

Legal Basis of Environmental Management: Challenges With Enforcing And Sustaining Environmental Compliance

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Review Article

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ABSTRACT

The speed at which human society has been developing in the last 50 years, threatens to lead the Earth and the Environment to destruction. Facing the increased depletion of natural resources and high levels of pollution in oceans, air and land, humanity has a critical mission to accomplish by 2030. At the core of this mission are the reduction of detrimental impacts of humanity's activity and protection of the nature and environment. The author argues that environmental laws and management systems can play a vital role to support this mission. The article examines the legal basis of environmental law and Environmental Management System (EMS), their gaps and challenges with implementation and enforcement. Moreover, the author offers views on how environmental compliance can be sustained.

INTRODUCTION

Unprecedented development rate of the human society that has been observed over the last 50 years gradually drives our Environment to destruction. Suffice to say that consumption of Earth's natural resources more than tripled between 1970 and 2015. At the speed we are going now, the humanity needs resources worth 1.5 Earths to sustain the current lifestyle today and 2 Earths by 2030. If current patterns continue, there will be no seafood left in the world oceans by 2050, and according to NASA, the world's rainforest will disappear by 2100. As for the water resources, Professor Benjamin Sovacool of Aarhus University, Denmark, predicts that potable water reserves can be fully depleted by as early as 2040 if "we keep doing what we are doing today."

The development one witnesses nowadays (that has been somewhat slowed down by the COVID-19 pandemic) has not always been the case. Some 4000 years ago, human beings used to live in a relative harmony with the surrounding Environment, not causing much harm. However, as human beings evolved and their tools advanced, the impact of human activity has greatly increased. Different materials and substances (e.g., synthetic and organic chemical compounds, plastics, deposits of carbon dioxide, etc.) had been invented by humans and discarded as waste thereby causing damage to ecosystems ^[1]. For instance, in just one generation, the production of man-made chemicals increased by 40,000%, i.e., from 1 million to 400 million tons. And in the last 170 years, 2.4 trillion tons of carbon dioxide have been discharged into the atmosphere, of which 50% was added just in the last 30-35 years.

Looking into the future, humanity has a critical mission to fulfill between now and 2030 that is to reduce detrimental impacts of its activity and to protect the Environment and the Planet from destruction. Environmental Management System (EMS) and environmental laws can play a significant role to support this mission ^[2].

Therefore, this article aims to review fundamental questions such as:

- What is the legal basis of EMS and Environmental Laws?
- What are the gaps in EMS and Environmental Regulations?
- Why are environmental regulations not as effective as they should be?
- What are the challenges of enforcing those regulations?
- What is needed to make environmental compliance sustainable?

The article attempts to organize and synthesize the body of knowledge pertaining to the EMS and environmental law, how environmental regulations are enforced and the challenges associated with enforcement. A number of models of environmental compliance are summarized and supported with practices from various countries. And finally, an attempt has been made to propose the ways in which environmental compliance can become sustainable.

LITERATURE REVIEW

An extensive number of open source publications have been reviewed for this article, including books, journal articles and United Nations' reports. The article encapsulates research and scientific views of authors from a variety of countries and cultural backgrounds.

Legal basis of EMS

Knowing the legal basis of EMS and environmental law is fundamental to understanding their pivotal role. EMS is a framework designed to help organizations achieve their environmental [3]. The legal basis of the most commonly used EMS is rooted in the ISO 14001 standard established in 1996 [4]. ISO's EMS framework is based on the Plan-Do-Check-Act methodology, and its five main stages include:

1. Commitment and Policy
2. Planning
3. Implementation
4. Evaluation
5. Review

Gaps in EMS

There is plenty of evidence that the EMS system of ISO 14001 standard can benefit organizations. However, one also needs to understand the gaps of this system [5]. The most common disadvantages of the EMS system are linked to the following challenges:

Implementation cost: The cost of obtaining ISO EMS certification can be high. This cost consists of the cost of EMS implementation as well as maintenance (e.g., monitoring and auditing activities, re-certification, etc.) [5].

Human resources: The effective implementation of EMS heavily depends on the availability of in-house human resources. In some cases, the absence of this resource may become a bigger problem than the cost issue [5].

Time: EMS system requires substantial time commitment to establish the system and all of its components. Time is also needed to implement and monitor requirements [6].

Management commitment: Management commitment at all levels of an organization is essential to the success of EMS implementation. In the absence of such support, attempting to start any EMS implementation is not recommended [6].

Bureaucracy: Establishing and running an EMS system requires developing and maintaining a great deal of paperwork and evidence. As a result, an organization may feel discouraged from further pursuing the EMS [6].

Exposure of organization's weaknesses: EMS requires organizations to track their regulatory compliance obligations and openly report performance to management. For some organizations, this may expose their weaknesses to regulatory bodies and lead to fines or other punitive measures ^[5]. Therefore, the gaps of the ISO EMS system are well recognized along with its advantages. This is why, before embarking on the EMS system, organizations need to assess their readiness for this journey in terms of having sufficient resources, will and management support.

Legal basis of environmental laws

The commonly supported view is that the foundation for environmental law was laid out with the introduction of the US National Environmental Policy Act in 1970 ^[7]. At the global level, however, the 1972 United Nations Conference on the Human Environment (Stockholm, Sweden) was a turning point for attracting attention to environmental problems ^[8]. The Conference shed light on a multitude of environmental principles which were recognized by Member States. Furthermore, in 1992 the United Nations hosted the Conference on Environment and Development (known as the "Earth Summit") in Rio De Janeiro, Brazil, that reinforced the environmental principles which were implemented through the national laws of most nations. And while there have been many other conferences held later on, the above two are considered the most important pillars of environmental law ^[4]. It is worth mentioning that National Constitutions of UN Member States also serve as one of the key legal instruments to protect the Environment ^[9].

Gaps of environmental laws

The environmental law is known to have a number of gaps which are sufficiently documented in the literature. The gaps are mainly attributed to the following:

Fragmented structure: The structure of international environmental law is fragmented. This means that the management of environmental issues is handled by various sectoral (legislation on water, air pollution control, waste, etc.), issue-specific, and legally independent treaties. Consequently, some environmental issues are addressed while others aren't ^[10].

Lack of effective enforcement: There is lack of effective enforcement tools, and globally this weakness is considered a fundamental challenge. Although most environmental regulations contain criminal penalties to punish offenders, these penalties have not brought about the expected results ^[11].

Environmental law is not ecologically oriented: Another fundamental limitation of the current Environmental Law is that it is mostly centered on the needs and activities of humans rather than those of ecosystems. Unlike humans, nature is not viewed as having rights. Rather, it is viewed as a resource base to facilitate human activity. Therefore, in the absence of rules prohibiting harm to the integrity of ecosystems, Environmental law's effectiveness is significantly reduced ^[7].

Lack of involvement of civil society

Research works of many scholars confirm that simply adopting environmental legislation is not sufficient. Where Civil Society is not involved in enforcement, desired results will be harder to achieve ^[12]. The main conclusion here is that environmental regulations do have a solid foundation and are even embedded in the UN Member States' Constitutions. Nevertheless, existing gaps hamper the overall enforcement and effectiveness of environmental regulations.

How is the environmental law enforced?

The process of enactment of environmental laws does not necessarily ensure effective enforcement. Often, success depends on the enforcement models employed by government environmental agencies around the world ^[13]. The literature splits enforcement models into two main branches. On the one hand, there is the sanction-oriented deterrence approach. And on the other hand, there is the compliance approach ^[14]. Deterrence based approach relies on enforcement and punishment of offenders while compliance based approach uses advice, persuasion and negotiation tactics, and considers criminal prosecution as a means of last resort ^[15]. A plethora of enforcement models has been identified in the literature, and can be summarized as follows:

Rules and deterrence model: The Rules and Deterrence model relies on prescriptive standards applicable to a wide array of circumstances. For instance, the US Environmental Protection Agency (EPA) predominantly employs this model. By doing so, EPA monitors compliance and collects evidence for enforcement action ^[14].

Advice and persuasion model: The Advice and Persuasion model focuses on engaging civil society, promoting education and awareness campaigns, collaboration and information sharing. It may use legal action only as a means of last resort ^[14].

Criteria model: This model does not prescribe any standards. Instead, the enforcement officers use a list of criteria to arrive at a certain decision depending on specific circumstances of the case ^[14].

Risk based model: Under this model, the allocation of resources, time and effort is risk-based. Enforcement agencies provide guidance and also enforce the law if there is non-compliance ^[14].

Responsive regulation model: Responsive Regulation model employs a combination of persuasion and coercion depending on the behavior of the regulated community. The enforcement agency can be flexible and cooperative, however, if an organization does not follow a similar approach, then the regulator will switch to deterrence tactics ^[14].

Hybrid model: Hybrid model consists of a mix of strategies where some strategies are complementary while others are more fundamental or permanent ^[14].

Command and control model: Command-and-control model has been widely deployed by many countries. It is straight forward in terms of applying deterrence and punishment for violations. This model is known for achieving quick results. But it also suffers from drawbacks such as economic inefficiency and inflexibility ^[16].

Market-Based instruments model: This is a relatively new model which has emerged to support traditional ones. The model offers environmental taxes, tradable allowances and permits, grants and subsidies for pollution control, and so on. The use of this model is progressively going up ^[16]. Every model has its own strengths and limitations. Therefore, it is suggested that combining the models would make enforcement more effective. While

choosing which models to combine one needs to consider the maturity level of the regulated community, the overall compliance culture of a particular country, and the very nature of environmental challenges being addressed.

Enforcement mechanisms practices from different countries

Enforcement mechanisms differ from country to country. They are summarized below in an attempt to demonstrate a wide array of enforcement practices and models employed around the world.

Nigeria

The environmental protection laws in Nigeria provide for a number of enforcement mechanisms, which include: permit, license, certificate, inspection, search, seizure, arrest, sealing, notice of violation, notice of revocation of permit, revocation order, recourse to courts for civil penalties for violation, injunctive relief to require compliance, criminal sanctions for violations, and citizen's suits to enforce the statutes in the absence of effective government enforcement ^[17].

South Africa

In 2005, South Africa introduced a new legislation to appoint Environmental Management Inspectors (EMIs). The latter were tasked with the monitoring and enforcement of certain environmental legislation. EMIs were given a new tool known as Compliance Notice. The main objective of Compliance Notices is to bring non-compliant organizations into compliance with environmental legislation. Non-compliance with a Compliance Notice is subject to prosecution ^[18].

United Kingdom

In UK, with the introduction of the Regulatory Enforcement and Sanctions Act in 2008 and the Environmental Civil Sanctions Order of 2010 regulatory agencies received new tools ^[19]. Of these, enforcement undertakings are the most interesting ones. An enforcement undertaking is a legally binding written agreement between the offender and the regulator where offenders make a commitment to improve their compliance by taking specific steps. Such steps may include commitments like restoring the environmental damage caused or paying compensation to third parties who suffered from that damage. In the absence of third parties, the offender can make a charitable donation to wildlife trust, nature reserve or similar environmental organizations ^[19].

United States

The US EPA has multiple tools at its disposal to enforce environmental regulations. The tools include compliance assistance, compliance monitoring, and compliance incentives and auditing. In EPA's opinion, these tools make the overall enforcement strategy much more effective ^[20]. It is, therefore, evident that there is no shortage of enforcement models and mechanisms, and countries have come up with some innovative approaches too. If this is the case, what is holding them up from effective enforcement?

Challenges with enforcing environmental regulations

Challenges with enforcing environmental regulations are abound. Most of the time, they are closely associated with a country's specific geopolitical, political, financial, environmental, legal and/or other issues. Here are the five main reasons why enforcing environmental regulations is challenging:

- a) Environmental legislation cannot possibly foresee every present and future circumstance;
- b) Legislation may have gaps;
- c) Environmental challenges may differ from country to country;
- d) Environmental regulatory agencies differ among themselves in terms of their staffing, resources, access to technologies, (e.g., some agencies are more advanced than the others);
- e) Lack of public trust in regulatory agencies ^[21]. Consequently, virtually all countries have difficulties with enforcing environmental regulations ^[17]. To illustrate the point better, let us take a close look at specific examples of challenges described in the literature.

China

China's main environmental protection law was enacted in 1989. Challenges with this law include superficial enforcement of environmental mechanisms, low fines for pollution, floppy investigation processes, delayed punishment of illegal activities, lack of adequate compensation for pollution victims and so on. In addition, many environmental mechanisms have not been fully implemented yet. Overall, the enforcement has not been consistent resulting in certain industries continuing their pollution practices ^[17].

Central American countries

In the countries of Central America, most of the environmental laws are not clear, and suffer from the lack of effective mechanisms. Other limitations are lack of political support, inefficient legal frameworks, lack of financial and human resources ^[17].

Nigeria

The biggest challenge for Nigeria is the lack of an effective enforcement strategy. Most of the existing strategies and mechanisms are not well developed, and not being implemented ^[14]. Lack of funding and human resources as well as threats from powerful individuals combined with corruption also negatively impact Nigeria's enforcement efforts ^[17].

South Africa

South Africa has its own fair share of environmental enforcement challenges. This is due to the lack of capacity and insufficient resources in government structures. Also, for many years, the country has been dependent on 'command and control' enforcement approach and has not incentivized its regulated community. Predominant

use of criminal enforcement has not resulted in visible improvements since the penalties have not been substantial enough to deter polluting enterprises ^[18].

The Arab world

In Arab countries, the lack of civil society engagement is one of the drawbacks of environmental law enforcement. Public participation is not considered as part of environmental management and some countries (for instance, Egypt, Bahrain, and UAE) do not even require it. In addition, the focus and consistent implementation of existing environmental laws would benefit from a major overhaul ^[22].

USA

Despite spending billions of dollars annually on enforcement mechanisms the overall effectiveness of US Government's efforts has been controversial. Many researchers believe that there have been significant reductions in environmental pollution in the US. However, there are also examples when major stakeholders did not support stringent enforcement. For instance, the U.S. Congress pushed for reduced enforcement during the early 1990s, while the U.S. EPA itself proposed a plan to cut down on inspections ^[23].

European Union

Similar to other countries, the European Union (EU) has also experienced difficulties with environmental law enforcement in terms of high number of non-compliances. While the EU's environmental regulations are quite advanced and highly developed, their effectiveness has been questioned. For example, for many years since the adoption of Aarhus Convention in 1998, EU has been focused on encouraging the "bottom up" enforcement. With the Aarhus Convention, the EU has given third party citizens and Environmental Non-Governmental Organizations (ENGOS) legal rights of access to environmental information, public participation, and access to justice in environmental matters. In the meantime, the EU has reduced its public enforcement measures. Despite using such an innovative approach, there has been little evidence to date, to demonstrate its effectiveness ^[24].

DISCUSSION

How to make environmental compliance sustainable?

To some people, the terms "compliance" and "sustainability" may seem incompatible. One of the reasons for this is that sustaining compliance with the increasing number of environmental regulations and requirements is a challenging task. Nevertheless, it is argued here that environmental compliance can be made sustainable albeit not in every case and not in every country. Sustainability requires certain conditions to be met, such as, but not limited to, availability of resources (both human and capital), effective judicial system, socio-economic factors, active civil society engagement in environmental matters, etc ^[25]. So, what are the potential ingredients needed to make environmental compliance sustainable? Based on the literature review and the author's field experience, the following summary of key factors is proposed:

Role of government: is crucial in sustaining environmental compliance. Regulated entities (regardless of their maturity level) depend on the government for setting standards and strategic direction. Also, they expect the government to provide guidance, assistance, monitoring, incentives, and other support. All these functions are vital to establishing sustainable compliance, and without them, many environmental issues would not have ownership ^[16].

Adoption of ISO EMS or a similar system by all enterprises: EMS systems like the one from ISO are available yet are voluntary. This leads to enterprises having different levels of environmental performance and compliance with requirements. To improve sustainability of environmental compliance, it would add value for all companies to adopt an EMS system.

Shift from compliance to performance excellence: A fundamental shift is needed if we are to sustain environmental compliance. Meeting or exceeding environmental compliance obligations needs to become part of conducting business. One way of achieving this is by incorporating compliance obligations into entities' performance measures, and concentrating limited resources on the most significant environmental aspects. Mere compliance with minimum requirements should be viewed as a thing of the past ^[26].

Change of mind set: Environmental compliance should no longer be viewed as a burden or something that is being done out of fear of prosecution ^[20].

Digital technologies: Modern times have witnessed a surge in the availability of various environmental monitoring and measurement technologies. Online dashboards, digital measurement systems, flow meters, analyzers and other technologies should be widely adopted in order to meet and exceed the minimum compliance obligations ^[12].

Engineering solutions: To improve sustainability of compliance, environmental challenges should be resolved through engineering solutions. Unfortunately, for decades, environmental impacts have not been considered properly at the design stage of equipment, machinery and polluting industries out of the belief that Environment is there to "simply supply resources" ^[27]. Applying engineering solutions to environmental issues will significantly aid in not only resolving the problem, but also in sustaining the solution while also promising to reduce operating costs ^[28].

Smart incentive schemes: these are the kind of incentives that can be measured, be linked directly to a regulated entity's performance and related to a significant environmental aspect. A great example comes from Sweden where the government introduced a refunded fee to compensate companies for offsetting NOx emissions based on metered results. By doing this, the government encouraged companies to install flow meters which previously seemed to be cost prohibitive, but all of a sudden, became a financially viable option. Such smart incentives make environmental compliance more attractive, hence sustainable ^[27-30].

Human capability development: it is necessary to invest in environmental staff development in both government and private sectors. Educated environmental professionals are highly effective in developing and enforcing legislation, and driving environmental performance [12].

Civil society engagement: civil society is on the receiving end of environmental damage. It can provide crucial feedback and attract attention to real environmental issues. When civil society speaks up, politicians have no options other than listening and taking action. And when the civil society is disengaged, the harm to environment silently keeps going on and on [12,24].

Education and awareness: These are still topical and continue to play a significant role nowadays. For instance, if employees are aware and educated on the harm caused by their industry on their local environment, they would be more keenly interested in implementing preventive and mitigation measures. It is true that education and awareness do not resolve problems overnight, yet they tend to have a cumulative effect, i.e., positive effects can be observed once the majority of workforce has accumulated sufficient basic knowledge to appreciate the environmental damage caused [12,31-37].

CONCLUSION

This article has reviewed several key subjects related to EMS and Environmental Compliance. It touched upon the legal basis of EMS and environmental laws, talked about gaps in EMS and environmental regulations, examined the way environmental laws are enforced, and the challenges associated with enforcement. Practices from different countries have been shared to illustrate the main points. The article summarized a number of enforcement models and mechanisms applied by different countries, and it stressed that the effectiveness of enforcement continues to be a major challenge worldwide. The article concludes with a view that environmental compliance can be made sustainable. A model of sustainability consisting of various factors was shared. In addition, many components are already there, and have improved over the past decade. For instance, the legal infrastructure already exists, i.e., national laws and international conventions are there, and so are the regulators and their enforcement mechanisms. Training, awareness and education on environmental subjects have proliferated in the last decade and can be obtained with relative ease. Moreover, recent years have seen an “explosion” in the level of awareness of environmental problems around the world that has fueled the trend of green technologies. The momentum has been gained, and the world leaders as well as private businesses have become more perceptive of environmental issues than in the past. These changes are unprecedented and serve as a solid foundation for enhancing and sustaining environmental compliance. There are also subjects, however, that require further research and analysis. These are:

- Effectiveness of enforcement tools;
- A shift in environmental law towards Nature and ecosystems; and
- Effectiveness of civil society engagement.

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