best approaches to enhance compliance and hence support the national call to be environmentally conscious. The residents are periodically engaged to give opinions on how to amend the comprehensive plan to

²⁹⁷ Alshihri, Faez, Adel Bouregh, and Fahad Al-Harigi. "Public Participation In Preparing Urban Plans, Kingdom Of Saudi Arabia: The Case Of Dammam Metropolitan Area. (Dept. A)". *Bulletin Of The Faculty Of Engineering. Mansoura University* 39, no. 2 (2013). P.12 https://bfemu.journals.ekb.eg/article_102872_d7b2cde1b4f88cea49b2d7bf217c9b3f.pdf

²⁹⁸ *Id.*

²⁹⁹ New Castle Town Board, *A FRAMEWORK FOR THE FUTURE OF NEW CASTLE*, (2017), <http://www.wmpf.org/wp-content/uploads/2018/08/Approved-2017-Comp-Plan.pdf>

maintain the bucolic tag of the residence as opposed to reconstructing the hamlet to accommodate a growing population. Despite its location in New York (a location at least a half-hour north of NYC), New Castle hamlet residents are opposed to utilization of the open spaces as the hamlet will lose its historical associations and are instead open to the improvement of the parking spaces, drainage systems and social amenities to guarantee more comfort to the residents.³⁰⁰ The approach adopted and the nature of feedback sought during public participation is often aligned with the objectives of public participation. Hence, for New Castle NY, the objectives are not to expand on the residential amenities or deconstruct the hamlet to allow room for modern structures but instead to maintain the current infrastructural arrangement while improving on the overall comfort of the residents.³⁰¹

New Castle and Dammam Metropolitan Area (DMA) are in different stages of implementation of public participation in urban planning and development and enforcement of compliance to environmental protection. For instance, DMA is poised to be the biggest city in KSA which wants to adopt the proposal of public participation. If public participation will be allowed, urban design for upcoming cities will not be limited to planning for the provision of housing, infrastructure and other social amenities; it will involve aesthetic aspects meant to solve social problems that arise from poor designs and setups.³⁰²

Dammam Metropolitan Area (DMA) expects a further increase in population due to its centrality within the Eastern province and the plenty of job opportunities

³⁰⁰ *Id.*

³⁰¹ *Id.*

³⁰² Alshihri, Faez, Adel Bouregh, and Fahad Al-Harigi. "Public Participation In Preparing Urban Plans, Kingdom Of Saudi Arabia: The Case Of Dammam Metropolitan Area. (Dept. A)". *Bulletin Of The Faculty Of Engineering. Mansoura University* 39, no. 2 (2013). P.12 https://bfemu.journals.ekb.eg/article_102872_d7b2cde1b4f88cea49b2d7bf217c9b3f.pdf

from the oil exploration sector. The involvement of the public in the development of the city's plan will therefore enabled utilization of space, avoidance of environmental conflicts, the general aesthetic outlook of the city and increased public awareness in environmental issues.

New Castle Hamlet is one of the dream residential hamlets within New York due to its serene atmosphere, organization, and single-family houses characteristic of the city.³⁰³ To the best of my knowledge, there are no studies that try to compare the challenges faced by the New Castle Hamlet and Dammam. The primary reason for updating the Comprehensive Plan was to establish an equilibrium between the demand to accommodate targeted population growth and the demand to contain life quality in essence of natural resources.³⁰⁴ Through public participation, New Castle city government has on several occasions been compelled to halt proposals to replace the existent units with space-economic structures as well as hold back on plans to erect more housing units on the numerous spaces within the city³⁰⁵. Similarly, through public participation, the management of New Castle collects important feedback that is used in the adjustment of existing structures and infrastructural establishments to offer the best service to the residents of the city. It can be argued that despite its powers, the management of New Castle is more of an implementation authority as opposed to a decision-making organ since in most cases, members of the public subject decisions relating to public structures to participation and approval.³⁰⁶

³⁰³ New Castle Town Board, *A FRAMEWORK FOR THE FUTURE OF NEW CASTLE*, (2017), <http://www.wmpf.org/wp-content/uploads/2018/08/Approved-2017-Comp-Plan.pdf>

³⁰⁴ *Id.*

³⁰⁵ *Id.*

³⁰⁶ *Id.*

With the public participation in New Castle, it has become very easy for this council authority to enforce environmental standards and policies to the people. For example, suburban New Castle has initiated several environmental conservation projects that have improved the beauty and aesthetics of the municipality.³⁰⁷ Thus, with public participation, New Castle has been able to enforce maiden changes such as rallying the public in social and environmental services such as tree planting and among other exercises.³⁰⁸

³⁰⁷ *Id.*

³⁰⁸ *Id.*

V. Chapter 5: Results

A. Introduction to Results

From the previous chapters, it has been made clear that the Kingdom of Saudi Arabia KSA lacks environmental courts, although the benefits of such institutions are apparent in other regions, the United States being a comparative case. As mentioned before, the US has a few environmental courts at the state level, yet they are good examples.

Despite the limitless efforts to establish environmental control policies, KSA has not realized its full potential. The absence of environmental courts has remained a pressing matter in this region. Principally, environmental law courts have a significant role in helping a state realize adequate protection of the environment. However, with the absence of environmental court jurisdictions, it is clear that KSA will not have a safe environment if the most effective ways of protecting the same are not put underway.

As indicated earlier, the driving force for this dissertation was to establish the deficiencies in the environmental law and standards in KSA while benchmarking the results with the USA's case. Apart from environmental law courts' deficiency, it was made clear that KSA lacks public participation framework in the previous sections. This is another factor that has remained detrimental to the efforts of maximizing the protection of the environment. From practical perspectives, it is well known that the public will always adhere to the laws that it is aware of. Notably, involving the public in the development of policies goes a long way in digging deeper into the public views and creating the fittest policies. Due to the absence of public participation

framework, the Kingdom of Saudi Arabia has experienced a slow pace in implementing environmental laws.

Taking the case of KSA into consideration, there is a need to establish a transparent system of rules that will govern the environment's standards. As the previous research has indicated, “unless a strong body is established and enforced, environmental degradation will risk compromising the country’s future.”³⁰⁹ In line with this argument, I believe that the establishment of environmental courts will be a useful tool to protect the environment in a country that relies heavily on oil and gas production.

KSA is located in the heart of a desert, and therefore most of its sustainable activities aim to use oil and gas. In essence, exploitation of oil deposits is the main activity that steers most activities in KSA. Previous research indicates that a lack of adequate environmental courts will lead to overexploitation of KSA's natural resources, which will lead to the drying up of oil and gas reserves. Consequently, KSA will lack adequate natural resources for the current and future generations. Therefore, it is exceedingly important to note that this problem can be explicitly resolved by establishing sound regulatory policies through the help of the courts and public participation in that respect.

The most significant part of this dissertation has indicated that the best practice KSA can have to establish firm regulations. However, firm regulations can be reached through integrating development of the policies with the public's views. As an extension, effective environmental policies can be realized through heightened public participation. Notably, Islam has a well-outlined role in ensuring proper management

³⁰⁹ Alturki, Faisal K. "Promoting sustainable development through environmental law: Prospects for Saudi Arabia." (2015). <https://digitalcommons.pace.edu/lawdissertations/17/>.

of the environment. On the baseline, empirical evidence illustrates that religious doctrines play a vital role in reinforcing the government's environmental policies and regulations. In many regions, most religions hold environmental protection with unquestionable regard and are in the front line in inspiring people to protect the environment. Despite the fact that KSA consider Islam's views in its policies, there is a need for stronger attempts to protect the environment. This study suggests that what is needed to fortify those efforts is strong and meaningful public participation in adopting and enforcing environmental regulations and policies.

Earlier on, this study made it clear that in the two countries, KSA and the US, various authorities focused on implementing environmental laws. In the case of KSA, it was stated that Meteorology and Environmental Protection Authority (MEPA) is the heart of regulations related to the environment. On the other hand, the US has the Environmental Protection Agency (EPA) as the critical formulator of policies concerning protecting the environment at the federal level.

Alongside the information provided by MEPA, data drawn from the Ministerial Committee on Environment (MCE) has been useful in propelling this research's objective. It is important to note that apart from MEPA, KSA has other authorities such as the Ministry of Environment Water, Agriculture, and Ministry of Petroleum and Energy develops policies governing exploitation of oil and petroleum products in KSA. Lately, KSA has established five other organizations to work in place of MEPA.³¹⁰ Among the five organizations, the critical player governing environmental policies' formulation is the Ministry of Environment, Water, and Agriculture.³¹¹

³¹⁰ Gov.sa, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

³¹¹ *Id*

Principally, all the newly established organizations have been tasked with various missions to promote environmental protection and prosperity in KSA.³¹²

It is important to note that unlike organizations in KSA, the US's EPA is a federal government agency. This means that, as opposed to KSA's environmental protection organizations such as MEPA, the EPA has the authority to take legal actions against the environmental policies' violators, when they violate federal environmental laws.³¹³

KSA has also established notable efforts to punish those who violate the environment, but the outcome is still little.³¹⁴ For instance, KSA has recently provided environmental police to take a legal action which was established in 2019.³¹⁵ However, the environmental police are subordinate to the Ministry of the Interior not to MEPA, which is an executive body, and not a judicial body.³¹⁶ This explains why KSA needs an environmental judicial body such as a specialized environmental court with the full trappings of power to enforce the environmental laws as is.

B. Research Results Obtained from Sources

Previous studies have helped analyze the issue by revealing that KSA, unlike the US, lacks public participation in urban planning. Although KSA has MEPA as an environmental protection agency (which is noneffective agency), it lacks environmental courts and tribunals to foster the implantation of environmental policies and regulations.

³¹² *Id.*

³¹³ US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

³¹⁴ SPA, *Drive to stamp out environmental violations in Saudi Arabia*, Arab News (2020), <https://www.arabnews.com/node/1613226/saudi-arabia>.

³¹⁵ Khaled Althagafi, *Interior Ministry to form new environmental police force*, Saudigazette (2018), <https://saudigazette.com.sa/article/544519>.

³¹⁶ *Id.*

With respect to the US's case, there is a relatively higher degree of public participation in urban planning. On a similar note, the US has EPA at the federal level, environmental courts such as the Hawaii's Environmental Courts,³¹⁷ Shelby County Environmental Court³¹⁸, and Vermont Superior Court Environmental Division,³¹⁹ at the state level, which has translated to better ecological sustainability within the region. The explanation for this phenomenon requires detailed evidence like the one illustrated in the following sections.

C. factors that affect public participation and environmental management in KSA.

Lack of public participation in Saudi Arabia's urban planning is more likely attributed to the rise of energy consumption. The rising demand for energy is causing a great strain on the environment.³²⁰ For instance, Saudi Arabia has lately experienced a surge in population growth as well as economic prosperity.³²¹ This accelerated growth has come with huge demand infrastructural expansion to accommodate the

³¹⁷ Hawaii State Judiciary, *Environmental Court*, www.courts.state.hi.us, https://www.courts.state.hi.us/special_projects/environmental_court#:~:text=Hawaii.

³¹⁸ Shelby County Environmental Court / *Shelby County*, TN - Official Website, WWW.SHELBYCOUNTYTN.GOV, <https://www.shelbycountyttn.gov/353/Environmental-Court>.

³¹⁹ Environmental Division | *Vermont Judiciary*, www.vermontjudiciary.org, <https://www.vermontjudiciary.org/environmental>.

³²⁰ Al kanani, A., et al. "Energy Efficiency in Residential Buildings in the Kingdom of Saudi Arabia." Building Information Modelling, Building Performance, Design and Smart Construction. (2017), p.129
https://www.researchgate.net/publication/315854855_Energy_Efficiency_in_Residential_Buildings_in_the_Kingdom_of_Saudi_Arabia

³²¹ Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018),
https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FIN_AL.pdf.

growing number of people.³²² Consequently, the growth in infrastructure has led to increased demand for energy use, especially in the residential and industrial setups.³²³ The trend in economic and social growths have been experienced globally.³²⁴ In Saudi Arabia, the demand for green building is gaining tractable effect given the huge cooling needs required by these buildings. It is estimated that 70% of the Saudi's electricity is consumed by air conditioning systems due to the prevalence of hot and humid climate across the year.

In the US, winters come with increased demand for heating, but the green building concepts already installed in many states.³²⁵

The elevated energy demand in Saudi puts more pressure on the government to either adopt passive architectural design or sound energy practices to meet this growing demand for energy use. There is an agreed observation that adopting the right construction materials and using renewable energy sources could reduce the energy consumption by 30%.³²⁶ Thus, energy conservation in buildings is one way of realizing environmentally friendly and sustainable practices in the use of natural resources. Saudi, unlike the US has higher energy demand due to the hot and humid climate requiring cooling throughout the year. Some of the existing solutions to extreme energy demand include adopting the green building concepts that will require

³²² Al kanani, A., et al. *"Energy Efficiency in Residential Buildings in the Kingdom of Saudi Arabia."* Building Information Modelling, Building Performance, Design and Smart Construction. (2017), p.129

³²³ *Id.*

³²⁴ *Id.*

³²⁵ U.S BUREAU OF LABOR STATISTICS, *Careers in Green Construction* : U.S. Bureau of Labor Statistics, Bls.gov (2017), <https://www.bls.gov/green/construction/>.

³²⁶ Al kanani, A., et al. *"Energy Efficiency in Residential Buildings in the Kingdom of Saudi Arabia."* Building Information Modelling, Building Performance, Design and Smart Construction. (2017), p.129
https://www.researchgate.net/publication/315854855_Energy_Efficiency_in_Residential_Buildings_in_the_Kingdom_of_Saudi_Arabia.

low to moderate energy use.³²⁷ On the same note, in 2030 vision of KSA, the government has reiterated on the importance of using renewable energy sources as a way of reducing dependency on fossil fuels.³²⁸

D. Level of responsibility among People towards the Environment:

The Case of KSA Compared to the USA.

A. Comparative Levels of Consumption of Electric Power

The results from my research show that in recent times, KSA has made notable efforts in environmental protection. Indeed, "the kingdom has made remarkable progress in strengthening sustainability in pursuit of Vision 2030."³²⁹ KSA has a very impressive natural potential to harness renewable energy through the adoption of measures such as strategic investments. Consequently, various signature projects have been launched with the goal of optimizing the energy mix within the country. However, the latest results show that environmental challenges are still persistent in KSA. This is so because the state's policies and regulations do not prohibit overconsumption of natural resources such as oil. Arguably, due to lack of environmental courts, public awareness and public participation, people in KSA have increasingly continued to consume electric power.

³²⁷ U.S BUREAU OF LABOR STATISTICS, *Careers in Green Construction* : U.S. Bureau of Labor Statistics, Bls.gov (2017), <https://www.bls.gov/green/construction/>.

³²⁸ Joe Lo, *Saudi Arabia aims for 50% renewable energy by 2030, backs huge tree planting initiative*, 2021, <https://www.climatechangenews.com/2021/03/31/saudi-arabia-aims-50-renewable-energy-2030-backs-huge-tree-planting-initiative/>.

³²⁹ Ministry of Municipal and Rural Affairs. "*Saudi Cities Report 2018*." (2019). [HTTPS://UNHABITAT.ORG/SITES/DEFAULT/FILES/DOCUMENTS/2020-05/SAUDI_CITIES_REPORT_-_EXCUTIVE_SUMMARY_ENGLISH.PDF](https://unhabitat.org/sites/default/files/documents/2020-05/saudi_cities_report_-_excutive_summary_english.pdf).

According to the Energy Information Administration (EIA), an average home in the US consumes approximately 11,000 kilowatt-hours (kWh) annually.³³⁰

However, the rate varies in different parts of the country due to the different climatic conditions. In 2019, an average residential home in the state of Louisiana consumed approximately 10,399 kilowatt hours (kWh) annually.³³¹ Compared to the average national consumption rate of 11,000 kWh, the consumption level in 2019 was lower by 601 kWh.³³²

In 2020, an average home for a U.S. residential utility had an annual consumption of 10,715 kilowatt-hours (kWh).³³³ The slight increase can be attributed to the increased stay at home among the residents due to the effects of COVID-19. However, even with the increased consumption of electricity in residential home, the rate was still lower compared to the national average. In the US, some of the measures taken by the US federal government to reduce consumption include the implementation of appliance standards for minimum levels of efficiency performance (applied for household items such as washing machines, microwaves, cookers among others),³³⁴ strict implementation of building codes, public education on behavior modification, as well as zoning and commissioning of residential properties.³³⁵

³³⁰ U.S. Energy Information Administration, *Electricity use in homes* - U.S. Energy Information Administration (EIA), [www.eia.gov](https://www.eia.gov/energyexplained/use-of-energy/electricity-use-in-homes.php) (2019), <https://www.eia.gov/energyexplained/use-of-energy/electricity-use-in-homes.php>.

³³¹ Energy Information Administration (EIA), (2021), <https://www.eia.gov/todayinenergy/detail.php?id=49036>.

³³² *Id.*

³³³ Energy Information Administration (EIA) (2021), <https://www.eia.gov/tools/faqs/faq.php?id=97&t=3#:~:text=In%202020%2C%20the%20average%20annual,about%20893%20kWh%20per%20month>.

³³⁴ Office Of Energy Efficiency & Renewable Energy “*Energy Efficiency Policies and Programs*” 2019, <https://www.energy.gov/eere/slsc/energy-efficiency-policies-and-programs>.

³³⁵ *Id.*

Zoning and commissioning are achieved by designating the minimum standard required for buildings within specific areas in terms of insulation, heating, cooling, and the appliances used by the residents.³³⁶

Evidence shows that both state and local governments are at the forefront in promoting energy efficiency programs. The graph below shows the average annual consumption of electricity in the US residential homes between 1960 and 2020.

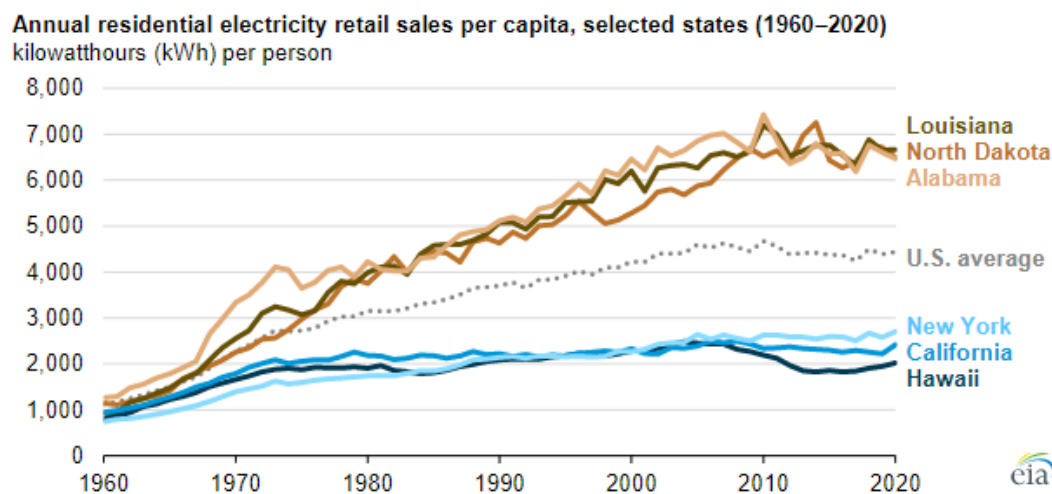


Figure 1: Annual residential electricity consumption in the US³³⁷

Based on data concerning the overconsumption of electric power, the graph below illustrates that KSA's rate is higher than the US. The average energy consumption in residential homes located in the north in 2019 was 1, 4430,000,000 kilowatt hours.³³⁸ This was much higher than the average consumption in the US. This shows that there exists high level of consumption of resources in KSA which depicts low level of responsibility towards the environment as compared to USA.

³³⁶ *Id.*

³³⁷ Energy Information Administration (EIA), (2021), <https://www.eia.gov/todayinenergy/detail.php?id=49036>

³³⁸ Annual Electricity Consumption for Saudi Arabia - Saudi Open Data, Data.gov.sa (2019), <https://data.gov.sa/Data/en/dataset/annual-electricity-consumption-for-saudi-arabia>.

As data suggests,³³⁹ KSA's citizens have not been fully involved in making laws about the environment. They, therefore, lack of optimal understanding of what is expected from them, because the government has not actively involved the public on matters of environmental conservation and management. Thus, public participation is an ideal route that will promote public understanding and loyalty on environmental issues. Therefore, due to the structure of management regulation in KSA has very little room for public involvement.

In a move to reduce energy consumption, the government of KSA should ensure that they create a framework for the involvement of the public in energy consumption. It will also be important to incorporate other stake holders in the economy to ensure that a comprehensive energy consumption reduction strategy is implemented. For instance, the government can work closely with the manufacturers of various electronic home appliances to set the minimum energy efficiency standards for their products. Stakeholders within the construction sector could also be engaged to improve and streamline energy efficiency standards for residential homes. The graph below shows the rate of energy consumption in KSA residential homes between 2012 and 2020.³⁴⁰

³³⁹ *Id.*

³⁴⁰ Annual Electricity Consumption for Saudi Arabia - *Saudi Open Data*, Data.gov.sa (2019) <https://data.gov.sa/Data/en/dataset/annual-electricity-consumption-for-saudi-arabia>.

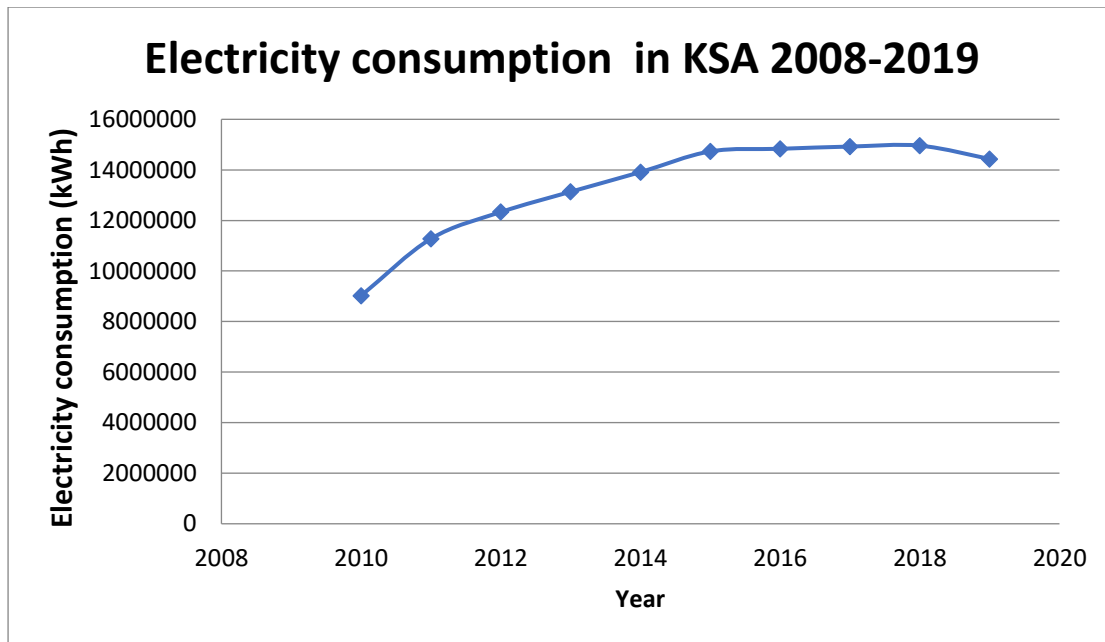


Figure 2: Energy consumption in KSA residential homes between 2012 and 2020³⁴¹

B. Comparative Levels of Water Consumption

The second case considers water consumption in KSA by region. Previous studies indicate that, in KSA, the areas such as Riyadh have been overconsuming the natural resources, and for this case, the levels of water consumption are represented graphically.³⁴² The reports show that in Riyadh, water consumption exceeded one billion cubic meters in 2019.³⁴³ It is important to note how this case is alarming given that “KSA water consumption rate twice the world average.”³⁴⁴

³⁴¹ Annual Electricity Consumption for Saudi Arabia - *Saudi Open Data*, Data.gov.sa (2019) <https://data.gov.sa/Data/en/dataset/annual-electricity-consumption-for-saudi-arabia>.

³⁴² Salma Saleh, Saudi Arabia: *Water consumption by region 2018*, Statista (2019), <https://www.statista.com/statistics/627146/saudi-arabia-water-consumption-by-region/>.

³⁴³ *Id.*

³⁴⁴ ABDUL H. TAGO, "KSA water consumption rate twice the world average," Arab News" (2014), <https://www.arabnews.com/news/532571#:~:text=Mirza%20Barjees%20Baig%2C%20a%20Canadian>.

Meanwhile overconsumption of water in KSA will continue to exist if there is no public awareness creation on optimal water consumption and stronger enforcement of laws curtailing water misuse. For instance, the institutionalization of environmental courts will play a fundamental role in enforcing laws such water management, besides imparting self-responsibility on citizens to manage their water resources. From the closer analysis, in KSA there are community campaigns to rationalize water consumption organized by the Ministry of Environment. The community campaigns are purposely meant to spread awareness to the public about responsible use of water. It is essential to note that people in KSA still need to understand and recognize water's value. This situation has been created due to inadequate public participation and public awareness.

However, compared to the US's case, the EPA has continued to play a vital role in spreading awareness managing water consumption.³⁴⁵ From the EPA website, a website that played a crucial role in this research, my research found that "EPA continues to do campaigns that manage water to maintain progress and implements water projects to reduce water consumption further."³⁴⁶ Water is one such natural resources that EPA, through its website and communication platform tries to sensitize the members of the public.³⁴⁷ Understanding the water bills is one such area of public concern that EPA tries to dispense clear and accurate information to the members of the public.³⁴⁸ Some of the fundamental information it offers include the units of

³⁴⁵ US EPA,OARM, *Water Conservation at EPA* | US EPA, (2015), <https://www.epa.gov/greeningepa/water-conservation-epa>.

³⁴⁶ *Id.*

³⁴⁷ OW US EPA, *Understanding Your Water Bill*, www.epa.gov (2017), <https://www.epa.gov/watersense/understanding-your-water-bill#What%20are%20my%20charges%20going%20towards?>.

³⁴⁸ *Id.*

measuring water use, the pricing of such units and the ways of conserving water as an important resource.³⁴⁹ This sensitization information help a lot in defining an accurate platform for EPA to bring on board the members of public as part of the water resource management and conservation agents.³⁵⁰ Members of the public are therefore educated through the EPA platform to effectively manage and understand their water bills.³⁵¹

Just like EPA does campaigns on the management of resources in the US, Saudi can adopt the same framework embedded on public awareness through campaigns to sensitize members of the public about water management and the importance of conserving their water resource; like what EPA does for its facilities that also could encourage citizens and business to conserve water consumption.³⁵² To support this statement, the website provides a graphical representation of the trend that EPA has taken to prevent water wastages.³⁵³ The EPA provides water usage guidelines, and optimal use standards to avoid water wastage. The movement is represented in figure 1 below.

From the data presented in Figure 1, the graphs show a decreasing trend in the water consumption from 2007 to 2019.³⁵⁴ This steep reduction in water consumption is largely attributed to the intensified EPA's action to create public awareness on resource management where water use is part of it.³⁵⁵ Thus, EPA's practice and management in natural resource management efficiently which can contribute to

³⁴⁹ *Id.*

³⁵⁰ *Id.*

³⁵¹ US EPA, OCSPP, *Pollution Prevention Tips for Water Conservation* | US EPA, US EPA (2013), <https://www.epa.gov/p2/pollution-prevention-tips-water-conservation>.

³⁵² US EPA, OARM, *Water Conservation at EPA* | US EPA, US EPA (2015), <https://www.epa.gov/greeningepa/water-conservation-epa>.

³⁵³ *Id.*

³⁵⁴ *Id.*

³⁵⁵ OMS US EPA, *Water Management Plans and Best Practices at EPA*, US EPA (2015), <https://www.epa.gov/greeningepa/water-management-plans-and-best-practices-epa>.

public awareness and help individual household in understanding their consumption in the US courtesy of this graph and raised the responsibility toward the conservation of water.³⁵⁶

Based on the latter, it shows that the level of water consumption at different points have reduced due to the enforcement of certain Executive Order For example, California in 2014 adopted measures to lower their water consumption voluntarily.³⁵⁷ The 2014 drought situation across Western United States prompted the California's governor Gavin Newsom to initiate water mitigation measures to curb an eventuality of an acute shortage.³⁵⁸ The governor added nine counties and called all residents in these regions to reduce water use by 15 percent in a bid to protect water reserves should the drought conditions persist.³⁵⁹ Such measures have been vital in coping with climate change that has ravaged many parts of the world today.³⁶⁰

In direct contrast, my research has found that in KSA, there has been a surge in water consumption, and perhaps, if there is good public participation, the public will see the need to conserve water resource, which is very expensive and scarce in most Saudi cities.

The evidence is significantly explanatory as presented in the figure 1 below.

To this end, it should be noted that establishing environmental courts, and having strong public participation and awareness creation would go a long way in reducing overconsumption of water in KSA. Besides, public awareness and participation will

³⁵⁶ *Id.*

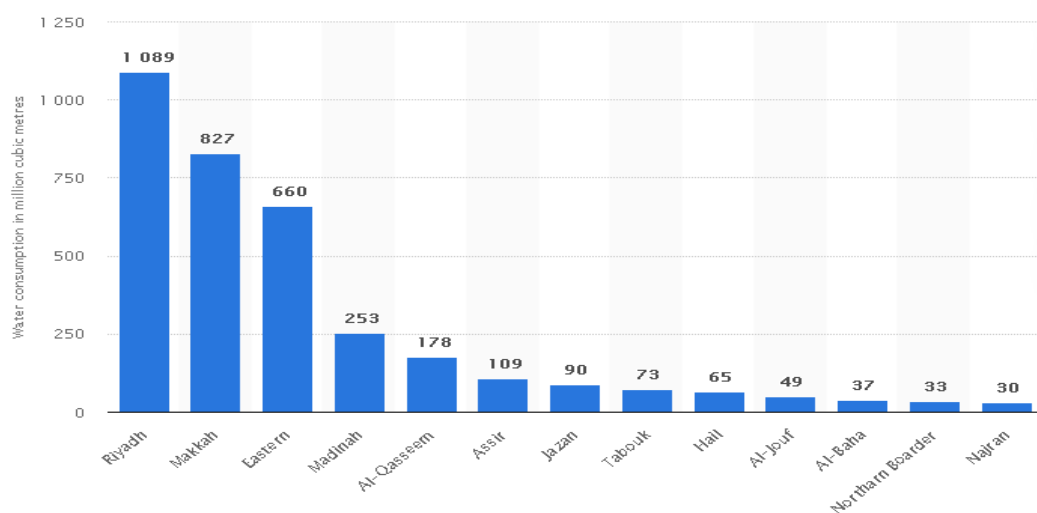
³⁵⁷ As Drought Conditions Intensify, *Governor Newsom Calls on Californians to Take Simple Actions to Conserve Water*, California Governor (2021), <https://www.gov.ca.gov/2021/07/08/as-drought-conditions-intensify-governor-newsom-calls-on-californians-to-take-simple-actions-to-conserve-water/>.

³⁵⁸ *Id.*

³⁵⁹ *Id.*

³⁶⁰ Salma Saleh, Saudi Arabia: *Water consumption by region 2018*, Statista (2019), <https://www.statista.com/statistics/627146/saudi-arabia-water-consumption-by-region/>.

educate the citizens on the need to conserve water resources at the household level, also promoting loyalty in paying taxes on overconsumption water use. All these initiatives will help in conserving the environment in KSA.



Source: Statista Research Department³⁶¹

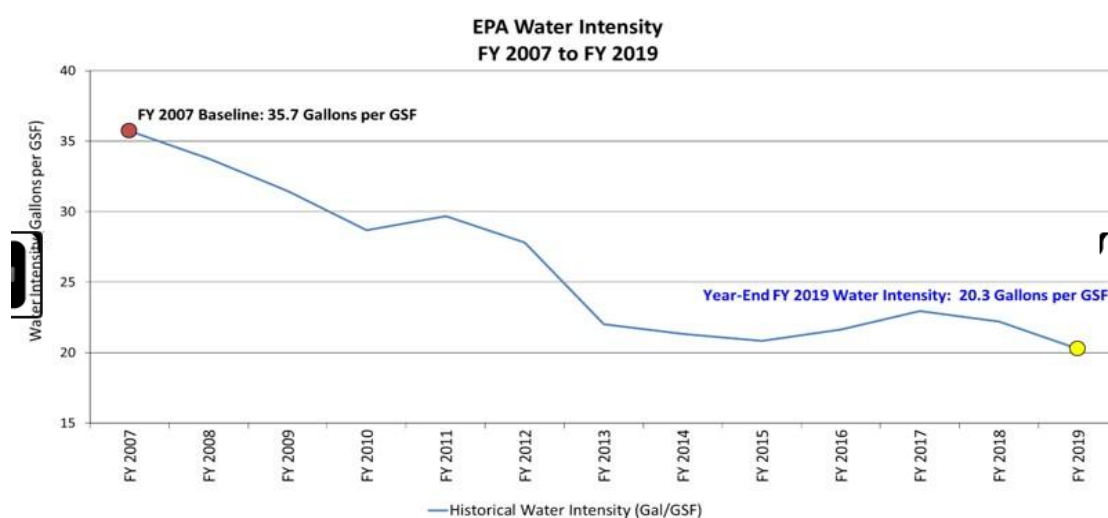


Figure 1: Source: Environmental Protection Agency (EPA)³⁶²

³⁶¹ *Id.*

³⁶² US EPA, OARM, *Water Conservation at EPA* | US EPA, US EPA (2015), <https://www.epa.gov/greeningepa/water-conservation-epa>.

C. Comparative Levels of Waste Production

Furthering the evidence on impacts of lack of environmental courts and public participation and awareness, previous studies show that KSA has experienced increased waste levels during the last years.³⁶³ A survey conducted by Baig et al. (2019) illustrates that “the per capita production of solid waste in the KSA is over 1.5 kg per day, placing the KSA among the highest per capita waste producers in the world.”³⁶⁴ Graphically, the level of concrete waste production in KSA is represented in Figure 2 below.³⁶⁵ The evidence also illustrates that food waste has been a significant contributor to the high level of destruction in KSA. Notably, food waste acts as a significant determinant of the greenhouse gases in KSA.³⁶⁶

The research conducted by Mirza helps us validate that, indeed, the level of greenhouse gases has continued to rise exceedingly over the years.³⁶⁷ Notably, all these problems are closely related to our research problem in that the absence of environmental courts, public participation and awareness has led to low environmental protection strategies in KSA.

On the other side, in the US, it is clear that through federal agencies like EPA, state and local agencies that pertain to the environment, all have contributed to the level of awareness among US citizens towards the environment.³⁶⁸ and this is higher

³⁶³ Baig, Mirza B., Khodran H. Al-Zahrani, Felicitas Schneider, Gary S. Straquadine, and Marie Mourad. "Food waste posing a serious threat to sustainability in the Kingdom of Saudi Arabia—A systematic review." *Saudi Journal of Biological Sciences* 26, no. 7 (2019): 1743-1752. <https://www.sciencedirect.com/science/article/pii/S1319562X18301451>.

³⁶⁴ *Id.*

³⁶⁵ *Id.*

³⁶⁶ Mirza Barjees Baig, Irena Gorski & Roni A. Neff, *Understanding and addressing waste of food in the Kingdom of Saudi Arabia*, 26 *Saudi Journal of Biological Sciences* (2018), <https://www.sciencedirect.com/science/article/pii/S1319562X1830216X>..

³⁶⁷ *Id.*

³⁶⁸ US EPA, *Our Mission and What We Do* | US EPA, US EPA (2019), <https://www.epa.gov/aboutepa/our-mission-and-what-we-do>.

than that of KSA. This explains why the rate of waste production in US decreases with time given that the citizens feel responsible of their actions.

Statistically, the evidence from the selected sources shows that in 2018, the rate of concrete waste production was "292.4 million tons in a year or 4.9 pounds per person per day."³⁶⁹ Notably, this rate is a little bit higher when compared to the case of KSA. But In the US, the environmental regulating agencies in coordination with state and federal agencies have adopted and implanted rough measures aimed at eliminating indiscriminate environmental pollution. Measures such as outlaw of plastic bags and banning of Styrofoam food containers have worked well in minimizing pollution from these non-biodegradable materials.³⁷⁰ These two sets of restrictions have greatly enriched the environment against indiscriminate pollution from individuals as a result of unsustainable industrial actions.

In just 2017, about 139 tons of trash were sent to landfill, with just 35 percent being recycled.³⁷¹ Meanwhile, US households have progressively increased their trash volumes over the years, but it is not yet among the leading recycling nations globally. The concept of environmental leadership is increasingly gaining traction in the US, and this has resulted to more volumes of wastes being recycled each year.³⁷² The main population hubs of San Francisco and Long Angeles achieved unprecedented waste recovery levels when stricter environmental regulations were implemented to compel

³⁶⁹ US EPA, National Overview: *Facts and Figures on Materials, Wastes and Recycling* | US EPA, US EPA (2018), <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>.

³⁷⁰ National Conference of State Legislatures, *State Plastic and Paper Bag Legislation*, Ncsl.org (2021), <https://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>.

³⁷¹ US EPA, National Overview: *Facts and Figures on Materials, Wastes and Recycling* | US EPA, US EPA (2018), <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>.

³⁷² *Id.*

the residents to help the authorities conserve their environment.³⁷³ San Jose, a city in California boasts of adopting a highly circular system of waste recovery.³⁷⁴ There are several bold moves that have been undertaken by different cities across the USA to bolster environmental management and conservation efforts.³⁷⁵ If Saudi Arabia adopts some of those measures and initiatives, it would improve its waste management.

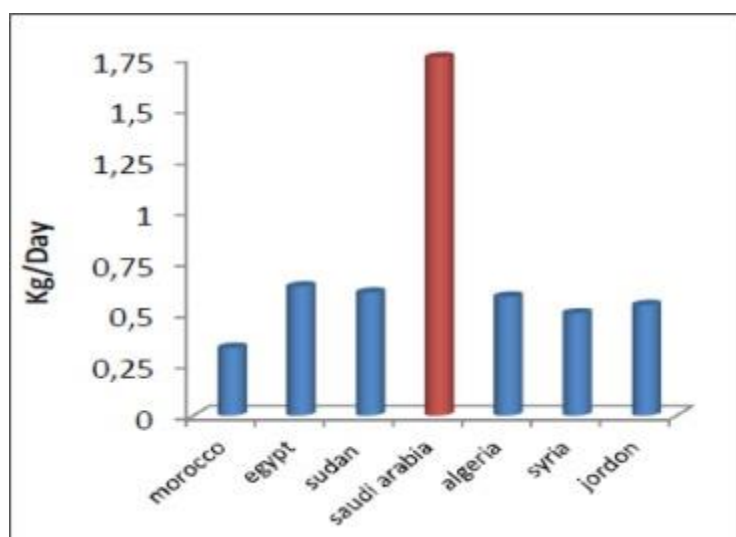


Figure 2: Source: Baig et al., (2019). Solid Waste in KSA when compared to other regions.³⁷⁶

D. Comparative Levels of Voluntary Disclosure among Companies.

The disclosure of product's features by companies on the potential environmental effect is vital for conserving the environment. The Environmental Product Declaration (EPD) report gives a compelling and comprehensive report about the impacts of any

³⁷³ Becca Brewer. *RECYCLING ENVY: TEN AMERICAN CITIES WITH EXCELLENT PRACTICES* (2020). <https://www.bustedcubicle.com/outside/top-american-cities-recycling>.

³⁷⁴ *Id.*

³⁷⁵ *Id.*

³⁷⁶ Baig, Mirza B., Khodran H. Al-Zahrani, Felicitas Schneider, Gary S. Straquadine, and Marie Mourad. "Food waste posing a serious threat to sustainability in the Kingdom of Saudi Arabia—A systematic review." *Saudi Journal of Biological Sciences* 26, no. 7 (2019): 1743-1752. <https://www.sciencedirect.com/science/article/pii/S1319562X18301451>.

product on the environment. The product's lifecycle highly impacts its interaction and effects to the environment. This report begins by documenting the life cycle story of a given product as well as the associated impacts it has on the environment. Some of the impacts include global warming, smog creation as well as ozone depletion.³⁷⁷ This report allows the public consumers to understand and comply with the environmental protection.³⁷⁸

I believe if this report applies to products to meet certain environmental standards, such as electrical appliances, that will help the public to understand the environmental impact of what they purchase and consume. Also, this can also contribute to their understanding of what a product is comprised of, and how it affects the environment over the course of its life cycle. By doing so, this would be useful to increase public awareness and protect the environment.

At the corporate level, one study, while investigating the level of voluntary disclosure among companies in Saudi Arabia, Al-Janadi et al. found that many companies in KSA fail to disclose vital environmental information to the public.³⁷⁹ Consequently, the level of public awareness on environmental issues has continued to decrease in this region.

However, this is not the case on the US's side, given that the EPA ensures that members of the public are well informed about their rights to information on every product they purchase.³⁸⁰ In addition, The Audit Policy of the EPA provides

³⁷⁷ U L, *Environmental Product Declarations Program*, UL, <https://www.ul.com/resources/environmental-product-declarations-program>.

³⁷⁸ *Id*

³⁷⁹ Al-Janadi, Yaseen, Rashidah Abdul Rahman, and Normah Haji Omar. "The level of voluntary disclosure practices among public listed companies in Saudi Arabia and the UAE: Using a modified voluntary disclosure index." *International Journal of disclosure and Governance* 9, no. 2 (2012): 181-201.

³⁸⁰ OCSPP US EPA, *Buying Green for Consumers*, www.epa.gov (2014), <https://www.epa.gov/greenerproducts/buying-green-consumers>.

important incentives for regulated firms to voluntarily discover and fix infractions of federal environmental laws and regulations.³⁸¹ When all of EPA's eligibility conditions are met, the Audit Policy offers companies a 100% reduction in gravity-based civil penalties, as well as a recommendation for no criminal prosecution, in order to encourage voluntary discovery, disclosure, correction, and prevention of environmental violations.³⁸²

As a result, the US has been able to maximize environmental accountability. For the case of KSA, this research found that “KSA needs to issue strong rules concerning” failure to provide voluntary disclosure.³⁸³ Also KSA can provide an incentive program to motivate companies to disclose of environmental information as EPA does. As illustrated by various sources, KSA has initiated efforts to motivate environmental measures. Such measures include programs like "Friends of the Environment" established in Riyadh. Indeed, such programs have helped KSA realize positive results on ecological improvement.³⁸⁴

³⁸¹ OECA US EPA, *EPA's Audit Policy*, US EPA (2019), <https://www.epa.gov/compliance/epas-audit-policy>.

³⁸² *Id*

³⁸³ Al-Janadi, Yaseen, Rashidah Abdul Rahman, and Normah Haji Omar. "The level of voluntary disclosure practices among public listed companies in Saudi Arabia and the UAE: Using a modified voluntary disclosure index." *International Journal of disclosure and Governance* 9, no. 2 (2012): 181-201.

³⁸⁴ Friends of the Environment Association, | *Riyadh Environment* (2019), <https://www.riyadhenv.gov.sa/plan/%D8%AC%D9%85%D8%B9%D9%8A%D8%A9-%D8%A3%D8%B5%D8%AF%D9%82%D8%A7%D8%A1-%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D8%A9/?tab=3>.

E. Comparative Levels of Environmental Violations

As independent cases, my research results show that both countries, KSA and the US, have handled many environmental violation lawsuits. Statistically, in KSA, MEPA “discovered 8,754 environmental violations in Saudi Arabia in 2019.”³⁸⁵ On the other hand, as found my research found, in 2019, “170 criminal cases opened, an increase from 128 in Fiscal Year " 2018" in the US.”³⁸⁶ Nevertheless, the cases of violation of environmental laws in the US remained significantly lower than in KSA due to many institutionalized efforts to protect the environment in both federal and levels.³⁸⁷

From a closer analysis, it turns out that the cases of environmental violations are higher in KSA than in the US. In both cases, environmental violators are subjected to fines and penalties. However, it appears that the efforts by KSA to mitigate environmental violations are ineffective when compared to its benchmark, the US. The higher cases of environmental violations in KSA are directly related to the lack of efficient environmental agency, courts and public participation in urban planning. Therefore, it can be argued that EPA regulations act as a notable deterrent factor.³⁸⁸ As a result, the citizens fear side-stepping between the right and wrong given that

³⁸⁵ Arab News, "*Drive to Stamp out Environmental Violations in Saudi Arabia*," Arab News, last modified January 15, 2020. <https://www.arabnews.com/node/1613226/saudi-arabia>

³⁸⁶ OA US EPA, "*EPA Announces 2019 Annual Environmental Enforcement Results*", WWW.EPA.GOV (2020), <https://www.epa.gov/newsreleases/epa-announces-2019-annual-environmental-enforcement-results>

³⁸⁷ Arab News, "*Drive to Stamp out Environmental Violations in Saudi Arabia*," Arab News, last modified January 15, 2020. <https://www.arabnews.com/node/1613226/saudi-arabia>⁶

³⁸⁸ US EPA, OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

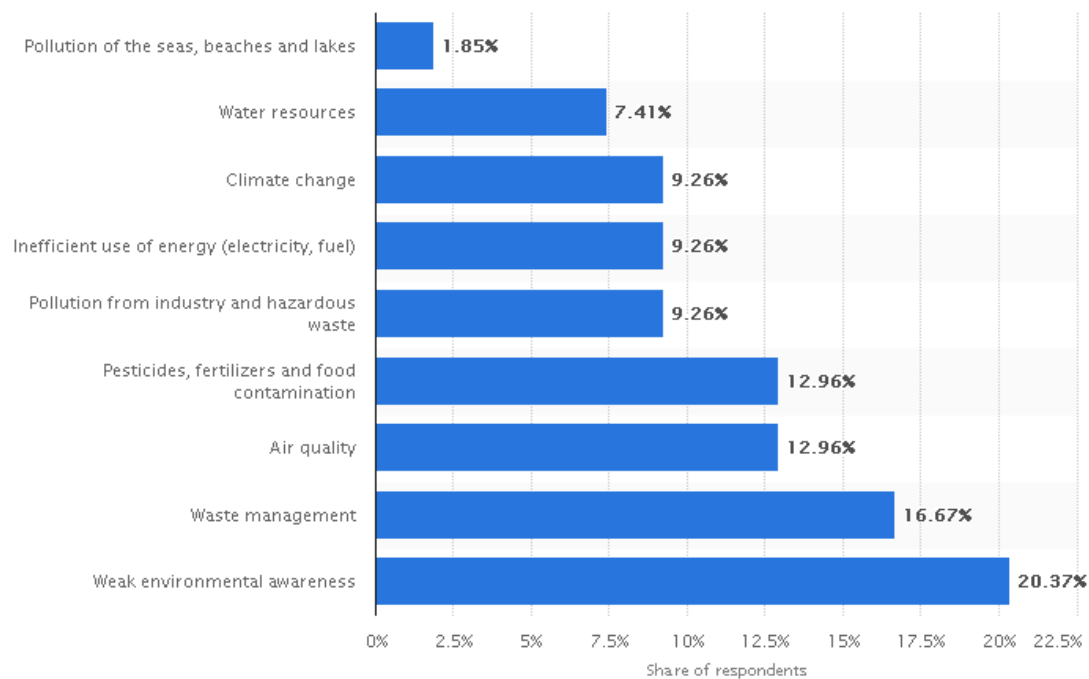
doing the wrong has punitive punishments. For this reason, there is a great need for having environmental courts in KSA. When investigating the most significant environmental issues in KSA, Statista illustrated that a greater percentage of the study sample posited that lack of awareness in environmental issues was the most significant challenge.³⁸⁹ The statistical value of this argument is presented in the form of a graph in Figure 4 below.³⁹⁰ Arguably, a low level of public awareness on environmental issues goes hand in hand with a lack of public participation in urban planning. On the other side of the argument, studies have shown that the level of public involvement is relatively higher in the US, while there is no public participation in KSA.

Graph: Shows variations in responses according to existing environmental issues³⁹¹

³⁸⁹Statista, "*Public opinion on the most important environmental issues in Saudi Arabia as of June 2017*," Statista.com, 2021 <https://www.statista.com/statistics/868413/saudi-arabia-public-opinion-on-environmental-challenges/>.

³⁹⁰ *Id.*

³⁹¹ *Id.*



This figure demonstrates that weak environmental awareness is a leading cause of environmental issues.

VI. Chapter 6: Discussion

There are some heavyweight environmental cases that have set precedent in the subsequent environmental rulings. The case of *Massachusetts vs. Environmental Protection Agency* is considered a top-most case, and one that is highly ranked across all demographics.³⁹² This case has stood the test of time to form a legal jurisprudence on matters environmental quality and management. Ruhl's article tries to aggregate these cases and weighs them based on the appropriateness and the impacts of these cases on environmental management and conservation.³⁹³ This article is discussed here is to show an example of the role of public awareness in environmental issues. Interestingly as you will read in the following paragraphs, the role of public awareness reached to a point where the public sued the EPA for failing to do their job. This, I find, is compelling evidence of how an informed public can protect the environment.

The article, *Standing: Who Can Sue to Protect the Environment*.³⁹⁴ By Marisa Martin & James Landman, features past cases where the environmental agency was sued at the apex courts for neglecting its mandate duties.³⁹⁵ In some cases, private citizens brought the matter before the Supreme Court, and a subsequent determination

³⁹² *Massachusetts v. Environmental Protection Agency*, Oyez, <https://www.oyez.org/cases/2006/05-1120>

³⁹³ James E. Salzman & J. B. Ruhl, *Who's Number One?* papers.ssrn.com (2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1498640

³⁹⁴ Marisa Martin & James Landman *Standing: Who Can Sue to Protect the Environment?* ABA, 2020. https://www.americanbar.org/groups/public_education/publications/insights-on-law-and-society/volume-19/insights-vol--19---issue-1/standing--who-can-sue-to-protect-the-environment-/.

³⁹⁵ *Id.*

was made. These cases involved climate change issues.³⁹⁶ It is, therefore, evident that EPA's policies on public awareness and education on environmental conservation continue to bear fruits. For instance, knowledge on various environmental laws has helped the members of the public identify incidences of violation and, empowered them to take action against the violators by initiating strong legal suits to challenge any course that is environmentally devastating.

The private citizens act as plaintiffs, who challenge any case that can potentially degrade the environment. The US Constitution allows any proper interested party to bring a lawsuit against a company perceived to be violating the environmental laws provided such allegations are backed by substantive evidence. Such a principle was invoked in the landmark ruling in the *Massachusetts v. EPA*; a case that involved claims of global warming and greenhouse gas emissions.³⁹⁷

In this case, 19 private organizations in Massachusetts fronted a case against EPA for failure to take charge in the regulation of polluting gases and other hazardous wastes.³⁹⁸ EPA has claimed that it had no mandate to regulate the emission of greenhouse gases such as carbon dioxide.³⁹⁹ However, these plaintiffs reiterated that EPA had intentionally neglected its responsibility as an environmental watchdog.⁴⁰⁰

This case was submitted to the Supreme Court, which subsequently ruled that indeed EPA had the authority to regulate carbon dioxide emission contrary to position that body had taken in the lower jurisprudence courts.⁴⁰¹ The court went ahead to state

³⁹⁶ Marisa Martin & James Landman Standing: *Who Can Sue to Protect the Environment?* ABA, 2020. https://www.americanbar.org/groups/public_education/publications/insights-on-law-and-society/volume-19/insights-vol--19---issue-1/standing--who-can-sue-to-protect-the-environment-/.

³⁹⁷ *Id.*

³⁹⁸ *Id.*

³⁹⁹ *Id.*

⁴⁰⁰ *Id.*

⁴⁰¹ *Id.*

general guidance on the standing in the global warming cases. The court's position was triggered by the fact that EPA elevated itself from taking responsibilities over environmental violations that led to global warming.⁴⁰² Indeed, this case led to a redefinition of the EPA's mandate under the Clean Air Act.

The state of Massachusetts was energized by the apex court had recognized its rights to personally prosecute cases of environmental violations, especially those it perceived to have been exacerbated by EPA's laxity. The ruling made by the EPA had significant merits. First, it created a clear precedence by redefining the roles of EPA, especially over regulatory issues.⁴⁰³ The court made it clear that it was within the mandates of the EPA to act upon carbon dioxide emission regulations, and not accepting this responsibility went against its stated mandates of overtly maintaining environmental cleanliness and pushing for proper responsibility of everyone on matters environment.⁴⁰⁴ Since this ruling was made and determined, the EPA has been prompted by several states to act in the defense of the natural environment.⁴⁰⁵ Essentially, this case and other subsequent Supreme Court rulings created a new wave of environmental activism with different persons and states challenging the EPA over its mandates. On the same note, this case amplified the voice of the public to stand strong as environmental activists. Consequently, the price of environmental activism paid off with several jurisdiction being tabled to the EPA for a further debate and possible prosecution. This landmark ruling has had a significant sway on subsequent climate changes lawsuits besides environmental standings. These lawsuits have

⁴⁰² *Id.*

⁴⁰³ *Id.*

⁴⁰⁴ *Id.*

⁴⁰⁵ US EPA, *Summary of the Clean Air Act* | US EPA, US EPA (2018), <https://www.epa.gov/laws-regulations/summary-clean-air-act>.

mostly angled on the jurisdiction of the EPA to accept responsibility in situations that had earlier denied.⁴⁰⁶

A. Implications of the results.

The results section clarifies that there is no public participation in matters concerning urban planning in the Kingdom of Saudi Arabia. On the same note, KSA lacks a separate courts system that would reinforce the implementation of environmental laws. Meanwhile, it is essential to note that the lack of these two necessities has continued to hinder the optimal implementation of environmental policies. On the side of the comparator case, the USA, it is observable that strong environmental protection agency and acknowledgment of public participation in urban planning which helped public awareness have gone a long way in helping the state implement laws concerning protecting the environment.

In recent years under the current government, KSA has made significant advances in environmental law and regulations. Saudi's previous government was not concerned with those issues due to the absence of such legal and administrative framework to regulate its environmental conducts. The ongoing climate change among other push factors have promoted Saudi to act and take important steps towards improving its environmental state.⁴⁰⁷ Thus, the active roles taken by the government to institute enforcement bodies and measures have improved its handling of the environment.

⁴⁰⁶ *Massachusetts v. EPA* - 549 U.S. 497, 127 S. Ct. 1438 (2007)

⁴⁰⁷ THE UNITED NATION FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC), *Third National Communication of the Kingdom of Saudi Arabia*, (2016), https://unfccc.int/files/national_reports/non-annex_i_natcom/application/pdf/saudi_arabia_nc3_22_dec_2016.pdf.

The identified gaps in the environmental policy and enforcement regime were shown to lead to specific environmental harms. Notably, the findings indicate that absence of environmental courts and public awareness in KSA has resulted to overproduction of oil reserves, excessive consumption of water, high amounts of waste. The results acted as a gateway upon which the research objectives and questions can be validated. The KSA needs to adopt and adapt a similar path taken by US and thereby establish more “concrete” environmental protection bodies. Having a balanced result established from different sources authenticates the main aim of the research, besides fulfilling the thesis statement. Indeed, the climax of any research lies on the result section, which either validates or invalidates the initially stated objectives.

As reiterated above, the result section is a critical part of any research paper because it gives direction as whether the objectives have been achieved and supported by facts. Thus, these results help in analysis, which lead to a generalization that the main aim of the research has been achieved. In this research, the study was purely anchored on finding the operative measures used by KSA compared to US on environmental regulation and identifying more practical measures to enhance environmental protection and solve environmental issues.

To recap, I argued that:

- Lack of public participation in urban planning impeded the implementation of environmental policies in Saudi Arabia.
- The lack of environmental courts in the Kingdom of Saudi Arabia has slowed the process of environmental policy implementation.

The arguments of this research have also been validated through the US's use as the comparative study. Using water consumption as the center of arguments, Figure

one in the results chapter indicated how the US has successfully controlled overconsumption of water resources using its strong environmental policies and bodies. For instance, being supported by the EPA, and agencies in state level implemented laws that regulated water quality and generally sensitized the public about the need to have clean, safe, and proper water usage_which helped increase public awareness directly to protect water from overconsumption. Several other graphs also presented the adverse effects of lacking public awareness and strong enforcement body such as environmental courts in KSA.⁴⁰⁸

B. What the KSA needs to do.

The gaps in the KSA's environmental regulatory regime can be plugged by:

1. adopting a public participation framework where the government incorporates people in its environmental agenda.
2. Establishing environmental court.
3. The integration of the environmental police would aid in the enforcement of these laws to the citizens. However, this segment of the enforcement agency should only be enforced when proper public participation frameworks have been adopted.⁴⁰⁹

C. Environmental Police in KSA

The environmental police have been one of the most effective environmental protection movements in KSA and it is affiliated with the Ministry of the Interior.

⁴⁰⁸ Statista, "Public opinion on the most important environmental issues in Saudi Arabia as of June 2017," Statista.com, last modified 2021 <https://www.statista.com/statistics/868413/saudi-arabia-public-opinion-on-environmental-challenges/>.

⁴⁰⁹ *Id.*

Notably, the movement was established in 2019. The environmental police would be spread all over the country and therefore many efforts to conserve the environment would be achieved. Indeed, this has been the case since the environmental police has been on the frontline in ensuring that illegal logging has been eliminated.⁴¹⁰ In general, the environmental police ensure that the wildlife and the overall environment is protected from human-related harm. Indeed, the establishment of environmental police is one of the most notable achievements in KSA. Meanwhile, KSA can observe the impacts that environmental police have had in protecting the environment and go ahead and establish environmental courts. As a far-reaching effect, the environmental courts will ultimately back up the environmental police.⁴¹¹

D. Saudi Arabia Vision 2030 for Environmental Conservation and Protection as an Important First Step

During the past few years, environmental concerns have led to a notable surge of debates across the Kingdom of Saudi Arabia.⁴¹² At the same time, “the kingdom has made remarkable progress in strengthening sustainability in pursuit of Vision 2030.”⁴¹³ Notably, Saudi Arabia Vision 2030 is believed to be the pivot around which standardized policies will be developed. A report produced by the Kingdom of Saudi

⁴¹⁰ RIYAD, *34 charged with violation of Saudi environmental laws*, Arab News (Jan. 7, 2021), <https://www.arabnews.com/node/1788506/saudi-arabia#:~:text=RIYAD%3A%20The%20Special%20Forces%20for>.

⁴¹¹ *Id.*

⁴¹² Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018), https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FIN_AL.pdf.

⁴¹³ Ministry of Municipal and Rural Affairs, *Saudi Cities Report 2018*, https://unhabitat.org/sites/default/files/documents/2020-05/saudi_cities_report_-_excutive_summary_english.pdf.

Arabia indicates that “Saudi Vision 2030 endorses several constructive programs, initiatives and projects that are bound to enhance efforts towards achievement of sustainable development.”⁴¹⁴ Indeed, even without the environmental courts, the Kingdom of Saudi Arabia, through its Vision 2030, shows a promising path that will change the condition of the environment around this region. Besides, “Environmental protection to meet environmental challenges is a primary system that Saudi Arabia has taken care of within its 2030 plan.”⁴¹⁵ During the past few years, Saudi Arabia has shown reputable efforts tailored towards implementing Sustainable Development Goals (SDGs). Indeed, KSA has experienced a comprehensive and dramatic transformation thanks to the Saudi Arabia Vision 2030. In general, earlier research has shown that the Saudi Arabia vision 2030 aims to establish a vibrant community, a thriving economy, and, most importantly, an ambitious state.⁴¹⁶

In its Vision 2030, Saudi Arabia has established distinct strategies that are believed to promote the implementation of its SDGs. Such methods include the Vegetation Restoration Strategy in Riyadh, the National Strategy for Conservation of Biodiversity, and the National Environmental strategy. It is important to note that governmental institutions and not legal firms support all these strategies. If there were some environmental courts around KSA, achieving sustainable development goals would be much more effective than it is now.

⁴¹⁴ United Nations Saudi Arabia, *Towards Saudi Arabia's Sustainable Tomorrow*, (2018), https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FINAL.pdf.

⁴¹⁵ Kingdom of Saudi Arabia, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

⁴¹⁶ Gov.sa, *Vision 2030*, (2016), https://www.vision2030.gov.sa/media/rc0b5oy1/saudi_vision203.pdf.

Apart from the pressing environmental concerns, KSA has also experienced a notable increase in its population.⁴¹⁷ In this regard, KSA has included in its Vision 2030 strategies of increasing renewable energy production to supplement the energy produced by crude oil. In Vision 2030, KSA targets to produce a total of 9.5 GW of renewable energy.⁴¹⁸ This translates to approximately 10% of the total energy produced in this region. To fulfill its Vision 2030, efforts to monitor air quality have intensified across the Kingdom of Saudi Arabia. With the attempt to enforce environmental regulations and standards, KSA has included in the Vision 2030 several authorities such as Ministry of Environment, Water and Agriculture. These institutions back-up the efforts of other institutions like MEPA to align the pollution levels.⁴¹⁹ However, to ultimately reduce environmental issues within the Kingdom of Saudi Arabia, there is a great need to establish more substantial monitoring authorities that can take legal actions against individuals violating the environmental policies. Meanwhile, this condition will remain unachieved if KSA delays implementing environmental courts suggested under this study.

Saudi Arabia Vision 2030 has been coupled with the need to establish better strategies for using natural resources.⁴²⁰

The available evidence portrays that although the Kingdom of Saudi Arabia has been on the front line towards achieving a sustainable environment by creating distinct

⁴¹⁷ Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018), https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FIN_AL.pdf.

⁴¹⁸ Kingdom of Saudi Arabia, *Energy & Sustainability*, Vision 2030, <https://www.vision2030.gov.sa/thekingdom/explore/energy/>.

⁴¹⁹ Gov.sa, *Saudi Arabia National Portal*., My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

⁴²⁰ Gov.sa, *Vision 2030*, (2016), https://www.vision2030.gov.sa/media/rc0b5oy1/saudi_vision203.pdf.

policies and regulations, the state has not accomplished full implementation of these policies. Going back further, earlier research has shown that, through Vision 2030, KSA has made notable contributions to be on the same lane with the other developing countries. However, fulfilling Saudi Vision 2030 depends mainly on the institutions that implement environmental policies within this region. Also, Saudi Arabia has primarily focused on improving economic status. Even as the country continues to develop its plans, it is necessary to note that, besides increasing public awareness, environmental courts and public participation own the abilities to make Vision 2030 a reality. Therefore, KSA needs to rectify the existing mismatches and acknowledge environmental courts' potentials as illustrated herein.

Besides that, KSA's vision 2030 seeks to reduce the cause of climate change, and completely transform the state of the environment.⁴²¹ Thus, environmental conservation is a key agenda that KSA is hoping to completely achieve by 2030.⁴²² Some of the initiatives adopted by the KSA include utilizing renewable energy sources as a way of reducing its reliance on fossil fuels and other conventional energy sources.⁴²³ While the oil wars across the globe is intensifying, there is a new transition the Saudi's economy from being oil dependent to relying on other economic sectors.⁴²⁴ This diversification plan is likely to see Saudi change priority from fossil fuels to green energy. By 2030, the country hopes to reach 50% in renewable energy utilization.⁴²⁵ Besides, the country hopes to encourage a circular carbon economy,

⁴²¹ THE UNITED NATION FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC), *Third National Communication of the Kingdom of Saudi Arabia*, (2016), https://unfccc.int/files/national_reports/non-annex_i_natcom/application/pdf/saudi_arabia_nc3_22_dec_2016.pdf.

⁴²² *Id.*

⁴²³ *Id.*

⁴²⁴ Kingdom of Saudi Arabia, *Energy & Sustainability*, Vision 2030, <https://www.vision2030.gov.sa/thekingdom/explore/energy/>.

⁴²⁵ Kingdom of Saudi Arabia, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

which promotes the management of economy. Moreover, the country has engaged a roadmap that would see its land degradation reduce by 50% by the year 2040.

Notably, the Saudi Arabia Environmental Initiative is primary system that tasked with the mandate of tackling environmental challenges, and it is subsidiary to the Kingdom's vision 2030.⁴²⁶ The initiative focuses on tackling environmental problems, with the projection of minimizing the environmental pollution.⁴²⁷ Thus, the Kingdom's Vision 2030 is the main agenda while the Initiative plays a complementary role to its general agenda. The trend with which the Kingdom of Saudi Arabia has established several initiatives for conserving the environment is notable.⁴²⁸ However, even with these efforts, previous research indicates that the significant initiative delegated to the mandate to protect the environment remains to be MEPA. Meanwhile, the government has restructured MEPA by giving it more mandates for establishing environmental regulations. Given that KSA has launched many initiatives, it is essential to note that all these initiatives work collaboratively with MEPA. The report produced by Saudi Arabia's government indicates that the "establishment of MEPA has been in response to the urgent need for supporting the concerned agencies in taking utmost care for uses of the natural resources."⁴²⁹

As the central agency responsible for protecting the environment, MEPA has worked closely with other critical agencies towards one goal: establishing a safe environment for all. Even with a properly installed agency like MEPA, KSA can

⁴²⁶ *Id.*

⁴²⁷ *Id.*

⁴²⁸ *Id.*

⁴²⁹ Kingdom of Saudi Arabia Presidency of Meteorology and Environment, *General Environmental Regulations And Rules for Implementation*, (2001), https://elaw.org/system/files/attachments/publicresource/saudiarabia.General%20Environmental%20Regulations.pdf?_ga=2.202322385.1550030270.1584000600-750610768.1584000600.

realize a sustainable environment through existing new initiatives. Meanwhile, Meanwhile, it is possible to protect the environment using only one body which is the environmental courts supported with Ministry of Environment, Water, and agriculture.⁴³⁰ Evidence also indicates that KSA has planned to establish eco city, specifically to create regions with zero emissions. The plan is in line with the enhancement of the KSA's futuristic NEOM business area.⁴³¹ As outlined by Welle, the proposed eco city called "The Line," will have "zero cars, zero streets and zero carbon emissions." With such plans, it can be assured that environmental protection activities will continue to grow stronger.⁴³² All these measures are blueprints of KSA, which seek to reduce environmental degradation, while promoting conservation.

E. New Environmental Law Movement in KSA

The New Environmental Law Movement has played key responsibilities since its enactment in 2020.⁴³³ This movement's aim has been to offer full protection to the environment, by providing a comprehensive legal framework governing all areas in relation to preservation as well as protection of the environment.⁴³⁴ Besides, the New Environmental Law Movement seeks to regulate the environmental sector and other

⁴³⁰ Gov.sa, *Saudi Arabia National Portal*., My.gov.sa (2021), <https://www.my.gov.sa/wps/portal/snp/agencies/AC171/>.

⁴³¹ Deutsche Welle (www.dw.com), *Saudi Arabia to build a zero emissions city* / DW | 11.01.2021, DW.COM (2021), <https://www.dw.com/en/saudi-arabia-to-build-a-zero-emissions-city/a-56189240>.

⁴³² *Id.*

⁴³³ Saudi Legal. "Environmental Laws" <https://www.saudilegal.com/saudi-law-overview/environmental-laws>.

⁴³⁴ DIMAH TALAL AL-SHARIF, *Strong legal framework to ensure a sustainable environment*, Arab News (2021), <https://www.arabnews.com/node/1791641>.

related activities. The Environment Regulation, Royal Decree No M/165 of Dhul Qada 1441 Hejra entered into force on 13 January 2021, superseding the 2011 Regulation.⁴³⁵

For instance, Article 3 of the General Environmental Regulation, it is stipulated that no person or entity shall indulge in any practice or activity that directly or indirectly impact the environment⁴³⁶

In recent years, KSA has made notable improvements in its environmental policy development. There have been significant advancements in the KSA's environmental practices aiming to improve the existing environmental protection policies. As illustrated by the current research, the Kingdom of Saudi Arabia in 2020 established new regulation to reinforce its environment protection practices.⁴³⁷ The newly enacted laws have a general aim of regulating the environmental sector.⁴³⁸

According to Article (47) (4) of the newly enacted environmental regulation, organizations must have environmental impact assessments during their operation.⁴³⁹

The newly established environmental regulation in KSA in article (35) prohibit the unhealthy disposal of wastewater and any other form of waste that is detrimental to the environment.⁴⁴⁰ On the same note, Saudi Arabia has established new rules under Article (30) of the new environmental regulation, that restrict wildlife resources.⁴⁴¹

⁴³⁵ Saudi Legal. "Environmental Laws" (2020), <https://www.saudilegal.com/saudi-law-overview/environmental-laws>.

⁴³⁶ Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>.

⁴³⁷ DIMAH TALAL AL-SHARIF, *Strong legal framework to ensure a sustainable environment*, Arab News (2021), <https://www.arabnews.com/node/1791641>.

⁴³⁸ Shazelle James & WKC Group, *KSA's 2021 Environmental Regulatory Reforms – Part 2*, WKC Group (2021), <https://www.wkcgroup.com/newsletter/news/saudi-arabias-environmental-regulatory-reforms/>.

⁴³⁹ Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>.

⁴⁴⁰ *Id.*

⁴⁴¹ *Id.*

Most importantly, all this has been achieved without the influence of the environmental courts. However, implementing this regulation would receive more excellent practicability if KSA used environmental courts to facilitate its practices.

Through new environment law issued by Royal Decree No. M / 165 dated 11/19/1441 AH, and Cabinet Resolution No. 729 dated 16 / 11/1441 AH, as of 13th January 2021, the government will cancel the General Authority for Meteorology and Environmental Protection Authority (MEPA) in 6 months from now.⁴⁴² At the same time KSA has established five new centers that collaboratively work towards enhancing practices that protect the environment.⁴⁴³ The Ministry of Environment, Water and Agriculture considers all five centers to be branches of its overarching authority (MEWA).⁴⁴⁴ Under the new environmental law, the five centers stated are: the National Centre for Waste Management , the National Center of Meteorology, the National Center for Vegetation Development and Combating Desertification, the National Center for Monitoring Environmental Compliance, and the National Center for Wildlife Development.⁴⁴⁵ It is important to note that all the five centers work in collaboration to ensure that protecting the environment remains active.

A report produced by Dimah illustrates that “each authority has its own jurisdiction and clearly defined duties and powers.”⁴⁴⁶ Arguably, the Ministry of Environment, Water, and agriculture is delegated to assess activities that may negatively impact the environment. On the other hand, the General Authority of

⁴⁴² Shazelle James & WKC Group, KSA’s 2021 Environmental Regulatory Reforms – Part 2, WKC Group (2021), <https://www.wkcgroup.com/newsletter/news/saudi-arabias-environmental-regulatory-reforms/>.

⁴⁴³ *Id.*

⁴⁴⁴ *Id.*

⁴⁴⁵ *Id.*

⁴⁴⁶ DIMAH TALAL AL-SHARIF, *Strong legal framework to ensure a sustainable environment*, Arab News (2021), <https://www.arabnews.com/node/1791641>.

Metrology and Environment is concerned with a broader creation of environmental standards that would limit the environment's degradation.⁴⁴⁷ Finding this important, the National Center for Monitoring Environmental Compliance is concerned "with preserving and protecting the environment, preserving its resources and preserving it from deterioration, by providing high-quality services that contribute to raising the level of compliance with environmental regulations and standards."⁴⁴⁸ Under the guidance of the new environmental regulation in KSA, anyone involved with the violation of the environmental laws is heavily penalized to reduce recidivism and reinforce integrity insofar as protection of environment is concerned. In Article (38) of the General Environmental Regulation the fines range from \$300 to \$50000 depending on the magnitude of offense committed.⁴⁴⁹ From the preceding arguments, it has been made clear that KSA relies on several environmental institutions to establish its environmental protection practices. However, the mandates can be delegated to the environmental courts owing to their experience and skills over environmental protection oversights. Even with the newly established centers described above, research has shown that enforcement challenges remain the primary source of concern within KSA. Generally, the effectiveness of any policy relies mainly on the enforcement mechanisms, which stem directly from the appropriate agencies that strictly monitor the implantation of proposed policies.

⁴⁴⁷ *Id*

⁴⁴⁸ Gov.sa, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

⁴⁴⁹ Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>.

F. Conclusion

KSA needs a proper enforcement mechanism to meet its efforts. The USA model has illustrated that environmental authorities like EPA are not enough as far as adequate environmental protection is concerned. Instead, what is needed is stronger regulatory infrastructure.

While the KSA needs strong environmental laws, such as NEPA,⁴⁵⁰ SEQR, it is still necessary to reinforce these laws by implementing environmental courts.⁴⁵¹ Without many confrontations, it is clear that environmental courts would enhance the implementation of statutes quite considerably. Apart from that, there is a significant need for extensive public participation in urban planning, given that this process improves compliance with the enacted environmental policies. It is high time for KSA to start finding the strategies that can establish public participation in urban planning. Most importantly, some of these strategies have been illustrated in this study, basing arguments on states that already experience higher public involvement.

G. Structural Comparisons

KSA has central government and local authority, including 13 administrative regions, which are managed under one administrative organization for environmental policies unlike the US, which has a three-tier system. The 13 administrative divisions in KSA are called the provinces, and they act as the immediate centers of powers

⁴⁵⁰ OP US EPA, *What is the National Environmental Policy Act?*, US EPA (2013), [https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=The%20National%20Environmental%20Policy%20Act%20\(NEPA\)%20was%20signed%20into%20law.](https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=The%20National%20Environmental%20Policy%20Act%20(NEPA)%20was%20signed%20into%20law.)

⁴⁵¹ Department of Environmental Conservation NY, *SEQR - NYS Dept. of Environmental Conservation*, <https://www.dec.ny.gov/permits/357.html>.

covering various regional headquarters.⁴⁵² In the US, there are three levels comprising of the federal, state and local governments, which have clearly spelt out mandates.⁴⁵³ These three administrative units are centers of enforcement to the environmental laws and regulations. For instance, all the cases of environmental violations and enforcement happening at the state levels are administered by the state agencies. The state courts act on cases brought before it over matters environment. Meanwhile, higher degree courses are forwarded to the specialized courts. The District of Columbia is a federal level court that hears specialized cases of environmental violations.⁴⁵⁴ On the other hand, KSA has just one administrative unit to monitor and enforce all environmental issues, which altogether limits its efficacy.

Although KSA has a centralized unified government system which enables it to enforce environmental laws more easily, the US with its federal system that makes implementation environmental laws more challenging, yet it is at far better than KSA.

Notably, the US has very robust and effective components comprising of strong laws, independent environmental agencies, public participation in urban planning, environmental social movement, and some environmental courts among other structural systems making it better in having environmental institutions compared to KSA, which lacks such elaborate systems. On the same note, state courts play a complementary role in the enforcement of the environmental laws.

⁴⁵² Provinces of Saudi Arabia, Wikipedia (2022), https://en.wikipedia.org/wiki/Provinces_of_Saudi_Arabia.

⁴⁵³ Mike Doyle, *About Our Government*, Congressman Mike Doyle (2019), <https://doyle.house.gov/resources/about-our-government>.

⁴⁵⁴ Ryan Reft, Research Guides: The Federal Paper Chase: Judges' Papers in the Manuscript Division: *U.S. District Court for the District of Columbia*, guides.loc.gov (2019), <https://guides.loc.gov/papers-of-federal-judges/district-dc-circuit>.

The lack of such formidable environmental regulating structure has made it hard for KSA to maximize on the implementation of certain laws. Consequently, KSA needs an effective environmental court system, which work alongside local court systems. The one administrative level in KSA is making it so hard to administer laws on people.⁴⁵⁵ With these systems in place, the residents of KSA will be well informed about the environmental laws and will become law abiding. The courts will spur public awareness and help KSA realize its environmental goals under vision 2030. beside the new strong regulations and fulfillment of the country's vision 2030 goals on environmental management. The ministry of environment and the environmental police will equally help foster and implement the established laws.

Clearly, the missing link in the enforcement of environmental regulations in KSA is the absence of power to the legitimate agency to effectively enforce the environmental laws. In the US, enforcement of environmental regulations is quite inclusive, with the local and state agencies heavily involved in keeping check to the environment by potential violators. The lower administrative echelons adopt and enforce laws as well as regulations thereby leading in the protection of the environment. For instance, a city like New York recently enacted a Local Law 97, Requires carbon reductions.⁴⁵⁶ While prohibits building from emitting carbon by 50% by 2030.⁴⁵⁷ These laws will require new design and retrofitting of the existing building to meet this standard.⁴⁵⁸ KSA would be at the same level as the US if it

⁴⁵⁵ Provinces of Saudi Arabia, Wikipedia (2022), https://en.wikipedia.org/wiki/Provinces_of_Saudi_Arabia.

⁴⁵⁶ NYC Sustainable Buildings, *Local Law 97 - Sustainable Buildings*, <https://www1.nyc.gov/site/sustainablebuildings/ll97/local-law-97.page#:~:text=Under%20this%20groundbreaking%20law%2C%20most>.

⁴⁵⁷ *Id.*

⁴⁵⁸ *Id.*

adopts renewed and radicle measures that would lower emissions, while assuring of its enhanced progressive steps in environmental enforcement.

Meanwhile, it is worth noting that these two countries have distinct cultural beliefs. Thus, the enforcement of the environmental regulations will follow along the cultural beliefs held in these countries. In KSA, people are ever compelled to follow rules, and would not adhere to the basic rules without being compelled by the applicable laws. For instance, the enforcement measures will force the general public to adhere to the established environmental standards. On the other hand, US citizens hold a different side of cultural focus and orientation. Citizens in the US, relative to KSA citizens, are more aware of their responsibility over environmental matters. Unlike KSA, citizens have increased awareness about their immediate environment, and would take every necessary action to enforce all the applicable laws.

EPA is a body that act as a link between the public and the established local and federal environmental agencies.⁴⁵⁹

EPA gives people the freedom and a mandate to report any environmental violations.⁴⁶⁰ Thus, the story about cultural responsibility on environmental matters is quite different between these two countries, with US being more people-centric than Saudi where the state and its agencies do all enforcement with minimal support from the citizens.

H. The Way Forward: Mechanisms That Can be used to improve the Results

⁴⁵⁹ US EPA, *Our Mission and What We Do* | US EPA, US EPA (2019), <https://www.epa.gov/aboutepa/our-mission-and-what-we-do>.

⁴⁶⁰ US EPA,OECA, *Report an Environmental Violation, General Information* | US EPA, US EPA (2013), <https://www.epa.gov/enforcement/report-environmental-violation-general-information>.

To have more robust results, it is important to extend these studies to many other areas or disciplines. Having extensive research will widen the scope of results achieved given that it is secondary research being explored here.

- The establishment of environmental courts in KSA has not been tried before, but there are no doubts that this practice will help KSA realize its efforts.
- KSA needs to develop a system that will provide more vigorous enforcement of environmental policies.

The KSA government also needs to take the appropriate actions to establish public participation in urban planning. One way through which KSA can increase public participation is through conducting public dialogues with the citizens. This step will ensure that the citizens are aware of the policies to protect the environment and thus improve compliance with these regulations. Assuring an inclusive public participation besides creating environmental courts in KSA is an ideal move given the changes that have put a great strain on natural resources.

As the growing population in KSA calls for sustainable utilization of natural resources,⁴⁶¹ In the energy sector, the government should enhance the enforcement of green building codes and regulations to stabilize energy use.

- Increasing public awareness can also be facilitated through public hearings. Attending public hearings illustrates the willingness of the citizens to engage in environmental protection. Of most importance is that public awareness will increase deliberation and interaction among

⁴⁶¹ Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018), https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FIN_AL.pdf.

citizens. The environmental issues that require clarification can be presented in the public hearings and be attended to satisfactorily. In the public hearings, decision-makers can effectively present public policies. Notably, detailed explanation of public policies can lead to better understanding of the same and also increase public awareness.⁴⁶²

In some instances, people contend that throwing garbage in the street violates culture. However, public hearings can be used to turn this culture into law thus increasing public awareness.⁴⁶³ Consequently, public participation and establishing environmental courts are ideal steps to ensuring environmental management. For instance, through public participation, people in KSA will respect to the need to use the natural resources wisely, knowing that a violation would attract punishments from the environmental courts.

- To enhance the results illustrated in this study, we believe that it is essential if the government of KSA restructures the existing environmental institutions and forms a robust enforcement system. This will help KSA cope with the global trend and realize the effective implementation of regulations.
- Increase public awareness and public participation is through teaching courses related to environment in the schools.⁴⁶⁴ The school is an

⁴⁶² Cyrille Valence Ngouana Kengne, Serge Emeran Menang Evouna & Dieudonné Bitondo, *Public hearings in environmental and social impact assessment for energy sector projects in Cameroon*, 31 *Impact Assessment and Project Appraisal* 64–73 (2013), <https://www.tandfonline.com/doi/full/10.1080/14615517.2012.759454>.

⁴⁶³ *Id.*

⁴⁶⁴ Mansoor Ahmad, *Environmental Education: An Indispensable Tool for Public Awareness*, 8 *International Journal of Research in all Subjects in Multi Languages* (2020),

important institution that can be used to introduce learners to issues related the environment.⁴⁶⁵ Schools can play a significant role in increasing public awareness and should therefore be on the front line in creating environmental awareness.⁴⁶⁶ Therefore, environmental awareness should be included in the school awareness insofar public awareness increase in concerned. Including environmental awareness in the school curriculum will motivate students take part in protection of the environment and consequently raise public awareness.⁴⁶⁷ Moreover, it is worthwhile noting that the school programs have the potential of introducing the students to the 3R's that form the hallmark of protecting the environment. Expressly, the 3R's are reducing wastes, reusing resources, and recycling resources.⁴⁶⁸ Equally important, the teaching environmental courses in school can facilitate organizing of various activities such as tree planting which will play a crucial role in increasing awareness on the importance of protecting the environment.⁴⁶⁹

https://www.raijmr.com/ijrsm/ wp-content/uploads/2020/06/IJRSML_2020_vol08_issue_4_Eng_03.pdf.

⁴⁶⁵ *Id.*

⁴⁶⁶ *Id.*

⁴⁶⁷ *Id.*

⁴⁶⁸ Rogue Disposal Recycling INC, *Exploring the three Rs of waste management — Reduce, Reuse, Recycle*, Rogue Disposal & Recycling, <https://roguedisposal.com/resources/education/recycling/exploring-the-three-rs-of-waste-management-reduce-reuse-recycle#:~:text=Exploring%20the%20three%20Rs%20of%20waste%20management%20%E2%80%94%20Reduce%2C%20Reuse%2C%20Recycle&text=In%20order%20to%20keep%20as>.

⁴⁶⁹ Mansoor Ahmad, *Environmental Education: An Indispensable Tool for Public Awareness*, 8 International Journal of Research in all Subjects in Multi Languages (2020), https://www.raijmr.com/ijrsm/ wp-content/uploads/2020/06/IJRSML_2020_vol08_issue_4_Eng_03.pdf.

VII. Chapter 7: Conclusion

This research aimed to substantially illustrate that the weakness of environmental regulations and lack of public participation in urban planning alongside poor public awareness in Saudi Arabia has inhibited the implementation of environmental policies across this region. In a nutshell, this research compared KSA to the US building on numerous studies to illustrate how weak regulations and lack of public participation and solid environmental courts correlate with weak or ineffective environmental policies.

Notably, any research is conducted to find a solution to a particular problem and provide new knowledge. In this regard, it is essential to understand that this research is of fundamental significance insofar as environmental policies are concerned. The present study will contribute to environmental policy studies by bringing insightful information on environmental regulation and public awareness in Saudi Arabia. This information will assist researchers in developing on this issue and assist policymakers in identifying existing gaps in environmental protection policies.

As it sits, this research has validated the effectiveness of various environmental agencies such as MEPA by depicting what they are capable of doing. On the same note, this work has provided a more nuanced analysis of the US, in its exclusive roles to entrench public awareness and the active roles of specialized environmental courts (at the state level). The angle covered here reflects on the EPA's important roles (at the federal level) of creating public awareness by bringing cases to the federal courts to prosecute individuals and companies found in violation of the

stated environmental laws.⁴⁷⁰ Although they are just a few, state environmental courts have been included in this research. In this regard, it is essential to understand that this study provides evidence that KSA policymakers can use to identify what they need to do. Besides, a closer analysis of the results presented in this research can evaluate what other countries are doing to protect their environment.

This research has also uncovered the gaps in KSA's environmental regulations and what the KSA needs to do. Additionally, this study's new knowledge indicates that to implement its environmental regulatory frameworks adequately, KSA should follow in the footsteps of countries such as the United States and adopt public engagement and a court-based enforcement mechanism. This ensures that laws are effectively implemented, and public awareness is greatly increased. Integration of environmental policy, for example, would aid in the enforcement of these rules among citizens. This section of the enforcement agency, on the other hand, should only be enforced if suitable public participation procedures have been implemented.

A. Recommendations for Future Research

This research has been anchored only on two contexts, Saudi Arabia and the US, to validate the significance of federal agencies, specialized state environmental courts and greater public participation in urban planning. Nevertheless, future studies exploring the same topic should focus on incorporating more contexts to affirm that increased public involvement and the creation of specialized environmental courts have a more significant effect in bolstering the implementation of environmental

⁴⁷⁰ Bill A., Seattle, Scientific American Wash. Environmental Enforcer: *How Effective Has the EPA Been in Its First 40 Years?* February 8, 2011.), <https://www.scientificamerican.com/article/the-epa-first-40-years/>.

policies. This will help draw more meaningful generalizations since several cases will be analyzed and, therefore, adequate evidence.

From the results and discussion of this study, there is a need for immediate action to be implemented by the concerned parties in KSA to ensure that the implementation of environmental policies is achieved more. In the case of Saudi Arabia, it is necessary to build a transparent set of regulations that would manage environmental norms. "Unless a powerful body is developed and implemented," according to earlier studies, "environmental degradation will risk jeopardizing the country's future." In line with this logic, KSA's natural resources will be insufficient for current and future generations. Therefore, it is critical to emphasize that all environmental issues may be directly addressed by developing strong regulatory regulations with the assistance of the courts and public engagement. In other words, KSA needs to create specialized environmental courts beside the enforcement agency and increase public awareness by public participation in urban planning to implement better policies developed by the environmental policies.

References

- Vision 2030, *Quality of Life*, Vision 2030 (2022), <https://www.vision2030.gov.sa/v2030/vrps/qol/>.
- UN environment program, *In battle against climate change, courts become a new frontier*, *UN Environment* (2021), <https://www.unep.org/news-and-stories/story/battle-against-climate-change-courts-become-new-frontier>.
- M. P. Amado et al., *Public Participation in Sustainable Urban Planning*, 3 *International Journal of Civil and Environmental Engineering* 228–234 (2009), <https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.
- Markus B. Zimmer, *Overview of Specialized Courts*, 2 *IJCA* 46, (2009), <https://www.iacajournal.org/articles/abstract/10.18352/ijca.111/>.
- Byungchun so, SJD Dissertation on *Public Participation in South and North Korean Environmental Laws*, 2003, <https://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1004&context=lawdissertations>.
- Wai-Hang Yee et al., *Regulatory Compliance when the Rule of Law Is Weak: Evidence from China's Environmental Reform*, 26 *Public Adm. Policy Res.* 95, 105 (2014). https://www.researchgate.net/publication/262636335_Regulatory_Compliance_When_the_Rule_of_Law_is_Weak_Evidence_from_China%27s_Environmental_Reform.
- ¹ Anis Omri et al., *Determinants of environmental sustainability: Evidence from Saudi Arabia*, 657 *Sci. Total Environ.* 1592, 1600 (2019). <https://pubmed.ncbi.nlm.nih.gov/30677924/>.
- Wai-Hang Yee et al., *Regulatory Compliance when the Rule of Law Is Weak: Evidence from China's Environmental Reform*, 26 *Public Adm. Policy Res.* 95, 105 (2014). https://www.researchgate.net/publication/262636335_Regulatory_Compliance_When_the_Rule_of_Law_is_Weak_Evidence_from_China%27s_Environmental_Reform.
- Qi Li1 et al., *Public awareness of the environmental impact and management of carbon dioxide capture, utilization and storage technology: the views of educated people in China*, 19 *Clean Technol. Envir.* 2041, 2055 (2017). <https://link.springer.com/article/10.1007/s10098-017-1387-0>
- Mansour M. A. A. et al., *Analyzing the Implementation Of Environmental Laws In the Saudi Arabian Construction Industry*, 17 *Appl. Ecol. Env. Res.* 3781, 3799 (2019). https://www.researchgate.net/publication/338984738_ANALYZING_THE_IMPLEMENTATION_OF_ENVIRONMENTAL_LAWS_IN_THE_SAUDI_ARABIAN_CONSTRUCTION_INDUSTRY.

D. Alzahrani & Huda Alqasmi, *Protecting the Biodiversity of the Arabic Gulf's Coastal Waters from Agricultural and Industrial Runoff Case Study-Saudi Arabia*, 3 International Journal of Social Science and Humanity 62–65 (2013), <http://www.ijssh.org/papers/195-G10034.pdf>.

Ibrahim Mosly, *Barriers to the Diffusion and Adoption of Green Buildings in Saudi Arabia*, 5 J Manage. Sustain. 104, 112 (2015), https://www.researchgate.net/publication/285628375_Barriers_to_the_Diffusion_and_Adoption_of_Green_Buildings_in_Saudi_Arabia.

The General Authority for Meteorology and Environmental Protection (GAMEP) *The state of the environment responsibilities and achievements*. Chap 7. (2017). <https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>

Agboola Sola, *Environmental Education and Public Awareness*, Vol. 4 No. 3 Journal of Educational and Social Research (2014), at 333-336 <http://www.mcser.org/journal/index.php/jesr/article/download/2731/2698>.

¹ Ksenia D. et al., *Environmental awareness raising through universities–city authorities' cooperation*, 18 Int. J. Sustain. High. Educ. 39, 48 (2017). <https://www.emerald.com/insight/content/doi/10.1108/IJSHE-05-2015-0085/full/html?skipTracking=true>.

Yang Li, *Study of the Effect of Environmental Education On Environmental Awareness and Environmental Attitude Based On Environmental Protection Law Of The People's Republic of China*, 14 Eurasia J. Math. Sci. Technol. Educ. 2277, 2282 (2018). <https://www.ejmste.com/article/study-of-the-effect-of-environmental-education-on-environmental-awareness-and-environmental-attitude-5429>.

Søren C. Winter & Peter J. May, *Motivation for Compliance with Environmental Regulations*, 20 J. Policy Anal. Manage. at 675, 693 (2001). https://www.researchgate.net/publication/227648066_Motivation_for_Compliance_With_Environmental_Regulations.

Wan Kalthom Yahya & Nor Hashima Hashim, *The Role of Public Awareness and Government Regulations in Stimulating Sustainable Consumption of Malaysian Consumers*, 2011 International Conference on Business, Engineering and Industrial Application, 105, (2011). https://www.researchgate.net/publication/261393986_The_role_of_public_awareness_and_government_regulations_in_stimulating_sustainable_consumption_of_Malaysian_consumers

S. E. Hasan, *Public Awareness Is Key to Successful Waste Management*, 39 J Environ. Sci. Heal, A. 483, 493-91 (2004). <https://pubmed.ncbi.nlm.nih.gov/15027831/>.

The General Authority for Meteorology and Environmental Protection (GAMEP), *The state of the environment responsibility and achievement*, Chap 7. (2017), <https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>

¹ Mohammed S. Al Surf & Will the Saudi's 2030 Vision raise the public awareness of sustainable practices? 37 Procedia Environ. Sci. 514, 525 (2017). <https://www.sciencedirect.com/>

Omar K. M. Ouda et al., *Energy Conservation Awareness among Residential Consumers in Saudi Arabia*, 6 Int. J. Comput. Digit. Syst. 349, 353 (2017). <https://pdfs.semanticscholar.org/2a43/6d3ea4e69403b35667ea72e058c0384dc0bf.pdf>.

N. Alghamdi, *Knowledge and Awareness of Sustainability in Saudi Arabian Public Universities*, In Handbook of Sustainability Science and Research 123, (2018) Springer, Cham. https://www.researchgate.net/publication/320291339_Knowledge_and_Awareness_of_Sustainability_in_Saudi_Arabian_Public_Universities

Abdulaziz Albahlal, Sulaiman Alqahtani & AL-Hassan Al-Muqri, *Sustainability Awareness in Saudi Arabia*, springerprofessional.de (2017), <https://www.springerprofessional.de/en/sustainability-awareness-in-saudi-arabia/13331080>

.Uzma KHAN, Mohammad Imdadul HAQUE & Aarif Mohammad KHAN, *Environmental Sustainability Awareness in the Kingdom of Saudi Arabia*, 7 The Journal of Asian Finance, Economics and Business 687–695 (2020) <http://koreascience.or.kr/article/JAKO202026061031437>.

Judith M. Dean et al., *Are foreign investors attracted to weak environmental regulations? Evaluating the evidence from China*, 90 J. Dev. Econ. 1, 11 (2009). https://econpapers.repec.org/article/eedeveco/v_3a90_3ay_3a2009_3ai_3a1_3ap_3a1-13.htm.

DANIEL C. ESTY & MICHAEL E. PORTER, *National environmental performance: an empirical analysis of policy results and determinants*, 10 Environment and Development Economics 391–434 (2005), https://openyls.law.yale.edu/bitstream/handle/20.500.13051/3778/National_Environmenta_I_Performance_An_Empirical_Analysis_of_Policy_Results_and_Determinants.pdf?sequence=2&isAllowed=y

Junming Zhu & Matthias Ruth, *Relocation or reallocation: Impacts of differentiated energy saving regulation on manufacturing industries in China*, 110 Ecological Economics 119–133 (2015), <https://isiarticles.com/bundles/Article/pre/pdf/43198.pdf>.

Wilma Rose Q. Anton et al., *Incentives for environmental self-regulation and implications for environmental performance*, 48 J. Environ. Econ. Manag. 632, 652 (2004).

<https://www.sciencedirect.com/science/article/abs/pii/S0095069603001025>.

Matthew Potoski & Aseem Prakash, *Covenants with Weak Swords: ISO 14001 and facilities' environmental performance*, 24 J. Policy Anal. Manage. 745, 763 (2005).

<https://onlinelibrary.wiley.com/doi/10.1002/pam.20136>

Francesca Mariotti et al., *Motivations and Barriers Affecting the Implementation Of ISO 14001 in Saudi Arabia: An Empirical Investigation*, 25 Total. Qual. Manag. Bus. Excell.

1352, 1362 (2014). <https://www.tandfonline.com/doi/abs/10.1080/14783363.2014.912038>

F. Kalantzis & D. Revoltella, *Do Energy Audits Help SMEs To Realize Energy-Efficiency Opportunities?* 83 Energy Econ. 229, 236 (2019).

<https://www.sciencedirect.com/science/article/pii/S0140988319302178#:~:text=Energy%20audits%20influence%20positively%20the,investments%2C%20particularly%20in%20support%20processes.&text=Energy%20audits%20help%20to%20overcome,investments%2C%20especially%20in%20small%20firms.>

D. G. McCullough, *Saudi Arabia's Green Decree Brings Hopes of Sustainability*, The Guardian, (2014, May 12), <https://www.theguardian.com/sustainable-business/saudi-arabia-green-construction-oil-sustainability-environment>.

David Popp, *International Innovation and Diffusion of Air Pollution Control Technologies: The Effects of NOX and SO2 Regulation in the US, Japan, and Germany*, 51 J. Environ. Econ. Manag. 46, 66-68 (2006).

<https://www.sciencedirect.com/science/article/abs/pii/S0095069605000604>

Lianbiao Cui et al., *Can China Achieve Its 2030 Energy Development Targets by Fulfilling Carbon Intensity Reduction Commitments?* 83 Energy Econ. 61 (2019).

<https://www.sciencedirect.com/science/article/pii/S0140988319302038#:~:text=China%20is%20likely%20to%20reach,the%202030%20target%20is%20not.>

Othman Alnatheer, *Environmental Benefits of Energy Efficiency and Renewable Energy in Saudi Arabia's Electric Sector*, 34 Energy Policy, 2,9 (2006).

https://www.researchgate.net/publication/223613784_Environmental_benefits_of_energy_efficiency_and_renewable_energy_in_Saudi_Arabia's_electric_sector.

George Pring & Catherine Pring, *Specialized Environmental Courts and Tribunals at the Confluence of Human Rights and the Environment*, 11 Or. Rev. Int'l L. 301, 314 (2009)

Markus B. Zimmer, *Overview of Specialized Courts*, 2 IJCA 46, (2009)

<https://www.iacajournal.org/articles/abstract/10.18352/ijca.111/>

George Pring & Catherine Pring, *Specialized Environmental Courts and Tribunals at the Confluence of Human Rights and the Environment*, 11 Or. Rev. Int'l L. 321-322 (2009).

History of Environmental Court | Shelby County, TN - Official Website,

www.shelbycountyttn.gov, <https://www.shelbycountyttn.gov/2125/History-of-Environmental-Court#:~:text=In%201983%2C%20the%20City%20of.>

Khalid Nasralden Mandeli, *Sustainable development and governance in Saudi cities*, 47 J. Eng. Sci. 565,576 (2019). https://jesaun.journals.ekb.eg/article_115515.html.

Ahmad Al-Gilani and Seamus Filor, *Reforming the National Framework for Environmental Policies in Saudi Arabia*, 42 J. Environ. Plan. Manag. 253, 258 (1999).

<https://www.tandfonline.com/doi/abs/10.1080/09640569911244>.

M. P. Amado et al., *Public Participation in Sustainable Urban Planning*, 3 *International Journal of Civil and Environmental Engineering* 228–234 (2009),

<https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.

Mathew, Cohen et al., *Aligning Public Participation to Stakeholders' Sustainability Literacy—A Case Study on Sustainable Urban Development in Phoenix, Arizona*, 7 Sustainability, 8709, 8725 (2015), <file:///C:/Users/hp/Downloads/sustainability-07-08709.pdf>.

Bingsheng Liu et al., *Critical Success Factors for the Management of Public Participation in Urban Renewal Projects: Perspectives from Governments and the Public in China*, 144 J. Urban Plann. Dev. (2018).

<https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29UP.1943-5444.0000467>.

Mohammed S. Al Surf & Lobna A. Mostafa, *Will the Saudi's 2030 Vision Raise the Public Awareness of Sustainable Practices?* 37 *Procedia Environmental Sciences* 514–527 (2017),

https://researchgate.net/publication/315999138_Will_the_Saudi's_2030_Vision_Raise_the_Public_Awareness_of_Sustainable_Practices.

Al-Gilani, A., & Filor, S. (1997). Policy and practice environmental policies in Saudi Arabia. *Journal of Environmental Planning and management*, 40(6), 775-788.

<https://www.tandfonline.com/doi/abs/10.1080/09640569711903>.

- M. P. Amado et al., *Public Participation in Sustainable Urban Planning*, 3 *International Journal of Civil and Environmental Engineering* 228–234 (2009), <https://publications.waset.org/15443/public-participation-in-sustainable-urban-planning>.
- So, *SJD Dissertation on Public Participation in South and North Korean Environmental Laws*, 13. , [SJD Dissertation on Public Participation in South and North Korean Environmental Laws](#).
- Daren C. Brabham, *Crowdsourcing the Public Participation Process for Planning Projects*, 8 *Plan. Theory* 242, 252 (2009). <https://journals.sagepub.com/doi/abs/10.1177/1473095209104824>
- So, *S.J.D. dissertation, Pace University School of Law*, 22-23. , [SJD Dissertation on Public Participation in South and North Korean Environmental Laws](#).
- Kishan Khoday and Leisa Perch, *Green Equity: Environmental Justice for more Inclusive Growth*, International Policy Centre for Inclusive Growth, (2012)., <https://www.academia.edu/4082133>.
- Ralph H Turner & Lewis M Killian, *Social movement*, Encyclopædia Britannica (2013), <https://www.britannica.com/topic/social-movement>.
- John D. McCarthy & Mayer N. Zald, *Resource Mobilization and Social Movements: A Partial Theory*, 82 *American Journal of Sociology* 1212–1241 (1977). <https://webarchiv.ethz.ch/soms/teaching/OppFall09/mccarthyzald77.pdf>
- Neil R. White & Madalla A. Alibeli, *Gender and Environmental Concerns in the Middle East*, 10 *PERSPECTIVES ON GLOBAL DEVELOPMENT AND TECHNOLOGY* 156–170 (2011). <http://www.ijbssnet.com/journals/Vol. 2 No. 4; March 2011/1.pdf>
- US EPA,OA, *Environmental Justice Timeline* | US EPA, US EPA (2019), <https://www.epa.gov/environmentaljustice/environmental-justice-timeline>.
- National Environmental Justice Advisory Council (NEJAC), *Summary of Public Meeting Albuquerque, New Mexico*, (2011), <https://www.epa.gov/sites/default/files/2015-02/documents/nejac-meeting-sum-1011.pdf>.
- Helen Ding & Peter Veit, *3 Reasons Property Rights Are Essential for Healthy Ecosystems*, www.wri.org (2016), <https://www.wri.org/insights/3-reasons-property-rights-are-essential-healthy-ecosystems>.
- Roger E Meiners, Pierre Desrochers & Andrew P Morriss, *Silent spring at 50: the false crises of Rachel Carson* 239 (2012).
- Sandra Postal Sandra Postel, Marjorie Spock: *An Unsung Hero in the Fight Against DDT and in the Rise of the Modern Environmental Movement*, (2021), <https://rachelcarsoncouncil.org/wp-content/uploads/2021/04/marjorie-spock-web.pdf?eType=EmailBlastContent&eld=1545c71f-09a0-495c-ba2e-ee01e3eba01>

Safe Harbor Pollution Insurance, What is CERCLA?, news.safeharborpollutioninsurance.com (2018), <http://news.safeharborpollutioninsurance.com/what-is-cercla#:~:text=CERCLA%20permits%20federal%20authorities%20to>.

Gov.sa, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

Gove.sa, *A Sustainable Saudi Vision*, Vision 2030, <https://www.vision2030.gov.sa/v2030/a-sustainable-saudi-vision/>.

Pragati Rawat & Juita-Elena (Wie) Yusuf, *Participatory Mapping, E-Participation, and E-Governance: Applications in Environmental Policy, Leveraging Digital Innovation for Governance, Public Administration, and Citizen Services: Emerging Research and Opportunities* (2020), <https://www.igi-global.com/chapter/participatory-mapping-e-participation-and-e-governance/238954>.

US EPA,OITA, *Public Participation Guide: Tools* | US EPA, US EPA (2019), <https://www.epa.gov/international-cooperation/public-participation-guide-tools>.

Tsuey-Ping Lee & Tung-Wen Milan Sun, *Public Participation*, in *Global Encyclopedia of Public Administration, Public Policy, and Governance* 5171–5181 (2018), https://link.springer.com/referenceworkentry/10.1007/978-3-319-20928-9_2720.

Brenton Holmes, *Citizens' engagement in policymaking and the design of public services – Parliament of Australia*, Aph.gov.au (2011), https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1112/12rp01.

Department of Conservation Te Papa Atawabi, *Evaluating public input in National Park Management Plan reviews Facilitators and barriers to meaningful participation in statutory processes*, (2011), <https://www.doc.govt.nz/Documents/science-and-technical/sfc308entire.pdf>.

Hadi Aliyu & Ismail Kaoje, *PUBLIC AWARENESS AND PERCEPTIONS TOWARDS PHYSICAL PLANNING IN NIGERIA: A CASE STUDY OF TALATA MAFARA, ZAMFARA STATE*, 9 *Journal of Environmental Sciences AND RESOURCES MANAGEMENT* (2017), <https://www.cenresinjournal.com/wp-content/uploads/2020/01/Page-92-105-0854.pdf>.

Kishan Khoday and Leisa Perch, *Green Equity: Environmental Justice for more Inclusive Growth*, International Policy Centre for Inclusive Growth, (2012), <https://www.academia.edu/4082133>.

Earth Reminder, *How to Conduct Environmental Awareness Campaigns?*, Earth Reminder (2021), <https://www.earthreminder.com/environmental-awareness-campaign-ideas/>.

David M. Driesen, Richard J. Lazarus. *The rule of five: making climate history at the supreme court*, 10 Journal of Environmental Studies and Sciences 362–363 (2020),

https://www.researchgate.net/publication/342245947_Richard_J_Lazarus_The_rule_of_five_making_climate_history_at_the_supreme_court_Cambridge_Massachusetts_and_London_England_Harvard_University_Press_2020

Professors George Rock) Pring & Catherine Kitty) Pring, *Environmental Courts & Tribunals*, (2016), <https://wedocs.unep.org/bitstream/handle/20.500.11822/10001/environmental-courts-tribunals.pdf?sequence=1>

¹ B. J. Preston, *Characteristics of Successful Environmental Courts and Tribunals*, 26 Journal of Environmental Law 365–393 (2014).

Saudi Legal. “Environmental laws.” <https://www.saudilegal.com/saudi-law-overview/environmental-laws>.

Vernon Valentine Palmer, Muhammad Y Mattar & Anna Koppel, *Mixed legal systems, east and west* (2015).

Deutsche Welle (www.dw.com), *How environmental courts can help Africa* | DW | 13.08.2020, DW.COM (2020) <https://www.dw.com/en/how-environmental-courts-can-help-africa/a-54553765>.

Sandrine Maljean- Dubois, *The Effectiveness of Environmental Law*, Intersentia NV (2017), <https://intersentia.com/en/the-effectiveness-of-environmental-law.html>.

Cathrin Zengerling, *Greening international jurisprudence: environmental NGOs before international courts, tribunals, and compliance committees* 17 (2013). <https://brill.com/view/title/24158>.

Sandrine Maljean- Dubois, *The Effectiveness of Environmental Law*, Intersentia NV (2017), <https://intersentia.com/en/the-effectiveness-of-environmental-law.html>.

Thomas O. McGarity, *The Role of Government Attorneys in Regulatory Agency Rulemaking*, 61 Law and Contemporary Problems 19 (1998).

¹ Yale Law School, Environmental Law YALE LAW SCHOOL • CAREER DEVELOPMENT OFFICE, Chapter 1 (2018), https://law.yale.edu/sites/default/files/area/department/cdo/document/cdo_environmental_law_public.pdf.

US EPA, *The Origins of EPA* | US EPA, US EPA (2018)

<https://www.epa.gov/history/origins-epa>.

Randy Showstack, *Congressional committee scrutinizes Environmental Protection Agency*, 92 Eos, Transactions American Geophysical Union 443–443 (2011).

<https://eos.org/articles/epa-comes-under-the-gun-in-congressional-hearing>.

Yale Law School, Environmental Law YALE LAW SCHOOL • CAREER DEVELOPMENT OFFICE, Chapter 1 (2018),

https://law.yale.edu/sites/default/files/area/departments/cdo/document/cdo_environmental_law_public.pdf.

US EPA,OEI, *Environmental Topics* | US EPA, US EPA (2019),

<https://www.epa.gov/environmental-topics>.

The Clean Air Act, 42 U.S.C. §7401, et seq. (1970)

The Clean Water Act, 33 U.S.C. §1251, et seq. (1972)

Ocean Dumping Act 40 U.S.C.A. §§ 220.1 - 220.4 (LII)

Safe Drinking Water 42 U.S.C. §300f et seq. (1974)

US EPA,OA, *About the Office of Water* | US EPA, US EPA (2019),

<https://www.epa.gov/aboutepa/about-office-water>.

Solid Waste Disposal Act 42 U.S.C. §6901 et seq. (1976)

Resource Conservation and Recovery Act 42 U.S.C. §7401 et seq. (1976).

Toxic Substances Control Act (TSCA) 15 U.S.C. §2601 et seq. (1976)

US EPA,OA, *Laws and Executive Orders* | US EPA, US EPA (2013),

<https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

US EPA,OECA, *How We Monitor Compliance* | US EPA, US EPA (2013),

<https://www.epa.gov/compliance/how-we-monitor-compliance>.

US EPA,OA, *The Basics of the Regulatory Process* | US EPA, US EPA (2013),

<https://www.epa.gov/laws-regulations/basics-regulatory-process>.

US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019),

<https://www.epa.gov/enforcement/basic-information-enforcement>.

EPA, *Environmental Appeals Board*, Epa.gov (2020),

https://yosemite.epa.gov/oa/eab_web_docket.nsf.

Annise Maguire, *Permitting Under the Clean Air Act: How Current Standards Impose Obstacles to Achieving Environmental Justice*, Vol. 14 Michigan Journal of Race and Law 255–284 (2009), <https://repository.law.umich.edu/mjrl/vol14/iss2/3/>

Kate C. Shouse, CRS INSIGHT *White House Directs EPA to Review Air Quality Standards and Permitting Process*, (2018), <https://sgp.fas.org/crs/misc/IN10891.pdf>

US EPA,OA, *Regulations* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/regulations/regulations>.

Kate C. Shouse, CRS INSIGHT *White House Directs EPA to Review Air Quality Standards and Permitting Process*, (2018), <https://sgp.fas.org/crs/misc/IN10891.pdf>.

Scientific American, *Environmental Enforcer: How Effective Has the EPA Been in Its First 40 Years?*, Scientific American (2011), <https://www.scientificamerican.com/article/the-epa-first-40-years/>.

US EPA,OA, *Laws and Executive Orders* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

US EPA,OA, *Summary of the Administrative Procedure Act* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/summary-administrative-procedure-act>.

US EPA,OA, *Regulations* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/regulations/regulations>.

OP US EPA, *Get Involved with EPA Regulations*, US EPA (2013), <https://www.epa.gov/laws-regulations/get-involved-epa-regulations>.

OAR US EPA, *Title V Evaluation Report - District of Columbia*, www.epa.gov (2017), <https://www.epa.gov/caa-permitting/title-v-evaluation-report-district-columbia-0>.

OECA US EPA, *Proposed or New Rules, Policies, and Guidance Affecting Agriculture*, www.epa.gov (2015), <https://www.epa.gov/agriculture/proposed-or-new-rules-policies-and-guidance-affecting-agriculture>.

ORD US EPA, *Role of Science at EPA*, US EPA (2014), <https://www.epa.gov/research/role-science-epa>.

National Environmental Policy Act 42 U.S.C. §4321 et seq. (1969)"

OECA US EPA, *What is the National Environmental Policy Act?*, US EPA (2013), <https://www.epa.gov/nepa/what-national-environmental-policy-act>.

Pepper, Elly. *Never Eliminate Public Advice: NEPA Success Stories*. NRDC. 2015. <https://www.nrdc.org/resources/never-eliminate-public-advice-nepa-success-stories>.

E McMahon & Michael Wright, *STREAMLINING SEQR How to Reform New York's "Environmental" Planning Law*, (2013), <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf> <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf>.

E McMahon & Michael Wright, *STREAMLINING SEQR How to Reform New York's "Environmental" Planning Law*, (2013), <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf> <https://www.empirecenter.org/wp-content/uploads/2013/12/SEQR-FINAL.pdf>.

Maryland Manual. *MARYLAND AT A GLANCE ENVIRONMENT*.
<https://msa.maryland.gov/msa/mdmanual/01glance/html/mdglance.html>.

Ministry of Environment, Water and Agriculture, *National Environment Strategy Executive Summary for the Council of Economic and Development Affairs*, (2017),
<https://www.mewa.gov.sa/en/Ministry/initiatives/SectorStrategy/Documents/6.%20BAH-MEWA-KSA%20NES-CEDA%20Executive%20Summary%20v3%2020180221%20ENG.pdf>.

General Environmental Regulations And Rules for Implementation.
<https://elaw.org/system/files/attachments/publicresource/saudi-arabia.General%20Environmental%20Regulations.pdf>.

Abdel- Rahman Hussein, StackPath, [dailynewsegypt.com](https://dailynewsegypt.com/2007/08/03/the-environment-finally-gets-a-mideast-tv-channel/) (2007),
<https://dailynewsegypt.com/2007/08/03/the-environment-finally-gets-a-mideast-tv-channel/>.

Fatima Muhammad, *New Environment and Sustainable Development Program launched in Jeddah*, *Saudigazette* (2018), <https://saudigazette.com.sa/article/530011>.

UN & Government of the Kingdom of Saudi Arabia, *Country Profile - Saudi Arabia*, [www.un.org](https://www.un.org/esa/earthsummit/saudi-cp.htm) (1997), <https://www.un.org/esa/earthsummit/saudi-cp.htm>.

The General Authority for Meteorology and Environmental Protection, *The state of the Environment responsibilities and achievements, Authority's responsibilities* (2017),
<https://ncm.gov.sa/Ar/DataLists/DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>.

UN & Government of the Kingdom of Saudi Arabia, *Country Profile - Saudi Arabia*, [www.un.org](https://www.un.org/esa/earthsummit/saudi-cp.htm) (1997), <https://www.un.org/esa/earthsummit/saudi-cp.htm>

Minister of Environment, Water and Agriculture announces formation of National Grain Company, a partnership between SALIC and Bahri, *eyeofriyadh.com* (2020), <https://www.eyeofriyadh.com/news/newsdetail.php?newsid=115501>.

Ministry of Environment, Water and Agriculture. *The General Authority of Meteorology and Environmental Protection* (2020), <https://mewa.gov.sa/en/Partners/Pages/%D8%A7%D9%84%D9%87%D9%8A%D8%A6%D8%A9-%D8%A7%D9%84%D8%B9%D8%A7%D9%85%D8%A9-%D9%84%D9%84%D8%A3%D8%B1%D8%B5%D8%A7%D8%AF-%D9%88%D8%AD%D9%85%D8%A7%D9%8A%D8%A9-%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D8%A9.aspx>.

Ahmad Al-Gilani, *Reforming the National Framework for Environmental Policies in Saudi Arabia*, 42 *Journal of Environmental Planning and Management* 253–269 (1999), <https://www.tandfonline.com/doi/abs/10.1080/09640569911244>.

The General Authority for Meteorology and Environmental Protection (GAMEP) Kingdom of Saudi Arabia., *The state of the environment responsivities and achievement*, (2017), <https://ncm.gov.sa/Ar/DataLists//DocumentLibrary/%D8%A7%D9%84%D8%AA%D9%82%D8%A7%D8%B1%D9%8A%D8%B1%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9/The%20State%20of%20the%20Environment%202017.pdf>.

Gove.sa, *Law Details*, laws.boe.gov.sa (1993), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/93e87aa7-f344-4711-b97c-a9a700f1662b/2>.

US EPA,OA, *Regulations* | US EPA, US EPA (2013), <https://www.epa.gov/laws-regulations/regulations>.

¹ Gove.sa, *Law Details*, laws.boe.gov.sa (1993), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/93e87aa7-f344-4711-b97c-a9a700f1662b/2>.

Christa Slaton, *Why does EPA Administrator Scott Pruitt still have a job? He's definitely loyal to Donald Trump and effectively pushes his agenda*, (2018), http://eprints.lse.ac.uk/90694/1/Slaton_Why-does-EPA_Author.pdf.

US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>.

Yale Law School, *Environmental Law YALE LAW SCHOOL • CAREER DEVELOPMENT OFFICE, Chapter 1* (2018), https://law.yale.edu/sites/default/files/area/departments/cdo/document/cdo_environmental_law_public.pdf.

Jeddah, *Our judiciary is transparent, independent: Justice minister*, Arab News (2016), <https://www.arabnews.com/featured/news/861036>.

Shelby county Tennessee, *History of Environmental Court* | Shelby County, TN - Official Website, <https://www.shelbycountyttn.gov/2125/History-of-Environmental-Court#:~:text=In%201983%2C%20the%20City%20of>.

Lorin Eleni Gill. *Hawaii's environmental court is second established in U.S.* Pacific News. 2015.), https://www.bizjournals.com/pacific/blog/morning_call/2015/06/hawaiiis-environmental-court-is-second-established.html.

Hawaii state judiciary, *Environmental Court*, www.courts.state.hi.us, https://www.courts.state.hi.us/special_projects/environmental_court#:~:text=Hawaii%20is%20only%20the%20second.

Hawaii Revised Statutes, *Title 12 - CONSERVATION AND RESOURCES* (§§ 171-1 — 200D-5) , <https://casetext.com/statute/hawaii-revised-statutes/division-1-government/title-12-conservation-and-resources>.

Hawaii state judiciary, *Environmental Court*, www.courts.state.hi.us, https://www.courts.state.hi.us/special_projects/environmental_court#:~:text=Hawaii%20is%20only%20the%20second.

Lorin Eleni Gill, *Hawaii's environmental court is second established in U.S.*, Bizjournals.com (2022), https://www.bizjournals.com/pacific/blog/morning_call/2015/06/hawaiiis-environmental-court-is-second-established.html.

Teagu Courtney. Chief Justice: *Hawaii Environmental Court 'Very Successful' In First Year*. 2016. P.2 <http://blog.hawaii.edu/elp/files/2016/06/Civil-Beat-India-Symposium-article-June-21-2016.pdf>.

Faisal Alturki, *Promoting Sustainable Development Through Environmental Law: Prospects for Saudi Arabia*, 2015, <https://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1016&context=lawdissertations>.

OECA US EPA, *Civil Cases and Settlements*, [cfpub.epa.gov](https://cfpub.epa.gov/compliance/cases/), <https://cfpub.epa.gov/compliance/cases/>.

Town of New Castle, *About The Plan*, [plannewcastle.us](https://plannewcastle.us/abouttheplan) (2018), <https://plannewcastle.us/abouttheplan>.

Office of Strategic Planning and Community Development, City of Somerville, Massachusetts Office of Strategic Planning and Community Development, (2020)

<https://www.somervillema.gov/sites/default/files/community-participation-plan-amendment-2020.pdf>.

Office of Strategic Planning and Community Development, "*Citizen Participation Plan*," City of Somerville, 2020. P. 10 http://www.thesomervilletimes.com/getnews/tst_10_21_20.pdf.

New Castle Town Board, *A FRAMEWORK FOR THE FUTURE OF NEW CASTLE*, (2017), <http://www.wmpf.org/wp-content/uploads/2018/08/Approved-2017-Comp-Plan.pdf>.

The Shura Council, *Majlis Ash-Shura - Historical Background*, shura.gov.sa (1926), <https://shura.gov.sa/wps/wcm/connect/ShuraEn/internet/Historical+BG/>.

Alshihri, Faez, Adel Bouregh, and Fahad Al-Harigi. "Public Participation In Preparing Urban Plans, Kingdom Of Saudi Arabia: The Case Of Dammam Metropolitan Area. (Dept. A)". *Bulletin Of The Faculty Of Engineering. Mansoura University* 39, no. 2 (2013): P.8 https://bfemu.journals.ekb.eg/article_102872_d7b2cde1b4f88cea49b2d7bf217c9b3f.pdf.

Comprehensive Planning - *Land Use Planning - Local Community Resources* - University of Illinois Extension. <https://web.extension.illinois.edu/lcr/comprehensiveplanning.cfm>.

David Rouse, "*What Makes a Comprehensive Plan Effective?*", 2019 <https://davidrousefaicp.com/what-makes-a-comprehensive-plan-effective/>.

New Castle Town Board, *A FRAMEWORK FOR THE FUTURE OF NEW CASTLE*, (2017), <http://www.wmpf.org/wp-content/uploads/2018/08/Approved-2017-Comp-Plan.pdf>.

Alshihri, Faez, Adel Bouregh, and Fahad Al-Harigi. "Public Participation In Preparing Urban Plans, Kingdom Of Saudi Arabia: The Case Of Dammam Metropolitan Area. (Dept. A)". *Bulletin Of The Faculty Of Engineering. Mansoura University* 39, no. 2 (2013). P.12 https://bfemu.journals.ekb.eg/article_102872_d7b2cde1b4f88cea49b2d7bf217c9b3f.pdf.

Gov.sa, *Saudi Arabia National Portal*., My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

SPA, *Drive to stamp out environmental violations in Saudi Arabia*, Arab News (2020), <https://www.arabnews.com/node/1613226/saudi-arabia>.

Khaled Althagafi, *Interior Ministry to form new environmental police force*, Saudigazette (2018), <https://saudigazette.com.sa/article/544519>.

Hawaii State Judiciary, *Environmental Court*, www.courts.state.hi.us,
https://www.courts.state.hi.us/special_projects/environmental_court#:~:text=Hawaii.

Shelby County Environmental Court / *Shelby County*, TN - Official Website,
[www.SHELBYCOUNTYTN.GOV](http://www.sHELBYCOUNTYTN.GOV), <https://www.shelbycountyttn.gov/353/Environmental-Court>.

Environmental Division | *Vermont Judiciary*, www.vermontjudiciary.org,
<https://www.vermontjudiciary.org/environmental>.

U.S. Energy Information Administration, *Electricity use in homes* - U.S. Energy Information Administration (EIA), www.eia.gov (2019), <https://www.eia.gov/energyexplained/use-of-energy/electricity-use-in-homes.php>.

Energy Information Administration (EIA), (2021),
<https://www.eia.gov/todayinenergy/detail.php?id=49036>.

Energy Information Administration (EIA) (2021),
<https://www.eia.gov/tools/faqs/faq.php?id=97&t=3#:~:text=In%202020%2C%20the%20average%20annual,about%20893%20kWh%20per%20month>.

Ministry of Municipal and Rural Affairs. “*Saudi Cities Report 2018*.” (2019).
[HTTPS://UNHABITAT.ORG/SITES/DEFAULT/FILES/DOCUMENTS/2020-05/SAUDI_CITIES_REPORT_-_EXCUTIVE_SUMMARY_ENGLISH.PDF](https://unhabitat.org/sites/default/files/documents/2020-05/saudi_cities_report_-_excutive_summary_english.pdf).

Office Of Energy Efficiency & Renewable Energy “*Energy Efficiency Policies and Programs*” 2019,
<https://www.energy.gov/eere/slsc/energy-efficiency-policies-and-programs>.

Annual Electricity Consumption for Saudi Arabia - Saudi Open Data, Data.gov.sa (2019),
<https://data.gov.sa/Data/en/dataset/annual-electricity-consumption-for-saudi-arabia>.

Annual Electricity Consumption for Saudi Arabia - *Saudi Open Data*, Data.gov.sa (2019)
<https://data.gov.sa/Data/en/dataset/annual-electricity-consumption-for-saudi-arabia>

Annual Electricity Consumption for Saudi Arabia - *Saudi Open Data*, Data.gov.sa (2019)
<https://data.gov.sa/Data/en/dataset/annual-electricity-consumption-for-saudi-arabia>.

Salma Saleh, Saudi Arabia: *Water consumption by region 2018*, *Statista* (2019),
<https://www.statista.com/statistics/627146/saudi-arabia-water-consumption-by-region/>.

ABDUL H. TAGO, "KSA water consumption rate twice the world average," *Arab News*" (2014),
<https://www.arabnews.com/news/532571#:~:text=Mirza%20Barjees%20Baig%2C%20a%20Canadian>.

US EPA,OARM, *Water Conservation at EPA* | US EPA, (2015),
<https://www.epa.gov/greeningepa/water-conservation-epa>.

OW US EPA, *Understanding Your Water Bill*, www.epa.gov (2017),
<https://www.epa.gov/watersense/understanding-your-water-bill#What%20are%20my%20charges%20going%20towards?>.

US EPA, OCSPP, *Pollution Prevention Tips for Water Conservation* | US EPA, US EPA (2013), <https://www.epa.gov/p2/pollution-prevention-tips-water-conservation>.

US EPA,OARM, *Water Conservation at EPA* | US EPA, US EPA (2015),
<https://www.epa.gov/greeningepa/water-conservation-epa>.

OMS US EPA, *Water Management Plans and Best Practices at EPA*, US EPA (2015),
<https://www.epa.gov/greeningepa/water-management-plans-and-best-practices-epa>.

As Drought Conditions Intensify, *Governor Newsom Calls on Californians to Take Simple Actions to Conserve Water*, California Governor (2021),
<https://www.gov.ca.gov/2021/07/08/as-drought-conditions-intensify-governor-newsom-calls-on-californians-to-take-simple-actions-to-conserve-water/>.

Salma Saleh, Saudi Arabia: *Water consumption by region 2018*, Statista (2019),
<https://www.statista.com/statistics/627146/saudi-arabia-water-consumption-by-region/>.

US EPA,OARM, *Water Conservation at EPA* | US EPA, US EPA (2015),
<https://www.epa.gov/greeningepa/water-conservation-epa>.

Baig, Mirza B., Khodran H. Al-Zahrani, Felicitas Schneider, Gary S. Straquadine, and Marie Mourad. "Food waste posing a serious threat to sustainability in the Kingdom of Saudi Arabia—A systematic review." *Saudi Journal of Biological Sciences* 26, no. 7 (2019): 1743-1752. <https://www.sciencedirect.com/science/article/pii/S1319562X18301451>.

Mirza Barjees Baig, Irena Gorski & Roni A. Neff, *Understanding and addressing waste of food in the Kingdom of Saudi Arabia*, 26 Saudi Journal of Biological Sciences (2018),
<https://www.sciencedirect.com/science/article/pii/S1319562X1830216X>..

S EPA, *Our Mission and What We Do* | US EPA, US EPA (2019),
<https://www.epa.gov/aboutepa/our-mission-and-what-we-do>.

US EPA, National Overview: *Facts and Figures on Materials, Wastes and Recycling* | US EPA, US EPA (2018), <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>.

National Conference of State Legislatures, *State Plastic and Paper Bag Legislation*, Ncsl.org (2021), <https://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>.

US EPA, National Overview: *Facts and Figures on Materials, Wastes and Recycling* | US EPA, US EPA (2018), <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>.

Becca Brewer. *RECYCLING ENVY: TEN AMERICAN CITIES WITH EXCELLENT PRACTICES* (2020). <https://www.bustedcubicle.com/outside/top-american-cities-recycling>.

Baig, Mirza B., Khodran H. Al-Zahrani, Felicitas Schneider, Gary S. Straquadine, and Marie Mourad. "Food waste posing a serious threat to sustainability in the Kingdom of Saudi Arabia—A systematic review." *Saudi Journal of Biological Sciences* 26, no. 7 (2019): 1743-1752. <https://www.sciencedirect.com/science/article/pii/S1319562X18301451>.

U L, *Environmental Product Declarations Program*, UL, <https://www.ul.com/resources/environmental-product-declarations-program>.

Al-Janadi, Yaseen, Rashidah Abdul Rahman, and Normah Haji Omar. "The level of voluntary disclosure practices among public listed companies in Saudi Arabia and the UAE: Using a modified voluntary disclosure index." *International Journal of disclosure and Governance* 9, no. 2 (2012): 181-201.

OCSP US EPA, *Buying Green for Consumers*, www.epa.gov (2014), <https://www.epa.gov/greenerproducts/buying-green-consumers>.

OECA US EPA, *EPA's Audit Policy*, US EPA (2019), <https://www.epa.gov/compliance/epas-audit-policy>.

Friends of the Environment Association,| *Riyadh Environment* (2019),

<https://www.riyadhenv.gov.sa/plan/%D8%AC%D9%85%D8%B9%D9%8A%D8%A9-%D8%A3%D8%B5%D8%AF%D9%82%D8%A7%D8%A1-%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D8%A9/?tab=3>

Al kanani, A., et al. "*Energy Efficiency in Residential Buildings in the Kingdom of Saudi Arabia.*" Building Information Modelling, Building Performance, Design and Smart Construction. (2017), p.129

https://www.researchgate.net/publication/315854855_Energy_Efficiency_in_Residential_Buildings_in_the_Kingdom_of_Saudi_Arabia.

Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018),

https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FINAL.pdf.

Al kanani, A., et al. "*Energy Efficiency in Residential Buildings in the Kingdom of Saudi Arabia.*" Building Information Modelling, Building Performance, Design and Smart Construction. (2017), p.129

U.S BUREAU OF LABOR STATISTICS, *Careers in Green Construction* : U.S. Bureau of Labor Statistics, Bls.gov (2017), <https://www.bls.gov/green/construction/>.

U.S BUREAU OF LABOR STATISTICS, *Careers in Green Construction* : U.S. Bureau of Labor Statistics, Bls.gov (2017), <https://www.bls.gov/green/construction/>.

Joe Lo, *Saudi Arabia aims for 50% renewable energy by 2030, backs huge tree planting initiative*, 2021, <https://www.climatechangenews.com/2021/03/31/saudi-arabia-aims-50-renewable-energy-2030-backs-huge-tree-planting-initiative/>.

Arab News, *"Drive to Stamp out Environmental Violations in Saudi Arabia,"* Arab News, last modified January 15, 2020. <https://www.arabnews.com/node/1613226/saudi-arabia>

OA US EPA, " *EPA Announces 2019 Annual Environmental Enforcement Results*", WWW.EPA.GOV (2020), <https://www.epa.gov/newsreleases/epa-announces-2019-annual-environmental-enforcement-results>

US EPA,OECA, *Basic Information on Enforcement* | US EPA, US EPA (2019), <https://www.epa.gov/enforcement/basic-information-enforcement>.

Statista, *"Public opinion on the most important environmental issues in Saudi Arabia as of June 2017,"* Statista.com, 2021 <https://www.statista.com/statistics/868413/saudi-arabia-public-opinion-on-environmental-challenges/>.

Massachusetts v. Environmental Protection Agency, Oyez, <https://www.oyez.org/cases/2006/05-1120>

James E. Salzman & J. B. Ruhl, *Who's Number One?* papers.ssrn.com (2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1498640

Marisa Martin & James Landman Standing: *Who Can Sue to Protect the Environment?*

ABA, 2020. https://www.americanbar.org/groups/public_education/publications/insights-on-law-and-society/volume-19/insights-vol--19---issue-1/standing--who-can-sue-to-protect-the-environment-/.

Marisa Martin & James Landman Standing: *Who Can Sue to Protect the Environment?* ABA, 2020. https://www.americanbar.org/groups/public_education/publications/insights-on-law-

[and-society/volume-19/insights-vol--19---issue-1/standing--who-can-sue-to-protect-the-environment-/](#).

US EPA, *Summary of the Clean Air Act* | US EPA, US EPA (2018),

<https://www.epa.gov/laws-regulations/summary-clean-air-act>.

THE UNITED NATION FRAMEWORK CONVENTION ON CLIMATE CHANGE

(UNFCCC), *Third National Communication of the Kingdom of Saudi Arabia*, (2016),

https://unfccc.int/files/national_reports/non-annex_i_natcom/application/pdf/saudi_arabia_nc3_22_dec_2016.pdf.

Statista, "*Public opinion on the most important environmental issues in Saudi Arabia as of June 2017*," Statista.com, last modified

2021 <https://www.statista.com/statistics/868413/saudi-arabia-public-opinion-on-environmental-challenges/>.

RIYAD, *34 charged with violation of Saudi environmental laws*, Arab News (Jan. 7, 2021),

<https://www.arabnews.com/node/1788506/saudi-arabia#:~:text=RIYAD%3A%20The%20Special%20Forces%20for>.

Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018),

https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FINAL.pdf.

Ministry of Municipal and Rural Affairs, *Saudi Cities Report 2018*,

https://unhabitat.org/sites/default/files/documents/2020-05/saudi_cities_report_-_executive_summary_english.pdf.

United Nations Saudi Arabia, *Towards Saudi Arabia's Sustainable Tomorrow*, (2018), https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FINAL.pdf.

Kingdom of Saudi Arabia, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>

Gov.sa, *Vision 2030*, (2016), https://www.vision2030.gov.sa/media/rc0b5oy1/saudi_vision203.pdf.

Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018), https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FINAL.pdf.

Kingdom of Saudi Arabia, *Energy & Sustainability*, Vision 2030, <https://www.vision2030.gov.sa/thekingdom/explore/energy/>.

Gov.sa, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

THE UNITED NATION FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC), *Third National Communication of the Kingdom of Saudi Arabia*, (2016), https://unfccc.int/files/national_reports/non-annex_i_natcom/application/pdf/saudi_arabia_nc3_22_dec_2016.pdf.

Kingdom of Saudi Arabia, *Energy & Sustainability*, Vision 2030, <https://www.vision2030.gov.sa/thekingdom/explore/energy/>.

Kingdom of Saudi Arabia, *Saudi Arabia National Portal*, My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

Kingdom of Saudi Arabia Presidency of Meteorology and Environment, *General*

Environmental Regulations And Rules for Implementation, (2001),

https://elaw.org/system/files/attachments/publicresource/saudi-arabia.General%20Environmental%20Regulations.pdf?_ga=2.202322385.1550030270.1584000600-750610768.1584000600.

Gov.sa, *Saudi Arabia National Portal*., My.gov.sa (2021),

<https://www.my.gov.sa/wps/portal/snp/agencies/AC171/>.

Deutsche Welle (www.dw.com), *Saudi Arabia to build a zero emissions city* / DW |

11.01.2021, DW.COM (2021), <https://www.dw.com/en/saudi-arabia-to-build-a-zero-emissions-city/a-56189240>.

Saudi Legal. "*Environmental Laws*" <https://www.saudilegal.com/saudi-law-overview/environmental-laws>.

¹ DIMAH TALAL AL-SHARIF, *Strong legal framework to ensure a sustainable environment*, Arab News (2021), <https://www.arabnews.com/node/1791641>.

Saudi Legal. "*Environmental Laws*" (2020), <https://www.saudilegal.com/saudi-law-overview/environmental-laws>.

Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>

DIMAH TALAL AL-SHARIF, *Strong legal framework to ensure a sustainable environment*, Arab News (2021), <https://www.arabnews.com/node/1791641>.

Shazelle James & WKC Group, KSA's 2021 *Environmental Regulatory Reforms – Part 2*, WKC Group (2021), <https://www.wkcgroup.com/newsletter/news/saudi-arabias-environmental-regulatory-reforms/>.

Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>

Shazelle James & WKC Group, KSA's 2021 *Environmental Regulatory Reforms – Part 2*, WKC Group (2021), <https://www.wkcgroup.com/newsletter/news/saudi-arabias-environmental-regulatory-reforms/>.

DIMAH TALAL AL-SHARIF, *Strong legal framework to ensure a sustainable environment*, Arab News (2021), <https://www.arabnews.com/node/1791641>

Gov.sa, *Saudi Arabia National Portal*., My.gov.sa (2012), <https://www.my.gov.sa/wps/portal/snp/aboutksa/environmentalProtection>.

Gov.sa, *Law Details*, (2019), <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/63831ff6-63d9-4212-8b54-abf800e146bd/1>.

OP US EPA, *What is the National Environmental Policy Act?*, US EPA (2013), [https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=The%20National%20Environmental%20Policy%20Act%20\(NEPA\)%20was%20signed%20into%20law](https://www.epa.gov/nepa/what-national-environmental-policy-act#:~:text=The%20National%20Environmental%20Policy%20Act%20(NEPA)%20was%20signed%20into%20law).

Department of Environmental Conservation NY, *SEQR - NYS Dept. of Environmental Conservation*, <https://www.dec.ny.gov/permits/357.html>.

Provinces of Saudi Arabia, Wikipedia (2022), https://en.wikipedia.org/wiki/Provinces_of_Saudi_Arabia.

Mike Doyle, *About Our Government*, Congressman Mike Doyle (2019), <https://doyle.house.gov/resources/about-our-government>.

Ryan Reft, Research Guides: The Federal Paper Chase: Judges' Papers in the Manuscript Division: *U.S. District Court for the District of Columbia*, guides.loc.gov (2019), <https://guides.loc.gov/papers-of-federal-judges/district-dc-circuit> .

Columbia Climate School, *The State and Local Role in Protecting America's Environment, State of the Planet* (2018), <https://news.climate.columbia.edu/2018/07/16/state-local-role-protecting-americas-environment/>.

OECA US EPA, *Civil Cases and Settlements*.
<https://cfpub.epa.gov/compliance/cases/>.

THE OFFICIAL WEBSITE OF NEW YORK STATE, Introduction to SEQR - NYS Dept. of Environmental Conservation,
<https://www.dec.ny.gov/permits/6208.html#:~:text=New%20York>.

CITY OF NEWPORT BEACH, CEQA - California Environmental Quality Act | City of Newport Beach, <https://www.newportbeachca.gov/government/departments/community-development/planning-division/ceqa-california-environmental-quality-act#:~:text=What%20is%20CEQA%3F>

NYC Sustainable Buildings, *Local Law 97* - Sustainable Buildings,
<https://www1.nyc.gov/site/sustainablebuildings/ll97/local-law-97.page#:~:text=Under%20this%20groundbreaking%20law%2C%20most>.

US EPA, *Our Mission and What We Do* | US EPA, US EPA (2019),
<https://www.epa.gov/aboutepa/our-mission-and-what-we-do>.

US EPA,OECA, *Report an Environmental Violation, General Information* | US EPA, US EPA (2013),
<https://www.epa.gov/enforcement/report-environmental-violation-general-information>.

Gov.sa UN., *Sustainable Development Goals, 1st Voluntary National Review Kingdom of Saudi Arabia*, (2018),
https://sustainabledevelopment.un.org/content/documents/20230SDGs_English_Report972018_FINAL.pdf.

Cyrille Valence Ngouana Kengne, Serge Emeran Menang Evouna & Dieudonné Bitondo, *Public hearings in environmental and social impact assessment for energy sector projects in Cameroon*, 31 *Impact Assessment and Project Appraisal* 64–73 (2013),
<https://www.tandfonline.com/doi/full/10.1080/14615517.2012.759454>.

Mansoor Ahmad, *Environmental Education: An Indispensable Tool for Public Awareness*, 8 *International Journal of Research in all Subjects in Multi Languages* (2020),
https://www.raijmr.com/ijrsml/wp-content/uploads/2020/06/IJRSML_2020_vol08_issue_4_Eng_03.pdf.

Rogue Disposal Recycling INC, *Exploring the three Rs of waste management — Reduce, Reuse, Recycle*, Rogue Disposal & Recycling,
<https://roguedisposal.com/resources/education/recycling/exploring-the-three-rs-of-waste-management-reduce-reuse-recycle#:~:text=Exploring%20the%20three%20Rs%20of%20waste%20management%20%E2%80%94%20Reduce%2C%20Reuse%2C%20Recycle&text=In%20order%20to%20keep%20as>.

Mansoor Ahmad, *Environmental Education: An Indispensable Tool for Public Awareness*, 8 *International Journal of Research in all Subjects in Multi Languages* (2020),
https://www.raijmr.com/ijrsml/wp-content/uploads/2020/06/IJRSML_2020_vol08_issue_4_Eng_03.pdf.

Bill A., Seattle, Scientific American Wash. Environmental Enforcer: *How Effective Has the EPA Been in Its First 40 Years?* February 8, 2011.),
<https://www.scientificamerican.com/article/the-epa-first-40-years/>.