

National and International Environmental Law and Justice

Primers and Catalysts of Environmental Law and Regulations: The Missing Links

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Introduction

International environmental law will always be ever-changing, constantly expanding, especially when reliance depends on decisions and collaborations between nations, treaties or agreements, or cooperation. The vastness of international law includes not only the environment broadly, but such other issues, connected or unconnected of population, biodiversity, global climate change, ozone depletion, preserving the Antarctic regions, movement of toxic and hazardous substances, land or vessel-based pollution, dumping, conservation of marine living resources, trans-boundary air and water pollution, desertification, unsustainable lifestyle, over-consumption, over-production of waste, and the list keeps growing.

Now that we are informed about where this global discipline came from and how it has evolved (Venkatasamy, 2022), there is a need to look at the complicated and still evolving mechanisms that are behind the workings of environmental law, and apart from its origins and development over the years, what have been considered as crucial to environmental protection and human wellbeing, what has been ignored and considered as inappropriate, or simply omitted. Far from having been solely dictated by any national institution or international authority, its rules are the results of a maze of policies, management practices and objectives, recommendations, suggestions, declarations and customary practices, some binding, others voluntary and others still debatable, all having been developed through scientific knowledge, economic requirements and policy decisions. What has probably been sidelined, or even ignored, are the moral and ethical considerations and inclusions. Scholars have been for the past decades discussing these moral and ethical issues and the necessity for consideration and inclusion within environmental law policy frameworks. Today, they appear to remain as the missing links in both national and international environmental laws and policies, and more importantly environmental justice.

Since the natural environment does not have a defined status, nor a voice to express opinions, the main problem today is primarily about moral and ethical concerns for the environment in terms of ecosystems and biodiversity, and justifying the creation of environmental laws to protect these systems. The concept of sustainable development is an acceptable moral basis for environmental protection and regulation, but ensuring sustainable development is a problem that the world is still grappling with, since politicians, economists, businesses and environmental scholars have different, but not necessarily opposing views. The position of stewardship, which is primarily human centred, accepts the need for a degree of resource conservation and protective environmental management, but there again it has to bend its rules in relations to changing national/international policies and human needs. The concept of nature's rights is not fiction anymore, and should not be, and would probably change the world if it becomes a reality. The need to move from the concept of purely ethics and morality to one of criminality, or the newer concepts of ecocide, environmental crimes, and environmental justice have led to some drastic changes to approaches in environmental protection and environmental law and justice.

Establishing the basis for environmental law needs to consider and analyze efforts the world has made so far, the reality being that such efforts have unfortunately appeared in disjointed entanglements over the past decades, with some overlapping and others contradictory. The rapid evolution of practices, either in the business and industrial sectors or in the changes and influence of consumers' needs and demands has made the task even more complicated. However, there is a need to adopt a step by step strategy and try to establish a way forward through an analysis of successes, failures and omission.

Environmental law exists at many levels and is only partly constituted by international declarations, conventions, and treaties. The bulk of environmental law is either statutory, that is encompassed in the enactments of legislative bodies, or regulatory, that is generated by agencies charged by governments with protection of the environment. In addition, many countries have included some right to environmental quality in their national constitutions. The Chinese constitution declares that:

The state ensures the rational use of natural resources and protects rare animals and plants.

The South African constitution goes a bit further and recognizes:

A right to an environment that is not harmful to health or well-being; and to have the environment protected for the benefit of present and future generations.

According to Britannica (2019), most environmental laws fall into a general category of laws known as '*command and control*.' Such laws typically involve three elements:

1. Identification of a type of environmentally harmful activity,
2. Imposition of specific conditions or standards on that activity, and
3. Prohibition of forms of the activity.

Levels of environmental laws and regulations appear to have changed courses throughout history, mostly as a result of rapid and engineered economic growth, leading to excessive resource extraction and excessive consumption and waste production; others, however, see an association with market failures. The phenomenon in the dynamics of environmental laws has been discussed by Dempsey (1989), Acharya et al. (2011) and Stavropoulos et al. (2018). Commenting on such historical changes, Dempsey (1989) remarks that:

Just as 18th century mercantilism gave birth to '*laissez faire*', and 19th century '*laissez faire*' gave birth to economic regulation, and 20th century regulation gave birth to deregulation, undoubtedly deregulation will lead to 21st century reregulation.

Samuelson and Nordhaus (1992) define a market failure as '*An imperfection in a price system that prevents an efficient allocation of resources,*' while according to Gunningham (2011), three types and reasons for market failures have so far been identified:

1. Imperfect competition,
2. Lack of transparency, and
3. Negative externalities.

The first and second reasons for market failures are most relevant when it comes to the consequences for the market structure, and when regulations should be timeously issued by the state to remedy these failures. Regulations are, however, further aimed at modifying market structures and behaviours so that the desired elements and conditions for innovation and environmental protection are met. While market failures appear to have been at the centre of innumerable discussions regarding the direction environmental regulations should take, other more important causes of environmental degradation appear to have taken a backseat.

However, the discussions of Michael Soule (1994) and Bruce Diamond (1996) aim at setting environmental regulations in the right direction in arguing that:

It seems clear that the current frenzy of environmental degradation is unprecedented. The failure to adequately protect precious environmental resources....clearly calls for a retooling of strategy.

The argument made here, however, should also consider that some countries may have been slipping in their capacity to devise institutions and procedures that are adequate to a new era of environmental problem solving. The air, water, and land would have been much better off than they are today even with the extensive system of environmental controls that has been put into place since the 1970s, claims Soule (1994) and Diamond (1996).

Regulatory interventions at different levels become necessary because of several persisting negative practices and because of the uncontrolled building up of negative externalities, including:

1. The overuse of natural resources,
2. An increase in environmental problems,
3. Maximisation of individual profit against social welfare, and
4. The absence of corporate responsibility towards environmental pollution.

To place what scholars have proposed as what should be the primers and catalysts of environmental law and regulations, it is necessary to first analyze the current available regulatory instruments and frameworks, and visualize where and how the missing links with ethical and moral considerations have been built in.

The General approaches to environmental law and policy making aim at considering several hierarchal levels of regulatory instruments on their own or as blends, which presently include:

1. Customary Laws.
2. The Common Law.
3. Command-and-control regulation-Prescriptive Regulations:
 - Principle-based regulations;
 - Performance-based regulations;
4. Management/Market-based approaches.
5. International Treaties.

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Levels of Environmental Law and Regulations

Customary Laws

Customary international law (CIL), according to Shabtai Rosenne (1984) consists of:

Rules of law derived from the consistent conduct of States acting out of the belief that the law required them to act that way.

It follows that customary international law can be discerned by a widespread repetition by States of similar International Acts over time.

The Legal Information Institute (Cornell Law School-USA-2014) defines CIL as:

Customary international law refers to international obligations arising from established international practices, as opposed to obligations arising from formal written conventions and treaties. Customary international law results from a general and consistent practice of states that they follow from a sense of legal obligation.

However, it needs to be remembered that customary laws, apart from being tied to legal obligations also originates from moral and ethical considerations. The importance of customary international law lies in the fact that since they are the norms and rules that countries have followed as a matter of custom and have become so prevalent that they eventually bind all states in the world. When would a principle become customary law is not clear cut and many opposing arguments have been advanced by states not wishing to be bound by such laws. Examples of customary international law relevant to the environment include:

- The duty to warn other states promptly about emergencies of an environmental nature and environmental damages to which another state or states may be exposed.
- Principle 21 of the Stockholm Declaration (*good neighbourliness*).

Dupuy (1991; 2008) defines the law status of customary law as:

The customary law status of a rule depends on whether the principle has been referred to, or put into operation, in a treaty, in a soft law instrument, in judicial or semi-judicial decisions, or in other expressions of state practice.

Analyzing the creation and importance of customary international law, Professor Bodansky (1995) concludes by stressing several points:

- The approach is empirical rather than normative; it attempts to describe the existing norms that govern the relations among states, but does not advocate or prescribe new norms, hence drawing a distinction between *lex lata* (law as it is) and *lex ferenda* (law as it should be).
- The concept of following a rule has an internal as well as an external aspect; the doctrine of *opinion juris* serves to introduce the internal point of view into the concept of customary international law.
- Customary norms depend not only on state practice but also on acceptance of these regularities as law by states.
- Customary rules represent regularities, but not necessarily uniformities of behaviour; the behavioural approach requires a general congruence between rules and behaviour.

Professor Bodansky (1995) further proposes that since debating the legal status of any given norm may often seem out of place, international lawmakers should spend '*their time and energy incorporating norms, regardless of their true status, into concrete treaties and actions.*' Professor Bodansky contends that the ever growing importance of treaties may

result in diluting the role and importance of customary international environmental law, even when many in several parts of the world still consider custom to be an important source of international environmental law. Meanwhile, expert groups have been and still are dedicating both time and effort in attempting to codify whatever they consider or accept as the customary norms of international environmental law.

Referring to Article 38 of the Statute of the International Court of Justice, which lists customary international law and general principles of law as two of the sources of international law, Roberts (2001) finds that these are the two most difficult sources to research because they are documented in such a wide variety of materials. Roberts further finds that though Article 38 lists judicial decisions and the teachings of international law scholars as ‘*subsidiary means for the determination of rules of law,*’ these cannot be considered as authorities, but rather as evidence of the sources of international law.

Roberts, (2001) finally concludes his analysis by declaring that customary international law includes three salient elements that should be noted:

- The widespread repetition by States of similar international acts over time (State practice);
- The requirement that the acts must occur out of a sense of obligation (*opinio juris*); and
- That the acts are taken by a significant number of States and not rejected by a significant number.

While some scholars have been busy criticizing the possible benefits of customary international law, Guzman (2005) notes that while basically many of such criticisms could be justified in that customary norms lack the consistency and coherence of written or codified law, the possibility that international legal norms could positively affect state behaviour should neither be overlooked, nor ruled out. Guzman doubts that the impact of customary international law has faded to the point of irrelevance, and has been totally replaced by present day soft law treaties, more acceptable to most sovereign states because of their simplicity, straight forwardness and not-so-binding characteristics.

Guzman further argues that despite these trends, an understanding of customary laws is critical to an understanding of international law, elaborating on some specific points that should be noted, including:

1. There remain important areas of international relations governed primarily by customary rules.
2. Even in areas where one or more treaties exist, CIL often plays an important role.
3. CIL can also serve to influence treaty regimes; treaties sometimes refer to rules of customary international law, making such rules relevant to the interpretation of the treaty.
4. CIL is sometimes relevant to or a part of domestic law, as in the 1948 Alien Tort Statute (ATS) of the USA.
5. Custom remains an integral part of the rhetoric used in the international legal landscape.
6. CIL is one of the recognized sources of international law; one could hardly claim to understand international law without an understanding of CIL, how it works, and its relevance.
7. Whatever other purposes CIL serves, it is the basis for the requirement that states honour treaties.

The conclusion of Guzman's arguments show clearly that CIL still remains the backbone on present times international environmental law, and should still form the framework of laws of co-operation between and among states.

In their discussions, Blodgett et al (2008) find that customary law may be seen as analogous to the common law framework that still exists in the legal system of the United Kingdom, the United States, and in several other countries that were once part of the British Empire. The authors find that customary law, or '*the English unwritten law that evolved from the 12th century onward,*' has its source in what is termed as '*state practice*' in two instances:

1. In the general principles of law that are recognized by civilized nations, and
2. In the judicial decisions of respected jurists.

Article 38 of the Statute of the International Court of Justice speaks generally about the often contested issue regarding the origin and foundation of international law as known today; as a matter of fact, international law itself, as it is applied to consenting nation-states, is said to be derived from two primary sources:

- Treaties, conventions, and other agreements freely entered into by nation-states, and
- General principles derived from long-standing practices among nations.

These general Principles, Blodgett finds, may be listed as:

- Principle 1 of customary international law is that of '*good neighbourliness,*'
- Principle 2 is that of due diligence in protecting the rights of other states in the international environmental arena,
- Principle 3 is that of the equitable or reasonable utilization of shared resources, and
- Principle 4 of customary international law is a duty to inform and cooperate by giving prior notice under certain circumstances.

Based on and in relevance to these principles, in deciding a case, the International Court of Justice may apply

- International conventions '*expressly recognized by the contesting states,*' and/or
- International custom, as evidence of a time-tested general practice accepted as law.

Blodgett supports his analysis further by explaining how many customary law provisions in the realm of international environmental law have been subsequently enacted as treaty provisions. As a result, two respected private organizations, the International Law Association (ILA) and the United Nation's International Law Commission (ILC), have undertaken to codify a number of customary rules.

In her study, Shelton (2008) propounds that in practice non-binding norms are often the precursor to treaty negotiations and sometimes stimulate state practice leading to the formation of customary international law. In fact, soft law has many roles to play in relation to hard law. A non-binding normative instrument, claims Shelton, may do one or more of the following:

- Codify pre-existing customary international law, helping to provide greater precision through the written text;
- Crystallize a trend towards a particular norm, overriding the views of dissenters and persuading those who have little or no relevant state practice to acquiesce in the development of the norm;

- Consolidate political opinion around the need for action on a new problem, fostering consensus that may lead to treaty negotiations or further soft law;
- Fill in gaps in existing treaties in force;
- Form part of the subsequent state practice that can be utilized to interpret treaties;
- Provide guidance or a model for domestic laws, without international obligation, and
- Substitute for legal obligation when on-going relations make formal treaties too costly and time-consuming or otherwise unnecessary or politically unacceptable.

According to the arguments of Shelton (2008), there can be no appropriate ‘*recipe*’ for ensuring the effective resolution of international problems and conflicts. While there may be particular factors that appear to influence state and non-state behaviour, Shelton claims that ultimately the issue will centre on how to prevent and resolve conflict and promote international justice. In the end, the international legal system appears to be a complex, dynamic web of inter-relationships between hard and soft laws, where legal norms are given greater or lesser priority, and where various institutions seek to promote the rule of law.

In a discourse about the formation of customary international law, Scharf (2014) relates how ‘*crystallisation*’ of new rules of customary international law has been viewed as a protracted process that may take decades, if not centuries, to complete. French jurisprudence generally requires the passage of at least forty years for the emergence of an international custom, while German doctrine generally requires thirty years. The International Law Commission (ILC) however, requires State practice of ‘*over a considerable period of time*’ for a customary norm to emerge. However, the author finds that sometimes customary international law has taken roots faster, thus challenging the accepted slow geologic metaphor of ‘*crystallizations*’, and that for some specific reasons, claims Scharf (2014), including:

1. In some ways, customary international law possesses more jurisprudential power than does treaty law:
 - Unlike treaties, which bind only the signatory parties thereto, once a norm is established as customary international law, it is binding on all States,
 - Since some international law rules co-exist in treaties and custom, customary international law expands the reach of the rules to those States that have not yet ratified the treaty,
 - Unlike some treaties, which by their terms permit withdrawal, customary international law does not recognize any unilateral right to withdraw from it.
2. While there may be a tendency to think of customary international law as growing too slowly, in contrast to the more rapid formation of treaties, the actual practice of the world community in modern times suggests that the reverse is more often the case:
 - For instance, negotiations for the Vienna Convention on the Law of Treaties began in 1949 was concluded in 1969, and did not enter into force until it received its thirty-fifth ratification in 1980, that is some thirty-one years later,
 - Customary international law often forms at a much faster pace, especially with respect to areas of technological or other fundamental changes.
3. It might be assumed that treaty law offers the benefit of greater clarity and precision in the articulation of the legal obligations, but this is not always the case:
 - Rather, the provisions of treaties, especially multinational conventions, are also often subject to a ‘*penumbra of uncertainty*’ resulting from the need to bridge language, cultural, legal, and political divides between diverse parties,

- In some areas, customary rules may provide greater precision since they evolve in response to concrete situations and cases, and are often articulated in the written decisions and language of international courts.

While recognising that far less attention has been paid to customary international law, Helfer and Wuerth (2016) find that far too many scholars have dismissed CIL as irrelevant, because treaties have codified many legal rules that were traditionally regulated by custom, or because treaties offer putative advantages over custom, such as precision in language, and in part because custom is plagued by doctrinal confusion. Critics describe the practice that produces custom as ‘*informal, haphazard, not deliberate, even partly unintentional and fortuitous*’ as well as ‘*unstructured and slow.*’ However, Helfer and Wuerth find that such is not always the case and that in reality customary law may be more direct and thus more effective, as is implied in the following:

- Customary law aspires to universality in both its formation and application. Article 38 of the International Court of Justice (ICJ) provides the canonical definition of custom, as ‘*a general practice accepted as law.*’
- One feature that distinguishes custom from treaties and nonbinding norms is that custom is an unwritten form of law.
- Another distinctive characteristic of custom is that it is not negotiated in the manner treaties and soft laws are.

As discussed by the authors, the unwritten character of all-states-benefit custom means that the resulting legal rules are often amorphous and malleable. This facilitates widespread initial agreement to a rule, while also giving states leeway to assert their preferred interpretation when applying that rule to specific contexts or new circumstances.

Bratspies (2018) finds that scholars, activists, and policymakers have been actively turning to international human rights law as a potentially transformative framework for promoting environmental protection, prompting a search for new legal tools and approaches. The fact that enjoyment of basic human rights hinges on adequate environmental protection garners wide support. As such, the obvious route to follow would be fitting environmental rights into the framework of international law on human rights. The justification could be based on Judge Weeramantry’s 2009 statement characterizing protection of the environment as:

The sine qua non for numerous human rights such as the right to health and the right to life itself.

And on the present realities that Judge Weeramantry (2009) cites in support of his statement:

Climate change, loss of biodiversity, and the spread of toxic pollutants, among other environmental challenges, make it abundantly clear that the environmental consequences of state decisions affect a state’s ability to realize and protect human rights within its territory. This insight has prompted calls to recognize state environmental decisions as implicating human rights and to identify international legal principles that govern state environmental conduct.

But as these two rights converge, without completely merging, Bradspies (2018) believes that for customary law to become law, several elements need to be analyzed, including:

- To be considered customary law, a candidate rule proposition must satisfy two elements: state practice and *opinio juris*. State practice means an observed pattern of activity generally and consistently adhered to by states. *Opinio juris* means that states accept the practice as a legal obligation.

- In determining whether a candidate rule has matured into a custom recognized by article 38 as a source of international law, the ICJ takes in consideration the uniformity, consistency, and longevity of the rule in question. There is no precise formula to indicate how widespread a practice must be before it will be considered uniform enough to qualify, but it is clear that uniformity need not be perfect.
- Similarly, state conduct need not always be in conformity with the rule, so long as inconsistencies are treated as a breach of legal obligation rather than evidence of an alternative norm. And, under the appropriate circumstances, relatively recent legal developments can rapidly become customary law.

Putting aside the question of whether there is, or should be a free-standing human right to a healthy environment, there can be no question that environmental degradation increasingly poses an obstacle to *'the enjoyment of a wide range of human rights'* argues Bratspies.. Perhaps for that reason, advocates are increasingly urging decision-makers to consider environmental protection through a human rights lens. The recognition that environmental and human rights problems are frequently entwined has the potential to guide decision-makers toward better, more sustainable environmental choices, that improve the quality of the environment while simultaneously promoting human dignity and equality.

While the synergistic effects of protecting the environment and promoting human rights seem clear, Bradspies (2018) finds that the relationship between international legal principles concerning human rights and environmental protection still remain somewhat indistinct. Given the complexity of these bodies of international law, not to mention the rapidity with which both have developed, it is not surprising that there is no clear consensus about how their intersection might form customary international law, concludes Bradspies.

There have also been some disagreements as to whether customary laws are actually an offshoot of indigenous customs. Giacomini (2020) argues that customary law is not, indeed, at the basis of all Indigenous law, most of which are positivistic-derived or based on natural law. The term customary law is wrongfully applied to all types of Indigenous peoples' legal systems, but this reference continues to be used by contemporary legal scholars, Indigenous representatives and academics, playing a significant role in international negotiations.

Giacomini claims that the incorporation of non-Western legal systems in national and international governance mechanisms is crucial in terms of meaningful participation of Indigenous peoples in environmental governance, as prescribed by international human rights law and by the Convention on Biological Diversity(CBD-1992) regime.

In yet another discussion, Giba-Matthews (1996) posits that customary international law often acts as Federal Common Law in law Courts of the USA, and within the judicial capacity of the International Court of Justice (ICJ). Shaw (2003) informs that Chapter II, Article 38 of the Statute of the ICJ states that:

International customs and general practices of nations shall be one of the court's sources of customary international law

The ICJ further stipulates that customary international law can be established by showing:

1. State practice, and
2. *opinio juris*.

Discussing folk and indigenous customary laws, von Benda-Beckmann (2001) reflects on how customary law, regarded as a vestige of the past for a long time and bound to disappear, has in fact proved to be far more resilient than expected. The author further finds that today both national and international law and concepts of self-regulation are founded on principles of customary law, to which Blodgett et al. (2008) add that:

International environmental law draws from two important sources: international treaties and conventions and customary international law.

Discussing regulations in the USA, Saterson (2013) deliberates on how, apart from governing the use of biological resources for centuries, customary or traditional laws have also dictated on judicious limits on use of biological resource, indicating that the concept of sustainability existed well before being introduced into present times prescriptions. Since traditional societies are becoming more integrated into national and global markets and political systems, traditional knowledge and laws are being either lost or diluted.

In a recent discussion regarding environmental rights, Bratspies (2018) argues that the concept of such rights have actually become customary international law, as reflected in the obligation to conduct an environmental impact assessment (EIA). Under such an approach, the consistency of environmental principles enshrined across state regulatory law becomes evidence of both state practice and *opinio juris* in the form of the environmental obligations that states consider themselves bound to respect and uphold.

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The Common Law

Investopedia describes Common Law as:

A body of unwritten laws based on legal precedents established by the courts, thus influencing the decision-making process in unusual cases where the outcome cannot be determined based on existing statutes or written rules of law.

The common law is also known as case law, a body of unwritten laws based on legal precedents established by the courts. Common laws sometimes prove the inspiration for new legislation to be enacted. People sometimes call common law ‘*customary law*’ because judges consider the customs (common practices) of the country when making decisions

The three great bodies of the common law are:

1. Property, by which the rights of individuals regarding things are established and perfected;
2. Contract, by which those rights are exchanged through mutual consent; and
3. Tort, by which harm to those rights is rectified.

Life, liberty, and private property have long been recognized as the fundamental rights of individuals under the common law. The distinctive feature of common law is that it represents the law of the courts as expressed in judicial decisions. The grounds for deciding cases are found in precedents provided by past decisions, as contrasted to the civil law system, which is based on statutes and prescribed texts. Besides the system of judicial precedents, other characteristics of common law are trial by jury and the doctrine of the supremacy of the law.

The English common law originated in the early Middle Ages in the King’s Court (*Curia Regis*), a single royal court set up for most of the country at Westminster. Like many other early legal systems, it did not originally consist of substantive rights but rather of procedural remedies. The working out of these remedies has, over time, produced the modern system in which rights are seen as primary over procedure. Until the late 19th century, English common law continued to be developed primarily by judges rather than legislators. Common law draws from institutionalized opinions and interpretations from judicial authorities and public juries.

In comparison, Civil Law is a comprehensive, codified set of legal statutes created by legislators. A civil system clearly defines the cases that can be brought to court, the procedures for handling claims, and the punishment for an offense. Judicial authorities use the conditions in the applicable civil code to evaluate the facts of each case and make legislative decisions. While civil law is regularly updated, the goal of standardized codes is to create order and reduce biased systems in which laws are applied differently from case to case.

Common law draws from institutionalized opinions and interpretations from judicial authorities and public juries. Similar to civil law, the goal of common law is to establish consistent outcomes by applying the same standards of interpretation. In some instances, precedent depends on the case-by-case traditions of individual jurisdictions. As a result, elements of common law may differ between districts. The U.S. common-law system evolved from a British tradition that spread to North America during the 17th- and 18th-century colonial period. Apart from the United Kingdom, Common law is also practiced in Australia, Canada, Hong Kong, India, and New Zealand.

The spirit of the Common law is best expressed in a statement by Landry (1999):

The common law is as a result of a natural sequence which hardened first into custom and then into law. It did not come about as an act of will, as an act of some group aware only of the instant moment, unaware of the nature and history of man. It came about as a result of a seamless and continual development, through processes we can hardly begin to understand; it evolved along with man.

It is such an evolution, mentioned by Landry (1999), towards environmental protection and as part of the numerous attempts at establishing environmental norms and laws that has attracted attention as to its inclusion in environmental law and justice. Separately, all too often modern environmental law unwisely allows private parties to escape tort liability by pleading their compliance with existing statutory standards. The common law actions are civil suits in which the plaintiff, (the party bringing the lawsuit) seeks to remedy a violation of a right. Criminal actions are those in which the state seeks to redress a breach of public or collective rights that are established in codified penal law. The three types of common law actions most commonly encountered in the environmental field are:

1. Nuisance,
2. Trespass and
3. Negligence.

Five decades ago, discussing the avenues for judicial protection of the environment, and exploring the possible role of the common law towards that end, Maloney (1972) concludes that:

There is a tendency today to look to the legislatures to provide the cure for all environmental maladies, and to overlook or underrate the potential of common-law remedies to assist in the proper solution of these problems.

In her book, *Property Rights in the Defense of Nature*, Elizabeth Brubaker (1995) elaborates on how for centuries the common law of property remained a force for environmental protection, while contemporary statutes have allowed polluters to foul private lands and public resources alike. Brubaker argues that individuals and communities should be entrusted with the task of preserving the environment and that, with stronger property rights, they would regain the power to prevent much harmful activity, stating that:

Empowering those most directly affected by pollution, common law property rights protect powerfully, preventing polluters from arbitrarily fouling streams or spewing poisons onto neighboring property.

While Kuhnle (1996) proposes that under the public nuisance theory of the common law, states could actually sue companies for their excessive emissions, stating that '*a rebirth of the common law is already occurring.*' In their discussion stressing on the '*nuisance*' approach, Meiners and Yandle (1999) explain how prior to modern-day command and control statutes, the nuisance cause of action was the main tool for environmental protection, with actions being either public or private, and the possibility nuisances themselves being both. Taking their discussions even further, Meiners et al. (2000) observe how environmental law and regulation '*have evolved ... from reliance on tort law to an emphasis on end-of-pipe controls through direct regulation and finally to an emphasis on pollution prevention.*' The authors also observe that despite the fact that common law tort claims have been used to abate pollution since the seventeenth century, the bulk of environmental common law cases and lawsuits came during the late nineteenth and twentieth centuries, creating what is now known as environmental law.

In their discussions along the same lines, Cooter and Kornhauser (1980) conclude that at least three arguments could be proposed to justify considering the common law within the environmental law and justice arena, namely:

1. Judges tend to actively seek efficiency;
2. Inefficient rules are litigated more often than efficient rules (differential litigation); and
3. Litigants who benefit from an efficient rule invest more in the litigation than those who favour an inefficient one.

According to Dukeminier and Krier (2002), difficulties in adjudicating common law tort claims caused a progressive shift from tort actions to more direct regulation of environmental harm, as in command and control regulations. The creation of command-and-control statutes and other legislations were designed during the late 1960s and early 1970s to set standards and mandate compliance through threat of fines for violation, and have been analyzed and discussed by Lazarus (2004).

Discussing the necessity for a re-birth of environmental common law, especially in the federal systems of law in the USA, Czarnecki and Thomsen (2007) find that while Federal law strives to mitigate environmental harm, especially regarding air pollution and hazardous waste contamination, results are unsatisfactory most of the time. The authors conclude that:

Federal law often fails to mitigate environmental harm. An alternative litigation response when federal avenues prove ineffective is reliance on state common law doctrines, especially public and private nuisance. A rebirth of the common law is occurring.

Stuart Buck (2008) and Bruce Yandle (2008) have extensively discussed the way the common law fits into environmental laws, and how it provides a strong foundation for common law environmental protection, how it works, and how the record of common law protection may be compared to the protections afforded by statute law. Buck's legal analysis is tightly focused on the way the two systems operate; he also addresses the difficulty encountered when trying to determine which system of law is to be preferred by those who seek efficient and effective environmental protection. Yandle (2008) concludes that:

Statute law displaced common law for precisely the opposite reasons generally offered by those who extol statute law's virtues. We contend that common law environmental protection was, if anything, too strict for those who wanted to generate pollution with greater impunity.

In his analysis of the application of the common law in environmental protection, Lord Carnwath, (2014) discusses how court Judges have played a central role in developing and enforcing effective laws for the protection of the environment and ensuring access to justice for environmental defenders. As an example, British judges in the UK responded timeously to the problems created by the 19th century Industrial Revolution using the provisions of the domestic common law. The same mode of action, continues Lord Carnwath, has been adopted in recent years by judges round the world to deal with environmental challenges of their own countries, using a range of legal mechanisms, derived from their varied constitutions or statutory codes. According to Lord Carnwath, judges have sometimes been criticised for not respecting the proper limits of the judicial role, '*when dealing with issues of political controversy or allocation of economic resources,*' concluding that:

Although the legal frameworks may differ, many of the problems and their solutions are of universal application. The emerging principles can be seen as the foundation of a system of '*common laws of the environment*' suitable for the daunting environmental challenges of the modern world.

Epstein (2015) believes that adhering to the common law principles makes it possible to avoid three major flaws of modern national and international environmental law:

1. The first is to allow compliance with statutory requirements to a private party from liability or the government from paying just compensation for the pollution it causes.
2. The second is to allow the government to require that parties comply with extensive permit requirements that halt activities wholly without any showing of imminent or actual harm.
3. The third is to obscure the distinction between harms caused and benefits conferred, in ways that allow the government to restrict, without compensation, private uses of land that do not constitute nuisances at common law.

Epstein further observes that:

The systematic disregard of the efficient common law rules on pollution and land use produce two forms of mischief: too much tolerance of pollution and too much regulation of land use in the absence of pollution.

Discussing the relevance of the supportive role of the Law of Torts in addressing environmental issues, Grinlinton (2017) elaborates on five areas within the common law/law of torts that could aptly be allied to environmental justice, namely:

1. Trespass to land.
2. Nuisance.
3. Negligence causing property damage.
4. Strict liability.
5. The doctrine of waste.

However, Lowry and Edmunds (2000) contend that overall serious concerns have been expressed about the continued value of common law principles as an effective and coherent system that is geared to protecting the environment. Environmental law is increasingly developing its own statutory regimes to address a range of environmental problems, claims Lowry and Edmunds, accentuating the sense in which the aims and reach of these two different branches of the law appear to be diverging. Questions inevitably arise about the inter-relationship between the private law sphere of tort and the public regulatory schemes, and the unabated and accruing environmental degradation occurring in many parts of the world, in spite of an exponential growth in statutory environmental laws and regulations.

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Command and Control-Prescriptive Laws

Principle-Based-Performance-Based Regulations

I. Command and Control Regulations

According to the OECD glossary of terms (1997) the Command and Control policy refers to environmental policy that relies on regulation (permission, prohibition, standard setting and enforcement) as opposed to financial incentives, that is, economic instruments of cost internalisation. Ellerman (2003), and Goulder and Parry (2008) refer to Prescriptive Regulations as direct regulatory instruments, because they feel that Command-and-Control has a ‘*somewhat negative connotation,*’ although they both mean the same types of environmental regulations. McManus (2009) defines the regulation as:

The direct regulation of an industry or activity by legislation that states what is permitted and what is illegal.

Prescriptive Environmental Regulations are generally recognized as consisting of two main characteristics:

1. Command-and-control as the dominant form of environmental regulation in the world.
2. Its fundamental principle is for the regulator to specify the steps individuals or firms must take to mitigate/solve an environmental problem.

Further, two basic types of prescriptive regulations have been established, namely:

1. Technology standards, and
2. Performance standards.

While Technology standards typically specify a particular type of equipment and process that must be used, Performance standards typically stipulate the maximum emissions or externalities allowed per unit of economic activity. The flexibility of prescriptive or command and control regulations is also reflected in its adaptability when necessary, in that:

1. Often, a regulation combines performance standards with technology standards to suit specific circumstances.
2. Prescriptive regulations may, in fact, be combined with fines and penalties associated with noncompliance, which are different from the strategies of economic incentives popular in management-based regulations.

The command-and-control approach (CAC) to environmental regulations is therefore one where political authorities mandate people, by enacting a law, to bring about a behaviour, and use an enforcement machinery to get people to obey that law. In environmental policy, the CAC approach basically involves the setting of standards to protect or improve environmental quality. A standard is generally the tool used in the CAC approach, and it is a mandated level of performance enforced through a piece of legislation. Standards are popular because they appear simple and specific in targets, and normally include:

Design Standard to reflect on current technology and give specific rules about what type of environmental treatment must be used.

Performance Standard to set an exact limit for the allowable threshold of environmental harm.

Input Standard mandating types of production resources that can be used in terms of inputs and likely outputs.

Although each policy decision will require its own analysis, the relevant questions confronting the decision-maker will be:

- Is it more costly for government to identify one effective solution and ensure it is being used? (Means standards)
- Or is it more costly for government to establish a way of monitoring the outcomes of many different solutions? (Performance standards)

However, and in reality, there are complications and other considerations that have to be addressed, such as

- The level of standards,
- Uniformity of standards,
- Equity effects, and
- Enforcement.

This constraint has thus encouraged the use of other policy alternatives for environmental management, one of which is an incentive-based strategy referred to as the '*polluter pays*' principle where taxes or charges are estimated according to the level of emission. While these policies are basically blanket solutions for industries with pollution problems they are not always the most efficient methods available; however, they are still widely used solely or as an integral part of other regulations.

In his analysis, Ogus (2004) finds that CAC comprises of 3 different types of standards, the use of each determined by such factors as the nature of the environmental problem and the administrative capacities of the governing body:

1. Environmental Standards. These are centrally driven standards. A legally enforceable numerical limit is often used to determine the '*standard*', but the term can be used more broadly, describing more general rules about acceptability.
2. Target Standards. The condition of the environment into which the pollutant enters is central to these standards. It can be subdivided into ambient and receptor standards. Ambient standards set the targets that apply to the regulators and policy makers. Whereas Receptor standards apply to the regulated and state that a specified maximum level is not to be exceeded.
3. Performance Standards. These determine how much of a pollutant released into the environment is deemed acceptable.

Stavins and Whitehead (1992) recognize two broad types of command and control regulations:

1. Technology-based, and
2. Performance-based.

The former specify the methods and equipment that firms must use to meet the target. Performance standards, on the other hand set an overall target for each firm, or plant, and give firms some discretion in how to meet the standard.

Elaborating the benefits of Command-and-Control, Hanley et al. (2001) propose that:

- They are preferred in cases where the pollutant is so highly toxic that concern over their impact outweighs any economic efficiency concerns.
- Preferred when the Marginal Abatement Cost Curves (MAC) are uniform across all of the firms in the regulated industry and the government can easily know the MAC curve.

- Preferred when the initial reduction in the amount of pollutant significantly benefits society, while continued reduction does not offer as much benefit (The Marginal Benefit of reduction is highly inelastic).

On the other hand, Gruber (2005) elaborates on some of the drawbacks of Command and Control regulations, stressing that:

- With technology constantly evolving it is very difficult for the regulatory agency to stay current with the most effective methods.
- All of these standards (design, performance, input) are just one piece of the puzzle to try to reduce pollution. This is not to say that the government should integrate all of the standards into one uniform regulation. This would drastically reduce flexibility of choice for the firms.
- They limit the firm's ability to find the most cost-effective way to continue production while reducing pollution. This occurs because each individual firm might have differing cost structures, so a one-size-fits-all standard mandated from a centralized government agency does not afford the firms the flexibility to address their particular externality problems, which may lead to economic inefficiency.
- Often times it is hard or impossible for the government to know the cost structures of each of the polluting firms. This knowledge is required if the regulation is to be efficient.
- Even if traditional methods lead to an efficient solution, they might draw accusations of unfairness from the polluting firms. In order to be efficient in most markets, the regulators must split the responsibility for reducing pollution unequally among the polluting firms. The ones required to reduce pollution the most might cry foul over being treated differently.
- Finally, these are just rules. Without quick responses to the consequences of non-compliance they are unlikely to succeed. There will be an incentive for firms to find loopholes if the regulatory agency or the regulation itself is weak.

Sometimes, the conditions in the market can be just right for command-and-control regulation to work by itself. More often they do not work very well because:

- Enforcement may be weak,
- Compliance low, and
- The goal of pollution reduction cannot be reached.

High administrative and information costs can afflict the government, while high compliance costs for the firms create more economic inefficiency

Dissatisfaction with so-called command-and-control forms of regulation has been slowly building up since the 1990s; the criticisms being that it is inefficient, ineffective, and far too rigid to handle the dynamic needs of environmental policy, as has been elaborated upon by Stewart (2003) and Freeman and Kolstad (2007).

In his analysis and discussion Tietenberg (1991) was probably amongst the first of the critics of CAC, finding the cost of compliance of CAC to be usually high, resulting in costs that are higher than the sanctions for non-compliance. Among the many critics of CAC regulations, Gunningham and Sinclair (2002a) label them as '*inefficient*,' and a system that '*spends resources but generates little revenue*.' In their analysis Ruhl and Craig (2011), conclude that dissatisfaction with and criticism of command-and-control forms of regulation is not new but have been building up since the 1990s, with critics labeling CAC as being inefficient,

ineffective, and far too rigid to handle the dynamic needs of environmental policy, similar to the arguments of Stewart (2003) and Freeman and Kolstad (2007).

There have been several arguments to the effect that the solution needed to fix the ailing system of environmental control is to turn the system into one that is primarily based on the marketplace, discussed by Gray (1997). It must be noted that Gray's discussion is about environmental control rather than protection, and the focus appears to be limited to industrial externalities. The theory behind a market system is that this type of scheme would shift cost-benefit decisions from government to businesses, in agreement with the earlier conclusion of Mikkelsen (1993) that a market-based approach to regulations would provide economic efficiency.

Discussing their thesis on *Economic Instruments for Pollution Control and Prevention*, Duncan Austin of the World Resources Institute (1999) concludes:

While command and control (or direct) regulations were successful in securing the first tranche of emissions reductions from previously unregulated industries, more than two decades after their introduction they are now viewed as increasingly burdensome.

Concluding his discussion on regulatory prescriptions, Ruhl (2004) informs that regulatory innovation proposals have taken three broad forms:

1. Government-stakeholder network structures,
2. Indirect governance mechanisms, and
3. Economic incentive programmes.

In his discourse on environmental regulations Singhal (2018) recognizes that a set of instruments divided into two main categories could be made available:

1. Command-and-control (CAC) instruments, and
2. Economic Incentives (EI) or market-based instruments.

While EI instruments provide the polluter an economic incentive to abate pollution with the flexibility to do so by any means, CAC instruments are a direct form of regulation in which the regulator specifies a target or a standard that a firm, plant, or locality must achieve, or face non-compliance penalties.

However, Cole and Grossman (1999) are of the opinion that the prevailing view of alternative regulatory regimes is oversimplified in at least three ways:

1. It overemphasizes the differences between command-and-control regulations and economic instruments for environmental protection;
2. It conflates nominal and relative economic efficiency in comparing alternative regulatory regimes; and
3. It tends to be ahistorical and acontextual, ignoring changes over time in marginal costs, technological capabilities, and regulatory institutions.

According to Baldwin et al. (2011), critics tend to favour market-based strategies, being dubious of the merits of governmental regulatory approaches. In their analysis, Baldwin et al. (2011) discuss four of the salient issues with CAC regulations:

1. Regulatory capture: Expressing concern about the relationship between regulators and the regulated that may lead to the interests of the public being neglected, a situation that may become unacceptable, leading to the regulator protecting the interests of the regulated.

2. Legalism: Command and control is accused of stifling competition and enterprise, as an inevitable consequence of the inflexible and complicated rules that can be created by a tendency to over-regulate.
3. Standard-setting: To avoid causing detriment to the regulated, appropriate standards when implementing a CAC regime is crucial..
4. Enforcement: One of the key issues is the expense of enforcement, especially when a complex system of rules has been developed in the CAC regulatory approach.

Cole and Grossman (1999) find that it has become an article of faith among economists, legal scholars, and policy makers that economic forms of regulation such as effluent taxes and emissions trading are inevitably more efficient than traditional command-and-control regimes for environmental protection. Some suggest that command-and-control regimes are not only less efficient but inherently inefficient, implying that they naturally produce more social costs than benefits.

However, both Austin (1999) and Cole and Grossman (1999) argue that:

Command-and control environmental regulations can be (and have been) nominally efficient, producing social benefits in excess of their costs; indeed, they even can be (and have been) more efficient than alternative '*economic*' approaches to regulation.

Astin (1999) concludes that in practice, with a well established regulatory system based on traditional measures already in place, the key issue will be to work out how economic instruments for pollution control and prevention can complement, and integrate with conventional measures. Concluding their discussion, Cole and Grossman (1999) insists that contrary to the conventional wisdom among economists and legal scholars, command-and-control (CAC) environmental regulations are not inherently inefficient or invariably less efficient than alternative economic instruments (EI). In fact, CAC regimes can be and have been efficient, producing net social benefits, and even more efficiently than alternative EI regimes in some cases.

With technology constantly evolving it is very difficult for regulatory agencies to stay current with the most effective methods of environmental control. As a result of these set backs many economists and policy-makers are pushing for other regulatory tools like taxes, subsidies, and tradeable pollution permits. Although implementation of such designs has been said to be more efficient over the more direct regulation of command-and-control programmes, there is no reason to believe that traditional methods of combating pollution are worthless. Indeed, many of these newer methods incorporate some type of the older style of regulation.

Trying to balance the economic and dynamic advantages and disadvantages of CAC over Market-Based regulations, Lamperti et al. (2020) find that:

CAC interventions are favoured by path dependence and guarantee policy effectiveness irrespectively of the timing of their introduction.

The authors further sustains that the hypothesis of path dependence in technological change has received vast empirical support and it is a key feature of many models of growth, arguing that CAC policies should be seen as a valuable and non-equivalent alternative to MB interventions. Lamperti et al. (2020) conclude their study in declaring that:

On the contrary, we find that command-and-control interventions guarantee policy effectiveness irrespectively on the timing of their introduction. As command-and-control policies are always able to direct technical change toward '*green*' technologies and to prevent climate disasters, they constitute a valuable alternative to market-based interventions.

II. Principles-based regulations

One type of regulation extensively discussed by Black et al. (2007) and Black (2008) is anchored on stated norms (principles) used to set standards for practical application to situations, and different from rules based regulations. Principles are regarded as the fundamental obligations, or norms, that all norm subjects should observe (Black 2008). To illustrate such principles, Black et al. (2007) refer to the eleven Principles for Business of the Financial Services Authority (FSA) in the United Kingdom.

It is on the other hand, sometimes argued that some rules may be as general as principles, and that the difference between rules and principles can be minimal. In strict legal terms there is indeed no real difference between principles and rules. From a juridical point of view, both detailed rules and broad principles have the same legal status. Lévêque (1996) observes that two different steps are normally followed in regulatory frameworks:

1. The first step is the choice of the regulatory objective, and
2. The second step is the choice of the best instrument that is rules that can achieve the defined objective.

Rules and principles both have the ability of specifying and measuring stringency of outcomes and time that should be allowed for compliance. However, the debate about principles based regulation and rules based regulation should be more a debate about the role and design of regulation and the expected effects, than a debate about the legal status of norms, explains Black (2008). Therefore it may be nevertheless possible to distinguish different dimensions of regulation that enables rules and principles to be characterized at a formal regulatory level.

The statement of Black et al (2007) further stresses on the validity of principle-based regulations in that:

Principles-based regulation means moving away from reliance on detailed, prescriptive rules and relying more on high-level, broadly stated rules or Principles to set the standards by which regulated firms must conduct business.

According to Vranes (2006), legal norms normally contain either an obligation or permission, or right for a person or a number of persons as to their behaviours and outcome of their actions, and since most policies are formulated in terms of obligations for norm subjects, an obligation implies that norm subjects are compelled to refrain from certain behaviours. Klok (1991) remarks that obligations therefore result in control in exclusive behavioural motives, whereas permissions do not. Whether regulation exerts obligations or permissions depends primarily on the domain and scope of the issue being considered. Another characteristic of legal norms is that they apply only when one or more specified conditions are satisfied.

Discussing legal norms further, Klok (1991) suggest that since they have a defined structure in formulation, four dimensions ought to be considered:

1. The necessity for a norm operator to describe the implications it has on the behaviour of the norm subject, with two distinct operators: a '*must*' and a '*may*'; the '*must*' implies an obligation of the norm subject; the '*may*' results in a permission or right to certain behaviours.
2. A legal norm should contain a description of the norm subject. The norm subject may be a person, a group of persons or a legal person that the regulation intends to affect.

3. A legal norm should contain a norm object, meaning it must become clear in the formulation of the regulation what behavioural conduct is being assessed, and subsequently, what norm conditions are relevant in its assessment.
4. It is imperative to acknowledge that regulation concerns relationships between people. Therefore a right for one person results in an obligation for someone else.

Black et al. (2007), Black (2008), and Schilder (2008) characterize the potential advantages of principles based regulation in four categories.

1. Effectiveness: A principle is perfectly congruent with the objective of regulation because it explicitly communicates the regulatory objectives and promotes behaviour that will achieve those objectives. Consequently, principles based regulation has the potential to be highly effective in achieving the objective of regulation, when the preconditions for it to function have been sufficiently satisfied.
2. Durability: Norm subjects expect regulation to be consistent in its application and that it is clear how compliance can be achieved (Black 2002). Because principles are very general and broad compared to rules, they will be better capable to adapt to a rapidly changing market environment than rules are.
3. Comprehensibility: Based on principles, principles based regulations are more comprehensible for senior management, and for norm subjects that are less capable to oversee all regulation of small prints (Black 2008).
4. Substantive compliance: The potential advantage of principles is that they foster greater substantive compliance of norm subjects with regulations. There is limited incentive for norm subjects to devise an alternative approach that can achieve the outcome the regulator seeks. As long as the detailed requirements that have been established by law are met, norm subjects are in the clear.

However, critics of the theory of principles based regulation distinguish seven risks for effectiveness that illustrate the difficulty and complexity involved in attempting to adopt principles based regulation, these being:

1. The interpretive risk: There is a risk of an increasing gap between the published principles and the bureaucratic interpretation they receive (Black 2008). Consequently, uncertainty as to what principles mean and unpredictability as to the response of the regulator are increased by ambiguous interpretation of principles (Black, Hopper & Band 2007)
2. The communicative risk: A communicative risk arises when the regulator or a third party is undisciplined in the provision and proliferation of guidance.
3. The compliance risk: Norm subjects may be tempted to improve compliance with regulation by taking advantage of their discretionary power in developing new methods that are more effective in achieving the outcome expressed by principles, but through optimizing the outcome the norm subject seeks (which is usually profit).
4. The supervisory and enforcement risk: The two styles of enforcement, '*deterrence*' and '*compliance*' imply that the deterrence model is a punitive enforcement sanctioning non-compliance. Consequently, principles based regulation needs enforcement to give it credibility and for it to gain the advantages of principles, but on the other hand over-enforcement will lead to its downfall.
5. The internal management risk: Both rules-based and principles-based regulations have different implications for the roles of the regulator and the norm subject. By supporting norm subjects in translating the implications of principles for their organizations, compliance can be better safeguarded (Black et al. 2007; Black 2008).

6. The ethical risk: In order to interpret principles and come up with a plan to comply by them, the norm subject has to calculate the risk of getting it wrong. The ethical risk arises when compliance with regulation turns out to be an issue of risk management, because non-compliance with regulation will become an option. Norm subjects may be tempted to decide what level of non-compliance they are prepared to risk. (Black 2008).
7. The trust risk: The trust risk is possibly the ultimate risk that principles based regulation has to overcome. Trust in turn, can help in solving the other six risks identified (Black 2008).

In general terms, principles-based regulation means moving away from reliance on detailed, prescriptive rules and relying more on high-level, broadly stated rules or Principles to set the standards by which regulated firms must conduct business.

III. Performance-based regulations

A Performance Based Regulation (PBR) is broadly defined as a regulatory approach that focuses on desired, measurable health, social and environment outcomes, as opposed to prescriptive processes, techniques, or procedures. Performance-based regulation leads to defined results without specific direction regarding how those results are to be achieved.

Gunningham and Sinclair (2009) describes PBR and its Standards as a concept that specifies the outcome of some anticipated or expected improvement, leaving the concrete measures to achieve this open-ended for businesses to adopt various codes and guidelines, or adapt to varying local or international circumstances. The authors find that PBR bears a number of affinities or relationships to several other management-based regulatory environmental terms or concepts, including:

- Market-based regulation.
- Self-regulation.
- Management-based regulation
- Information disclosure.
- Equivalency clauses or waiver provisions.
- Codes of practice or guidance.

Black (2008; 2010) further adds that the terms '*performance-based regulation*' '*outcome-based regulation*' '*goal-based regulation*' '*evidence-based regulation,*' '*risk-based regulation,*' and '*principles-based regulation*' are management-based concepts of environmental regulations frequently used interchangeably, but all with the same goals even if through different routes. Black (2008) finds that while its supporters argue that it provides a flexible regulatory regime that can facilitate innovation, its detractors consider it as a lax form of regulation that leaves the responsibility of environmental protection at the mercy of businesses.

Black (2008) further adds to the definition by stating that:

Principles based regulation refers to a number of distinct approaches, including what might be better characterized as forms of '*outcomes based-regulation*' or '*management-based regulation*'

Earlier, Steinzor (1998) concluded her discussion on such management-based regulations by stating that re-inventing environmental regulation would represent a dangerous journey in switching from command to self-control. Discouraging on the roles of both states and the

business sector in regulating activities that may represent environmental harms, a number of environmental law scholars have pointed out that regulations should also involve activities and inputs from non-state actors. They argue that perceptions of regimes such as de-centered regulation (Black, 2002), smart regulation, (Gunningham et al., 2003; 2004) and regulatory pluralism (Gunningham and Sinclair, 2002a; 2002b; Grabosky, 2013) should also be part of the package of environmental regulations.

In his analysis of PBR, Stavins (2001) reflects of how environmental policies typically combine the identification of a goal with some means to achieve that goal. Although these two components are often linked within the political process, the discussions of Stavins focuss rather on the objectives and expectations of the instruments of environmental policy, stating that:

Market-based instruments are regulations that encourage behaviour through market signals rather than through explicit directives regarding pollution control levels or methods.

These policy instruments, such as tradable permits or pollution charges, can reasonably be described as '*harnessing market forces*,' explains Stavins, because if they are well designed and implemented, they encourage firms or individuals to undertake pollution control efforts that are in their own interests and that collectively meet policy goals, but not necessarily environmental exigencies.

Stavins further adds that by way of contrast, conventional approaches to regulating the environment, or command-and-control regulations, allow relatively little flexibility in the means of achieving goals by setting uniform standards for businesses, the most prevalent of which being technology and performance-based standards. Technology-based standards specify the method, and sometimes the actual equipment that must be used to comply with a particular regulation. A performance standard sets a uniform control target, while allowing some latitude in how this target is met.

While standards may effectively limit emissions of pollutants, or other externalities, they typically exact relatively high costs in the process, by forcing some businesses to resort to unduly expensive means of controlling emissions of environmental pollutants, claims Stavins. Because the costs of controlling emissions may vary greatly among firms, and even among sources within the same firm, the appropriate technology in one situation may not be appropriate (cost-effective) in another.

Concerned about the intricacies of measuring environmental performance of businesses without appropriate standards and indicators, Stavins (2001) defines performance measurement as:

The process of developing and using indicators and other tools to assess progress in achieving predetermined goals.

In addition, indicators are described as:

Measurable pieces of information (parameters, or value derived from parameters) that point to, provide information about, or describe a phenomenon or activity.

While Coglianesse (2001) defines standards as:

A performance standard specifies a required outcome but leaves the means of achieving that outcome to the discretion of the regulated entity.

Stavins (2003) recommends that indicators of environmental regulatory management and compliance assurance should aim to characterise:

1. The efforts of government authorities to reduce the impact of economic activities on the environment and human health through regulation and supporting tools; and
2. Changes in compliance (behavioural response) and environmental results associated with these efforts.

According to Stavins (2001; 2003), experiments and experiences in the United States with market-based environmental policy instruments have been both numerous and diverse. As such, it would necessary and convenient to consider them within four major categories:

1. Pollution charges;
2. Tradable permits;
3. Market friction reductions; and
4. Government subsidy reductions.

Although there has been considerable experience in the United States with market-based instruments for environmental protection, this relatively new set of policy approaches has not replaced nor come anywhere close to replacing the conventional command-and-control approaches in terms of effectiveness. Stavins further states that even when and where these approaches have been used in their strictest form and with some success, they have not always performed as anticipated.

The discussions and conclusions of Steinzor (2001), Coglianese and Lazar (2003) and Coglianese, et al. (2004) are all in agreement that when the performance-based approach is offered, it is usually simply presented as an alternative to existing prescriptive environmental regulations. Despite the enthusiasm for results-based regulation at state levels and within the politico-business circles, the merits and feasibility of the approach are open to debate. The authors recognise four key elements to any such protective regulation:

1. Rules that should govern expected behaviours or outcomes,
2. Standards that should serve as benchmarks for compliance,
3. Sanctions for non-compliance with the rules, and
4. An administrative apparatus that enforces the rules and administers sanctions.

In his analysis, Peter May (2003) of the Center for American Politics and Public Policy, University of Washington, recommends that the notion that environmental regulations should be based on achievement of specified results rather than on adherence to particular technologies or prescribed means, have been widely accepted as a basis for improving social and environmental regulation. However, May observes that regardless of the form that performance-based regulation takes, it cannot be considered as separate from, or superior to the broader regulatory system. The appeal of performance-based regulation is as much about introduction of a new regulatory regime as it is about regulating for results, claims May. The broad expectations are that performance-based regulations will reduce regulatory rigidity and compliance burdens while promoting innovation and allowing for lower compliance costs.

Under performance-based regulation, the pendulum is clearly swinging away from tight controls and toward increased discretion and flexibility, prompting May to state:

Regulatory reformers have widely endorsed greater use of a performance-based approach to regulation that defines objectives in terms of desired outcomes. The appeal of the performance-based approach is as much about introducing a regime that overcomes problems of overly rigid rules and inflexible enforcement as it is about regulating for results.

According to a research report published by the OECD (2002), performance-based regulation is rapidly developing in several OECD countries; its use has been increasing significantly in relation to health, safety, consumer protection, and environmental regulation in particular. The OECD however recognises there are costs associated with performance-based regulations. They can be difficult to develop, as they require measurement or specification of desired outcomes, which are not always apparent where prescriptive regulation is analyzed. Moreover, the very fact that they allow for a range of different compliance strategies suggests that the verification of compliance is likely to be more difficult, and that administrative and monitoring costs may be increased as a result.

The OECD (2002) finds that PBR can provide flexibility in compliance even if the concentration is on outcomes rather than on the precise factors to be controlled or the means of controlling them, and can be regulated by Guidelines and Codes of Practice. Appropriate Codes of Practice have been found to be useful tools that can and should be used to enhance performance, and have been discussed by Nash and Ehrenfeld (2003), and Wood (2006). Codes should necessary be associated with Guidelines, and one such set of Guidelines, the OECD Guidelines for Multinational Enterprises, recognised as one of the world's foremost corporate voluntary codes of conduct, recommend that managers of enterprises give appropriate attention to environmental issues in their business strategies and day-to-day operations.

Other Guidelines may not be as effective as they should, and DownToEarth (2018) has rather been critical of some of these, asserting that while guidelines may stress on businesses to incorporate internal policies, procedures and structures to address adverse impacts on the environment, they are often evasive on prescriptions on how to address such adverse impacts. The whole planet is today aware of how environmental degradation and its associated effects on society has escalated to the point of the planet reaching a tipping point. Flexibility in compliance, as advocated by the OECD may also lead to sacrificing elements in environmental law frameworks directly connected to human wellbeing and environmental protection.

The OECD (2002) further states that Guidelines function as a '*lighter handed approach*,' providing information on appropriate compliance strategies and thus also helping to enhance certainty of compliance. Such guidelines include:

- *Process based regulations* where Eco-audits are used to identify major pollution problems and risks.
- *Co-regulation* sharing the regulatory role between government and industry.
- *Economic instruments* taxes, subsidies, tradable permits, vouchers, market incentives, and the like.
- *Information and education* information and education campaigns, information disclosure, provision of information to consumers on the environmental aspects of the manufacture.
- *Guidelines* promulgation of quasi-regulatory guidelines by a regulatory authority.
- *Voluntary approaches* initiated and undertaken by industry and firms, sometimes formally sanctioned or endorsed by states, including voluntary initiatives, voluntary codes, voluntary agreements, and self regulation.

However, the OECD does not explain the practical implications of relying on quasi-regulatory guidelines by a regulatory authority, setting out processes or providing interpretations to aid understanding of state's objectives by business and citizens. In addition,

neither does the OECD assess to what extent such a *'light handed approach'* should be to guarantee compliance with both existing and proposed environmental law and policy frameworks.

Voluntary approaches are arrangements initiated and undertaken by industry and firms, sometimes formally sanctioned or endorsed by states, in which self-imposed requirements go beyond or complement the prevailing regulatory requirements. Previous successful examples of voluntary arrangements include the concept of Responsible Care Programmes and the *'cradle to grave'* product lifecycle management approaches, discussed by the OECD (1997) and Bastmeijer (1997). However, the failings of Corporate Social Responsibility (CSR), the rejection of the Tripple Bottom Line (TBL) approach to environmental protection, and the ailing concept of Environmental Social Governance (ESG) and their associations with voluntary instruments have left some doubts in the minds of environmental scholars.

Taking her thesis and discussions even further, Black (2012) identifies four different forms of principles-based regulation, namely: formal, substantive, full, and polycentric. In her discussions, the author also identifies and explores seven paradoxes which principles-based regulation may encounter in its various forms, these being:

1. Interpretation,
2. Communication,
3. Compliance,
4. Enforcement,
5. Internal management,
6. Ethics, and
7. Trust.

In her earlier analysis (Black, 2008) concludes that in its full form PBR may provide an *'effective, durable, resilient and goal based regulatory regime'* but its paradoxical nature renders it vulnerable in many respects, in contrast to prescriptive and detailed rules-based regulations. In other words, maybe admitting it is a non-starter.

In yet another report, Mazur (2010) of the OECD Environment Directorate, informs of at least six types of intermediate and outcome of performance measures that need analyzing, including compliance rates, indicators of improved environmental management practices, and reduced risk. The report further considers the following types of intermediate and final outcome performance measures in relation to compliance assurance activities:

- Compliance rates;
- Measures of recidivism and duration of non-compliance;
- Pollution release indicators;
- Indicators of improved environmental management practices and reduced risk;
- Measures of effectiveness of individual compliance assurance instruments; and
- Environmental quality (final outcome) indicators.

The OECD analysis, reports Mazur (2010), recommends the following approaches to the design of outcome indicators of compliance assurance:

- Performance assessment focused on the effectiveness of compliance assurance instruments across regulations and environmental problems.
- Performance assessment focused on specific environmental problems reflecting the competent authority's strategic priorities.

- Multi-tier performance assessment focused on pollutant-specific results of regulatory actions at the lower level and on the overall programme effectiveness at the higher level

The OECD report concludes that even with the application of a toolbox of existing outcome indicators and the analysis of their respective strengths and weaknesses, it is not possible to identify a ‘*best practice*’ approach or a set of ‘*flawless*’ indicators. Perhaps another admission of a non-starter, and the continued failure in proposing an appropriate recipe.

Based on the OECD criteria for the evaluation of environmental indicators, that is measurability, analytical soundness and policy relevance, the report identifies the following key challenges for developing and using compliance assurance outcome indicators:

- Resource limitations for data collection and treatment.
- Complexity of scope definition, including the delimitation of the studied regulated community, accounting for the relative seriousness of violations.
- Difficulty of designing statistically valid indicators of compliance behaviour.
- Uncertainty in linking outputs with outcomes.
- Challenges of interpreting outcome indicators.
- Low comparability of indicators due to differences in regulatory requirements.

Is the OECD admitting yet another instrument that ends up as a non-starter? To address these challenges, Mazur (2010) of the OECD suggests several ways to improve the effectiveness of specific categories of compliance assurance outcome indicators, broadly summarised as follows:

3. Address specific segments of the regulated community in measuring compliance rates, improved environmental management practices, and effectiveness of compliance assistance;
4. Focus on particular types of serious environmental violations (e.g., compliance with emission limit values) in defining compliance rates and indicators of recidivism and duration of noncompliance; and
5. Concentrate on priority pollutants in assessing the reduction of pollution releases and local environmental quality improvements and linking them to compliance assurance activities.

In their analysis, Coglianese and Nash (2005; 2016) elaborate on how, despite global enthusiasm for performance-based regulation, little empirical research exists to show how such regulation has actually been working in practice. Indeed, even though legal and policy scholars have written widely on regulatory instrument choice, the case for performance-based regulation still remains largely theoretical. To define performance-based regulation more precisely, the authors conclude that ought to start by distinguishing four main ways that performance can be incorporated into regulation:

1. Performance can be used as a basis for evaluating regulatory programmes and agencies (evaluation or management).
2. Performance can constitute a criterion for allocating enforcement and compliance resources (targeting).
3. Performance can trigger the application of differentiated or tiered regulatory standards (tracking).
4. Performance can form the basis for legal or regulatory commands (standards).

Discussing *'The Limits of Performance-Based Regulation,'* Coglianesse (2017) finds that critics of the regulation have long charged that it is too constraining, unreasonable, and costly. These objections become more apparent whenever a regulation rigidly requires every entity it targets to undertake the same action or adopt the same technology, even though for some entities or under some circumstances the required action or technology might be unduly expensive, ineffectual, or even counterproductive.

In addition to its bipartisan support in the United States, Coglianesse (2017) finds that performance-based regulation has garnered supporters that extend throughout the world, which could reflect on yet another tendency towards the soft option. The global trading regime operating under the World Trade Organization formally favours the use of performance standards, with Article 2.8 of the Agreement on Technical Barriers to Trade (TBT) stating that:

Whenever appropriate, countries should design technical regulations in terms of performance rather than design or descriptive characteristics.

Coglianesse (2017) further adds that representatives to the WTO's Committee on Technical Barriers to Trade (TBT) *'have stressed the advantages of performance-based regulation'* and urged that *'whenever possible, standards should be performance-based rather than based on design or descriptive characteristics.'* Likewise, Canada, Mexico, and the United States have committed, as one of ten *'common regulatory principles'* in a jointly adopted Regulatory Cooperation Framework, to *'promote performance-based regulation'* as much as possible. The Organization of Economic Cooperation and Development (OECD, 2004; 2006a) has noted that *'the use of performance-based regulation is rapidly developing in OECD countries.'* What is to be noted is that organizations and countries most concerned in business development are the strongest supporters of PBR, while environmental organizations appear to disapprove of PBR through their silence.

In his discussion about *'Compliance Capitalism'* as associated to PBR and its many formats, Dekker (2021) finds that since much has been privatized and deregulated, a new form of public management *'driven by neoliberal, market-favouring policies'* has appeared. Dekker believes there are more rules today, most promoting the role of the private sector in the economy, creating a compliance economy giving free markets a greater reign over political economy. Dekker (2021) believes that the last two decades has seen the field of regulation shifting away from a dominant focus on the state as the key locus of regulatory activities.

However, a study of what the FSA prescribes, or condoned in recent years reveals that there are a number of connected but distinct regulatory approaches working under the banner of *'Principles-based regulation'*, some of them suggesting potentially radical developments in the relationship between the FSA and the industry it regulates. At least three elements in the FSA's current thinking can be identified:

1. Broad-based standards in preference to detailed rules.
2. Outcomes-based regulation.
3. Increasing senior management responsibility.

These strategies may be related and may be used together, but they are different and, importantly, they are therefore likely to raise different practical issues for regulators and regulated.

In contrast, outcome-based regulations, also known as performance-based regulations or results-based regulations are thought to be more flexible and less costly. Performance objectives or results are clearly outlined, but the industry is able to decide for itself how it will achieve these results. This may encourage innovation, particularly if existing technologies cannot meet the new requirements, and this may reduce their compliance costs. Companies may also have an improved understanding of their regulatory obligations and can be held more accountable to the results they may produce, because of their responsibilities in actively participating in the regulatory processes.

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Management/Market-Based Approaches

Management Based Instruments (MBIs) can be classified in different ways according to their sector of implementation (transport, energy) or by environmental medium (water, air). Alternatively, the European Environmental Agency (EEA) has classified MBIs into five main types based on their aim and functioning:

1. *Environmental taxes* (also environmentally related taxes) that have been designed to change prices and thus the behaviour of producers and consumers, as well as raise revenues.
2. *Environmental charges* that have been designed to cover (in part or in full) the costs of environmental services and abatement measures such as wastewater treatment and waste disposal.
3. *Tradable permits* that have been designed to achieve reductions in pollution (such as emissions of CO²) or use of resources (such as fish quotas) in the most effective way through the provision of market incentives to trade.
4. *Environmental subsidies and incentives* that have been designed to stimulate development of new technologies, to help create new markets for environmental goods and services including technologies, to encourage changes in consumer behaviour, and to temporarily support achieving higher levels of environmental protection by companies.
5. *Liability and compensation schemes* that aim at ensuring adequate compensation for any damages resulting from dangerous activities to the environment and provide for means of prevention and reinstatement.

Other propositions have been more elaborate to include:

1. *Charges*: fees or taxes paid for discharges of pollutants to the environment, based on the quantity and/or quality of the pollutant(s).
2. *Tradable Permits*: similar to charges and taxes except that they operate by fixing an aggregate quantity of emissions rather than charging a price for each unit of emissions.
3. *Charge-Permit Hybrids*: a blend of the quantity-based permit approach with a price-based charge or tax approach
4. *Deposit-refund schemes*: a surcharge levied on a product at the point of payment, when pollution is avoided by returning the product, or its polluting components,
5. *Subsidies*: Where taxes or charges can be used as a penalty on discharges, subsidies can be used to reward the reduction of discharges in a similar manner. (Barde, 1997).
6. *Carbon Tax or a Tax Shift*: a carbon tax to reduce the carbon dioxide emissions from fossil fuels, and which threaten to change the climate.

Concluding their analysis of MBIs, Altvater (2006) declares that market-based approaches are believed by some as simply:

Designed as financial instruments which serve the financial industry, not the environment.

No doubt, this is probably one of the strongest rebukes of market-based policies one would ever come across. Scientifically, one could argue that market-based approaches demonstrate that *'the source of the problem cannot also be its own solution'* (Aldy and Stavins, 2012). The analysis of Anderson and Leal (2001) came up with the reflection to the effect that:

For the true believer, the market is the answer regardless of the question, and even irreversible climate change is just another opportunity for private profit.

The authors raise two points regarding free market environmentalism that anchors their arguments on only two avenues for dealing with global warming.

1. The first takes changes in the Earth's temperatures as given and asks whether individuals have the incentive to respond with innovative solutions.
2. The second focuses on the evolution of property rights to the atmosphere.

Stavins, (2001) finds that while traditional regulatory and voluntary approaches are valuable policy tools for some types of environmental problems, incentive based policies are becoming increasingly popular as tools for addressing a wide range of environmental issues, from acid rain to climate change. Market-based approaches or incentives provide continuous inducements, both monetary and near monetary, to encourage polluting entities to reduce releases of harmful pollutants. As a result, market-based approaches create an incentive for the private sector to incorporate pollution abatement into production or consumption decisions and to innovate in such a way as to continually search for the least costly method of abatement.

A criticism of command-and-control policies is that firms are only encouraged to reduce to a regulated level. With market incentives, firms will reduce their emissions as long as it is financially valuable for them to do so, and this generally happens at a point where marginal abatement costs are equated across all regulated firms. Cost savings to firms also often translate into cost savings to customers who purchase products from regulated firms, resulting in lower overall social costs.

However, in his earlier discourse on environmental pollution, Stavins (1998) remarks that:

Market-based instruments are regulations that encourage behavior through market signals rather than through explicit directives regarding pollution control levels or methods.

Discussing market-based instruments further, Stavins (2003) finds that many environmental organizations choose to stand back and hesitate, because:

They are worried that, as flexibility in environmental rules goes higher, the overall standard of environmental protection, on the contrary, will fall.

Others prefer the traditional government command and control instruments which have higher moral virtue rather than the market-based system which condone the '*right to pollute*'. In addition, regarding command and control in a conventional way, many individuals prefer to stick to the old pattern to solve problems according to their experience.

In a review on market-based initiatives, Adikari (2009) of the Asian Development Bank Institute argues that market-based approaches to environmental management, such as payment for environmental services (PES), have attracted unprecedented attention during the past decade. What is still difficult, or rather impossible to resolve is pricing environmental services in its entirety that is recognizing that the natural environment is a complex system about which we yet need to learn more. PES policies, in particular, have emerged to realign private and social benefits such as internalizing ecological externalities and diversifying sources of conservation funding as well as making conservation an attractive land-use paradigm

The discussions of Bei Zhang (2013) about the ever-growing attempts of economists to commodify the environment reach the conclusion that:

In the eyes of the economists, the environmental factor is valuable and should not be cost free.

In other words, and according to Zhang (2013), when consumers buy products, the price they pay supposedly includes a certain amount of money for environmental consideration, such as environmental harm and any recycling process. Zhang believes that market-based instruments should offer the environmental factor a proper price in the production and consumption process and present flexibility and distinction at the same time.

In discussing the Pros and Cons of Market-Based Initiatives, Kenneth Andres (2019) finds the problem with market-based approaches is that it tries to justify the paradox between capital accumulation (which entails the exploitation of natural resources) and environmental conservation by using the market itself as the primary instrument to push for fixes to the current environmental problems. Andres further states that market-based approaches are seen as a delaying tactic by corporations to keep the *status quo* for as long as possible, as is the case with carbon offsets that merely delays corporations and people from making the necessary changes in their lifestyle patterns and GHG emissions level, and consequently prevent some needed regulations from being implemented. Similarly, Aldy and Stavins (2012) earlier argue that on close analysis it will be revealed that the main goal with the cap-and-trade or a carbon tax is to basically allow companies to slowly adapt their technologies to keep their profit margin at a reasonable level. If anything, the company's profit is seen as much more important than the environment or the climate, conclude the authors.

The main disadvantage associated with economic incentives is that they can be inappropriate for dealing with environmental issues that pose equity concerns. Emissions trading programmes, for example, could have the unintended consequence of concentrating pollution in economically disadvantaged areas, such as pollution hot spots). Examples of market-based approaches that have been intensely discussed include:

- Marketable permit systems (Nash and Revesz, 2002).
- Emission taxes, fees, and charges (Miller and Vela, 2013).
- Subsidies (Kampungu and Feng, 2013)
- Tax-subsidy combinations (Garcia-Alaminos and Rubio, 2021)

I. Hybrid approaches-Combining Standards and Pricing Approaches

Pollution standards set specific emissions limits, and thereby reduce the chance of excessively high damages to health or the environment but may impose large costs on polluters. Emissions taxes restrict costs by allowing polluting sources to pay a tax on the amount they emit, but because there are no emission limits, taxes leave open the possibility that pollution may be excessively high.

Contrary to existing methods and tools, the holistic and integrated developed framework, using a hybrid top-down and bottom-up approach claims to encompass a wider spectrum of circular economy complexity, based on the four building blocks of the circular economy defined by the Ellen MacArthur Foundation (2013).

Hybrid arrangements have been extensively discussed (Bäckstrand, 2008; Jänicke and Jörgens, 2009; Pattiberg, 2010; Galli and Fisher, 2016). The conclusion of Jänicke and Jörgens (2009) points to the development of an instrument at multiple levels would be indicative of both civil society and private sector actors being aware of, and acting in response to, the limitations of top-down environmental governance. Pattiberg (2010) finds that given the multiplicity of actors with overlapping forms of authority across a range of political and social environmental arenas, hybrid partnerships would be especially central to climate governance, that is as a means of controlling a single environmental issue.

Much of the literature on transnational climate governance has focused on proliferation of partnerships and collaboration between state, market, and civil society actors (Bäckstrand, 2008; Pattiberg, 2010). The authors find that transnational climate governance networks, characterized by their complexity and variety, may be made up of purely public actors (governments, government sub-units, legislators, etc.), or purely private actors (non-state entities and organizations), or, most commonly, a combination of the two. In Bäckstrand's words:

These partnerships “signify a shift to ‘new’ modes of governance, which build on non-hierarchical steering and are characterized by decentralized, voluntary, market-oriented interaction between public and private actors.

In their discussion, Saidani et al. (2017) refer to the combination of standards and pricing mechanisms as a ‘*safety-valve*’, in the sense that it may be used to limit both costs and pollution in cases where it is applied. According to these authors, such a combination imposes the same emissions standard on all polluters, and consequently all polluters are then subject to a unit tax for emissions in excess of the standard. Although such policy combination may have some attractive features, it is limited to emissions and not a whole range of externalities and actions. One serious criticism would be that only if standards are set properly, protection of health and the environment will be achieved, while high abatement costs may drive polluters to defray costs by preferring to pay the emissions fee rather than the costs of cleaning up, and that is too often the case.

II. Voluntary initiatives

Voluntary Environmental Programmes (VEPs) are considered useful for policy-makers wishing to test potential policy options or encourage better production or consumption practices. Goals of voluntary actions include providing participating companies with a competitive edge, to the effect that companies that participate in a voluntary programme might have larger social appeal than those that do not, thereby resulting in increase-value added to businesses, and reducing pollution. It is however interesting to note that voluntary instruments tend to concentrate on business externalities but not the wider net of environmental harms, directly or indirectly.

Limited experience with voluntary initiatives suggests the importance of structuring them in ways that would maximise chances of success, and a number of features have been identified as of particular importance, and discussed by Gunningham and Rees (1997) and Gunningham and Grabosky (1998), including:

1. Proposed environmental targets.
2. Tools for measuring accountability and transparency.
3. Provisions for monitoring and verification by independent institutions.

In their report titled ‘*Occasional Paper: Co-operative Approaches to Regulation,*’ and discussion on and analysis of voluntary instruments, the OECD- PUMA (1997), summarise their findings as:

A new kind of interaction between government and business is emerging in which both parties see the need for co-operative rather than adversarial relationships

While the OECD does not elaborate on why there should be any adversities between states and businesses, it continues by declaring and prescribing that:

There is increasing evidence that a co-operative approach to solving regulatory problems can lower costs for both parties and achieve equal or better performance in relation to policy objectives.

In yet another discussion supportive of the findings of the OECD, Scholz (1997) recognizes that shifting the focus of legal and regulatory enforcement onto the internal practices of companies can be an attractive law enforcement option for many types of potential corporate misconduct. Scholtz (1997) notes that since it is not always possible to define legal behaviour in detail, in advance and in a way that is relevant for all businesses, it may be more effective to define general principles for corporate behaviour, and then to provide guidance on the implications for regulating competitive and managerial practices rather than spelling out *ex ante* which practices are prohibited. Scholtz concurs that such an approach may also be a promising strategy in the many areas where the relationship between the enforcer and businesses rather than being adversarial, share common objectives.

In their analysis, Gibson (1999) and Moffet and Bregha (1999) find that the main problem arising from voluntary instruments lies in the fact that it is quantitatively difficult to assess their success, and that even when evaluators appear to have developed several statistical methods, success rates are not available for analysis. Gibson (1999) goes further to label voluntary initiatives as mere '*gift horses*,' stating that:

All manner of corporations and industrial organizations are now promoting, even undertaking, so-called voluntary initiatives. They are minimizing resource use, reducing waste, cutting pollution, enhancing environmental aspects of product quality, preventing accidents, repairing ecological damage, and strengthening the environmental sensitivity of corporate decision-making, all without being compelled to do so by government authorities.

The analysis of Segerson and Li (2000) and Coglianese and Nash (2016) conclude that voluntary programmes can be grouped into three main types:

1. Public voluntary programmes: where governments define programme requirements and invite businesses to join,
2. Negotiated agreements: where businesses and governments jointly define environmental requirements through negotiation, and
3. Unilateral agreements: where trade associations or businesses themselves define requirements for their environmental activities, without any direct input from government.

Segerson and Li (2000) and Delmas and Terlaak (2001) are amongst those professing that ISO 14001 (and EMAS) would perhaps serve as the most well-known and extensively studied private voluntary approaches to environmental management. One requirement would be that businesses willing to comply with ISO 14001 or EMAS voluntary standards must necessarily establish internal environmental management systems (EMS) through which managers identify the environmental impacts of their operations, develop goals to reduce those impacts, check progress toward achieving their goals, and take corrective action when progress falls short. To meet ISO's or EMAS's standards, businesses will therefore need to develop an environmental policy that calls for compliance with regulations and continuous improvement, continue the authors. The overall result would be that facilities can become certified to ISO 14001 or EMAS by having a registered third party authority (auditors) to verify that their environmental management system is consistent with the standard, hence the necessity for environmental audits. The arguments and propositions of Segerson and Li (2000) and Delmas and Terlaak (2001) demonstrate how easy it would be to regulate business activities using existing international instruments, in spite of the fact that businesses are fighting to regulate themselves without external influences.

In discussing the growing popularity of voluntary initiatives, Harrison (2000) warns that it can in some cases threaten the fundamental function of the state in setting public policy objectives if businesses are given increasing flexibility to set their own environmental objectives and grade their own performance in environmental management. Harrison concludes that:

Given that the business community is the last place many would look for altruism, that represents a significant leap of faith....Measures of rates of compliance and environmental benefits can be more difficult since voluntary initiatives are seldom backed by legal mechanisms to compel disclosure

Returning to the discussion table, the OECD (2001) contends that even if such initiatives are voluntary and private, they are influenced in various ways by the broader environment-cultural, social, legal, economic and political spheres from which they emerge. Such an argument is as much as treating businesses as part of humankind, human wellbeing and the wellbeing of the natural world, which some may consider as preposterous. Public policy shapes the environment by controlling activities that may prove detrimental, but the OECD argues that it also forms an important part of the institutional framework influencing voluntary initiatives..

In a rather detail analysis of voluntary instruments, Gunningham and Sinclair (2002a; 2002b) explain how such a new found interest in voluntary initiatives has resulted in their proliferation across a range of issues and in a variety of countries, even if still little is known about their effectiveness or about how best to design them to achieve optimum efficiency and effectiveness. Referring to the earlier analysis and observations of Davies and Mazurek (1997), Gunningham and Sinclair find that due to the recent introduction of this approach and the lack of data collection and reporting requirements in many such initiatives, adequate information is still scanty, and almost all analysts of voluntary initiatives seem to agree that far too little attention has so far been given to evaluating either their economic or environmental benefits, as emphasized upon by Davies and Mazurek, (1997).

Gunningham and Sinclair (2002b) further questions how businesses profess to be acting responsibly and sustainably in the way they exploits resources? The authors further questions how can companies avoid such serious accidents as the Baia Mare disaster in Romania, the Kumtor incident in Krygyzstan and at the OK Tedi mine in Papua New Guinea? Referring to their social license to operate, Gunningham and Sinclair believes the evolution of Responsible Care with modifications in independent third party audits and expanded roles for accountability, transparency and consultation, may go a substantial way to improving both its credibility and its capability to deliver positive environmental outcomes, as also discussed by Gunningham and Rees (1997), Gunningham and Grabosky (1998), Segerson and Li (2000) and Delmas and Terlaak (2001).

Gunningham and Sinclair (2002a) concluded their analysis by declaring that:

Voluntary initiatives are unlikely to make a substantial contribution to improved corporate environmental performance as a 'stand alone' policy instrument. The evidence suggests that sole reliance on voluntary initiatives has generally proved insufficient to achieve an acceptable level of industry-wide compliance.

Continuing their discussions and analysis of voluntary instruments, Gunningham et al. (2003) develop a complementary, overlapping, and in some ways broader framework for understanding the motivation for participation in VEPs. They propose three categories of general motivations for businesses to engage in sustainable behaviour:

1. Economic or competitive pressures,
2. Regulatory pressures, and
3. Social or community pressures.

Each of these categories effectively constitutes a license on how a business operates, similar to how a regulatory license constrains how a business operates, and so too do its economic and social licenses, discussed by Kagan et al. (2003) and Gunningham et al. (2004). Gunningham et al. (2004) further contends that the social license would play an important role in determining which business entity chooses to go beyond compliance with minimal regulatory standards and voluntarily improve their environmental performance.

Similarly, Prakash and Potoski (2006) reported that larger facilities and those that pollute more are less likely to obtain ISO certification for their EMS, an extra voluntary step that facilities could take to demonstrate a higher level of commitment to maintaining a quality EMS and to protecting the environment.

Prakash and Potoski (2006) suggest that there would be several benefits available to businesses wishing to join a voluntary programme, including:

1. Participation can improve their public image,
2. The programme might offer technical or other types of assistance in exchange for participation,
3. Because voluntary programmes are sometimes initiated as a pilot test to a regulation,
4. Participation can help the company to more quickly transition to a formal law, and
5. The possibility of limiting potential litigation and monitoring and enforcement costs.

In yet another analysis, Prakash and Potoski (2006) categorized VEPs, or what they term ‘*green clubs*’ into ideal types on the basis of:

- Whether they have weak or strong membership standards,
- Whether they have weak or strong enforcement of those standards.

Thus, their reasoning is based on why some VEPs will prove more effective than others will. Prakash and Potoski suggest that VEPs with moderate standards, but with strong enforcement standards, will have the greatest overall effectiveness, stating that:

The effectiveness of any type of VEP will be a function of both the level of participation in these programmes and the environmental and other improvements that result from the inducements for participation.

According to Koehler (2007), recent years have seen a tendency for voluntary approaches to environmental protection taking a greater prominence either as complementary or even at times as substitutes to traditional regulatory approaches, being adopted as ‘*good business practices*.’ Koehler hardly considers such approaches as being really truly voluntary, since such diverse elements as public participation, toxic chemicals reduction and phase-out, pollution prevention strategies, product stewardship, life-cycle programmes, environmental labeling, environmental management systems, procurement policies, and international standards are also have also to be addressed, and it must be pointed out that businesses hardly have either time or capacity to take on activities that do not add to their balance financial sheets.

Morgenstern and Pizer (2008) find that voluntary programmes are limited by the absence of clear regulatory signals to push changes in corporate action, or to stimulate demand for

cleaner and environmentally safer technologies. Referring to the dangers of ‘*Free Riding*,’ the authors find that it may serve as a strategy whereby some businesses would avoid making any effort while others would voluntarily address a few simple problems to satisfy and keep further regulations at bay. The authors further argue that a voluntary approach may shift attention from the biggest polluters that are invariably both the source of more emissions and more low-cost emissions, to cleaner companies that emit less and have already taken significant action. As such, voluntary programmes maybe seen as a distraction from the real work of taking mandatory action, claim the authors.

Concluding their discussion on an assessment of environmental voluntary programmes, Borek and Coglianesi (2009) maintain that, as opposed to traditional or market-based regulations, they are not anchored to sanctions that aim at motivating environmental improvements. The authors further observe that:

1. Overall, VEPs can sometimes achieve desired effects among participants, but that these effects are quite limited and may depend on the type of environmental behaviour the programmes target and the nature of participants' decision making,
2. The effectiveness of a VEP is a function of the number of participants in the programme, the average impact of the programme on each participant, and any spillover effects that the programme has on nonparticipants. These factors make up the ‘*effectiveness equation*.’
3. VEPs typically will not affect as many polluting facilities as mandatory regulations do, and the impacts of a VEP on participating facilities are not likely to be as large as the impacts of regulation on regulated facilities.

Ambec et al. (2013) relates how some twenty years ago, Harvard Business School economist and strategy professor Michael Porter challenged conventional wisdom about the impact of environmental regulation on business by declaring that:

Well-designed regulation could actually enhance competitiveness.

Porter’s hypothesis submits that the traditional view of environmental regulation held by virtually all economists until that time was that requiring firms to reduce an externality necessarily restricted their options and thus by definition reduced their profits. After all, if profitable opportunities existed to reduce pollution, profit-maximizing firms would already be taking advantage of them. Over the past twenty years, much has been written about what has since become known simply as the Porter Hypothesis.

The Porter hypothesis (Porter, 1991) asserts that polluting companies can actually benefit from environmental policies, arguing that well-designed and stringent environmental regulation can stimulate innovations, which in turn increase the productivity of firms or the product value for end users. To rectify the seemingly paradoxical relationship between environmental regulation and businesses’ financial performance, a growing number of researchers have highlighted the argument of Porter (1991), who argued that:

Environmental regulations, rather than uniformly penalising all firms, afford some firms the opportunity to become more competitive, consequently improving their financial performance.

The discussions of Ruhl and Craig (2011) present a different view; associating sustainability with economic development and environmental governance, the authors point out how regulatory reforms have further added four broad concepts to the already myriad initiatives in

existence, contending that within the environmental protection of resources agenda through innovative regulatory proposals, and these include:

1. Regulatory innovation proposals, or regulatory reforms.
2. Government-stakeholder network.
3. The indirect governance mechanism approach.
4. Economic incentives.

III. Regulatory innovation proposals, or Regulatory Reforms

These have been in the pipeline since a proposal from the OECD (2004): '*Taking Stock of Regulatory Reforms*,' followed by a further proposal: '*Alternatives to Traditional Regulation*' (OECD, 2006a&b). Perhaps the final coup de grace came through yet another OECD report: '*Regulatory Reform and Environmental Policy*' (OECD, 2006), this time basing arguments and judgements on Porter's Hypothesis (Porter, 1991), as discussed by Porter and van der Linde (1995) and which basically states that:

Environmental regulation is good for firms because it forces them to adopt production methods that are cleaner and which also turn out to be more efficient and more attractive to customers so that the regulated companies actually benefit from regulation.

The vagueness of the statement stands out as a misplaced conception with no foundation.

The concept of *Government-Stakeholder Network*, discussed by Benner et al. (2004) and Karin Bäckstrand (2006) is founded on structures established emphasizing on three elements of environmental governance:

1. Collaboration,
2. Inclusiveness, and
3. Flexibility

The main objective is to tailor solutions to the circumstances of what the authors term '*discrete situations*', that is dealing with environmental problems as they surface, as opposed to preventing such problems from occurring, in other words ignoring the preventive and precautionary principles. The effect is that whenever rulemaking initiatives are negotiated, stakeholders associated with proposed regulatory initiatives negotiate the terms of the regulations so as to avoid post-promulgation litigation. These networks capture the essence of post-sovereign governance entailing collaboration between market actors, governments, international organizations and NGOs on a range of issues from sustainable development, climate change, water, and biodiversity protection contends Benner et al. (2004).

Another formula proposed is *Contract-Based Permitting*, which refers to procedures in which terms of regulatory permits, rather than relying on prescribed formulated standards, are negotiated between the regulatory authority and the permit applicant, '*within a broader boundary of possible ingredients and outcomes*' and has been analyzed and discussed by Bäckstrand (2006). It is expected that public-private partnership programmes allow regulators to team with private entities to engage cooperatively in developing solutions that optimize benefits to both the interests of both parties, contends Bäckstrand.

IV. The Indirect Governance Mechanism Approach

Also known as reflexive law (discussed by Gunter, 2006), relies on information, consumer demands, and reputation values to induce desired behaviour in the regulated community. Gunter (2006) defines reflexive law as:

Reflexive law is characterized by a new kind of legal self-restraint. Instead of taking over regulatory responsibility for the outcome of social processes, reflexive law restricts itself to the installation, correction, and redefinition of democratic self-regulatory mechanisms.

The approach is based on information-reporting mechanisms whereby requirement to report harmful actions are prescribed, thus allowing greater public dissemination of information that, given public reaction to the information may induce the reporter to alter behaviour in order to control the impact of their actions. Coupled with *Certification Programmes*, businesses are induced to meet certain established standards (ISO, EMAS etc.), to be allowed the right to certify their products and thereby presumably also reap the benefits of consumer demand for more environmentally friendly products, discussed by the OECD (2016).

V. Economic Incentives

These are incentives that concentrate on basic economic interests, using constructed market frameworks or direct incentives, to induce desired behaviour or otherwise make it more likely to occur. Bowles and Polanía-Reyes (2012) found evidence that at least four mechanisms may account for the effects of incentives on preferences, namely:

1. Provide information about the person who implemented the incentive,
2. Frame the decision situation so as to suggest appropriate behaviour,
3. Compromise a control averse to individual's sense of autonomy, and
4. Affect the process by which people learn new preferences.

However, an earlier analysis by Bowles (2009) points out that the whole concept needs careful consideration, with a note of warning stating that:

Economic incentives become counterproductive when they undermine what Adam Smith called '*the moral sentiments*,' such as the desire to be esteemed by others and to be viewed as ethical and dignified. Organizational and social policy makers, take note.

The three salient Programmes proposed in the Economic Incentive proposal include:

1. Cap-and-Trade programmes that impose industry-wide pollution ceilings and allocate pollution credits among firms in the industry based on some initial allocation formula, but then allow individual forms to trade their credits so as to take advantage of differential pollution control efficiencies, discussed by Buchanan and Tullock (1975) and Hahn and Hester (1989).
2. Banking Programmes that allow some natural resource to be accumulated in a bank through restoration or enhancement, and then sold to third parties who require some level of mitigation as a condition to receiving a regulatory permit to engage in land development or other resource uses, discussed by Dunphy (2020) and Greenfield and Markoff (2020).
3. Tax and Subsidy Programmes that more directly induces desired behaviour by providing reward subsidies for delivery of environmental goods or by imposing punitive tax or fee consequences for engaging in environmentally undesirable behavior, discussed by Zhao (2003) and Christiansen and Smith (2015).

Although the discussion of Coglianese and Nash (2016) elaborates on how voluntary programmes offer businesses flexibility to adopt cost-effective measures to reduce environmental impacts, claiming that rather than inducing businesses to act through threats of enforcement. The earlier statement of Brouhle et al. (2005) resounds even louder:

The difficulty in evaluating voluntary approaches lies in sorting through the myriad of programmes, identifying a discernible environmental goal, gathering adequate data for analysis, and measuring achievement of the environmental goal relative to a reasonable baseline scenario.

Moreover, a plausible reflection would be that bribing could never be an answer to regulating environmental destruction.

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International Conventions, Agreements and Treaties.

The United Nations saw at some stage the necessity for countries around the world to meet to address the continuing global environmental degradation through human activities, leading to the 1972 UN Conference on the Human Environment in Stockholm, which highlighted the international aspects of emerging environmental challenges and as a result legitimized the environment as an area for international cooperation. The Stockholm conference also created the United Nations Environment Programme (UNEP), an institutional arm of the UN to be responsible for environmental protection within the United Nations system. At both Stockholm in 1972 and two decades later at Rio in 1992, countries around the world adopted a set of basic principles based on the Rio Declaration on Environment and Development of 1992. Some of these principles are emerging as customary law, helping to resolve environmental disputes and guide negotiations of the various environmental treaties protracted to this day.

Under international law, an environmental treaty is any legally binding agreement between states (countries). A treaty may be termed a Convention, a Protocol, a Pact, or an Accord, but it is the content of the agreement, not its appellation that makes it a treaty. There are different types of environmental treaties, including bilateral environmental treaties (BETs) between two states, or multilateral environmental treaties or agreements (METs or MEAs) that legally bind multiple states. Multilateral environmental agreements may involve multiple entities and considerations in their negotiations, and may lead to agreements which are within the law-making mechanisms, whether soft law or hard law. A multilateral environmental treaty may be initiated by a major concern prompting a study by an international institution such as the World Health Organization, the UN International Law Commission or the General Assembly itself. Once a treaty is in force, it is presumed, in accord with the Vienna Convention, that it binds the parties in good faith (United Nations, 1993). The basic principle of law is *pacta sunt servanda*- 'agreements which are neither contrary to law, nor fraudulently entered into, should be adhered to in every manner'. This principle applies to the interpretation of the terms of the treaty in its practice. Article 31 of the Vienna Convention sets out general rules of interpretation. However, specifying rules for the interpretation of treaties is viewed as warranting caution.

To address environmental problems that span national borders, countries have negotiated more than 1,000 international environmental agreements (MEAs). While most fall within the soft law category, helping states in environmental policy-making and enacting domestic environmental laws, norms and guidelines, others are considered within the category of international environmental hard law, and these to this day include:

- The Ramsar Convention on the Preservation of Wetlands (1971).
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES-1973).
- The Vienna Convention and Montreal Protocol to Protect the Ozone Layer (1985).
- The Basel Convention on the Control of Hazardous Waste and their Transfer Across Borders (1989).
- The Convention on Biological Diversity-CBD (1992).
- The United Nations Framework Convention on Climate Change-UNFCCC (1992).
- The United Nations Convention to Combat Desertification (1994).
- The Rotterdam Convention on the Prior Approval of the Transfer of Hazardous Chemicals (1998).
- The Cartagena Protocol on Biosafety (2000).

- The Stockholm Convention on Persistent Organic Pollutants (2001).

Multilateral Environmental Agreements are said to be one of the most effective ways in which governments of the world meet environmental commitments to protecting biodiversity, safely managing chemicals and waste, sustainably managing land, and mitigating and adapting to climate change. With rapid and unfettered economic development around the world, it has been recognized that businesses, especially large corporations and multinational corporations are mostly responsible for environmental degradation and need to be controlled either through laws, regulations, agreements or guidelines. Perhaps one of the objectives of MEAs is to address issues associated with international business operations and environmental degradation, and at the same time assess whether MEAs have been effective to that end.

The scale and reach of transnational businesses now make them significant actors in the environmental arena, to the point that the Johannesburg Plan of Implementation (2002) devotes an entire chapter to '*globalization and sustainable development*,' recognizing the necessity for states to actively promote corporate responsibility and accountability, as a reminder of the declaration of Tay (1999):

The significance of engaging these corporations cannot be underestimated. Arguably, MNCs can assert more influence on an environmental issue than can a treaty. States are more likely to comply with the demands of corporations because corporations are necessary components to the economic development of the states.

The globalization intensification of business and trade has inevitably placed tremendous pressure on both the natural and human environments, intensifying the need to regulate the behavior of MNCs, as aptly stated by Ewing-Cho and Soh (2009):

In the 'age of frameworks,' international regimes (whether sufficiently effective or not) were institutionalized to address the global nature of environmental problems. In the twenty-first century, the focus will be the actual implementation of these international regimes as the evolution of environmental law enters the 'age of compliance.' For environmental law to remain relevant and effective, it must target the primary actor in globalization: the multinational corporation.

Governments have committed themselves to numerous international environmental and sustainability agreements and conventions. These not only bring about commitments, but often also significant financial obligations. Since the 1970s, a growing number of environmental treaties have incorporated provisions designed to encourage their adoption by developing countries. Such measures include financial cooperation, technology transfer, and differential implementation schedules and obligations. (discussed by Mitchell, 2003). In his discussion on the concept of *Jus Cogens* in the Law of Treaties, Rozakis (1976) concludes that the quest as to whether a rule has the character of *jus cogens* must begin by finding out whether it belongs to general international law. Rozakis is of the opinion that it must be established that the rule is binding upon the great majority of States, in other words, that the international community, in general, has consented to its content. It needs to be noted that most Treaties are concocted by the richer countries of the North, to be imposed on the poorer countries of the South.

Although numerous international environmental treaties have been concluded and are in force, Bell and Russell (2002) find that effective agreements remain difficult to achieve for a variety of reasons, including:

1. Environmental problems ignore political boundaries, they can be adequately addressed only with the cooperation of numerous governments,
2. There exists serious disagreements on important points of environmental policy dictated to developing countries,
3. Measures necessary to address environmental problems typically result in social and economic hardships in the countries that adopt them,
4. Therefore many countries, particularly in the developing world, have been reluctant to enter into international environmental agreements.

However, the greatest challenge to the effectiveness of environmental treaties appears to be compliance. Discussing the issues, Mitchell (2003) finds that even if treaties could attempt to enforce compliance through such mechanisms as international sanctions, they would be of limited usefulness since:

1. Countries in compliance with a treaty may be unwilling or unable to impose the sanctions called for by the treaty, or
2. The threat of sanctions could be less important to most countries than the possibility that by violating their international obligations they risk losing their good standing in the international community.

One further reason mentioned by Mitchell (2003) is that enforcement mechanisms other than sanctions have not been easy or practical to establish, as these may require countries to cede significant aspects of their national sovereignty to foreign or international organizations, an unacceptable prospect. Young (2010) reckons that enforcement of international agreements should be considered as a domestic approach that would effectively allow each country to define compliance in whatever way best serves its national interest. However, Young believes that international environmental treaties and agreements are likely to grow in importance as international environmental problems become more acute, and which they are at present, but the reflection of Susskind and Ozawa (1992) still holds true in many instances:

The signing of a convention can ‘take the heat off’ political leaders, allowing symbolic but empty promises to substitute for real improvements. Nations and leaders that have absolutely no commitment to improving environmental quality can sign a convention and claim credit for ‘doing something’ when, in fact, there will be no improvement.

To add credibility to the observations of Susskind and Ozawa (1992), Crawford and Fiorentino (2005) have sounded the alarm bells about businesses efforts in either diluting or completely ignoring International Treaties through the creation of free trade agreements, beginning in the early 1990s. Citing the example of The North American Free Trade Agreement (NAFTA), the authors point out how the creation of large numbers of factories jointly owned by U.S. and Mexican corporations (*maquiladoras*) have been allowed to operate in Mexico within a wide free trade zone along the U.S.-Mexican border. Given that Mexico’s government lacks both the resources and the political will to enforce either the country’s environmental laws or international environmental agreements to which it may be a signatory, these ‘*maquiladoras*’ are able to pollute surrounding areas with relative impunity, often dumping hazardous wastes on the ground or directly into waterways, and such pollutants may find their way into other nearby states.

Crawford and Fiorentino reveals how prior to NAFTA's adoption in 1992, the prospect of problems such as these led negotiators to append a so-called '*side agreement*' to the treaty, which pledged environmental cooperation between the signatory states. Records show that these have never worked, having been pure lip service.

Meanwhile, concerns about the apparent connection between free trade agreements and environmental degradation in Europe have fueled opposition to the Maastricht Treaty (1992), which created the EU and expanded its jurisdiction. It is becoming more and more apparent that the growing number of regional and global trade agreements is seriously diluting the legal status of MEAs. The OECD (2007) reports on the existence of more than 200 such agreements at the time of publishing its report.

On 15th November 2020, fifteen countries signed the Regional Comprehensive Economic Partnership (RCEP), creating the world's largest free trade area stretching from the southern borders of Kazakhstan in the North to the South Pacific, including New Zealand. In December 2020 the WTO reported the existence of about 420 regional trade agreements around the world.

Issues associated with the impact of rapidly developing trade agreements on the effectiveness of international environmental agreements have been discussed at length by Copeland and Taylor (2003), Copeland and Gulati (2006) and Susskind (2008), and all conclusions point to a situation where such agreements are hardly serving their intended purposes. Perhaps also the answer to a question posed by Korves et al. (2011):

Is Free Trade Good or Bad for the Environment?

In a discussion about the effectiveness of MEAs and the need to strengthen them, Susskind (2008) states:

Despite the huge media attention environmental treaties receive, the system of making and implementing them is barely functioning.

From his analysis of problems associated with effectiveness and compliance, and his conclusion that '*the system for creating and enforcing MEAs is still relatively undeveloped,*' Susskind makes the following observations:

- Ongoing North-South tensions get in the way.
- We have lost sight of the importance of '*common but differentiated responsibilities*' (CBDR).
- There are few incentives for treaty compliance and few penalties for noncompliance.
- We have allowed the absence of scientific certainty to forestall useful action.

Even in the face of all the difficulties elaborated upon, Susskind believes there may be ways in which the treaty-making system can be improved, including:

- Involving '*unofficials*' more directly in treaty drafting and enforcement, including civil society groups, including environmental and scientific nongovernmental organizations (NGOs), universities, and trade associations,
- Setting longer-term timetables and adaptive management targets,
- Offering financial incentives for ratification and compliance by linking environmental treaties with trade and development assistance. An incentive to sign MEAs might involve granting favorable technology-sharing agreements to countries implementing the most important global environmental agreements, and

- Creating standing regional science advisory bodies for clusters of related treaties rather than organize separate committees for every treaty regime.

Whether existing environmental law regimes are actually failing the environment is the next question that should be debated, and in their discussion Camilleri and Falk. (1992) aptly states:

The emergence of an increasingly urgent environmental agenda in the closing years of the twentieth century demonstrates ever more starkly the incongruity between the physical properties of the biosphere and the image of a world partitioned hermetically and immutably, into fixed domains of sovereign authority.

The statement, made by the International Court of Justice (ICJ-1996) in the Nuclear Weapons Advisory Opinions (Legality of the Threat or Use of Nuclear Weapons [Advisory Opinion] [1996] ICJ Rep 226, 241), succinctly captures the paramount importance that an intact environment, that is the integrity of air, climate, water, soil, flora, fauna, and natural ecosystems, has for the well-being of the human species:

The environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn.

While this reasoning represents a compelling rationale for environmental protection, the environment arguably also deserves to be protected for its intrinsic value, which is independent from any utilitarian, spiritual, aesthetic, or other worth it might have for humans.

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Primers and Catalysts of National and International Environmental Law and Regulations

Introduction

One question that may be asked is why should environmental laws be either primed or catalyzed when there are established systems already in place responsible for such laws. What needs to be better understood is that for the past four decades or so, environmental law, national and international, has taken a direction in which the concentration is heavily on the side of economic development at the expense of environmental degradation and destruction. Because of that linear progression, today the world faces serious problems of atmospheric, soil and water pollution, deforestation on a massive scale, and unsustainable extraction of natural resource, reaching what has been termed the '*Tipping Point*' discussed by Mcsweeney (2020) and Chacko (2021). The calls from scholars private institutions and organisations around the world necessitates a re-examination of existing laws, and suggestions and proposals from different quarters need to be considered as possible primers and catalyst in enabling states and global organizations in shifting the present paradigm based on state-centric, homo centric vision to a non-state-centric, ecocentric vision in terms of the function of their systems of law.

By definition, environmental law primers should serve to prime and lay a foundation for environmental regulations and subsequent legal instruments. On the other hand, environmental law catalysts are precepts and guidance documents that enable environmental law making to proceed at a faster rate, under different conditions and with different end results. Environmental law making has so far been left to either policymakers, otherwise to those responsible for environmental damage and degradation, leaving out other concerned environmental groups. It is these other actors and their inputs that should attract attention

A statement issued from the Department of Justice of the USA (1991) proposed that:

The proper functioning of the international legal environment is critical, along with the contributions that are made by the major economic and political institutions involved in solving core environmental problems.

It is both interesting and important to note the persistent policy of entrusting the development on environmental laws to economists and policymakers, which include politicians and powerful corporations, those who have been all along prioritising economic development over environmental concerns, the consequences being the pitiful state of the world's environment today.

The taking over of environmental regulations by businesses has not been the main cause of continued environmental problems, and Reilly (1989) suggests that individual activities have also to be part of the problems. Reilly believes that to alter these activities attitudes towards the environment must change, not necessarily through more regulations, but rather through a change in mindset. Blumm (1992) is of the opinion that for such changes to happen, a new direction to environmental regulations could happen if primers or catalysts of environmental laws could be taken into consideration.

Rather than laws (hard or soft), the United Nations (2004), the organisation mostly involved in international environmental laws through the UN International Law Commission (ILC), realize that there has been a growing movement for the development of a worldwide "*environmental imperative*" in the past 20-30 years. The concept is based on international state cooperation, but it never materialized. Did the UN failed in a responsibility it gave itself

since its creations? The blame is clearly laid on those calling for different approaches in one statement:

It is important to consider the viewpoint that instead of multiplying statements of vague international legal principles and obligations, publicists need to engage in the much more empirical work of identifying common interests and constructing a regime based on them.

The interrelationship between national legal systems and international law has been subject to both discussions and controversies, remarks Lozada (2008) and Blodgett et al. (2008) in their analysis of the relationship between environmental law and development. The authors associate such controversies to the confluence, even if at times contradictory, of such concepts as national sovereignty, and the theory of global social responsibility. Especially when there have been no international super-legislative power to establish an international environmental regime so far, and no effective international enforcement mechanism concerning international environmental agreements in force. As Kubasek and Silverman (1997) concluded earlier:

There is disagreement over whether indeed there can even be a body of law known as international law, and if there is, what those laws are.

Christina Voigt (2011) believes in a new construct of human laws that keeps human activities in harmony with the unchanging and universal laws of nature, and to ensure an innovative legal approach to ecological sustainability, the author recommends:

A rule of law for nature which guides and transcends ordinary written laws and extends fundamental principles of respect, integrity and legal security to the non-human world.

Brown-Weiss (2011a, 2011b) has extensively discussed the validity of environmental laws in a social human construct that has changed drastically since the industrial revolution, without any further consideration or accommodation for the ongoing rapid and constant changes over time. These require new measures to accommodate them in order to ensure sustainable and equitable development for both present and future generations. Brown-Weiss sums up her analysis in a few meaningful words:

As we look to the future, we can anticipate that climate change is likely to dominate the environmental legal agenda, whether explicitly or implicitly. International environmental law will become of necessity more concerned with long-term risks and their assessment and management, and with issues of both inter-generational and intra-generational equity

Gonzalez (2015) is most concerned about how existing environmental laws discriminate the North from the South, since the economic demands of the North on the South has become excessive, the resulting environmental destruction and degradation in the South has become uncontrolled. Caused. The final reflection of Gonzalez is that:

International environmental law is a field in crisis because the problems it currently confronts are deeply embedded in the existing economic order and cannot be adequately addressed by simply tinkering on the margins.

The analysis of Laitos and Wolongevicz (2014) reveals how and why environmental protection laws have often failed since they tended to always include certain problematic characteristics, such as:

- They are anthropocentric, in that their goal is to protect and benefit humans, not the environment in which humans live;
- They assume human superiority and exceptionalism to nature and natural processes;
- They are based on the notion that humans are separate from nature;

- They presume that humans are not ultimately limited by planetary boundaries, because they are superior and somehow insulated from nature.

To the authors such laws use an unrealistic model for humans in the sense that human motivations have remained consistent with the *homo economicus* model used by resource economists, where unrealistic self-interest economic motivations takes priority over a model where nature should be perceived as a closely integrated, self-regulating, complex system that works best when left alone by humans.

Laitos and Wolongevicz (2014) conclude that for environmental laws to work in a new, more Ecocentric Era, they would have to be frameworked on three foundations:

1. Environmental laws would not continue to rely exclusively on the assumptions and models used in previous eras, but instead would reflect the reality of how humans behave and nature works.
2. These laws would impose an affirmative duty on humans to make choices consistent with ecological integrity and planetary boundaries, in other words, rather than telling humans what not to do, laws should tell or encourage humans what to do.
3. Rather than rely on rules that seek to prevent humans from creating negative environmental externalities, these new laws would create incentives for humans to create positive ecocentric externalities.

After a detailed discussion about ‘*Effective Environmental Regulation*,’ Demmke, C. (2011) concluded with a landmark remark:

The original view that environmental degradation could be solved by changing the behaviour of a few, easily identified and large-volume polluters has given way to a new perception that the environmental universe is more diffuse and atomistic.

Discussing ‘*environmental effectiveness*’ of existing laws, Montini (2013) propounds that improvements can only happen if a new paradigm is adopted, one that would guide the interpretation and enforcement of existing environmental legislation, as well as the development of new ones. Such a new paradigm, continues Montini, should be based on:

The recognition of the ecological core of sustainable development and aim to the creation of a virtuous link between sustainable development, ecological sustainability and environmental law.

In other words, a revision of international environmental law should be grounded on the concept of ‘*ecological sustainability*’, a concept that Montini describes as:

The need for human civilization to live in harmony with nature and the eco-systems which enable life on the planet and support human development.

Basing his call for a rethinking of global environmental law and governance, and backing his arguments from scholars who have been proposing a framework for the future of environmental law in a changing anthropocentric world French and Kotzé (2018) summarise that call as:

It specifically attempts to identify a host of considerations that environmental lawyers, including those who focus on natural resources and energy law, will have to contemplate if global environmental law and governance were to respond better to the many challenges and complexities in the Anthropocene epoch.

Earlier, and concluding discussions about the same issues that call for a drastic rethinking of current environmental laws, Kim and Bosselmann (2013) summarized their arguments on the basis that:

Our point of analytical departure is that the state of the global environment is deteriorating despite the accumulating body of international environmental law. By drawing on the recent Earth system science concept of interlinked planetary boundaries, this article makes a case for a goal-oriented, purposive system of multilateral environmental agreements.

Discussing '*International Environmental Law's Lack of Normative Ambition*,' and referring to what has been suggested by Kim (2016), the arguments of Kotze (2015; 2019), based on propositions for new approaches to frameworking laws today, would reveal that:

- There are many more actors involved with governing the Earth system than only the State;
- There are many more types of '*law*' involved in governing Earth system processes in addition to those emanating from the traditional sources of international law;
- There are several other alternative governance processes available than only the trite top-down mode of international environmental law; and
- International environmental law is only one part of a much larger body of laws that are relevant for governing the Earth system.

Kotzé and Kim (2020) have extensively discussed environmental laws that omit to consider the importance of putting earth systems at the centre of legal frameworks and legal decision-making, and referring to the earlier warnings of Robert et al. (2013), they declare that:

We are witnessing unprecedented levels of Earth system destruction and intensifying patterns of injustice at all levels and scales. This is likely to lead, if it has not already done so, to the transgression of critical tipping points in the Earth system, which are predicted to cascade and accelerate Earth system transformations into a deep Anthropocene.¹

Continuing their discussions and with reference to the earlier conclusions of Robert et al. (2013) and Steffen et al. (2004), Kotzé and Kim (2020) point out that laws developed in the context of the Holocene, cannot continue to exist in its present form for the purpose of the Anthropocene, basing their arguments based on:

1. International environmental law's scholars and practitioners have not yet fully appreciated the importance and value of embracing an interdisciplinary systems approach to better analyze, understand and respond to the multiple complex governance challenges arising from an integrated, dynamic and complex Earth system.
2. International environmental law has failed to provide an appropriate normative framework that is sufficiently geared towards preventing humans from encroaching on critical Earth system limits that define '*stable*' or '*harmonious*' Holocene conditions (Stephens 2018)
3. The ongoing incremental international environmental law reforms (of international environmental law internally and of the social processes this body of law seeks to influence externally) have not been sufficiently ambitious to achieve the type of thoroughgoing, radical transformations that are critically necessary to enable planetary integrity and socio-ecological justice (Kotze (2019).

The analysis and discussions of Cassotta (2021) concentrate on one element, ‘*The Future*,’ which is considered as the period of time that will require environmental law to facilitate and change the relationship between humans and the earth and that will require environmental law to be proactive and synchronize with the changing environmental governance.

Cassotta (2021) believes present deficiencies in current international environmental law regarding governance and effectiveness may be ameliorated by strengthening the interactions and synergies in a logic of multi-level regulatory governance (vertical and horizontal) between sources of law and policy in the different sectors and by reinforcing international cooperation.

Instead of focusing on transforming environmental law, continues Cassotta, there should rather be a focus on the need to transform and reframe human actions in response to the unprecedented environmental changes humanity has caused to earth systems; however, the perspective and awareness should be new and different from past beliefs, one that includes the acceptance of a necessary shift of paradigm of both environmental law and governance, synchronizing the two.

The design and application of modern environmental law have been shaped by a set of principles and concepts outlined in publications such as *Limits to Growth* (1972), *Our Common Future-The Brundtland Report* (1987), *Rio Declaration* (1992), the *Earth Charter* (2000), and *The Future we Want* (2012), which could have guided in seeking new directions in both national and International Law, but it so appears that the legal community has remained insular from suggestions. Discussions, suggestions, propositions and critical analyses from environmental scholars about in the literature, but again these do not have to have made any impact in the law-making machinery.

The importance of primers and catalysts for considerations in environmental lawmaking has been variously discussed by Barnosky et al. (2012), Feria-Tinta and Milnes (2019), Scotford (2019), Hollis (2021) and Hunter (2021). A number of precepts and guiding documents have also appeared over the years. The 1987 statement by the World Commission on Environment and Development in connection with the Brundtland Report has never been more relevant and urgent than it is today, but appears to have lost its message and meaning along the way..

The discussions of Barnosky et al. (2012) stress on the principles of good neighbourliness, due diligence and precaution as important guidelines to be adopted international jurisprudence. Asking the question: ‘*Do legal tools exist that could suffice to assure our survival?*’ Barnosky et al. are of the opinion that there have been insufficiencies in international environmental law since its emergence and development in the 1970s to the present. The authors point that:

Ecological systems are severely degraded, to the point where some scientists foresee a possible ‘*planetary collapse*’ within our lifetimes.

Discussing the wider problems of current developments within the context of human and ecological survival, Feria-Tinta and Milnes (2019) recommend that in the quest for international laws and regulations that possess real utility there is an urgent necessity to reorient international environmental laws and regulations towards integration (or de-fragmentation), to operate under environmental principles and focus on practical remedies.

In his discourse about legal connectors and catalyst in environmental principles across jurisdictions, Scotford (2019) examines environmental principles as a general phenomenon in environmental law, with particular emphasis on how they can connect, catalyse, and inspire legal thinking in relation to environmental problems across jurisdictions. Scotford recommends three ways in which environmental principles can be developed as legal connectors across legal orders without constituting formal and universal norms of public international law:

1. Connection through soft law instruments,
2. Connection through judicial dialogue, and
3. Connection through legal scholarship.:

According to Hollis (2021) although international law is primarily a legal instrument for states, it does not however hold a monopoly on regulations. Civil society players and other regulatory regimes may offer alternative vehicles, and non-state actors have expressed an interest in questions of how international law applies to multi-stake actors in environmental governance (Hollis, 2021).

What could be defined as catalysts or primers that should direct frameworks of environmental laws and regulations are numerous, but the following salient concepts, principles, or proposals are discussed.

- The Precautionary Principle-The Prevention Principle.
- The Integration Principle.
- The Public Participation Principle.
- Principle of Common but differentiated responsibilities.
- Principle of Environmental procedural rights.
- Principle of Common concern of humankind.
- Principle of Common heritage of Humankind.
- Principle of Intergenerational equity.
- Concept of Earth Jurisprudence.

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The Precautionary Principle – The Preventive Principle

There are many definitions of the precautionary principle, and it may be defined as ‘*caution in advance*,’ ‘*caution practiced in the context of uncertainty*,’ or ‘*informed prudence*’. All definitions rest on two key elements:

1. An expression of a need by decision-makers to anticipate harm before it occurs. Within this element lies an implicit reversal of the onus of proof: it remains the responsibility of an activity proponent to establish that the proposed activity will not or is unlikely to result in significant harm.
2. The establishment of an obligation, if the level of harm may be high, for action to prevent or minimise such harm even if the absence of scientific certainty makes it difficult to predict, or possibility of it occurring.

One of the primary foundations of the precautionary principle, and the globally accepted definitions emanate from the Rio Conference and Declaration of 1992. Principle 15 of the Rio Declaration stipulates:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

This definition is important in that:

1. It explains the idea that scientific uncertainty should not preclude preventative measures to protect the environment, and
2. The use of ‘*cost-effective*’ measures indicates that costs can be considered. This is different from a ‘*no-regrets*’ approach, which ignores the costs of preventative action.

Along the same thread, the January 29, 2000 Cartagena Protocol on Biosafety stipulates:

Lack of scientific certainty due to insufficient relevant scientific information..... shall not prevent the Party of import, in order to avoid or minimize such potential adverse effects, from taking a decision, as appropriate, with regard to the import of the living modified organism in question.

It is important to emphasize that, although this principle operates in the context of scientific uncertainty, it is considered by its proponents to be applicable only when, on the basis of the best scientific advice available, there is good reason to believe that harmful effects might occur. The precautionary principle is most often applied in the context of the impact of human actions on the environment and human health, irrespective of whether scientific information is available, as both involve complex systems where the consequences of actions may be unpredictable and permanent.

‘*In dubio pro natura*’ or ‘*erring on the side of environmental protection*’ accurately reflects the philosophy of the precautionary principle in general international law, as discussed by Trouwborst (2002, 2009). In particular, continues Trouwborst, the following definition of a duty of States to take precautionary action is deemed representative of the current state of the law:

Wherever, on the basis of the best information available, there are reasonable grounds for concern that serious and/or irreversible harm to the environment may be caused, effective and proportional action to prevent and/or abate this harm must be taken, including in the face of scientific uncertainty regarding the cause, extent and/or probability of the potential harm.

An important element of the precautionary principle is that its most meaningful applications pertain to those that are potentially irreversible. The concept includes an implicit ethical responsibility towards maintaining the integrity of natural systems, and acknowledges the fallibility of human understanding. However, both lack of political will, opposition from those believing in the priority of economic development, as well as the wide range of interpretations placed on it may hamper the application of the precautionary principle. The implications and mechanisms have been discussed by Vogel (2002), who concludes in stating that:

The precautionary principle is a guideline for regulating novel threats under conditions of severe scientific uncertainty.....which emphasizes avoidance of potentially damaging actions even where there is uncertainty about the consequences of those actions.

The issue of ‘*novel threats*,’ those that have not been scientifically or otherwise recognized yet, or those that are too obvious to have recourse to scientific verification should be considered as an important element of the principle.

Some studies identified at least 14 different formulations of the principle in treaties and non-treaty declarations, discussed by Foster et al. (2000) and Stewart (2002), reducing the precautionary principle to four basic versions:

1. Scientific uncertainty should not automatically preclude regulation of activities that pose a potential risk of significant harm (Non-Preclusion PP).
2. Regulatory controls should incorporate a margin of safety; activities should be limited below the level at which no adverse effect has been observed or predicted (Margin of Safety PP).
3. Activities that present an uncertain potential for significant harm should be subject to best technology available requirements to minimize the risk of harm unless the proponent of the activity shows that they present no appreciable risk of harm (BAT PP).
4. Activities that present an uncertain potential for significant harm should be prohibited unless the proponent of the activity shows that it presents no appreciable risk of harm (Prohibitory PP).

In deciding how to apply the principle, assessment may use a Cost-Benefit Analysis that factors in both the Opportunity Cost of not acting, and the Option Value of waiting for further information before acting, and has been discussed by Kuntz-Duriseti (2004) and Krämer (2018). However, one of the difficulties of the application of the principle in modern policy-making is that there is often an irreducible conflict between different interests, mainly from the anthropocentric and ecocentric factions, so that the debate necessarily involves politics, The Earth Charter (1987-2000) strongly states:

When knowledge is limited, apply a precautionary approach..... Place the burden of proof on those who argue that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm.

In some legal systems, as in the Law of the European Union, the precautionary principle has also become a general and compulsory principle of law, and the legal implications of both the precautionary and preventive principles have been extensively discussed by Tubiana (2001), Trouwborst 2009, Iverson and Perrings (UNEP-2011), Löfstedt, (2014), Garnett, and Parsons, (2017),

The World Charter for Nature (1982), adopted by the UN General Assembly, was the first international endorsement of the precautionary principle. On its adoption of the principle, UNESCO (2005) states that:

When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish harm. ... Actions should be chosen that are proportional to the seriousness of the potential harm.

The principle was also implemented in the Montreal Protocol (1987), adopted at the second International Conference on the Protection of the North Sea (1987), in the 1990 Bergen Declaration (as a follow-up to the Brundtland report, 1987). Among other international treaties and declarations it is reflected in the 1992 United Nations Rio Declaration on Environment and Development, in regulatory statutes for health and the environment in Australia, Canada, New Zealand and the UK, and it is a founding component of European environmental law and included in the 1992 Maastricht Treaty. At the state level, a precautionary approach is embraced in numerous environmental and consumer statutes in the United States, and by the National Green Tribunal of India.

Versions of the principle have since appeared in a variety of multilateral agreements. Nevertheless, there is little consistency across agreements, and a precautionary approach, as explained by Iverson and Perrings (2011) and Garnett and Parsons (2017), being not yet codified or a rule of customary international law, reflects on reluctance and hesitations, apart from other objections raised. The authors find that the major obstacle to implementing the precautionary principle at the international level stems from the need for multilateral cooperation, and without a sovereign global authority, which is not forthcoming, mobilizing states' endorsement will continue to prove complicated. Moreover, Iverson and Perrings (2011) raise two points:

- One is to set policy that does not do enough, with environmental (health) damages exceeding what would have been optimal in a cost-benefit sense.
- The other is to waste resources on unnecessary protective measures.

UNEP (1992) points out that the The Rio Declaration contains three attributes supporting the imposition of the principle:

1. A potential risk of present or future harm, in this case, '*serious and irreversible damage*';
2. An implicit or explicit requirement for a real basis for concern: '*threat*' not speculation; and
3. Action to prevent such harm before scientific certainty has been achieved.

These attributes have been approved by the European Commission (2000) and further discussed by Zander (2010) and Löfstedt (2014), and both support the principle as a way forward for risk management and risk-informed policymaking. The European Commission (2002) also stresses on Article 174(2) of the Maastricht Treaty (1992), which states that:

Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the Precautionary Principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.

However, upon analyzing both levels and methods of application of the principle, Sunstein (2005), Whiteside (2006) and Zander (2010) are of the opinion that the precautionary principle, through what they qualify as the vagueness of its definition and its evident lack of guidance on the level of precautions to adopt in practice, make it difficult to either adopt or apply. A lively debate has always been going on regarding the usefulness and effectiveness of

the precautionary principle, those mostly engaged include Holm and Harris.(1999), Bishop. (2000) and Stirling (2001). Perhaps the most frequently voiced criticisms concern four main issues, namely:

1. Current regulatory procedures are already precautionary;
2. The safety factors used in risk assessments already insure precaution;
3. The precautionary principle is not scientifically sound because it advocates making decisions without adequate scientific justification; and
4. If it were implemented, the precautionary principle would stifle innovation by requiring proof of safety before new technologies could be introduced.

Each of these concerns has been addressed by proponents of the principle (Ashford, 1999; Myers, 2001, Stacey, 2016).

Throughout the many discussions and analyses, the precautionary principle apparently embodies the assumption that preventative and abatement action is always appropriate where there is a sufficiently qualified threat of environmental harm. The principle accompanies this by the explicit elucidation that this is so even when scientific proof in relation to this threat and its potential effects is lacking. The definition of the principle in the 1990 Bergen Declaration points in the same direction: The Bruntland Report (1987) stresses that:

In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

Raffensperger and Tickner (1999) expounds on how the precautionary principle has become a necessary perception since efforts to combat problems such as climate change, ecosystem degradation, and resource depletion through existing legal and regulatory instruments have been either too slow, or have failed, and that environmental and health problems continue to grow more rapidly than society's ability to identify and correct them. The authors elaborate on how the potential for catastrophic effects on global ecologic systems has weakened confidence in the abilities of environmental science and policy makers to identify and control hazards.

Raffensberger and Tickner also reflect on the apparent contradictions of regulatory processes, as in laws contending effective control of toxic chemical release, and yet Schettler (1997) raised the issue as to why mercury levels in freshwater fish are so high that pregnant women should not eat them? Commenting on the risks represented by climate change and the inability for environmental laws to intervene, Schettler believes that:

The great complexity, uncertainty, and potential for catastrophe from global climate change are among the strongest motivators for those urging precaution in environmental policy.

According to the arguments of Kriebel et al. (2001), when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically, and their justifications are based on the propositions discussed earlier by Raffensperger and Tickner (1999). Kriebel et al. list four central components of the principle:

1. Taking preventive action in the face of uncertainty;
2. Shifting the burden of proof to the proponents of an activity;
3. Exploring a wide range of alternatives to possibly harmful actions; and
4. Increasing public participation in decision making.

Trouwborst (2002; 2009) contends that two scientific insights should account for the adoption by States of the precautionary principle, namely:

1. The realisation that in many cases environmental harm caused by human activities is graver than previously thought and can be difficult, if not impossible, to undo. Due to the vulnerability of the environment, anthropogenic impacts are often of a long-term and sometimes irreversible nature.
2. Insight making up the rationale of the precautionary principle concerns the uncertainty about, and limited predictability of, the gravity and probability of environmental impacts, which is due in a significant measure to the complexity and variability of natural systems and processes.

In international law and policy, contends Trouwborst, the precautionary principle is part of a recent trend moving away from reactive and fragmented environmental policies towards more proactive and holistic approaches

According to the analysis of Ricci et al. (2003), primary legislation concerned with large uncertainties and potentially severe or dreaded environmental outcomes can produce accurate and efficient choices. To do so, argues Ricci et al., primary legislation should specifically indicate what measures can represent uncertainty and how to deal with uncertain causation thus providing guidance to an agency's rulemaking or to an authority's writing secondary legislation. But Ricci and co workers warn that without consultations and confirmation with legal and scientific bodies as to how to update past information, and failure to update may result in regretting past choices. The authors conclude that since legislators have the democratic mandate to formulate precautionary principles and are accountable; embedding the methods to represent uncertainty of the precautionary principle in a statutory language would enhance subsequent judicial review of legislative actions. The authors claim their proposal would reduce the segmented views and interpretations of probabilities, possibilities, likelihood and uncertainty that exist in environmental decision-making.

Ashford (2004) discusses how and why the Precautionary Principle has been criticized as being both too vague and too arbitrary to form a basis for rational environmental decision making. The author finds the assumption underlying such criticisms is that any scheme not based on cost-benefit analysis and risk assessment is both irrational and without secure foundation in either science or economics. However, Ashford (2004) argues that the precautionary approach is the most appropriate basis for policy, even when large uncertainties do not exist, especially where the fairness of the distributions of costs and benefits of hazardous activities and products are a concern. Furthermore, it will offer an approach to making decisions within an analytic framework, based on equity and justice, to replace the economic paradigm of utilitarian cost-benefit analysis.

According to Garnett and Parsons (2017), the precautionary principle was formulated to provide a basis for political action to protect the environment from potentially severe or irreversible harm in circumstances of scientific uncertainty that prevent a full risk or cost-benefit analysis, referring to Principle 15 of the Declaration of the 1992 UN Conference on Environment and Development (Rio Declaration) that prompted UNEP (1992) to state that:

In order to protect the environment, the precautionary approach shall be widely used by States according to their capabilities. Where there are threats of serious and irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Garnett and Parsons (2017) simply stress on the reactivity of environmental policies, rather than the endless discursive strategies proposed by those whose interests are governed by economic material development, at any cost.

Analyzing the recommendations of The European Commission (2000), intended to give sound guidance on the nature of precautionary action, Garnett and Parsons (2017) developed a framework for analysis, based on three attributes:

1. Severity of potential harm,
2. Standard of evidence (or degree of uncertainty), and
3. Nature of the regulatory action.

In conclusion, the authors recommend that assessment of these attributes would give direction as to the necessity to apply the principle.

The discussion of Gill (2019a) allows an insight into the mechanisms of acceptance of the precautionary principle at State level in India, as a fundamental tool to promote sustainable development, avert risks of serious or irreversible harm to the environment or human health despite absence of scientific certainty, and offers the '*authority to take public policy decisions covering environmental protection in the face of uncertainty.*' The same philosophical views have been discussed earlier by Cameroon (1999). Gill (2019b) further informs that

The National Green Tribunal (NGT-India), under the NGT Act (2010), acknowledges the precautionary principle as an integral part of national environmental law, stating that:

- The applicability of [the] precautionary principle is a statutory command to the Tribunal while deciding or settling disputes arising out of substantial questions relating to environment.
- Thus, any violation or even an apprehended violation of this principle would be actionable by any person before the Tribunal.
- Inaction in the facts and circumstances of a given case could itself be a violation of the precautionary principle, and therefore bring it within the ambit of jurisdiction of the Tribunal.

Such acknowledgement of the principle within the NGT (India) Act may have catalyzed a greater engagement in adopting an appropriate legal frame at national and international levels, and the necessity for continued reliance on case law and Judges decisions in matters pertaining to the precautionary/preventive principles, as seen in recent efforts towards environmental and human health protection. Project RECIPES (2021) reports about Nine Case Studies on the possible

Application of the Precautionary Principle, including: Genetically modified organisms, Neonicotinoid insecticides, Glyphosate and Microplastics in food products and cosmetics. Hoepner and Rogelj (2021) have built up a case for controlling emissions through application of the precautionary principle. Guida, (2021) reports on applying the principle to control GMOs in Europe, and Pesticide Action Network (Europe-2021) informs that in a court decision on May 6, 2021, the Court of Justice of the EU backs EU decision to restrict neonicotinoids based on the precautionary principle. Birch (2021) discusses mechanisms on how to manage pandemics and associated problems in a proportionate way through the precautionary principle.

One spiny issue that is highly contested in the application of the precautionary principle is the Reversal of Proof. Jensen (2002) argues that the precautionary principle is much more a moral than a political legal principle, and as such, in the event of any action or policy causing severe or irreversible harm to the public or to the environment, in the absence of a scientific consensus that such harm would not have ensued, the burden of proof falls on those who would advocate taking the action. As a moral principle, it to be understood that morality and moral responsibilities can neither be legalized nor codified.

Reversal of proof requires those proposing an activity to prove that the product, process or technology is sufficiently 'safe' before approval is granted. Requiring proof of 'no environmental harm' before any action proceeds implies the public is not prepared to accept any environmental risk, no matter what economic or social benefits may arise. In addition, Cooney (2004) suggests that at the extreme, such a requirement could involve bans and prohibitions on entire classes of potentially threatening activities or substances. Over time, there has been a gradual transformation of the precautionary principle from what appears in the Rio Declaration to a stronger form that arguably acts as restraint on development in the absence of firm evidence that it will do no harm.

In discussing the implications of reversal of proof with the precautionary principle, Steiker (2013) based her arguments on two statements:

The statement of the UN Declaration on the Human Environment (1973) stating that:

The precautionary principle, which holds that if an action or policy might cause severe and irreversible harm to the public or the environment, the proponents of the action should bear the burden of proof of no harm, in the absence of a scientific consensus that the harm will not occur.

In addition, The Rio Declaration (1992), stating that:

Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.

From the strength of these two statements, Steiker (2013) argues the belief that the precautionary principle can be operationalized by reversing the burden of proof reflects a judicial or quasi-judicial understanding of the principle. Yet, continues the author, front-line environmental decisions are generally implemented in an administrative or regulatory context that is quite unlike a criminal trial with a comparatively clear onus and standard of proof as elaborated upon by Jones and Bronitt, (2006). In an administrative context, various 'burdens' arise with respect to providing specific information and conducting analyses. It may be that in some cases, the precautionary principle will operate to reverse or influence a burden of proof, but whether it does so requires careful attention to the specific regulatory context, as discussed earlier by Cordonier-Segger and Khalfan (2004) The notion that the precautionary principle requires the same thing in every instance does not reflect the enormous range of environmental issues to which the principle is relevant, or the diverse regulatory processes and decisions taken in response to these issues.

Moving away from the Precautionary Principle to analyze the associated Preventive Principle and their inter-relationships, Sands (2003) discusses how the latter should be considered as a predominantly environmental concept. An understanding of this principle, also referred to as 'preventative principle', 'prevention principle', 'principle of prevent(at)ive action', and 'prevent(at)ive approach,' is to be obtained partly by describing what it is not, and

specifically, the preventive principle should be told apart from the duty of States to avoid transboundary environmental harm (Sands, 2003).

The principle constitutes a traditional and fundamental tenet of international environmental law and was enshrined in the 1972 Stockholm Declaration as the obligation of States:

To ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.

It was reiterated in the Rio Declaration (UN-1992) and is almost universally believed to form part of customary international law.

Not surprisingly, in national and international discourse, States have not always distinguished sharply between the preventive and precautionary principles. A 1988 UK policy document, for example, speaks of '*a preventive, precautionary approach*'. The 1991 Bamako Convention, apart from mentioning '*the precautionary principle*', makes reference to '*the preventive, precautionary approach*', whereas the parties to the 1992 EEA Agreement dedicated themselves to preserving the environment on the basis of the principle that '*precautionary and preventive*' action should be taken.

In his discussion, Tubiana (2001) explains how estimating risks and benefits and finding a balance between risks and preventive measures could help avoid the main drawbacks of the precautionary principle; further inaction and refusal of innovation stems from highly restrictive administrative procedures, and many considers it a waste of funds on the search for the '*utopian*' goal of zero risks. Tubiana recommends that a preference of the precautionary principle over the preventive principle must not be used to mask protectionism when applied at the international level. Tubiana lays the responsibility on decision-makers to explain the rationale behind their decisions, to quantify the risks, and to provide objective information to ascertain the clear advantages of either the preventive or the precautionary principle whenever application one or the other is mandated.

Although numerous environmental legislations are drafted in response to catastrophes, preventing environmental harm is cheaper, easier, and less environmentally dangerous than reacting to environmental harm that already has taken place. The preventive principle is the foundation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989), which sought to minimize the production of hazardous waste, its possible accidental escape into the environment, and to combat illegal dumping. The preventive principle also was an important element of the EC's Third Environmental Action Programme, which was adopted in 1983 (Golub, 1998)

Discussing the principle within the EU policy instruments, Oskam et al. (1997) conclude that:

This principle allows action to be taken to protect the environment at an early stage. It is now not only a question of repairing damages after they have occurred, but to prevent those damages occurring at all.

It means in short terms: it is better to prevent than repair. However, Oskam concurs that the preventive principle is not as far-reaching as the precautionary principle, and as such has not appeared within common environmental regulatory instruments, or codified yet.

Kriebel et al. (2001) discusses how environmental law regularly operates in areas complicated by high levels of scientific uncertainty. In the case of many activities that entail some change to the environment, it is impossible to determine precisely what effects the activity will have on the quality of the environment or on human health, reasons Kriebel. The

precautionary principle requires that, if there is a strong suspicion that a certain activity may have environmentally harmful consequences, it is better to control that activity now rather than to wait for incontrovertible scientific evidence. This principle is expressed in the Rio Declaration, which stipulates that:

Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Cordonier-Segger and Khalfan (2004) argue that sustainable development, an emerging and complex body of international law, has a significant preventive component. It captures the idea that the present generation has an obligation to future generations not to push the Earth's ecological capabilities to their limits. Prevention is the idea that steps should be taken to prevent or mitigate foreseeable harm to the environment. It is often implemented through the requirement of conducting an Environmental Impact Assessment (EIA) prior to undertaking any regulatory activity, and has been discussed by Gray (2000).

Trouwborst (2009) however contends that as a principle, it has not been codified nearly as frequently as the duty to avoid transboundary harm, and the scant codifications in question are largely confined to European instruments. Consequently, not all scholars necessarily recognise the existence *per se* of the preventive principle, and of those who do, very few claim that it has attained the status of customary international law. Interestingly, continues Trouwborst, the 2005 arbitral award in the Iron Rhine case appears to come close to according customary status to the preventive principle, when stating that:

Environmental law and the law on development stand not as alternatives but as mutually reinforcing, integral concepts, which require that where development may cause significant harm to the environment there is a duty to prevent, or at least mitigate, such harm.

This duty, in the opinion of the Tribunal, has now become a principle of general international law.

The arguments of Trouwborst (2002, 2009) points out that under strictly preventive logic, the taking of preventive action is conditional upon the existence of '*certainty*' regarding the threats involved. Conversely, precautionary logic means acting as soon as alarm bells are ringing, even if '*certainty*' is not yet available. In time, precautionary logic thus typically calls for measures at an earlier stage than does purely preventative logic, argues Trouwborst. Precautionary logic goes further than preventative logic, claims Trouwborst, and clearly presupposes the latter. Whichever way, in principle, where there is certainty, preventive logic suffices and vice versa.

Preventive logic, explains Trouwborst (2002), may be captured through the common-sense saying that '*that prevention is better than cure*', and has been a pervasive feature of environmental law and policy for quite some time, forming the foundation of many international and national legal and policy instruments aimed at environmental protection. As a basis for everyday decisions in many walks of life, however, preventive logic is obviously not limited to environmental matters.

Trouwborst (2009) contends that the widespread endorsement of the precautionary principle has thus made the continued existence of a separate preventive principle in international law either silent or superfluous, reflecting on two possibilities:

- To all intents and purposes, in the international law of the environment the precautionary principle must be regarded as having absorbed the preventative principle;

- It seems fitting to emphasize the importance of the distinction between precautionary logic and the precautionary principle at this point.

Preventive justice also emphasizes the command imposed on the decision-maker. They are especially concerned that the precautionary principle seems to compel or ‘license’ the decision-maker to take preventive action, as discussed earlier by Stern and Wiener (2006). For Steiker (2013), the decision-maker discharges its obligations by reversing the burden of proof; that is, by requiring the affected party to show the absence of harm, rather than requiring the government to show the possibility of harm. If the burden is not met, then the decision-maker, on this view, has no option but to take action by implementing heightened surveillance or increased detention practices.

According to the extensive discussion and arguments of Duvic-Paoli (2018), the preventive principle, even if considered so far as a general principle, its status in customary international law is still being debated. Since the principle focuses on safeguarding against unforeseeable damage, and Duvic-Paoli argues that:

States cannot justify not taking the necessary measures to contain a risk because there was no prior evidence that the activity was harmful.

The author proposed that there is need to clarify the rationale, content, and scope of the preventive principle and necessity of placing it in a wider legal context, based on three definitional traits:

1. Its anticipatory rationale;
2. Its due diligence content; and
3. Its wide spatial scope to protect the environment as a whole.

Since modern public environmental law is a field largely premised on prevention, Stacey (2016) expounds on how from the 1970s onward international and domestic environmental laws have been shaped by the recognition that strictly remedial approaches to environmental issues are not adequate for deterring environmental harm and stemming serious environmental degradation. Stacey believes that the 1992 Rio Declaration on Environment and Development helped to solidify four guiding principles for public environmental law:

1. Polluter pays,
2. Sustainable development,
3. Prevention, and
4. Precaution.

While the first two have been found flexible enough to be acceptable, the last two still remain controversial to some, acceptable to others, but not yet globally adopted.

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The Integration Principle

Environmental protection requires that due consideration be given to the potential consequences of environmentally negative decisions. Various jurisdictions have integrated environmental considerations into their decision-making processes through appropriate provisions that necessarily call for an integration of various environmental-related principles, one being the Integration Principle.

The integration principle is recognised as one of the cornerstones of modern environmental policy and law. Principle 4 of the Rio Declaration on Environment and Development, as adopted by the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, proclaims that:

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

According to the Amsterdam Treaty (1997), the integration principle is now stipulated in Article 6 of the EC Treaty, which goes further than the Rio Declaration and prescribes that:

Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.

Integration of sustainable development objectives into the development process, and thus into the policy definition and implementation of various economic and social sectors have been discussed and defined, including in Stockholm Declaration, 1972; Rio Declaration, 1992; EU, Treaty of Maastricht, 1992 (Art. 2); the Treaty of the European Community, 2007 (Art. 6), and others.

The New Delhi Declaration of Principles of International Law Relating to Sustainable Development, adopted by the International Law Association in 2002, notes that:

The principle of integration reflects the interdependence of social, economic, financial, environmental and human rights aspects of principles and rules of international law relating to sustainable development as well as the interdependence of the needs of current and future generations of human kind.

It is quite clear that the requirement for environmental considerations to be integrated into the planning and implementation of development activities, the principle can be regarded as a binding legal obligation, which has been included in the key environmental conventions associated with the 1992 UNCED process at Rio. Article 6 of the 1992 Biodiversity Convention advocates that:

Parties to integrate ‘policies and measures to protect the climate system against human-induced change’ and ‘the conservation and sustainable use of biological diversity’ into relevant development plans, programmes and policies.

The same message is expressed in Article 4(2)(a) of the 1994 Desertification Convention, and discussed by Rieu-Clarke (2005). What should be noted is that the need to integrate environment and development can be traced back to the 1968 African Conservation Convention and the 1972 Stockholm Declaration. However, long-standing international consensus about the role and significance of the principle of environmental integration does not necessarily mean that there exists a satisfactory working example of its implementation in practice.

Discussing the concept of sustainable development, presently mostly concerned with economic development with little consideration for integrating the same into environmental concerns, it should be also of concern to note the reasoning of Nilsson et al. (2009) and the author's final observation to the effect that:

The underlying rationale is that sustainable development can only be achieved if environmental perspectives become a natural part of the goals, strategies and decision-making procedures of all major parts of public policy.

According to the thesis of Nollkaemper (2002), the integration principle, having remained more as an objective within the environmental law-making spheres, has not raised much objections as long as it is considered as within the '*policy-making category*' as a reflection of the philosophy of rights so often raised, as propounded in the earlier discussions and observations of Dworkin (1978). Nollkaemper finds there is also a third and broader meaning of the integration principle, in that its construction is '*not only an objective but also a principle*', and is not only a rule of reference, '*but also a principle that carries autonomous normativity*'.

In conclusion, Nollkaemper (2002) proposes how the integration principle may play three distinct roles in international environmental law:

1. It will serve as an objective that underlies and inspires more specific environmental laws,
2. It can, as a rule of reference, be used as a vehicle to encourage international institutions to comply with relevant norms of international law in their various activities, and
3. It may come to play as an autonomous normative principle, the role it plays depending upon the energies and activities of interested actors willing to make the principle effective and practicable

In their studies and analysis of the principle, Petrescu-Mag et al. (2014) find that the recommendations of Nollkaemper (2002) as sound and yet, even in the face of the importance shown by the scientific community, and the social popularity of the concept, academics and policymakers regard EPI as a simply another principle without even bothering to seek its fundamental meaning and potential.

Discussing the complicated issues associated with Environmental Policy Integration (EPI), Hertin and Berkhout (2003) stress that even if on the surface the concept of environmental policy integration (EPI) may seem superfluous and not urgent, it needs to be appreciated that policies, directly or indirectly not only affect the state of the environment, but the so-called unconnected or disconnected policy decisions about energy, planning, industry, consumption, waste production and a multitude of other domains will remain directly linked to the state of the environment through their effects. It therefore seems plausible, continue the authors, that any environmental strategy would only be effective if the influences of policies in other domains are also considered.

Governments have long been regarded as being composed of heterogeneous and diverging interests (Rhodes, 1997), but this phenomenon is particularly prevalent in the environmental domain (Weale and Williams, 1992). Hertin and Berkhout (2003) takes the discussion back in history when the problem of cross-cutting environmental issues was recognized shortly after 'the environment' initially appeared as a serious policy issue on national and international agendas in the early 1970s. Integration between economic and environmental policies was

one of the main demands of the classic discursive debates on the environment such as A Blueprint for Survival (Goldsmith, 1972), the World Conservation Strategy (IUCN, 1980), and Our Common Future (Brundtland Report-WCED, 1987), which clearly states that:

The mandates of ministries of industry include production targets, while the accompanying pollution is left to ministries of the environment. Electricity boards produce power, while the acid pollution they also produce is left to other bodies to clean up. The present challenge is to give the central economic and sectoral ministries the responsibilities for the quality of those parts of the human environment affected by their decisions.

Although the question of how an integrated approach to the environment can be positively implemented has been continuously debated since the 1970s; however, the practice of environmental policy-making remains largely unchanged some four decades later (Lenschow, 2002). It still is generally characterized by specialized environmental administrations, power struggles between pro-environment sectors and pro-economic development sectors. The combination of an administrative '*misfit*', claims Hertin and Berkhout (2003), and antagonistic relationships leads to patterns of communication and decision-making that, 'from an ecological modernization perspective, have several shortcomings,' including lack of goodwill and incentives for innovation.

Lafferty and Hovden (2003) summarise EPI into two general approaches towards positive achievement:

1. The toolbox approach, which involves identifying concrete measures that can be implemented in the short to medium-term, and
2. The longer-term policy reform approach, which involves trying to change fundamental structures in policy-making.

In their analysis, Lafferty et al. further noted that the relative effectiveness of measures is likely to depend on context and suggest a comprehensive approach comprising a mix of measures. Lafferty and Hovden (2003) and Persson (2004) sorted the main factors of EPI through analytical stringency into three broad categories:

1. Normative factors,
2. Organisational factors, and
3. Procedural factors.

Persson further elaborate on each of these categories, and his recommendation reflects on the spirit of the views of many scholars, and national and international agreements regarding the objectives of EPI.

Discussing the application of EPI even further, Lafferty and Hovden (2003) propose applying a standard of '*strong*' EPI (and, on this basis, CPI) in the policy process as well as its output. The authors propose a two-tiered definition of EPI is as follows:

1. The incorporation of environmental objectives into all stages of policymaking in non-environmental policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy;
2. Accompanied by an attempt to aggregate presumed environmental consequences into an overall evaluation of policy, and a commitment to minimise contradictions between environmental and sectoral policies by giving principled priority to the former over the latter.

However, Lafferty and Hovden omit to consider one stumbling block: the power and influence of those with vested interests concentrating solely on economic profit gains.

Persson (2004) is of the opinion that the main reasons for supporting the policy integration principle as a tool for finding sustainable policy paths are twofold:

- First, there is a broad agreement that it facilitates more rational policy-making, in that negative environmental consequences of a sector policy decision can be considered at an earlier stage and more easily prevented or mitigated. Likewise, positive environmental consequences could more easily be maximised.
- Second, many also agree on the normative case for giving a higher priority to environmental issues in relation to traditional sector and economic objectives

Persson (2004) further indicates that addressing environmental and sector concerns in an integrated way may still be preferable to separate policy-making processes, since:

1. Different policy actors can be brought together to allow the pool of knowledge to grow and increase chances for identifying previously unknown “win-win” opportunities increase.
2. Even if positive “winwin” opportunities do not exist, it may still be possible to avoid obvious policy contradictions.
3. Efforts to achieve more integrated policy-making may serve democratic objectives since it can lead to more comprehensive and transparent policy overviews, allowing actors to participate in a more informed way.

The views expressed by the WCED were supported at the UN Conference on Environment and Development held in Rio de Janeiro in 1992, which devoted chapter eight of Agenda 21 to the integration of environment and development in decision-making (UNCED, 1992). Four programme areas are identified in the chapter:

1. Integrating environment and development at the policy, planning and management level;
2. Providing an effective legal and regulatory framework;
3. Making effective use of economic instruments and
4. Market and other incentives; and establishing systems for integrated environmental and economic accounting.

One of the principles that has been relatively easy to agree upon, Environmental Policy Integration (EPI), discussed by Biermann et al. (2009) and reviewed by Jordan and Lenschow (2010), refers to the integration of environmental aspects and policy objectives into sector policies, such as energy and agricultural policy, and has also been referred to as sector integration. EPI is not only politically challenging, in terms of difficult trade-offs between environmental and other sector objectives, but also conceptually elastic and vague. The need for EPI was one of the key messages of the Brundtland Report (World Commission on Environment and Development, 1987):

The ability to choose policy paths that are sustainable requires that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, industrial, and other dimensions on the same agendas and in the same national and international institutions. That is the chief institutional challenge of the 1990s.

Limiting their discussions to the relationship between the applicability of the principle to climate change, Dupont and Oberthür (2012) argue that in spite of the recommendation of the Brundtland report (1987), and the call for a need to connect the disparate and disjointed objectives of economic, social and environmental policies in order to achieve sustainable development and protect earth system resources, discussions on EPI has grown and expanded (Jordan and Lenschow, 2010), and yet there is a complete lack of discussion and

consideration about climate policy objectives in the policy-making processes towards climate policy integration (CPI). As such the authors note that:

As long as no such consideration takes place, it seems futile to hope for political commitment to CPI, addressing functional overlap and a search for enhanced synergy and coherence, including with the objective of security of energy supply.

Dupont and Oberthür (2012) conclude their analysis by enumerating four broad factors, explaining the shortcomings of policy-makers:

1. The level of political commitment to climate policy and CPI,
2. The nature of the functional overlap with climate policy objectives (direct-indirect and synergistic-conflictive) and its realisation in the policy-making process,
3. The role and prominence of environmental/climate stakeholders and advocates in the policy process (including the process dimension of CPI), and
4. The institutional and policy context.

Synthesizing what was argued by Andre Nollkaemper (2002) in "Three conceptions of the Integration Principle in International Environmental Law", it appears that the integration principle may play three distinct roles in international and European environmental law:

1. It will serve as an objective that underlies and inspires more specific environmental law,
2. The integration principle can, as a rule of reference, be used as a vehicle to encourage the Community and other international institutions to comply with relevant norms of international law in their various activities, and
3. It may come to play as an autonomous normative principle. The role it plays depends upon the energies and activities of interested actors to make the principle effective and practicable

Reflecting on the practicability of the principle, Nollkaemper (2002) states that:

So, beyond the nature we have assigned it, the most important is the will to translate this principle into concrete enforceable norms.

However, disconnecting environmental concerns from policies may not yield appropriate result towards environmental protection, and the study of Runhaar et al.(2014) reflects on a philosophy to the effect that:

EPI is about 'the incorporation of environmental concerns in sectoral policies outside the traditional environmental policy domain

Cloutier de Repentigny (2012) points out that 20 years after Rio, progress in the application of the integration principle found in Principle 13 of the 1972 Stockholm Declaration the Human Environment, in Principle 4 of the 1992 Rio Declaration on Environment and Development and further developed at the 2002 World Summit on Sustainable Development through the Johannesburg Declaration on Sustainable Development and the Johannesburg Implementation Plan has reached nowhere, and still in the midst of eternal debates..

According to Cloutier de Repentigny, the principle of integration requires integrating environmental protection, economic development and human rights at the conceptual level of policies and laws and at the implementation stage of these policies and laws. Integration is thus a wide concept touching upon many issues of governance.

The integration of environmental concerns into other areas of policy-making, discussed and elaborated upon by McIntyre (2013) has achieved the status of one of the basic principles of EU environmental policy and law. The principle is reflected in Article 6 of the EC Treaty,

indicating that the principle has a general character and affects all policy areas. The European Court of Justice has ruled, in the case *Greece v Council* (1988) that:

.....it is a binding obligation and that environment-related requirements must be integrated into the other policies, but it is still far from clear what constitutes the exact substance of this principle.

In his discussion about '*The sobering Issues from EU Law*', McIntyre (2013) dwells on one key question which arises, being which '*environmental protection requirements*' must be integrated into the definition and implementation of the Union's policies and activities. The Union's policy on the environment stipulates that it shall contribute to the pursuit of the following objectives:

- Preserving, protecting and improving the quality of the environment,
- Protecting human health,
- Prudent and rational utilization of natural resources,
- Promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change

Concentration on policy coherence and coordination as backbones to integration, Cejudo and Michel (2017) define policy integration and coherence as the outcome of coordination, suggesting that attempts to deal with crosscutting policy problems will require the involvement of multiple levels and sectors of government. In the same vein, define policy integration as the product of '*intentional efforts to create an overarching regulatory framework that accounts for the complexity of multi-regime interactions.*' The multidimensional nature of the integration principle and its complications in policy-making has been elaborated upon by , and has been previously discussed by Cejudo and Michel (2017) and Howlett and del Rio (2015)

Analyzing how fragmented government systems are, Cejudo and Michel (2017) believe there might be different concepts to describe possible solutions to present challenges. The authors suggest that several concepts that have been extensively analyzed could be part of the solution. Such concepts have been the subject of further discussions recently and include:

- Policy coordination (discussed by Stead and Meijers, 2009; Peters, 2018),
- Joined-up government (Bogdanor, 2005; Trein et al. 2019),
- Policy coherence (May et al., 2006; Häbel, 2020),
- Polycentric governance (Berardo and Lubell, 2016; Carlisle and Gruby, 2019),
- Policy integration (Lafferty and Hovden, 2003; Candel and Biesbroek, 2016; Knill et al (2021).

Taking their discussions and proposals further, Cejudo and Michel (2021) assume that since policy instruments must work together, that is in a synchronized manner, to better address complex public issues, renewed approaches from scholars have to focus on identifying the best possible combinations of tools for attaining this goal. The premise on policy mixes is that if different instruments within a policy mix are coherent and coordinated, they would automatically be able to comprehensively address a complex problem, as proposed by Bobrow (2006 and Howlett (2019)

Discussing the integration principle in relation to sustainable development, Beate (2018) is more concerned about the lack of policy coherence as a result of confusion due to the array of principles proposed or recommended to this day. Beate is further concerned about the trend

of ‘*greening*’ policies, and yet the environment still occupies a back seat in policy decisions. As such the author declares:

For the duty of environmental integration to make a significant contribution to achieving such policy coherence, the environmental integration must have a clearly defined goal. Including environmental concerns at some level or other, an attempted ‘*greening*’ of European policies, is insufficient.

Beate (2018) further finds that in spite of all efforts and attempts so far, the world remains on the brink of numerable different types of disasters; yet, the present occasion and opportunity for a global efforts ‘to complete the jigsaw puzzle of sustainability’, with the objective of the present generation leading humanity away from ‘its destructive trajectory’ towards a truly sustainable path has stagnated.

Article 11 of the Treaty on the Function of the European Union (TFEU), analyzed and discussed by Beate (2018) states that:

Environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development.

In spite of so many of such recommendations and directives appearing in the past four decades or so, decision-makers still appear to be hesitation about concrete actions.

Beate (2018) is in agreement that, for the sake of environmental protection and integration, the philosophy expressed through that rule mandated by the EU is arguably a necessary contribution to achieve policy coherence for sustainable development, or sustainability in its broader meaning. However, Beate (2018) finds that the mere existence of this provision is clearly not sufficient to achieve the environmental integration in all EU policies and activities, let alone policy coherence to facilitate global sustainability. The author is of the opinion that for the duty of environmental integration to make a significant contribution to achieving such policy coherence, the environmental integration must have a clearly defined goal. As previously discussed by Alons (2017), attempting to include environmental concerns at some level or other, or any efforts to the ‘*greening*’ of European policies is insufficient and would ignore the multidimensional concept of EPI as process .

Moving away from lengthy discussions about the integration principle, Young (2018) informs and discusses how out of the blue, and in spite of years of discussion and propositions from various organizations, the United Nations is considering a proposal that promises to integrate various parts of international law, thereby improving its performance: the Global Pact for the Environment. On May 10, 2018, the United Nations General Assembly adopted the resolution “Towards a Global Pact for the Environment” which launches negotiations between States (resolution A / 72 / L.51 of May 10, 2018).

Young (2018) examines and analyses the draft preliminary text for the Global Pact for the Environment, and picks out the following promises, or premises:

- Right to an ecologically sound environment (Article 1),
- A duty of states and other actors to take care of the environment (Article 2), and,
- Requirements for parties to integrate the principles of environmental protection into their planning and implementation, especially to fight against climate change, and to help protect the ocean and maintain biodiversity (Article 3).

That is how the United Nations proposes to achieve systemic integration into international law, through rhetorics.

The Pact is intended to be a binding instrument, thus differing from the earlier ‘soft-law’ Rio Declaration. This has the potential to clarify, consolidate, and legalize principles of international environmental law that now appear in hundreds of agreements and declarations. Perhaps more importantly, it also promises normative coherence for the international legal system as a whole. Admittedly, a binding and widely ratified Global Pact for the Environment could provide clearer direction for treaty-interpreters to achieve systemic integration in public international law, but the realities of that happening may take decades, and the environment in the meantime is running out of time

However, a detailed analysis of the Global Pact by Kotzé and French (2018) reveals that the Pact’s objectives seem to be a complicated three-pronged effort:

1. To be a globally binding environmental law instrument;
2. To thus entrench all major principles of international environmental law (IEL) in one document; while also
3. Developing progressively the law to provide a globally recognised right to live in an ecologically sound environment, with associated procedural environmental rights.

Kotze and French (2018) conclude that these objectives can be broadly grouped into three summary critiques.

1. First, it does not provide a complete and normatively rich codification of current IEL. As noted above, there are principles which are absent, and for those that are included, they often fail to reflect fully present normative understandings.
2. Second, the Pact fails to raise normative ambition to include new provisions. There are several innovative provisions that could have been included, such as: specifically replacing the anthropocentric orientation of the Pact’s provisions with an ecocentric one;
3. Third, the provisions on monitoring, implementation, compliance and dispute settlement seem particularly weak.

The authors further find that combined with almost no understanding as to how this Pact, as a treaty of general application, will coexist alongside other MEAs and rules of customary IEL, there must be genuine questions not only as to what the Pact is for (an objective assessment), but also how (and whether) States might use the Pact to their own advantage (a subjective assessment). As a means of regulating and promoting positive behaviour both of themselves and others, the Pact is largely silent, prompting Kotze and French to quote Koskenniemi’s (2012) statement:

International law does not contain a ready-made blueprint for a better world that could only be ‘*applied*’ so as to bring about peace and justice. Instead it contains arguments and positions.

Azizi et al. (2019) find that the 2015 Sustainable Development Goals have added new impetus to efforts of integrating competing objectives of environmental sustainability, social development, and economic growth, as well as of integrating issue-specific environmental policies on climate change and terrestrial and marine biodiversity. The authors base the reasoning behind two precepts:

Principle 13 of the 1972 Stockholm Declaration stating that:

States should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve the human environment.

And Agenda 21, Chapter 8: Integrating Environment and Development in Decision-Making which highlights the following programme areas:

1. Integrating environment and development at the policy, planning and management levels;
2. Providing an effective legal and regulatory framework;
3. Making effective use of economic instruments and market and other incentives;
4. Establishing systems for integrated environmental and economic accounting.

Taking the discussions of Dupont and Oberthür (2012) on applying the integration principle in climate change issues even further, in his discussions and analysis of policies regarding climate change, Biesbroek (2021) proposes that substantive policy goals in broad and diverse sectors like energy, environment, and climate change, cannot be realized until incorporated into other sectors. Nonetheless, conflicts arise when achieving the goals of one pillar of sustainability (economy) at the detriment of another (environment), and will hardly satisfy the requirements of society as a whole. Biesbroek refers to elements of integration that can already be found in several international agreements, and have been ignored or sidelined. The author refers to Principle 13 of the 1972 Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), which clearly state that:

In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population.

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The Public Participation Principle

With the advent of the Universal Declaration of Human Rights, in 1948, provisions for publicly participation are succinctly enshrined in Article 19, which states that:

Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

Although there has been a substantial increase in the necessity for public participation, at different levels of environmental decisions globally, the concept of the principle has a historical background. The Rüstinger Rules of Law (1100 A.D) is witness to those earlier efforts. Democracy and public participation are closely connected and democratic nations like the US have included elements for it centuries ago. The right to petition, for example, has been part of the first Amendment of the US constitution since 1791.

About two decades after the Universal Declaration of Human Rights (1948), the Declaration of the United Nations Conference on Human Environment (The Stockholm Declaration-1972) stipulates that:

- To achieve environmental goals will demand the acceptance of responsibility by citizens and communities and by enterprises and institutions at every level, all sharing equitably in common efforts.
- Individuals in all walks of life as well as organizations in many fields, by their values and the sum of their actions, will shape the world environment of the future. (Preamble, para. 7)
- Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. (Principle 1)

A decade later, the U.N. World Charter for Nature (1982), adopted by the U.N. General Assembly in 1982,elaborates on the principle of public participation, stipulating that the public should have a right to be heard and to affect certain decisions. Being one of the first international instruments that proclaimed this principle, Paragraph 23 of the World Charter for Nature states that:

All persons, in accordance with their national legislation, shall have the opportunity to participate, individually or with others, in the formulation of decisions of direct concern to their environment, and shall have access to means of redress when their environment has suffered damage or degradation.

Adopted ten years later, the Rio Declaration on Environment and Development (Rio Declaration, 1992) sustains the spirit of the Earth Charter through Article 10 of the Declaration, describing the principle of public participation as follows:

Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Article 10 clarifies that the principle should consist of three different elements:

1. Participation in decision-making processes on environmental issues,
2. Access to environmental information (which was not included in Paragraph 23 of the U.N. World Charter for Nature), and
3. Access to administrative and judicial proceedings.

And another decade after the World Charter for Nature, the Rio Declaration on Environment and Development (1992) issued several dictums such as:

- Environmental issues are best handled with participation of all concerned citizens, at the relevant level.
- At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.
- States shall facilitate and encourage public awareness and participation by making information widely available.
- Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided. (Principle 10)

In establishing its Three Pillars, which is another version of the World Charter for Nature's recommendations, the Rio Declaration objectively aims at establishing that citizens are ensured of:

1. Access to information,
2. Public participation, and
3. Access to justice

Going further into putting Principle 10 into action: the UNEP Bali Guidelines for the Development of National Legislation on Access to Information, Public Participation, and Access to Justice in Environmental Matters re-iterates the same three conditions that would ensure the public's right to participation, declaring that:

1. Access to information
2. Public participation
3. Access to justice

The United Nations Conference on Environment and Development of 1992 was hailed as a major step towards public participation as a human right, and therefore a major step towards getting countries around the world to be in line with the EU Aarhus Convention. Principle 10 of the Rio Declaration deals specifically with public participation in environmental matters through its statement that:

Environmental issues are best handled with participation of all concerned citizens, at the relevant level.

A major recent development in the field of public participation in environmental issues in the EU is the Aarhus Convention, 1998) or the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, The Convention, though solely applicable to the EU, gives people the right to public participation by setting some minimum participation standards in environmental decision-making, similar to the ones prescribed for an Environmental Impact Assessment (EIA). The public participation requirements are:

- The public concerned should be notified timely and effectively,

- Time should allow for public participation,
- Acquiring information should not cost the public any money,
- The decision-makers should take into account the public's opinion, and
- The decision should be made public timely, with full text and reasons to back it up

The EU Directive 90/313 of 7 June 1990 on the freedom of access to information on the environment is one of the first binding pieces of European legislation that had to do with public participation.

Another interesting European environmental agreement, which has also been ratified by Canada and some Central-Asian States, is Participation as a general principle in international environmental law, about Environmental Impact Assessment (EIA) in a Transboundary context through the Espoo Convention (UNECE, 1991/1997). The Convention stipulates that:

State parties should facilitate public participation within the environmental impact assessment procedure that it prescribes, and that State Parties periodically convene meetings to review implementation issues.

According to the Rules of Procedure of these meetings, non-State actors (“the public”) are free to attend these meetings as observers. The Espoo Convention and frameworks proposed for public participation, and the spirit of the EIA in general have been analyzed and discussed by Garcia-Ureta (1993), Koivurova (2007), and Marsden (2017).

However, allegations are frequently levelled at the EIA process in that it is merely a rubber-stamping exercise carried out by the applicant's consultant and given credence by the regulators (DownToEarth, 2009).

The Protocol on Strategic Environmental Assessment (SEA Protocol, 2010), discussed by Torrieri (2020), supplements Environmental Impact Assessment and it is a ‘*process of evaluation of environmental effects (including health) during the preparation of policies, plans, programmes and legislation*’ (Pickaver and Kreiken, 2020). Since it is stipulated that SEA should be conducted with public participation, strategic decisions are thus made more transparent and should limit harm to environment and health.

Other major agreements/protocols referring to public participation Shelton et al. (2006) include:

- Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution Concerning the Control of Emissions of Volatile Organic Compounds or Their Transboundary Fluxes (Geneva, November 18, 1991), Article 2(3)(a)(4);
- Convention on the Protection and Utilization of Transboundary Rivers and Lakes (Helsinki, March 17, 1992), Article 16; -Convention on the Transboundary Effects of Industrial Accidents (Helsinki, March 17, 1992), Article 9;
- Convention for the Protection of the Marine Environment of the Baltic Sea (Helsinki, April 9, 1992), Article 17; -
- Convention for the Prevention of Marine Pollution of the North-East Atlantic (Paris, September 22, 1992), Article 9;
- Convention on Civil Responsibility for Damage resulting from Activities Dangerous to the Environment (Lugano, June 21, 1993), Article 13-16;
- North American Convention on Cooperation in the Field of the Environment (Washington, D.C., September 14, 1993), Article 2(1)(a), 14;

- Convention on Cooperation and Sustainable Development of the Waters of the Danube (Sofia, 29 June 1994), Article 14;
- Protocol to the 1975 Barcelona Convention on Specially Protected Zones and Biological Diversity in the Mediterranean (Barcelona, June 10, 1995), Article 19;
- Declaration on the Establishment of the Arctic Council (Ottawa, September 19, 1996), Preamble and Articles 1(a), 2, 3(c);
- Kyoto Protocol to the United Nations Framework Convention on Climate Change (December 10, 1997), Article 6(3).
- Article 21 of the Universal Declaration of Human Rights affirms the right of everyone to take part in governance of his or her country, as does the American Declaration of the Rights and Duties of Man (Article 20) and the African Charter (Article 13).
- Article 25 of the International Covenant on Civil and Political Rights provides that citizens have the right, without unreasonable restrictions “to take part in the conduct of public affairs, directly or through freely chosen representatives ”
- The final text of the Leipzig Declaration on Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture recognizes “the needs and individual rights of farmers and, collectively, where recognized by national law, to have non-discriminatory access to germplasm, information, technologies and financial resources.
- The principle of subsidiarity, which is a general organizing principle of governance, means making and implementing decisions at the lowest effective level of government or other organization. Each higher level of government is viewed as ‘*subsidiary*’ to the level below it, serving as a safety net to step in when the lower level cannot resolve problems for whatever reason (Shelton, 2008)

In spite of all national and international conventions, declarations and statements, inadequacies appear to have been a cause hampering the efficient application of the Public Participation Principle (PPP). Beierle (1998) was probably amongst the first analysts to comment on such inadequacies. Beierle contends that one reason for inadequacies in the public participation principle is due to a lack of consensus on what public participation is supposed to accomplish, prompting him to state:

Despite the resurgence of interest in public participation, no consistent method has emerged for evaluating the success of individual processes or the desirability of the many participatory methods.

Within the same line of critical analysis, Dahl (1996), supported later by the arguments of Wynne (2004), finds that citizens’ participation in environmental decision-making is often either considered a condition for the democratic legitimacy of decisions, or as an important opportunity to improve quality and effectiveness of those decisions. Within the same theme, Maria Lee (2016) finds the space for such participation is repeatedly constrained by technical risk assessment, cost-benefit analysis and the idea that the public lacks expertise and misunderstands science. Lee remarks that:

Even when legislation embeds enforceable rights to participate, the wider legal and policy context often limits the reasons to be taken into account in the decision-making process, and used in turn to justify the decision. This tends to frustrate the ability of the public to influence. These tensions make the notion of public participation deeply ambiguous and pose challenges to its practice.

Eden (1996) claims that the success of any environmental policy depends on public participation, though the scientific construction of environmental issues often means that such participation in policy-making is difficult when the public is not considered scientifically '*expert*'. Even if the notion of '*expertise*' is broadened to deal with this problem, it would not necessarily ensure truly '*public*' involvement, because lay ideas are still not included but are discounted as '*non-scientific*'. The author contends that to design environmental policy that can be successfully implemented, other ways in which people relate to their environments must be considered, including ways in which people '*understand*' their environments through culture, morality and social interaction.

Eberson (1997) has broadly discussed the mechanisms of the participatory principle, yet, finds that governments, through the rule of law, discuss little, if at all about several issues regarding the content of the law. Eberson's conclusion prompts him to ask several questions, including:

- Whether it promotes or blocks sustainable utilisation of resources,
- Whether it is discriminatory,
- Whether it provides adequate flexibility and participatory structures for decision-making, or
- Whether it limits the means for effective management of common-pool resources.

Referring to established notions of human rights law, Eberson further ask whether the present '*proceduralist*' approach to environmental law is really part of a scheme for public participation in decision-making, similar to the one developed in international law. The author reminds that the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention, 1998), setting minimum standards on the right to access to review procedures, appears to have been ignored by many states as guidance, or model. So the main question remains as to why the Aarhus Convention was not used as a model rather than beating around the bush from different directions and angles.

Although public participation is a self-defined concept or principle that enshrines numerous interpretations, Pring and Noé (2002) define Public participation as:

All interaction between government and civil society... including the process by which government and civil society open dialogue, establish partnerships, share information, and otherwise interact to design, implement, and evaluate development policies, projects, and programs.

It is to be noted that Pring and Noe limit themselves to the participatory element regarding development projects and policies, and further limits participation to '*civil society*,' leaving out the wider field of environmental, or even social, impacts that could be raised by the public at large. With such limitations being dictated, Karkkainen (2006) reckons that participatory governance innovations have opened up new points of public input into many levels and stages of legal process, including legislation, promulgation of rules, implementation of policies and enforcement. Within the same theme, the discussions of Richardson and Razzaque (2006) point out that although States have acknowledged the importance of public participation, it is nonetheless reported that the implementation of the provisions on public participation in domestic law meets significant difficulties. The authors conclude that in practice, each of the three elements of public participation is crippled by considerable flaws.

The extensive discussions of Shelton et al. (2006), about the controversial character of public participation, especially at national levels, led the authors to conclude that a reluctance to positively recognize it as a principle of international environmental law is the main cause. However, Shelton et al. (2006) do not consider that public participation cannot be considered as a principle, even if explicit recognition by States is not a requirement for qualification as a principle of law; the incorporation of public participation in national and international legal instruments indicates that States in fact have acknowledged public participation.

The discussion of Dovers and Connor (2006) reveals that apart from concepts mentioned by the UN, PPP is clearly connected to other principles and concepts in international environmental law, such as:

- The principle of sustainable development.
- The principle of assessing environmental impacts, because such assessments normally involve local communities through consultations on the planned project(s).
- It is also principle of good governance related to the concept of '*environmental justice*'.
- It is also connected to the concept of environmental justice.

However, Ebberson (2007) finds that whereas public participation is a general principle of international environmental law and can be seen as a part of a democratization of the international community, its major defects, and limits also show that States continue to be the most important actors in environmental law on the national and international level.

Callahan (2007) supports the belief that individuals should be given a voice in matters regarding their governance. While there appears to be universal agreement that the involvement of citizens in the decision making process of government is a good idea, there is little agreement as to the best way to achieve such meaningful involvement, comments Callahan, stating that:

There are many ways to consult with the public and get a sense of what they see as problems and opportunities; it is quite another thing to actively engage citizens in the decision-making process.

Nevertheless Callahan remarks that even when the benefits of including citizens in the deliberative process have been widely recognized, citizen participation is not routinely sought in the decision making process.

Taking the discussion a leap forward, Kiss (2008) proposes that the Public Participation Principle should extend beyond the tradition of '*the giving of the law*', and suggests that the traditional and authoritarian approach to issue of law and justice have become outdated.. Practitioners of access rights believe that legislation should be far more than just the "giving" of the law by a source of authority to the masses. Kiss believes it is a process that should be influenced by a public with relevant knowledge to enrich the output of legislation, and it should be a process where procedural mechanisms should guarantee that legislators listen to the voice of the public.

Kiss (2008) finds that the main questions of legislative transparency and participation should be listed as:

- To what extent can any person get access to information on legislative preparation?
- To what extent can any person participate in the process by expressing opinion towards the legislators?

- Which products of legislative preparation can be accessed and commented by the public?
- How much time is given for the public to comment products of legislative preparation after their existence and/or content is accessible?
- What are the means of access to legislative information and commenting available for the public?
- Can public participation influence legislation?
- Do legislators address public comments when making legislative decisions?

Picking from her own analysis of both the literature and case studies, Kiss formulates the following recommendations for legislatures in the matter of legislative transparency and participation:

1. Public should be treated in legislative decision-making as a partner whose views, opinions and comments are not further burdens for the legislators but sources of valuable information that are to enrich the final legislative decision.
2. Drafts of at least all those legislative preparatory documents that after their enactment will become legally binding norms should be made available and open for commenting.
3. Anybody indiscriminately, without having to ascertain affectedness or impairment of a right should be given access to information and participation in legislative decision-making, without an obligation for identification.
4. Sufficient time should be provided for commenting to those willing to participate, early enough in the process of legislative decision-making, when all options are still open.

Kiss concludes her discussion and analysis by stating that:

The traditional system of political representation is in an obvious crisis. The opportunity of the citizens to express their political will at the ballot box once every four or five years has become from a great achievement of democracy an unsatisfactory and too rare platform for enforcing public will. The increasing lack of trust even in elected state bodies including the supreme legislature must be a warning sign that something has to be done in this respect.

Adding to the hypothesis of Kiss (2008), The Environmental Rights Database (2008) informs that there have been instances where the proposition of the author has been implemented, as in:

1. In Chile, Article 70 of the Environmental Framework Law provides that the Ministry of Environment should encourage and facilitate public participation in the formulation of policies, plans and environmental quality standards.
2. In Greece, the government launched the Open Governance Project in 2009, requiring, that draft regulations, including environmental regulations, be made available online for public consultation where citizens can post comments, suggestions, and criticisms.

Analyzing traditional opportunities for democratic involvement, Czapanskiy and Manjoo (2008) finds there should be an answer to a pertinent question: should a democratic nation have mandatory mechanisms for give and take between legislative leaders and the public?

Partly answering their own query, the authors observe that:

In the international human rights arena, the International Covenant on Civil and Political Rights provides authority for a mandatory mechanism in General Comment, but it has attracted little attention.

Czapanskiy and Manjoo (2008) insist that every citizen should have the right and the opportunity, without any of the distinctions mentioned in article 2 of the Covenant, and without unreasonable restrictions:

1. To take part in the conduct of public affairs, directly or through freely chosen representatives;
2. To vote and to be elected;
3. To have access, on general terms of equality, to public service in his country.

The authors find that there should be a legislative's duty to facilitate input, and for so doing, debates relating to the notions of human rights and participatory democracy should consider:

1. Legislation is better when legislators are required to invite and attend to public input, and,
2. Citizenship is better when legislators are required to invite and attend to public input

Cameroon Holley (2010) came up with some fresh ideas in the concept of the New Environmental Governance (NEG), one that claims to improve efficacy, as well as the concept of 'deep democracy' by opening up new points of public participation into many levels and stages of traditional legal process. At a time when the Australian Labor Party is proposing a citizens' assembly on climate change, continues Holley, and international governments like the Obama Administration are calling on departments and agencies to offer Americans increased opportunities to participate in policymaking, it may come as a surprise that new participatory processes for securing public objectives are catalysing a shift in environmental law and regulation.

According to Holley (2010), traditional top down, command and control forms of environmental regulation have been increasingly besieged by both declining legitimacy and claims that they are too cumbersome, rigid, expensive and insensitive to local contexts to deliver effective and efficient environmental and natural resource outcomes. NEG seeks to go substantially beyond all these forms of participation by giving citizens and nongovernment stakeholders' roles in public decisions and enforcement that have traditionally been reserved for bureaucracies.

Whereas NEG may convene citizens, environmental NGOs, private stakeholders and public agencies to:

1. Develop environmental regulatory standards;
2. Produce and monitor individual industry pollution permits; and/or
3. Create and implement regional natural resource management plans.

Many NEG scholars argue that there are simply too many barriers in practice to achieve the kinds of inclusive and representative nongovernment participation believed vital for NEG to live up to its participatory aspirations and deliver on its normative promises. For example, some scholars argue that the cost and skills required to participate in NEG forums are likely to be so demanding that they will exclude all but the richest, educated or already '*influential*' stakeholders, effectively reinforcing existing power disparities rather than deepening democracy.

The principle is however not without flaws or shortcomings, and Razzaque (2013) notes that including public participation at the national level has not yet led to sustainable development, especially when it comes to access to justice. And although it improves the quality of decisions on environmental issues, Razzaque thinks that the reasons for this include:

- Public participation standards do not bring about real change to existing political institutions,
- These standards are invariably applied within institutional frameworks in most countries. They do not challenge the power and authority of such institutions, and
- They do not to influence the decision-making procedures and the final decisions.

As a result, institutions have the possibility to only consider the views of the public if these views are in conformity with the authorities' own interests and concerns. Giving full and unconditional effect to public participation provisions may affect State sovereignty and governance and existing institutions and structures of power that States are not willing to accept. Yet another stumbling block in the way of democratizing participation or any other forms of deliberative law making.

Lee et al. (2015) propounds that often decision makers do a poor job of conducting participatory processes, either intentionally because they perceive little value in stakeholder input, or unintentionally because of resource limitations. The authors find that processes may be poorly conducted since exclusion and equality remain concerns of participatory processes. Further, some processes may reinforce existing power imbalances by discouraging minority representation or may be particularly difficult for lay stakeholders to navigate through processes, or participation may encourage those involved to become overly focused on short-term actions while ignoring the bigger picture.

International environmental law is traditionally designed for States, and so are the general principles that constitute its foundations. Bekhoven (2016) finds that those affected appear to be excluded from influencing decisions over an essential part of our life. The author propounds that attempts at describing the concept of '*general principle of international environmental law*' should start by consulting article 38.1 of the Statute of the International Court of Justice (ICJ Statute), which enumerates the four sources of international law that the Court can use to decide disputes brought before it, namely:

- International conventions (treaties),
- International custom,
- General principles of law,
- Judicial decisions, and
- The writings of legal experts.

Widely recognized as an exhaustive list of the sources of international law, Bekhoven (2016) informs that apart from Article 38(1) of the International Court of Justice (ICJ) Statute, the U.N. World Charter for Nature (1982) was the first international instruments that proclaimed the principle, and was adopted by the U.N. General Assembly in 1982. Paragraph 23 of that document states that:

All persons, in accordance with their national legislation, shall have the opportunity to participate, individually or with others, in the formulation of decisions of direct concern to their environment, and shall have access to means of redress when their environment has suffered damage or degradation.

Further, notes Bekhoven, the Rio Declaration, Principle 10 recognizes a right to public participation. The preparation of the Rio Conference was itself an important step in encouraging the participation of non-governmental organizations and the representatives of economic interests. The Global Forum of Rio (1992), a meeting of nongovernmental organizations parallel to the official conference, represented world public opinion in favor of

conserving the world's ecosystems. The Rio Declaration reflects and confirms the importance of this opinion. In addition to Principle 10, the Declaration includes provisions on the participation of different components of the population: women (Principle 20), youth (Principle 21), and indigenous peoples and local communities (Principle 22). The democratization of the international negotiating process reflected in the Declaration is a fundamental contribution of the Rio Conference, concludes Bekhoven (2016).

The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) also contains provisions on public participation, and has also been discussed by Bekhoven (2016). Its preamble mentions the importance of public participation and public access to information to the climate change issues covered by the Agreement, and also acknowledges that it is essential that both States and non-State actors are involved in these issues. This is repeated in Article 6.8(b), which specifies that the role of private actors in the implementation of national climate change measures should be strengthened. Article 7.5 furthermore stipulates that public participation is to be included in adaptation measures, which should address vulnerable groups and communities. The Agreement also calls upon State Parties to cooperate, '*as appropriate*', in strengthening public participation and public access to information.

The review of Bekhoven (2016) regarding the participatory element in environmental management and law reveals a number of flaws. Bekhoven contends that the principles upon which international environmental law is constructed are essentially State-centered, such as the principle of State sovereignty, the principle of sustainable development, and the obligation not to cause environmental harm. For these reasons, one may wonder to what degree public participation really is an acceptable concept in international environmental law. which led the author to comment that:

It is often acknowledged that the environment is a concern for everyone. A clean environment benefits all, and no one can escape the impacts of a polluted environment. But to what degree does international environmental law give us the opportunity to participate in managing the environment?

In conclusion, to his discussion Bekhoven (2016) contends that the most important reason to qualify public participation as a principle of international environmental law is that it is clearly endorsed by the international community at the domestic, regional, and international level. In a wide variety of States, domestic laws are in force facilitating public participation, and even though the content and procedures of public participation may differ for each of these States, public participation is the principle that guides this content and these procedures and their ongoing development, with a final statement

I conclude that public participation is a crucial part, a general principle, of this branch of law. It impacts international and national environmental law, and decision-making, in different ways, because it leads to more democratic influence and oversight.

Pavlova (2017) reckons that public environmental management is the foundation for sustainable development in international environmental governance, and hence the institutional basis of public participation in the formation of a new legal understanding of the term. International environmental law doctrine proposes to determine the state of the driving force of international environmental governance and public participation will be a catalyst for development.

Pavlova (2017) contends that the conception of public participation as legal procedure in development of politics and international ecological management usually and often develops

and acquires a legal form. Steady development and ecological management may this become the connected elements of society development as a noncontiguous and relating item of triad: ecological, economic, and public directions. Rongxin Li (2019) similarly contends that broadly defined, public participation, as a part of the legislation process is widely accepted in various political regimes for engaging more citizens into the enactment and amendment of laws, regulations and policies, including the one-party states like China

Discussing the participatory principle in Brazil, Coutinho and co workers (2017) elaborates on how a variety of institutional innovations, designed to provide citizens with the ability to directly influence the conception and drafting of laws, regulations and policies, and to monitor their execution, have been implemented in Brazil. These initiatives vary significantly, but they aim to carve out political participation and accountability at different state levels and branches, to allow for societal influence during various phases of law making, and to safeguard the deliberative power of citizens. Autonomy allowed cities to create citizen councils (in areas such as healthcare, welfare, and housing) through which civil society participation and consensus building among stakeholders became possible.

In a Stockholm Environmental Institute's (SEI) discussion, Berry et al. (2019) summarise their views on the public participation principle as:

1. Civil society engagement is key to achieving sustainable development and environmental goals. Governments cannot reach environmental protection goals alone; they need support and guidance from the public.
2. Increased public participation builds a more engaged citizenry, increases the legitimacy of decisions, and helps ensure that policy-makers have valuable local knowledge.
3. Public participation in environmental decision-making includes both formal participation processes (*invited spaces*) and mobilization by engaged citizens (*created spaces*).
4. Policy-makers should invest resources in the capacity building necessary to facilitate equitable and inclusive participation.
5. Policy-makers should strive towards transparency in how input is applied to improve the legitimacy of public participation processes.

Perhaps there is a need to finally consider the hypothesis of Kiss (2008), stating that; Meaningful public participation in legislative decision-making can only be achieved if drafts of all legislative preparatory documents to be enacted as binding norms are available for anybody for reading and commenting, sufficient time is provided for commenting to those willing to participate and preferably, electronic access is guaranteed via the Internet

Would there ever be a change of direction in traditional law making processes? A distant reflection of that possibility can be found in the declaration of the ODIHR Director, Matteo Mecacci (2021), to the effect that:

Laws have a powerful impact on our daily lives, and our legal systems should make sure that the rights of the people are fully respected....That's why good laws are always based on democratic principles and drafted following full consultation, while good lawmaking ensures that the voices of all the groups making up our diverse societies are heard.

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Principles of Common but Differentiated Responsibilities

Though recognized and discussed since the first UN conference on the environment in 1972, and in the Stockholm Declaration (1972), CBDR re-emerged at the UN 1992 (UNCED, 1992) conference as a compromise between the positions of developed and developing countries with regard to their share of responsibilities in environmental degradation and environmental protection. The objective is to bring about conditions of environmental governance that, to be effective, need to be as inclusive as possible at the legal level. At the ethical level, it is an expression of general principles of equity in international law. It recognizes the historical correlation between higher levels of development and a greater contribution to the degradation of global environmental resources, such as water and air, and enables the sharing of responsibility accordingly. It establishes that developed countries, which had been able to develop for longer times unimpeded by environmental restrictions, now need to take a greater share of responsibility.

The various occurrences of the CBDR in international legal texts include the Rio Declaration (1992), where it is enunciated as '*Principle 7*,' and the United Nations Framework Convention on Climate Change (1992, together with the Kyoto Protocol (1997)). It was retroactively incorporated into the Vienna Convention and Montreal Protocol (1987) on substances that destroy the ozone layer. Practically, it entails the deferral of developing countries' compliance with the objectives of these environmental conventions.

Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) is a principle within the United Nations Framework Convention on Climate Change (UNFCCC-1992) that acknowledges the different capabilities and differing responsibilities of individual countries in addressing climate change. The principle of CBDR-RC is enshrined in the 1992 UNFCCC treaty, which was ratified by all participating countries. The text of the convention reads:

... the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions.

CBDR was formalized in international (soft) law at the 1992 United Nations Conference on Environment and Development (UNCED-1992) of Rio de Janeiro. The principle attempts at resolving a tension between two older notions of environmental governance:

1. The concept of a '*common responsibility*' lined directly to the concept of '*common heritage of mankind*,'
2. The 1967 UN resolution that emerged as an expression of concern for the loss of natural resources as common property.

The 1992 UN negotiations were organized around four key themes:

1. Climate change,
2. Deforestation,
3. Desertification, and
4. Biodiversity degradation

In legal terms, CBDR is described as:

The shared obligation of two or more states toward the protection of a particular environmental resource.....the need to establish variegated levels at which different states can effectively enter into a collective response, according to both their capacities and their levels of contribution to the problem.

Under the Paris Agreement, and specifically about carbon emissions, all signatory countries are obliged to mitigate their carbon emissions through the 'Nationally Determined Contribution' (NDC, 2015) mechanism (3, 4.2). Because countries can voluntarily set their own NDC's, their respective obligations can be substantially differentiated. Differentiation between different countries' obligations is also provided for in other ways throughout the agreement, including:

- An overarching principle that guides the implementation of the Agreement and '*recognises different national circumstances*' (Art 2.2),
- This additional phrase broadens the scope of what differentiation of obligations can be based upon, including the fact that national circumstances might change
- A recognition that '*developing*' countries will reach peak emissions later than '*developed*' countries' (art 4.1)
- '*Developed*' countries' should take the lead on '*economy-wide absolute emission reduction*' whereas '*developing*' countries should continue to improve their own efforts (art 4.4)
- Support is to be provided to '*developing*' countries to enable more ambitious targets (art 4.5)
- A mechanism wherein '*developed*' countries are required to provide '*developing*' countries with financial assistance for mitigation and adaptation (art 9.1)
- Recognition of countries' different capacities to engage in the transparent reporting framework provided for by the Agreement (art 13)

An early example of the CBDR principle can be found in the Montreal Protocol (1987), a reasonably successful treaty that dealt with the emission of chemicals causing the destruction of the ozone layer. This involved:

- A 10-year grace period for '*developing countries*' with a low annual consumption of the gases
- A financial mechanism and technology transfer requirements to support these later implementing countries to meet their obligations
- '*Developing*' countries' obligations were made conditional on effective cooperation of '*developed*' countries through this mechanism (art 5(5))
- '*Developed*' countries were also required to provide finance and technology to '*developing*' countries under the UNFCCC (Arts 4.3, 4.7)

One of the many contested impositions of The Kyoto Protocol (1997) lies in what is believed to be a controversial declaration requiring,

.....developed countries to have emissions reductions targets, whereas developing countries only needed to take more general measures to address the problem of greenhouse gas emissions depending on their national context.

This rather vague and badly-worded declaration, however, whether out of omission or politeness, fail to strongly emphasize that developing countries of the North, through their lifestyles, are the main emitters of GHG emissions, an externality that is unwillingly shared by countries of the South

Within the environmental regime, the starting point for the principle of CBDR is with the 1972 UN Conference on the Human Environment, in Stockholm. Although the term was not explicitly mentioned in the resultant declaration (Stockholm Declaration,1972)), its spirit was clearly expressed. Finally, Principle 24 of the Stockholm Declaration states that:

International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big and small, on an equal footing and that due account [needs to be] taken of the sovereignty and interests of all States.

Other landmarks in the early CBDR evolution are the final report of the World Commission on Environment and Development (Brundtland Commission, 1987) and the declaration resulting from the Ministerial Conference on Atmospheric Pollution and Climatic Change held in Noordwijk, the Netherlands in 1989 (Noordwijk Declaration, 1989). The final report of the Brundtland Commission is said to have founded the concept of sustainable development, which itself has a clear link to CBDR within the climate regime.

The Noordwijk Declaration was important, not only because particular elements of a future climate change convention were discussed, but also because it addressed the responsibility of industrial countries to take the lead in the work against climate change. Furthermore, typical elements of burden-sharing, like financial assistance and transfer of technology from developed to developing countries, were also topics of deliberations, discussed by Bodansky (1994).

In 1992, UNCED, also known as the Earth Summit, was held in Rio de Janeiro. Many important documents came out of the conference, among them the Rio Declaration, in which 27 principles of sustainability were posited. Considering the close relationship between CBDR and sustainable development, it is worth noting that Principle 7 of the Rio Declaration expressly recognizes CBDR *'in view of the different contributions to global environmental degradation'*

In December 1990, the UNGA established the Intergovernmental Negotiating Committee (INC, 1990) to initiate negotiations of the UNFCCC, and in the general debate of its first session, an explicit concern for some countries was that the CBDR-principle should be taken into full account in any future work on addressing climate change. It was also decided that the intended outcome should include adaptation measures and that these would be specifically aimed to support Small Island Developing States (SIDS).

The most fundamental example of where the CBDR-principle is found in the UNFCCC is in article 3.1, under the heading *'Principles'*:

The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

The preamble also specifically acknowledges that:

The global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions.

The intention with the Kyoto Protocol was to strengthen and substantiate already existing commitments under the UNFCCC and while doing so, still taking differentiation and issues of equity into account. In other words, developed countries were to make further commitments while developing countries merely were to reaffirm those commitments that already existed under article 4.1 of the UNFCCC.

The Berlin Mandate (1995) specifically stated, with reference to article 3.1 of the UNFCCC, that this process of strengthening commitments by developed country parties should be guided by nations' *'common but differentiated responsibilities and respective capabilities'*. (Berlin Mandate (n 94) para 1(a) and (e).

COP-21: The 2015 Paris Agreement was the result of a changing attitude among the bigger developing countries. Because of the failure to reach a legally binding agreement in Copenhagen (2009), together with the inability in Cancún the following year to determine the future of both the Kyoto-track and the Bali Action Plan, the COP decided to:

Launch a process to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all.

The common but differentiated responsibility of countries at different levels of development, discussed at the UNCED meeting of Rio in 1992, also establishes through Principle 7 in the Rio Declaration that:

In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

CBDR, as articulated at UNCED (1992) anticipates the concept of capability, when referring to finance and technology. Whilst, in parallel, the UNFCCC uses similar languages and includes explicitly the aforementioned concept; Article 3.1 reads:

The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.

Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

Detractors also find it questionable that multi-lateral environmental agreements should hold developed countries accountable for their historic emissions stocks, finding it unjust to ask modern-day citizens to make amends for pollution emitted generations ago. Because citizens of developed countries currently enjoy the fruits of past GHG emissions, it is only fair to require those nations to bear a greater burden in solving the climate change problem.

Moreover, because CDR is chiefly backward-looking, it does not provide any mechanism to adapt to the evolving global reality (discussed by Sunstein,2008). The principle is now focused on the existing stocks of emissions that were produced when the major economies of the United States and Europe industrialized and thus does not account for the current and future emissions of emerging economies.

Although member countries must agree to be bound by the protocols of the UNFCCC, there is no clear mechanism in the Convention to determine the degree to which each country will be bound. Therefore, the regime relies upon individual actors' sense of responsibility for damage done to a common good—the climate—and provides little else as incentive to commit to reducing emissions. The UNFCCC as a legal instrument relies on self-designation and elective commitments made in the global public interest.

CBDR is not unanimously accepted among developed countries. At the Rio negotiations it was rejected by the United States, which has since conditioned its participation in any restrictive scheme on a specific commitment from developing countries to participate as well (Byrd-Hagel Resolution, 1997). As a result of this lack of consensus, CBDR has been relatively sidelined in environmental governance debates.

Some countries, with the USA in the lead, have raised objections to the principle on the basis that it would imply a recognition or acceptance by them of any international obligations or liabilities, or any diminution in the responsibilities of other less developed countries. However, Justice/Equity dictates that:

Developed' countries have historically and still, in many cases, do put far greater pressure on the global environment than 'developing' countries. Their economies have benefited from that pressure in ways that 'developing' countries' economies have not. It would be deeply unfair not to recognise this historical difference, which has significant ongoing effects today, in allocating shares of the burden of solving the problem.

There are also other pragmatic realities to be considered:

- Some countries simply do not have the capacity, economic, technological, or political, to contribute the same amount as other countries can without assistance and allowances,
- CBDR allows for the degree of differentiation to adapt and change over time as countries gain the capacity to contribute more to collective goals.

Concluding his discussion on CBDR, Magraw (1990) states that:

Structurally, differential treatment constitutes a recognition of the limits of a system based on a fiction of legal equality between states that imposes reciprocity of commitments by all state parties to any treaty.

Discussing the relationship between CBDR and Multinational agreements, Stone (2004) finds that MEAs are increasingly adopting a principle that justifies imposing greater obligations on the Richer nations that invariably have a greater share in natural resources exploitation and degradation. However, Stones finds that while the notion of a '*differential*' obligation remains ill-defined, there are many reasons for negotiators to 'offer heterogeneous terms as a way of attracting heterogeneous parties. Similarly, discussing CBDR in the context of rights and obligations of states in relation to the environment, Birnie et al. (2009) note that, since it acknowledges the contextual differences among states, as a legally significant framework principle, CBDR provides an equitable basis for cooperation between developing and developed states.

In her discussion Charlotte Epstein (2007) explains how even if the common but differentiated responsibilities (CBDR) principle of international environmental law establishing that all states are responsible for addressing global environmental destruction, not all states are equally responsible. According to the author, the principle balances the need for all states to take responsibility for global environmental problems on the one hand, while the need to recognize the wide differences in levels of economic development between states, especially between North and South. Necessarily, the differences are linked to the states' contributions to, as much as their abilities and responsibilities, legal or otherwise, to address these problems.

Analyzing the CBDR and its international implications or appropriateness, Bortscheller (2010) finds the terms of the principle adequate and proposes that:

- CDR is sound and equitable;
- It has widespread acceptance in the international community, and
- It will continue to play a central role in climate negotiations.

Both Stone (2004) and Bortscheller, (2010) appear to be in agreement that, in spite of opposition arising out of a different interpretations of what is equitable for developed and developing countries it is too difficult to predict the differentiated needs of developing countries in light of scientific uncertainty about the specifics of adverse climate change impacts. Nevertheless there is widespread agreement that developing countries will bear a disproportionate amount of damages from climate change, which the principle of CDR rightfully seeks to correct.

From the ethical aspect raised by Epstein, in an earlier discussions Hunter et al (2011) concluded that:

The principle reflects core elements of equity and allows for ecological differences in addition to economic differences and presents a conceptual framework for compromise and cooperation in meeting future environmental challenges.

According to Sand and Peel (2012), since CBDR owes its origin from the application of equity in general international law, the principle has two elements:

1. Common responsibility of states, and
2. The need to take account of differing circumstances both in relation to the ability to prevent damage and the contribution of states to creating the problem.

Similar to the earlier discussions of Hunter et al. (2011) and Epstein (2015), Cullet (2016) reaffirms that the CBDR should reflect equity concerns that have been the object of most environmental debates on a North-South basis for several decades. According to Cullet, different forms of differentiation have been introduced in environmental law instruments over the years, to the point where it has become an essential element of any international environmental agreement. At the same time, differential treatment has been the object of sustained criticism, contesters arguing that:

1. It should be temporary,
2. That it fails to target beneficiaries appropriately, and
3. It undermines environmental outcomes.

Epstein (2015) comments that the CBDR principle balances on two requirements:

1. The need for all states to take responsibility for global environmental problems, and,
2. The need to recognize the wide differences in levels of economic development between states.

According to the analysis of Epstein, CBDR tries to resolve a tension that has existed between two older notions of environmental governance:

1. The idea of a “common responsibility” directly linked to the notion of “common heritage of mankind,”
2. The need to establish variegated levels at which different states can effectively enter into a collective response, according to both their capacities and their levels of contribution to the problem.

Basing his arguments on the premise that the CBDR emerged in 1992 at the Rio conference as a compromise between the positions of developed and developing countries with regard to environmental protection, it ought to bring about the conditions of environmental governance that, to be effective, need to be as inclusive as possible. From an ethical point of view, the author regards it as an expression of general principles of equity in international law, recognizing the correlation between higher levels of development with a greater contribution to the degradation of global environmental resources, requiring a sharing of responsibility accordingly.

Ferreira (2016) reports on how for the first time a national court (the Hague District Court) has expressly used the international environmental law (IEL) principle of common but differentiated responsibilities and capabilities (CBDRs) of the climate regime as a complementary tool to interpret the scope of a state's climate obligations under domestic law. On 24 June 2015, the Hague District Court (the Court) gave its decision in the case of *Urgenda v. Government of the Netherlands (Ministry of Infrastructure and the Environment)*. The Court's decision established that:

In order to meet its standard duty of care towards the plaintiffs (the Urgenda Foundation, representing current and future generations of Dutch citizens threatened by the risks of climate change), the Dutch government was ordered to 'limit the joint volume of Dutch annual greenhouse gas [GHG] emissions, or have them limited, so that this volume will have reduced by at least 25%–40% at the end of 2020 compared to the level of year 1990.

The discussion of Per Josephson (2017) concerning climate change, stresses on the fact that wealthier countries of the world have historically had a bigger role in causing climate change. Yet, some of the poorest countries are expected to suffer the worst consequences. Analyzing the causes and consequences of such disparities, Josephson concludes it would only be fair that this economic inequality be accounted for, and treaty obligations be more cumbersome for the more well-off nations.

A response to this inequity is the principle of common but differentiated responsibilities (CBDR). In an earlier discussion about the environmental justice implications of climate change, Brunnée (2009) remarks that:

The principal idea of CBDR is to call attention to every nation's stake in addressing this problem and while doing so, also distinguishing between each country's respective capabilities.

Both Brunnée and Josephson believe the principle can be said to tilt the scales in favour of poorer nations by differentiating between responsibilities and commitments when allocating the action that needs be taken.

For a further and more up to date definition of CBDR, Olivia Oldham (2020) of the Oxford Climate Society proposes:

Common but differentiated responsibility, sometimes with the addition of the phrase '*and respective capacities*,' is a principle of international law which means that different countries have different capabilities and responsibilities to address cross-border environmental issues such as climate change.

According to Oldham (2020), climate change should now be within the realms of international transboundary exportation of toxic substances, or international transboundary air pollution, discussed by the WHO (2006). Although regulated on the European Continent by the Geneva Convention on Long-Range Transboundary Air Pollution (1984) and its

subsequent Protocols, no consideration has been given to the global situation. According to the author, the CBDR should present two main objectives:

1. Balancing the need for all states to take individual responsibility for environmental destruction and its mitigation, and
2. The recognition that states aren't equally responsibly for the problem and nor equally capable of responding to it.

Discussing the realities of CBDR, Patel (2020) affirms that the principle forms the core of international environmental law, even if it has been the object of debate and opposition due to its endorsing of asymmetrical commitments among states. Patel finds that both in terms of bindingness, as well as content, the principle acts as an effective policy against climate change, reaching a realistic balance between the interests and historical realities of the North and the South. However, Patel (2020) ask two pertinent questions:

1. The legal status of the principle – is it binding enough?
2. The content of the principle – does it strike a good balance between the common objective of environmentalism and the particular interests of the North and the South?

Patel answers both of questions in her own way, but the reality is that both are still subject of intensive debates. However, the author finds there is the pervasive argument that the principle should entail lower commitment on the part of the developed countries due to:

1. There is the risk of disincentivizing the least developed countries, since their lower developmental rate grants them certain perks – at least in the context of environmental law.
2. The absence of binding commitments for developing countries might discourage developed countries and make them feel as if they are making a disproportionate sacrifice.

Referring to the Outcome Document of the United Nations Conference on Sustainable Development (2012), reaffirmed in the principles of the Rio Declaration, which included the principle of CBDR, stating that:

The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Jolly and Trivedi (2021) observe that both the United States and other developed nations, have been quick to react against the statement, stating that CBDR only applied in the context of the environment and could not be protracted into the broader context of development. For the G-77 and China, the position was non-negotiable since developing countries believed that the principle of CBDR is not just about the environment alone, but rather the international pursuit of sustainable development. It should also be noted that in spite of the acceptance of the CBDR principle in the environmental context, the principle was never incorporated into the global development agenda, including the Millennium Development Goals.

From his analysis, Atapattu (2021) finds that from opinions expressed by scholars, the CBDR principle comprises several components:

- It refers to the common responsibility of states to protect the environment;
- It refers to different contributions to global environmental problems by developing and developed countries;
- It acknowledges the greater pressures that northern countries place on the global environment; and

- It refers to the capacity of northern countries to address global environmental problems due to their superior financial resources and technology.

The recommendations of Atapattu (2021) reflects on the much earlier recommendations of Cullet (2016) to the effect that differential treatment should in future be based on a social and environmental assessment that identifies countries' vulnerability and resilience to environmental problems, to bring out two advantageous points:

1. It will help to bring back the environmental agenda to the centre of environmental treaties, and
2. Social and environmental indicators will provide a much better basis for differentiating between countries.

Referring to the earlier discussions of Rajamani (2006) and Le Bouthillier (2014), Cullet raises two different critiques that should be highlighted:

1. Differential treatment does not necessarily provide the basis for agreements favourable to sustainable development.
2. Within the context of a given treaty, the extent of differential treatment should preferably 'be limited in the service of the object and purpose of the treaty'.

The landmark 2015 decision by the Hague District Court in The Netherlands, discussed by Ferreira (2016) represents the first time a national court has expressly used the international environmental law (IEL) principle of common but differentiated responsibilities and capabilities (CBDRs) of the climate regime as a complementary tool to interpret the scope of a state's climate obligations under domestic law. Despite the marked engagement of national courts with IEL in recent decades, including engaging with principles such as sustainable development, polluter pays, intergenerational equity, and precaution, until that court decision, CBDRs had remained outside the purview of environmental law jurisprudence at the national level.

The literature recognizes that, in practice, the direct engagement of national courts with international law has traditionally been less forthcoming than its promised potential for at least three interrelated reasons:

1. The responsibility for creating, implementing and enforcing international law rests primarily with the legislative and executive branches;
2. Generally, national courts tend to favour the application and interpretation of domestic law, including law that implements international treaties;
3. For a long time, many national courts used avoidance techniques to evade interfering with what they consider to be international political questions (rather than legal disputes), which are better addressed through interstate negotiations.

However, that does not appear to be always the case. The present trend of resorting to the law courts to resolve the legal implications of emissions, climate change, global warming and the resulting other health and environmental implications has been ongoing for a number of years, and Setzer and Higham (2021) summarise the main points in litigation so far:

- Climate change litigation continues to grow in importance as a way of either advancing or delaying effective action on climate change.
- Globally, the cumulative number of climate change-related cases has more than doubled since 2015. Just over 800 cases were filed between 1986 and 2014, while over 1,000 cases have been brought in the last six years.

- The number of cases challenging government inaction or lack of ambition in climate goals and commitments continues to grow, with 37 ‘systemic mitigation’ cases identified around the world.
- Cases are targeting a wider variety of private sector and financial actors and there is more diversity in the arguments being used, for example incorporating themes of greenwashing and fiduciary duty.
- Three areas to watch in the future are value chain litigation, cases of government support to the fossil fuel industry (through subsidies or tax relief), and cases focused on the distribution of the burdens associated with action, which may be classed as ‘*just transition*’ cases.

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Principles of Environmental Procedural Rights

How have procedural environmental rights come to be entrenched constitutionally? International developments, such as enactment of the Aarhus Convention (1998), along with mounting pressure from nongovernmental organizations to advance public involvement in environmental decision making, hastened the constitutional development of procedural environmental rights. It may not be easy to concoct a meaningful definition of Environmental Procedural Rights, or PERs as it is referred to, but the attempt of Birgit Peters (2018) is comprehensive:

Procedural environmental rights ensure that the interests of individuals or groups, in particular of those likely to be affected, are taken into account in national or international procedures of environmental decision-making, i.e. decisions on environmental projects, or legislative decision-making in environmental disputes.

While constitutional procedural environmental rights have significant potential, they are nonetheless constrained in two important ways in both expression and enforcement. A review of the innumerable international human rights conventions will reveal how procedural rights have been allowed to evolve, or simply stifled. Such conventions include, amongst others, the 1948 Universal Declaration of Human Rights, the 1966 International Covenant on Civil and Political Rights (which reiterated the importance of procedural rights in governance), the 1950 European Convention for the Protection of Human Rights and Fundamental Freedoms, the 1969 American Convention on Human Rights, and the 1981 African Charter on Human and Peoples' Rights. Some constitutional systems incorporate and make enforceable international or regional human rights that also grant procedural rights to citizens. Such rights remain domestically enforceable, and as such do away with special or specific provisions for the granting of procedural rights in environmental matters. But the same situation on the international or global scene is more complicated than it appears on the surface.

The 1972 Stockholm Declaration promotes public involvement to '*defend and improve the human environment.*' The 1992 Rio Declaration on Environment and Development (Earth Summit, 1992) recognizes the paramount importance of procedural rights in environmental matters. The Aarhus Convention (1998) sets procedural rights and imposes duties on member states concerning decisions that affect the environment and establishes the three pillars of procedural rights:

- Access to information,
- Participation in decision making, and
- Access to justice.

However, the analyzing the legal implications of these three pillars, Erin Daly (2012) finds that procedural environmental rights hardly guarantee any particular level of environmental protection, as does the template set in the Aarhus Convention.

Several Multilateral Environment Agreements (MEAs) have included obligations of parties to make information held by government accessible to members of the public. Some of these include:

- Article 15(2) of the Rotterdam Convention on the Prior Informed Consent Procedure,
- Article 10(1) of the Convention on Persistent Organic Pollutants,
- Article 9 of the Convention on the Transboundary Effects of Industrial Accidents,
- Article 6 of the 1992 United Nations Framework Convention on Climate Change (UNFCCC)
- Article 7 of the Kyoto Protocol.

Article 7 of the Kyoto Protocol clearly states that:

Each Party included in Annex I shall incorporate in its national communication, submitted under Article 12 of the Convention, the supplementary information necessary to demonstrate compliance with its commitments under this Protocol....

And as such, the public also has the right to be informed about issues relating to climate change (UNEP, 2015), including:

1. Emission trading and activities related to other flexible mechanisms under the Kyoto Protocol;
2. Investment in green technology projects;
3. Financing of such projects;
4. Technology transfer;
5. Protecting carbon sinks and reservoirs of greenhouse gases; and
6. Other important matters.

UNEP (2015) goes further to discuss and recommend specific objectives of states, including:

- Procedural obligations for all governments to ensure that the affected public is:
 - Adequately informed about the impacts of climate change and the measures undertaken to both mitigate and adapt to climate change;
 - Adequately involved in public decisions about climate change; and (iii) given access to administrative, judicial, and other remedies when rights are violated as a result of climate change and responses to it.
- Substantive obligations for all governments to:
 - Protect human rights from climate-related harms;
 - Respond to the core drivers of climate change by regulating GHG emissions within their jurisdiction;
 - Cooperate internationally to protect human rights against climate-related harms;
 - Address the transboundary impacts of climate change; and
 - Safeguard human rights in all mitigation and adaptation activities.

The Rio Principle 10 had its roots in the following statement found in “Our Common Future” of the Brundtland Report (1987):

The law alone cannot enforce the common interest. It principally needs community knowledge and support, which entails greater public participation in the decisions that affect the environment.

This notion of ‘the common interest’, which requires community knowledge and support to be realized, extends even further into earlier declarations, such as Principle 1 of the Stockholm Declaration of the UN Conference on the Human Environment (1972), which formulates the clearest statement in any global legal or political instrument on the fundamental relationship between humans and their environment, stating that:

Humankind bears a solemn responsibility to protect and improve the environment for present and future generations.

Public participation is thus expressed as indispensable to the sentiment in Stockholm Principle 1.

The Rio Principle 10 is an overt expression of the operative principle that prescribes:

Through the exercise of civil, political and procedural rights individuals and associations can influence civic space in order to promote policymaking and decision-making that will protect and improve the environment and ensure sustainability.

The binding international standard in relation to procedural environmental rights was set with the adoption in 1998 in the Danish city of Aarhus of the UNECE Convention on access to information, public participation in decision making and access to justice in environmental matters (Aarhus Convention, 1998). Discussed by Kravchenko and Bonine (2008), it is described as:

The first multinational environmental agreement that focuses exclusively on obligations of the nations to their citizens and nongovernmental organizations,

It was acknowledged as an international benchmark against which the compatibility of national standards could be compared soon after its adoption. However, the Convention remains a purely European environment and human rights instrument.

The Aarhus Convention, Article 1 states that:

In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention.

And the list of recommendations and statements to emphasize on the importance and necessity a rights-based legal framework for citizens, and examples include:

Article 12 of the Paris Agreement (2015) declaring that:

Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.

The African Charter of Human and Peoples' Rights providing for:

All peoples shall have the right to a general satisfactory environment favourable to their development

The French Charte de l'environnement (2004-art. 7) guarantying that:

Every person has the right, under conditions and limits defined by law, to access information relative to the environment that is held by government authorities and to participate in the development of public decisions having an impact on the environment.

The Norwegian National Human Rights Institution's Report on 'Climate and Human Rights (2015) establishing that:

Environmental rights also include procedural rights. The procedural rights are not about the content of decisions, but they place certain requirements on the procedure in climate and environmental cases.

In many constitutions, procedural and substantive rights are co-joined. Brazil's constitution, for instance, protects the substantive right '*to an ecologically balanced environment*' but also requires the government to '*ensure the effectiveness of this right,*' including the obligation to demand and make public environmental impact studies (Constitution of Brazil, Art. 225, 1988)). In addition, judicial systems of several countries have included environmental tribunals, chambers or courts, which have special procedures designed to facilitate the bringing of actions to promote vindication of environmental rights. The Regional Instrument discussed in Latin America and the Caribbean also aims to guarantee the implementation of Principle 10 in the region, almost twenty years later, with the similar aim of establishing a floor, not a ceiling, for environmental access rights.

For the rest of the world outside the pan-European region, or regional blocs, the adoption of the Bali Guidelines in 2010 by the United Nations Environment Programme Governing Council, marked the birth of the Development of Legislations on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. Subsequent to the adoption of the Bali Guidelines, the international consensus on sustainable development progressed on several fronts, particularly with the adoption in 2015 of the Sustainable Development Goals (SDGs, 2015). Under SDG 16, the international community pledges to:

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels.

One may question the relationship between sustainable development and environmental law, but it need to be appreciated that the basis of development is anchored on the natural and human environments, discussed by Dogaru (2013), Zhou (2014) and Mishra (2020).

The discussions and analysis of Kiss (1992) explain how procedural human rights, when linked to environmental protection, receive more attention than do substantive environmental rights in legal instruments, as well as in jurisprudence and other doctrines in general. Kiss associates the focus on procedural rights in part on political caution at the international level, caution arising from concern that efforts to guarantee and enforce substantive environmental rights may be either unsuccessful or successful, or in opposition to vested interests.

The discussions of Gemmill and Bamidele-Izu (2002) stresses on why the third pillar of procedural rights (access to justice) should embody standing and remedies, which does not often appear to be the case. Some constitutions expressly provide for expansive or open standing to the judicial process to pursue environmental rights, continues Gemmill and Bamidele-Izu, and some constitutions of several countries provide an express right to file lawsuits to vindicate substantive environmental rights; but given their importance, it remains difficult to comprehend why relatively few countries elect to constitutionally instantiate procedural environmental rights. While a few have, the majority is still reluctant. Less than one-half of the countries with constitutions that recognize substantive environmental rights constitutionally do the same for procedural environmental rights, claims James May (2013); and less than twenty percent of nations constitutionally instantiate procedural environmental rights, making them underrepresented in national constitutions worldwide, explains Gemmill and Bamidele-Izu (2002).

However, Angola's constitution, rather than beating about the bush, takes the most direct route to instituting procedural rights in art.74 of its constitution, which states:

Every citizen, either individually or through associations representing specific interests, shall have the right to take legal action in the cases and under the terms established by law, with the aim of annulling acts which are harmful to the environment.

The earlier observations of Kiss (1992) to the effect that some proponents of procedural rights may have held the unfounded view that a fully informed public with rights of participation in environmental decision-making, and access to remedies for environmental harm, would ensure a high level of environmental protection, sometimes unpalatable to those with vested interests. The bottom line remains that what international organizations are offering is simply a series of soft laws without any appropriate mechanisms for enforcement. As such, the principle has generated some profound discussions amongst environmental and

legal scholars, and the bone of contention is the subtle but meaningful distinction between procedural rights and procedural justice.

Schlosberg (2007) prefers to begin by discussing procedural environmental rights in association with the concept of procedural environmental justice, describing it as '*fairness in processes of decision-making*.' Fairness is certainly nowhere near substantive. It is less sensitive to patterns of substantive victimization, proposes Heydon (2018; 2020), which both Schlosberg and Heydon find simply inclined to be associated with the term '*distributional environmental justice*,' and more concerned with widespread attempts at democratising deliberation procedures or deliberative justice, as discussed by Walker (2012). Despite much green criminological research concentrating on features that could be broadly categorised under the term 'procedural injustice' (Brisman 2008; 2013; Lynch et al. (2015); Goyes and South, 2017; Weinstock 2017) are all in agreement that little existing work has sought to develop and apply this specific concept theoretically or empirically.

The limits of focusing solely on this dimension of justice have been analyzed by Heydon (2018), and the key contention is that '*one cannot simply talk of one aspect of justice without it leading to another*,' as proposed by Schlosberg (2007). Heydon (2018) further explained how '*justice-as-recognition*' and '*justice-as-participation*' may be manifested jointly within '*procedural environmental justice*', but also how initial instances of misrecognition and marginalisation can generate a subsequent campaign of injustice, as those with authority struggle to manage the resultant dissatisfaction of citizens.

As proposed earlier by Phillips and Sexton (1999), it can hardly be assumed that use of a purely distributive definition is '*wrong*,' but the choice of definition may have consequences for the types of visible injustice. The authors suggest incorporating the concepts of '*justice-as-recognition*' and '*procedural justice*' alongside that of distribution, which prompted Heydon (2018) to state that:

Unequal exposure to environmental harm tends to result from unequal participation in decision-making processes, and that a lack of participation tends to signal a lack of recognition, the integration of this tripartite framework provides a more comprehensive conceptual toolkit from which to examine instances of injustice.

Davies (2007) finds that rights-based approaches to environmental protection are on the increase as the public become more aware of both their environment and their other civil and political rights. Such perspectives are increasingly finding popularity within international environmental agendas, and several national jurisdictions have progressed from mere principles into more formal '*hard law*', as is the case at the national level in Finland, reports Davis (2007).

Shelton (2010) proposes that the necessity to develop substantive environmental rights should arise from and be justified by the fact that:

Human rights tribunals facing claims of violations stemming from environmental degradation are increasingly incorporating and applying national and international environmental standards to assess whether or not the government in question has complied with its legal obligations.

Shelton insists that the term '*environmental rights*' should refer to any proclamation of a human right to environmental conditions of a specified quality. The author further adds proclamations should utilize a variety of descriptive terms like safe, healthy, ecologically sound, adequate for development, and sound.

The discussions of Boyd (2012) reveals that although constitutions in more than 90 countries contain substantive environmental rights, only 30-40 contain procedural environmental rights. Others have separate provisions guaranteeing broad participation rights, and rights relating to access to justice, including standing rules and other procedural rules that are applied in environmental cases, though not specifically or exclusively designed for them. Boyd finds that the fact that procedural and substantive rights so often found together in constitutions would suggest that:

Procedural environmental rights are viewed as a complement to, rather than a substitute for, substantive environmental rights.

Boyd (2012) further finds that the common argument is that procedural rights are weak versions of substantive rights; as such they do not secure the human condition that is of value, a clean or healthy environment, but only the opportunity to pursue activities of value, and even that opportunity is subject to political manipulation and requires time, effort, and expense to exercise. Procedural environmental rights, by contrast, demand only that courts identify specific procedures by which certain decisions are to be made. It is commonly accepted that rights are triggered by negative environmental impacts, but the rights themselves are commonly recognized rights of access and participation. Thus, the analytic framework entailed in enforcing procedural rights is narrower and more objectively bounded than what substantive environmental rights would demand.

Thus, concludes Boyd (2012):

Substantive and procedural environmental rights appear at a glance to use similar means individually, inducible constitutional rights to accomplish the same ends: protection of the nation's environmental heritage, presenting courts with similar challenges.

Daly (2012) and May (2013) have extensively discussed how and why some argue that procedural rights are weak versions of substantive rights, simply because they do not secure the object that is of value, a clean and healthy environment, but only the opportunity to pursue the thing of value. Daly and May find that even that opportunity is subject to political manipulation and requires time, effort, and expense to exercise, without any guarantee of success. Based on the earlier conclusions of Kuhn (1999) to the effect that to achieve environmental justice, there must be a requirement that vulnerable communities have opportunities to participate meaningfully in decision making processes, the analysis of Daly (2012) further confirms that equipping underrepresented groups with environmental information and avenues for influencing policy decisions strengthens the values and practices associated with democracy. More recently The study of Conca (2015) finds that substantial evidence demonstrates that where environmental policy incorporates procedural rights, environmental protection efforts are more robust.

In their analysis of environmental rights, both May (2013) and May and Daly (2014) concur that environmental rights should be a primary facet of '*environmental constitutionalism*' which entails the adoption or amendment of constitutional texts so as to advance rights to environmental entitlement, stewardship, duties, commodities, information, and process. Nonetheless, international, constitutional, statutory, or regulatory instruments may not be sufficient in ensuring meaningful public participation about environmental governance. Other than under the Aarhus Convention, procedural norms reflected in international accords are not enforceable, being simply soft laws, or guidance documents.

Both May (2013) and Daly and May(2015) find that often, governmental information in the hands of entrenched bureaucracies can be lost, hidden, or withheld. Public comments can be overlooked. Access to justice can be frustrated by obstinate obstacles concerning standing, justifiability, remedies, and enforcement (May, 2013). These obstacles can be particularly troublesome in environmental governance, where individual rights can be denied, collective rights misunderstood, and future generational rights ignored, conclude May and Daly.

In a discussion and analysis of procedural rights, May (2014) explains how participatory rights have become an essential ingredient for securing substantive constitutional rights. In the absence of the means to participate meaningfully, constitutional rights cannot exist. Rights to information, participation, and access to justice embody evolving international human and international rights norms, coupled with an element of the advancing democratization of the planet, argues May. Such procedural rights can provide means to an end or ends in themselves. Procedural rights can be a means for achieving human rights, including those to life, property, water, welfare, education, and the environment, as previously discussed by Kravchenko and Bonine (2008), proposes May (2014), stating that:.

Underlying procedural environmental rights is a growing appreciation that human and environmental rights are inextricably intertwined. Yet, without adequate ability to participate meaningfully, substantive environmental rights are less effective.

Constitutional enshrinement of procedural rights in environmental matters is an extension of a polymorphic approach first embodied in the Aarhus Convention. Kravchenko (2007) and others exhorted the importance of the Aarhus Convention in advancing procedural rights in environmental matters.

The discussions and analysis of Jendroška (2017) elaborate on importance of the concept of procedural environmental rights, not only as a widely recognized tool to increase participatory democracy and active involvement of the public in environmental protection, but also how it serves as a an effective instrument of monitoring compliance and enforcement of environmental law. Following recognition of the importance such rights, Jendroška (2017) and Jendroška and Bar (2017) further discuss how procedural environmental rights have increasingly been acknowledged in legal frameworks at the national, supranational and international levels, and how the first comprehensive approach to procedural environmental rights at the international level was undertaken, using the model of the Aarhus Convention, in which access to information, public participation in decision making and access to justice in environmental matters have been codified. Although the same rights are found in the Rio Declaration, the declaration belongs to the instruments of the so-called ‘soft laws,’ that is without the binding legal nature of hard laws, it is nevertheless a form of acceptance, recommendation, or political declaration.

According to the observations of Esser (2017), the main category of procedural rights is what should be termed and recognized as participatory rights. Participatory rights include the right to environmental information, the right to participation in decision-making processes and the right to effective legal remedies. The Norwegian National Human Rights Institution (NHRI-2015) believes that justification for these types of rights rests on the power of citizens to exert influence over states decisions in the field of climate and the environment. In other words, participatory rights are closely linked to democratic principles and participatory democracy. Another category of procedural rights, declares the NHRI, discussed by Kravchenko (2007), is the authorities’ duty to investigate, and on the basis of such investigations, decisions would be arrived at as to negative environmental consequences.

In addition, Kravchenko (2007) finds a close connection between the duty to investigate and the right to environmental information. Esser (2017) concludes his discussion by referring to Article 6(2) of the ECHR which states:

Procedural environmental rights have to be interpreted as ‘*victim rights*’ in criminal procedure law. Therefore investigating authorities have to balance the “procedural environmental rights” of the victim against the rights of the accused, always taking into account the presumption of innocence.

The study of Gellers and Jeffords (2018) expounds on development of environmental procedural rights based on the global expansion of constitutionally-instantiated substantive human rights to the environment (SERs), a phenomenon that, according to the authors, has garnered an increasing degree of attention by legal scholars, philosophers, and social scientists. Far less attention, however, has been paid to the emergence and effect of constitutionally entrenched procedural environmental rights (PERs), similar to the earlier proposal of May and Daly (2014) on the importance of constitutional provisions relating to access to information, access to justice, and participation in environmental matters, and the conclusion of Boyd (2012) who believe that PERs may constitute “the most important environmental addition to human rights law since the 1992 Rio Declaration on Environment and Development.”

Explanations and recommendations from these various studies may help resolve the controversy regarding the utility of PERs. Importantly, discussions have demonstrated that, although the impact of PERs may not be primarily environmental, PERs hold certain promise for improving intragenerational equity, a key element in the social aspect of sustainability. As such, PERs may offer a useful tool for promoting environmental justice and achieving sustainability, conditions necessary to attain environmental democracy conclude Gellers and Jefford (2018).

However, Hilson (2018) finds a striking difference in the two types of rights: A procedural right gives an individual or group the right to enter or use a procedure, which may or may not then produce the substantive result desired, while the substantive right, in contrast, provides direct access to the desired result in successful cases. Joining in on the debate, Jutta Brunnée (2018) proposes that strong procedural elements are indispensable for international environmental law’s capacity to serve community interests, given that procedural obligations can strengthen the rule concerning the prevention of environmental harm and ‘flesh out its due diligence standard.’ Further, Brunnée contends that procedural obligations can also serve useful purposes when states, or judges, are reluctant to entertain substantive arguments, or find it difficult to establish that environmental harm has been caused.

An analysis by Peeters (2020) finds that while all three environmental rights make important contributions to environmental democracy, the right of access to information is fundamental to enabling citizens to effectively use the other two rights, and specifically the right to participate in government decision-making. Peeters discuss how accesses to environmental information can be enforced through the courts, not only from an EU perspective alone, but also providing a means to compare the right to access environmental information across jurisdictions in other regions. Peeters further discusses the core elements of the right of access to environmental information that might be considered in case law, including:

1. The extent to which environmental information held by legislative institutions should be disclosed;

2. Specific interpretations of the grounds for refusing a request for environmental information that may be used by public authorities; and
3. What can constitute information relating to emissions into the environment.

Basing her arguments on the fact that the human right to a healthy environment is currently recognised in more than 150 states through their national constitutions, Boshoff (2021) attempts to reconcile three elements of environmental law and justice: Human rights, Substantive rights and Procedural rights. The author proposes that legislation or international treaties should take into consideration that while the formulation of this right differs depending on the context, it has substantive and procedural elements, both of which impose positive obligations on states. Positive substantive duties include ensuring that air, water, and soil are free from pollution and ensuring access to sustainably produced food and a safe climate; positive procedural duties on state include providing access to environmental information, fulfilling the right to participate in decision-making related to the environment, and providing access to justice where environmental standards are breached, exhorts Boshoff (2021).

Basically, the discussion centres around environmental rights of any types and in any forms that should actually be a basic human right.

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Concept of Common Concern of Humankind

The term '*common interest*' appeared early in international treaties concerning the exploitation of shared natural resources. The International Convention for the Regulation of Whaling (1946) recognized in its preamble that:

The interest of the world in safeguarding for future generations the great natural resources represented by the whale stocks.

The convention recognizes that it is in the common interest to achieve the optimum level of whale stocks as rapidly as possible, and the Convention of (1946) further states that:

Wild animals in their innumerable forms are an irreplaceable part of the earth's natural system which must be conserved for the good of humankind.

Soon thereafter, states began to recognize that it was in their common interest to take conservation measures further to protect overexploited fish stocks in general. The Tokyo Convention for the High Seas Fisheries of the North Pacific Ocean (1952) expressed the conviction of the parties to the convention that it would best serve the '*common interest of mankind,*' as well as the interests of the contracting parties, to ensure sustained productivity of the fishery resources of the North Pacific Ocean.

Further international recognition of the environment as a '*common concern of humanity*' came with conclusion of the 1959 Antarctic Treaty (Washington, 1959), its preamble affirming that:

It is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes.

The Antarctic Treaty system further developed with adoption of the Canberra Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR, 1959), emphasizing on the importance for '*all mankind to preserve the waters surrounding the Antarctic continent for peaceful purposes only,*' which Vignes (1996) finds as another early reference to the implications of the concept of common concern of humankind.

The much later addition to the Antarctic Treaty system, the 1991 Madrid Protocol on Environmental Protection to the Antarctic Treaty, discussed by the United Nation General Assembly (1991; 1992) and Pineschi (1996), achieved full recognition of the principle of common interest, even if not specifically spelled out as such, in its preamble expressing the conviction that:

The development of a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems is in the interest of mankind as a whole and for this purpose it denominates Antarctica a nature reserve, devoted to peace and science.

The 1968 African Convention on the Conservation of Nature and Natural Resources, expressing the desire of the contracting states to undertake individual and joint action for the conservation, utilization and development of natural resources by establishing and maintaining their rational utilization for the present and future welfare of mankind, represents another landmark in the recognition of CCH. Using the words '*welfare*' signals the appearance of the temporal dimension of the common interest of humanity on the African Continent.

The 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals recognizes in its preamble that wild animals in their innumerable forms are an irreplaceable part of the earth's natural system which must be conserved for the good of mankind, stating that:

Each generation of man holds the resources of the earth for future generations and has an obligation to ensure that this legacy is conserved and, where utilized, is used wisely.

The Convention on the Conservation of European Wildlife and Natural Habitats (1979), adopted several months after the Bonn Convention, joins the concept of '*general interest for the future humanity*' by recognizing that wild flora and fauna constitute a natural heritage that '*needs to be handed on to future generations.*'

According to the Stockholm Declaration (1972), the application of the common concern of humankind should achieve a balance between sovereignty and environmental protection, and an indication of this balance is expressed in Principle 21 of the declaration stating that:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

The 1972 World Heritage Convention uses the term '*heritage*' in referring to cultural and natural resources, but treats them as a common concern, not as common heritage. Discussed by Francioni (2004), the preamble declares that certain natural areas or sites should be '*preserved as part of the world heritage of mankind as a whole*' but the Convention is primarily concerned with ensuring the duty of '*the international community as a whole to participate in the protection of natural heritage of outstanding universal value*' within the territory of parties.

The inclusion of smaller areas within the principle is also seen in the Paris Convention for the Protection of the Marine Environment of the North-East Atlantic, adopted several months after the Convention on Biological Diversity. It recognizes that '*the marine environment and the fauna and flora which it supports are of vital importance to all nations.*' More recently, the UN Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification (1996), particularly in Africa stresses on:

The urgent concern of the international community, including states and international organizations, about the adverse impacts of desertification and drought.

Even if such calamities affect only some parts of the world, mankind is directly concerned, and indirectly affected.

Following suite, the World Charter for Nature (1982) recognizes that the preservation of wild species and ecosystems should be ensured '*for the benefit of present and future generations.*' The World Charter paved the way to the 1992 Convention on Biological Diversity which explicitly proclaims the principle of common concern of humanity/common heritage of humanity in endorsing:

The importance of biological diversity for evolution and for maintaining life sustaining systems in the biosphere....affirming that the conservation of biological diversity is a common concern of humankind.

Environmental treaties throughout the 20th century referred to shared global problems using various phrases that foreshadow the common concern of humankind. By the end of the century, the Convention on Biological Diversity (CBD-1992) and the United Nations Framework Convention on Climate Change (UNFCCC-1992) formally expressed the conservation of biological diversity and ‘*change in the Earth’s climate and its adverse effects*’ as common concerns of humankind, respectively. Most recently, the UN-UNFCCC Paris Agreement (2015) again acknowledged climate change as a common concern.

It is to be noted that the terms ‘*common heritage of mankind*,’ ‘*common concern*’ and others are being used interchangeably in several discussions, but both aim at stressing on a same concept. The second report of the Working Group of Experts on Biological Diversity (1989) reveals continued resistance to a ‘*common heritage*’ regime for biodiversity, but also growing consensus around the need for some kind of shared conservation model, as expressed in the statement:

The concept of ‘common responsibility’ for conservation and sustainable use of biodiversity should be developed to serve as an adequate definition for most areas, taking into account the need to keep the balance between different socio-economic interests.

In the working group’s third session in the summer of 1990, delegates raised the possibility of using ‘*common interest*’ or ‘*common concern*’ instead of ‘*common heritage*’ to refer to biodiversity. Whether the debate was about which would better fit into a legal framework or not remains guesswork. By November 1990, a new Working Group of Legal and Technical Experts (1990) was drafting a possible legal instrument, proposing variations on a theme for incorporation for incorporating biological diversity as either:

- A common heritage of mankind, or
- A common responsibility of humankind, or
- A common interest of humankind.

The concept appears to have generated concern explicitly with regards to climate change and biodiversity from those with vested interests, hence the hesitations and cautions expressed in the United Nations Framework Convention on Climate Change (UNFCCC-1992), and the conservation of biological diversity in the Convention on Biological Diversity (CBD-1992). However, The Framework Convention on Climate Change similarly affirms in the first paragraph of its preamble that:

Change in the Earth’s climate and its adverse effects are a common concern of humankind.

The concept of common concern of humankind has never been articulated in detail in any legal instrument. From 1990-1991, the United Nations Environment Programme (UNEP) hosted a group of legal experts to examine the concept. The report of the final meeting of the group, (UNEP, 1991), noted that:

The concept...was sufficiently flexible to warrant its general acceptance as providing a broad basis for the consideration of environmental issues... and should relate both to environment and to development.

Bringing ‘*development*’ into the concept raises the eternal question as to whether development should take priority over environment.

Environmental treaties throughout the 20th century referred to shared global problems using various phrases that foreshadow CCH. It is to be noted that the phrase ‘*common concern*’ featured prominently in the 1987 Report of the World Commission on Environment and

Development (Brundtland Report-1987). Chairwoman Gro Harlem Brundtland writes in the preface that commissioners from diverse nations united over:

A common concern for the planet and the interlocked ecological and economic threats with which its people, institutions, and governments now grapple.

The report discusses the need for the global community to unite in addressing shared problems. Throughout the report, the commissioners effectively communicate that environmental issues are the '*common concern*' of humankind.

Ultimately, the Working Group of Experts (1991) landed on '*common concern of humankind*,' finding the phrase expressed the core values that animated the Convention. The Executive Director drew attention to four of the complex issues covered by the draft convention that were of particular importance.

The fundamental principle that the conservation of biological diversity was a common concern of all people was expressed in three points:

- A principle that required the participation of all countries and all peoples in a global partnership.
- The principle implied intergenerational equity and fair burden sharing.
- The principle called for a balance between the sovereign rights of nations to exploit their natural resources and the interests of the international community in global environmental protection.

The 1991 Meeting of the Group of Legal Experts to Examine the Concept of the Common concern of humankind in Relation to Global Environmental Issues (Attard, 1991) came to the following clarifications and conclusions:

- The common concern of humankind is not a rule of general international law but might develop into a principle of customary law.
- The '*common concern*' is closely related to other concepts particularly the '*common heritage*', '*erga omnes obligations*', '*jus cogens*' and '*global commons*'.
- The '*common concern*' was accepted as a concept because it avoids the controversies of the '*common heritage*' concept.
- In International Law, the common concern of humankind is an area akin to that of '*public law*' in domestic legal systems.
- International law is changing in a similar way to the emergence of the distinction between public and private law in domestic jurisdictions.
- Community interests (like public interests) are overtaking reciprocal and bilateral relations in international law.
- It is hard to define the common concern of humankind concept, particularly as '*concern*' could apply to the '*causes*' as well as to the '*responses*' to the problem. '*Mankind*' implies intergenerational rights, however it is difficult to consider generations as the subjects of international law.

Timoshenko (1991) establishes that '*common concern means common actions to achieve common goals*,' as such the '*concern*' element leads to the obligation to take action and so forms the basis for establishing legal obligations. These concerns developed as a result of varying contributions to environmental deterioration from different countries. So countries have common but differentiated responsibilities as far as their actions to remedy environmental degradation are concerned (Commission on Sustainable Development, CSD-1996). The development of human rights law to protect individuals beyond the context of

armed conflict, and international criminal law, in which individuals are prosecuted for the most serious crimes against the international community, can also be seen as reflections of some common concerns of humanity.

The Paris Agreement has been widely hailed as a giant step forward in combating climate change, although the only gain from the Paris Agreement appears to be in endorsing the phrase of “common concern of humankind”, but not so much the principle. If climate change is a common concern of humankind argue Bowling et al (2016), then the international community ought to adopt certain strategies to address it, which has hardly been the case to this day’

Whereas the Paris Agreement requires all parties to set and strive towards successive nationally determined contributions (NDCs) of greenhouse gas reductions, Bowling et al. (2016) observe that at the same time, it instructs developed countries to assist developing countries, ‘*recognizing that enhanced support for developing country Parties will allow for higher ambition in their actions,*’ inferring common concern as a shared responsibility Robert Stavins (2015) notes that this is an improvement over the Kyoto Protocol (1997), under which the ‘*common but differentiated responsibilities*’ model was used to excuse developing nations from cutting their emissions. Given that each state sets its own NDCs, Stavins (2015) considers the universal applicability of monitoring and reporting requirements to be crucial to the success of the agreement.

The CBD includes a strong emphasis on national sovereignty, but this emphasis is offset by the idea that the conservation of biodiversity is a common concern of humankind. Because ‘*most components*’ of biological diversity have tended to be located within national borders, as have activities that are likely to affect biodiversity, national action plans represent a significant focus for operationalizing CBD mandates, argue Mongera and Tsioumani (2010). Earlier, Mgbeoji (2003) concluded a discussion by stating that:

Although state sovereignty over plant genetic resources reigns supreme, other States have a legitimate right of ‘common concern’ on how those resources are conserved and exploited.

Trindade and Attard (1991) argue that the basic implication of the common concern of humankind revolves around States accepting the responsibility and duty to cooperate to ensure that both climate and biological diversity are protected for the benefit of present and future generations. It can be further implied that States should ensure the role of stewards or trustees with duties to present and future generations, as elaborated upon by Brown-Weiss, (1989). Shelton (2009) also observes that such evolution should be seen as reflecting awareness of the general depletion of natural resources and of the threats to the environment, awareness that is increasing the pressure to adopt broad measures in the interest of present and future generations.

According to Glowka et al. (1994), the concept, ‘*implies a common responsibility to the issue based on its paramount importance to the international community as a whole*’. It can be distinguished from the common heritage of humankind because the common concern of humankind is not restricted to areas beyond national jurisdiction.

Looking at the concept from a different angle, more as an international environmental law issue than a purely moral or ethical one, and referring to Justice Weerantry's ruling in the Gabčíkovo-Nagymaros Project (Hungary/Slovakia(1997), Shelton (2009) quotes from the summing up:

We have entered an era of international law in which international law subserves not only the interests of individual States, but looks beyond them and their parochial concerns to the greater interests of humanity and planetary welfare...International environmental law will need to proceed beyond weighing the rights and obligations of parties within a closed compartment of individual State self-interest, unrelated to the global concerns of humanity as a whole.

Frank Biermann (2002), suggest that the CCH model also includes a principle of '*international environmental solidarity*.' This principle requires developed States to assist developing States, financially and otherwise, in their efforts to address common concerns of humankind, including by transferring needed technology. When developing nations must change their policies or enact new ones in order to combat a problem of common concern, argues Biermann, they may face disproportionate economic burdens. The author also points to the 1990 modifications to the Montreal Protocol, which specified that developed nations must do everything possible to effect the transfer of high-quality, environmentally safe technology to developing nations '*under fair and most favorable conditions*.' Similar language occurs in the UNFCCC. Biermann (2002) concludes that under the common concern regime, the answer to this problem is not to relax the standards for developing nations, but to require developed nations to assist them meet objectives that has been set globally in response to a serious problem.

Some scholars also identify international financial cooperation as the manifestation of the common concern language employed in the CBD. Morgera and Tsioumani (2010) argue that:

Financial cooperation under the CBD is thus seen as an expression of the common concern for biodiversity conservation.

Xiang and Meehan (2005) also suggest that the designation of biodiversity, climate change, and desertification as common concerns of humankind forms the basis of the rationale for financial cooperation in the three Rio Conventions (CBD, UNFCCC, and Convention to Combat Desertification). In Article 20, the CBD requires that developed countries:

Shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfill the obligations of this Convention and to benefit from its provisions and which costs are agreed between a developing country Party and the institutional structure referred to in Article

Since 1992, there has been only limited attention to the concept in other areas of concern until recently. Scholarly writing has proposed that access to and quality of fresh water should be viewed as a common concern of humankind, and there are incipient efforts to explore its application more broadly in other fields (Brunnée (2006; 2012), Bowman (2010), Brown-Weiss. (2012), Jaeckel (2013), Sifonios (2018), Ahmad (2021a;b). Brown-Weiss believes that the international legal doctrine of the common concern of humankind, which was set forth for climate change and biodiversity in 1992, should be extended to the global commons, so that humanity explicitly recognize its responsibilities for conserving the commons. The author further prescribes that the global commons should be viewed through two distinct lenses:

1. The intergenerational lens, which is long-term ranging from the next generation to decades or even centuries hence; and

2. The kaleidoscopic lens, which is a bottom-up approach focused on the actions of those who affect the commons and are affected by it.

According to Brown-Weiss (2014), our planet has now become in effect a global commons, and since traditionally a commons constitutes an area to which one cannot prevent access to it, the atmosphere, oceans, the ocean-atmospheric system and the ozone layer have all turned into a global commons, and a common concern for humankind.

In support of the philosophy of non-appropriation and shared benefits of Chavarro (2013), Brown-Weiss (2014) concludes her study of Nature and the Law by stating that:

To view the Earth as a global commons that we all share does not require that we regard it as common property that we own.

Concluding his analysis and discussions of the principle, Soltau (2016) stresses that it should encompass all aspects of the global environment that, by virtue of their significance and the need for collective action to protect them, have been designated as common concern of humanity, either in treaties or through decisions of the United Nations General Assembly, or elsewhere. The common concern of humankind, continues, Soltau, should reasonably be described as:

A principle of international environmental law against the interlinked backdrop of poverty eradication, economic development, energy availability and use, and climate change.

Picking up from the conclusion of Soltau (2016), the discussions of Schäli (2021) points out that while concentration of discussion regarding CCH appears to have concentrated around biodiversity and atmospheric pollution (GHC emissions), other areas to which the principle aptly applies should be discussed. Schäli examines the massive accumulation of marine litter, internationally recognized as one of the most pressing environmental concerns of our time, Identifying existing obligations regarding plastic pollution, as one of the pillars of the principle, Schäli explores the potentials of the principle to attempt at reinforcing global efforts to mitigate marine plastic pollution, arguing that plastic pollution, as a common concern of humankind, should urge states to cooperate more closely.

Discussing issues associated with land degradation and arguing that such degradation should also be a common concern for humanity, Vrdoljak and Lenzerini (2014) examines how International law has for long been dominated by the State, even when it has become apparent that such a bias has proved unrealistic and untenable in a contemporary world where the notion of common goods challenges such dominance. These common goods, in terms of values (human rights, rule of law, etc) or domains (the environment, cultural heritage, space, etc) give rise to an emergent international community beyond the society of States and the attendant rights and obligations of non-State actors.

By regarding the issue of land degradation as a common concern of humankind in the same way prescribed in the in the CBD and UNFCCC, Hannam and Boer (2019) propounds that a conceptual shift may be achieved in order to accord this issue the same weight. Arguing that it would make sense for states sharing a common land system to manage that system as a single ecological unit notwithstanding national boundaries, the authors point out that The Protocol for the Implementation of the Alpine Convention (1991) is the only one that carries the clout of hard laws, while others such as the Revised World Soil Charter (2014), SDG 15 (UNSDGs-2015) and the Revised African Convention on the Conservation of Nature and Natural Resources (2017) are mere soft laws with no enforcement mechanisms.

Beyleveld (2021) proposes addressing changes in economic distributions and unequal distribution of wealth as yet another common concern for humanity. Beyleveld argues that the light of current economic globalization, rebalancing the welfare of humankind through international coordination and cooperation, actions necessary to resolve the growing economic inequality within states and globally. Recognising new common concerns of humankind has become a necessity, as has been argued by Brown-Weiss (2014) and Schäli (2021) and the potential and utility of recognising a distributional common concern, argues Beyleveld, justifies itself as constitutive element of common concerns.

The extensive and sometimes irrational use of pesticides, their negative effects on human health, biodiversity and environmental degradation in general does not appear to have caught the attention of scholars as a common concern for humankind. Bernardes et al. (2015) have extensively discussed the serious drawbacks of pesticide on human health and the environment, revealing that more than 1000 active ingredients are marketed as insecticide, herbicide, and fungicide, and they conclude that:

The best pesticide policies need to reconcile environmental concerns with economic realities.

Hilal Elver and Baskut Tuncak (2017), Special Rapporteurs of the UN declare that given the scale of the impacts of pesticides, as well as the inappropriate shifting of blame and denials by the Agro-Industry of existing hazards, calls for a global treaty to regulate the vast majority of them throughout their life cycle. The Rapporteurs associate the harms caused by these compounds more to a human rights issue, and recognize the existence of a critical gap in the human rights protection framework, not so much as a common concern for humankind. They do however express concern about aggressive, unethical marketing tactics that remain unchallenged, and huge sums spent by the powerful chemical industry to influence policymakers and contest scientific evidence.

The discussions of Brühl and Zaller.(2019) concentrate on the environmental caused by pesticides, stressing on biodiversity decline, and omitting the issue of being a global concern. Justice Pesticides (2021) reports some 417 internationally registered pesticide-linked litigations, cases, with mention of the first and most famous successful case law relating to the decision of the Lyon Civil Court (2012) against Monsanto. So far, rather than a cause for human concern, pesticides remain one of the unresolved issues in international environmental law.

Attempting to take another route and analyzing how environmental rights could be linked up with the principle of common concern, Horn (2004) believes that since there is already evidence that an international right to environmental protection is emerging at the international law level, the possible application of this right to CCH could provide an alternative legal route for protecting the environment. The concept of the common concern of humankind, argues Horn, could link other environmental concepts (sustainable development, the precautionary principle and intergenerational and intragenerational equity) into the operation of this human right.

Horn (2004) supports her arguments by referring to the concept of a human right to a healthy environment developed from the first principle of the Stockholm Declaration (1987) which states that:

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.

Horn (2004) further argues that the common concern of humankind has been linked to areas of the global commons and also to areas falling solely within State jurisdiction regarding the global commons, including the UNFCCC declaration of 1992, and the CBD (1992). Alternatively, suggests Laura Horn (2004), some system that includes an ombudsperson may achieve following objective:

- Application of the concept to environmental problems as well as specifically to protection of the climate;
- The ‘equitable sharing’ concept as a subsidiary concept to the common concern of humankind, particularly in respect of climate change.
- Imposes a burden on developed countries proportional to their past or present responsibility for the deterioration of the atmosphere.

There is indeed an implication in this principle that a healthy environment is necessary for the appreciation of other human rights, and according to Shelton (1991), many national constitutions now include the right to a healthy environment and to conservation of the environment. Shelton (1991; 2006) finds that there may be the possibility of formulating a new human right to an environment that is not defined in purely anthropocentric terms, an environment that is safe not only for humans, but one that is ecologically-balanced and sustainable in the long term. By definition, a common concern requires international action and necessitates new forms of law-making, compliance techniques and enforcement.

Shelton (2009) proposes that the right and duty of the international community to act in matters of common concern must be balanced with respect for national sovereignty. States retain sovereignty subject to the requirements of international law developed to ensure the common interest. Other domains of international law, including trade and diplomatic relations, are instrumental to achieving this common interest of humanity. Shelton bases her arguments on the fact that national legal systems and international law have long recognized common ownership of or equitable interests in shared resources. As Jutta Brunnee has described it ‘*cooperative facilitation of compliance*’ has been regarded as the primary objective of the majority of existing compliance procedures, clear in the Montreal Protocol procedures, and several other international instruments..

The discussions of Bowling et al. (2016) argue that to face a shared problem, a CCH designation should at least express the need for international cooperation through strong global institutions, as proposed by Biermann (2002). International administrative or governing bodies that act upon issues of common concern should be equally accountable to all member nations, because of the shared nature of the problem, as recommended by Shelton (2009). Since problems of common concern are almost by definition those that will have long-lasting adverse effects, potentially devastating to future generations, Bowling et al. (2016) finds that CCH should ensure a strong focus on intergenerational equity, which, during negotiations for the Convention on Biological Diversity and taking note of the concept of common concern of humankind, the view of the negotiators was that ‘*it implied intergenerational equity and fair burden sharing.*’

Although ‘*common concern of humankind*’ or similar phrasing does not occur in any case that has been presented to the International Court of Justice (ICJ), the ICJ has clarified that many of the same principles that motivate ‘*common concern*’ in an environmental context have risen to the status of customary international law. For example, the 1997 Gabcikovo-Nagymaros Project case highlighted the obligation to carry out environmental impact assessments. In this dispute between Slovakia and Hungary, the ICJ reasoned that both sides had, to some degree, breached their obligations under a 1977 treaty concerning the construction of a series of locks. In its decision, the ICJ implied that this reconciliation has become one of the standards which States must consider before planning new activities or carrying out existing commitments, particularly in an international or trans-boundary context.

However, the 2017 UN Litigation Report identified 884 climate-related cases in 24 countries, including 654 cases in the United States and 230 cases in all other countries combined. By July 1 2020, the UN reports that the number of cases has almost doubled to at least 1,550 climate change cases filed in 38 countries (39 including the courts of the European Union), with approximately 1,200 cases filed in the US and over 350 filed in all other countries combined. Of consequence is the 2019 ruling in the Urgenda Foundation v. State of the Netherlands, which gave binding requirements for the state of the Netherlands to address climate change, leading to a growing trend of activist cases successfully being won in global courts (discussed by Germanos, 2021)

Discussing the legal aspects of the concept, Chavarro (2013) explains that international law was conceived to regulate relations between states; and that those relations are usually based upon the reciprocity principle. International environmental law plays an important role in preserving and conserving the commons, governing the conduct of states, and, to an extent, the actions of others actors in relation to the commons, declares the author. Chavarro (2013) finds at least four characteristics or elements within the principle, namely:

1. Non-appropriation;
2. Shared benefits;
3. International management; and
4. Exclusively peaceful use.

Taking the common concern into the realms of international environmental law Cottier and Ahmad (2021) discuss how the notion leads to the creation of a legal system whose rules impose duties on society as a whole and on each individual member of the community. Almost all national constitutions proclaim fundamental human rights and freedoms. and require the government to respect and ensure those rights. Increasingly, similar provisions are included to secure environmental protection. Both Chavarro (2013) and Cottier and Ahmad (2020) concur that:

Basic obligations under the principle of 'Common Concern of Humankind' comprise not only that of international cooperation and duties to negotiate, but also of unilateral duties to act to enhance the potential of public international law to produce appropriate public goods.

Tracing the background and origins of common concern of humankind, Cottier (2021) elaborates the legal framework and normative components of a future principle of CHM. Even when its contours remain vague and undetermined, Cottier suggests the possibility that in future the principle could emerge in a process of claims and responses, consisting of essentially three dimensions:

1. Problems actually or potentially posing a threat to international peace and stability - and thus in need to be addressed - entail obligations to consult and cooperate, beyond current disciplines of general public international law.
2. It entails obligations to implement international obligations and commitments, in addition to domestic law which in the field, may deploy extraterritorial effects in addressing the shared problem at hand.
3. The principle obliges states to act and take countermeasures, subject to proportionality, in response to free-riding and evasive states.

Cotier (2021) concludes that the principle of Common Concern should not be limited to international law, but should also be comparatively effective within sovereign states and federation of states in addressing and resolving pressing shared problems. The author propounds that the principle has the potential to become an important building block of transnational federalism and multi-level governance, and to assist restructuring different areas of public international law 'seeking greater cooperation and commitments in addressing pressing and shared regulatory needs.'

The discussions of Soltau (2016), Cottier (2021) and Ahmad (2021a;b) explain why basic obligations under the principle of 'Common Concern of Humankind' should comprise not only that of international cooperation and duties to negotiate, but also of unilateral duties to act to enhance the potential of public international law to produce appropriate public goods. As such the authors propose:

- Compilation the history of origin, evolution and relevant literature on the notion of the Common Concern of Humankind,
- Presentation of a forward looking doctrine of Common Concern of Humankind and expert assessments thereupon, and
- Including an array of case studies that put the doctrine into practice in different areas of international law

Analyzing the present position of the common concern of humankind in existing concepts and treaties of international environmental law, Kenig-Witkowska (2021) concludes that issues relating to common problems and actions beyond national jurisdictions and involving the joint responsibility for their solution should follow some other route. The author finds that the environment has a global character and that a piecemeal approach to its protection will not contribute to its conservation. However, after examining the principle of solidarity in international environmental law across its breadths, Kenig-Witkowska (2021) finds that no one should have any doubt that there is a need to formally recognize the principle of solidarity, which already now plays the role of a qualifier for the classic principle of cooperation in the field of environmental protection.

However, the bottom is that the words of the World Commission on Environment and Development apply just as well today as they did in 1987:

We are united by a common concern for the planet and the interlocked ecological and economic threats with which its people, institutions, and governments now grapple.

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Concept of Common Heritage of Mankind

When first introduced, the common heritage of mankind (CHM) was a controversial concept, and it remains so to this day. This controversy includes issues of scope, content and status, together with CHM's relationship to other legal concepts. Some commentators consider it out of fashion due to its lack of use in practice, resulting in its rejection by modern environmental treaty regimes. In contrast, Weiss-Brown (1989), Taylor (1998; 2011; 2013), and Baslar (1997; 1998) have extensively and positively discussed its merits in international environmental law, and consider it a general principle of international law with enduring significance.

However, the discussions of Edwin Egede (2014) question whether this concept is a legal one or merely a political or moral idea. Further, Egede refers to disputes as to whether it connotes communal ownership or merely joint management of global commons that are held to be CHM. Whereas the concept initially targeted the open oceans, it has been also been expanded to other domains, such as outer space and the Moon, Antarctica, human rights, human genomes, and plant genetic resources, and has been closely associated with the Concept of Common Concern of Humankind.

There have been efforts to de-link the CHM concept from that of UNESCO's National Heritage (2011; 2016), and as such the quest for an implied definition has been ongoing. For a comprehensive definition of the concept of Common Heritage of Mankind (CHM), Kemal Baslar (1998) proposes one in his discourse on the concept, stating that:

The Common Heritage of Mankind principle is a philosophical idea that questions the regimes of globally important resources regardless of their situation, and requires major changes in the world to apply its provisions.

Analyzing the concept, Borgese (2002), concludes that it should be considered as:

An ethical concept central to a new world order, based on new forms of cooperation, economic theory, and philosophy. This history is important to elucidating the ethical core of CHM: the responsibility of humans to care for and protect the environment, of which we are a part, for present and future generations.

Wikipedia concocts yet another definition that enshrines more than one objective:

Common heritage of mankind (also termed the common heritage of humanity, common heritage of humankind or common heritage principle) is a principle of international law that holds that defined territorial areas and elements of humanity's common heritage (cultural and natural) should be held in trust for future generations and be protected from exploitation by individual nation states or corporations.

Mankind, as a subject in international law appears in the Preamble of the United Nations Charter, the Preamble of the North Atlantic Treaty (1949), and the Treaty on the Non-Proliferation of Nuclear Weapons (1968; 1972).. The concept of '*Mankind*' is also mentioned in outer space treaties (UNTS, 1972; 1975), and have been analyzed and discussed by Gyula (2004). The concept, however, was first mentioned in the preamble to the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict and reiterated at the First UN Conference on the Law of the Sea by Prince Wan Waithayakon of Thailand in 1958.

The concept, however, has had a longer history. An ambitious 1948 draft World Constitution provided that the Earth and its resources were to be the common property of mankind, managed for the good of all. Concern about the use of nuclear technology and resources for

military and peaceful purposes also led to an early proposal that nuclear resources be collectively owned and managed, and not owned by any one state, which obviously never worked. Traces of CHM are also found in the UN Outer Space Treaty (UNOOSA-1967), which governs state exploration and use of outer space, the moon, and other celestial bodies. CHM, however, achieved prominence in the context of the evolving law of the sea. The 1967 World Peace through Law Conference (Athens-1963) referred to the high seas as ‘the common heritage of mankind’ and stated that the seabed should be subject to UN jurisdiction and control.

The 1959 Antarctic Treaty recognises in its preamble that preserving Antarctica for peaceful uses is ‘*in the interest of all mankind*’. The Treaty also provides a cooperative mechanism, wherein the ‘*Consultative Parties*,’ that is states carrying out concrete activities in Antarctica, have special conservation responsibilities. The Madrid Protocol of 1991 and its Annexes introduced environmental concerns into the Antarctic System (Madrid Protocol, 1991). The Protocol established, inter alia a moratorium on mining in Antarctica and, thus suspended *sine die* the application of a previous treaty, the Wellington Convention (CRAMRA, 1988), containing a detailed regulation on the exploitation of Antarctic mineral resources.

The speech of the Maltese ambassador Arvid Pardo (1967) delivered to the 1967 United Nations General Assembly was probably the first effort towards emphasizing on the concept of Common Heritage, even if the objective was limited to the deep seabed beyond national jurisdiction and the resources contained therein to be declared the common heritage of mankind. This speech was motivated by reports of rich resources in this part of the oceans, and by the possibility that the rich states with the technology to do so would unilaterally exploit the resources to the exclusion of poorer states. Later, negotiations of the 1982 Law of the Sea Convention (UNCLOS III) and other legal developments have since paid due attention to the concept of CHM.

One early influential CHM document was the Declaration of Principles, adopted by the U.N. General Assembly in 1970 (UN-GAOR, 1970). Paragraph 1 of this Declaration provides that:

The sea-bed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction (hereinafter referred to as the area), as well as the resources of the area, are the common heritage of mankind.

Over the years, the concept has moved in leaps and bounds with little coherent or connected strategies or policies. In 1970, the United Nations General Assembly Resolution 2749, the Declaration of Principles Governing the Seabed and Ocean Floor, adopted by 108 nations, stated that the deep seabed should be preserved for peaceful purposes and is the ‘Common Heritage of Mankind (UN, 1970). In 1982, the Common Heritage of Mankind concept was stated to relate to ‘the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction’ under Article 136 of the United Nations Law of the Sea Treaty (UNCLOS, 1982). In order to protect these sites, in January 2003 the World Conservation Union (IUCN) hosted a workshop in Spain (IUCN, 2003). The workshop’s purpose was to try to establish a framework for establishing and protecting Marine Protected Areas (MPAs). Both the IUCN and the World Wildlife Fund recognise that the current legal regime in the areas beyond national jurisdiction left a ‘*critical gap*’ in the protected areas system and that high seas protected areas were ‘*urgently needed*’ and has been recently discussed in more details and relation to the present context by Gownaris et al (2019). It is to be noted that much concentration has been focused on the seabed, and not so much about ocean biodiversity and ocean renewable resources.

Associating the concept with Hardin's 'Tragedy of the Commons' Common heritage of mankind (1968), and his own Treatise on '*The Tragedy of the Common Heritage of Mankind*', Scott James Shackelford (2009) defines it as:

A principle of international law which holds that defined territorial areas and elements of humanity's common heritage (cultural and natural) should be held in trust for future generations and be protected from exploitation by individual nation states or corporations.

It is interesting to note that for the first time the notion of risks represented by corporations is being included in a definition of the concept. Payoyo (1997) argues that the common heritage of humanity principle in Part XI of the Law of the Sea Treaty (UNCLOS-1982) should favour developing states (the voice of conscience in establishing it), and not merely in some transient '*affirmative action*' manner. Payoyo claims that the 1994 Implementation Agreement facilitated control by industrialised countries of the International Seabed Authority (ISA), allowing access by the private sector to the deep sea bed and inhibiting constructive dialogue on sustainable development. It appears Payoyo's prophecy is today becoming a reality.

International conservation law, in particular, has failed to recognise living resources in general or migratory species in particular as part of the CHM, in terms similar to the UNCLOS-CHM regime. The '*International Undertaking on plant genetic resources for food and agriculture*' adopted by the FAO (1983), for example, declared these resources to be 'a common heritage of humankind' However, the subsequent International Treaty, adopted under FAO auspices in 2001, abandoned the CHM concept in favour of the concept of '*common concern of all countries*' (FAO, 2001). Similarly, the CBD (1992) does not have a CHM clause, despite the World Commission on Environment and Development (Brundtland Report-WCED, 1987) suggestion, in its report '*Our Common Future*', to draft a global convention on wild species qualifying the same as '*a common heritage*' (WCED, 1987). It is true that the concept of CHM was utilised in the WCED (1987) document in a persuasive sense, trying to insinuate that the management of wild species should imply:

1. The collective responsibility of states (though not collective rights), while respecting the state sovereignty over natural resources;
2. Equitable sharing of revenues; and
3. The establishment of a trust fund to collect contributions and support conservation programmes.

Actually, a significant number of global and regional treaties on wildlife concluded in the 1970s and 1980s have been aligned with the CBD (1992), either through formal revision or by means of interpretation. However, the discussions of Scovazzi (1999) propose that the CBD's main purposes and objectives concern the management of MGRs in three distinct and inter-linked ways:

1. Biodiversity conservation,
2. The sustainable use of biodiversity components, and
3. A fair and equitable sharing of the benefits deriving from the utilization of genetic resources.

Scovazzi (1999) may have been predicting the formation of the business-oriented World Ocean Council (WOC) whose mission is defined as:

The WOC provides responsible companies from the Ocean Business Community the ability to collectively address cross-cutting ocean sustainable development challenges and shape the future of the ocean by engaging and working with other ocean stakeholders.

Mixing business with sustainable conservation of resource, renewable or non-renewable, appear to be a more than ambitious objective.

The CBD (1992) eventually adopted the concept of ‘*common concern of humankind*’, which also found its way into the UN Framework Convention on Climate Change (UNFCCC, 1992). The CBD, with its holistic approach to biodiversity conservation, offered a corrective to the excessive fragmentation in international biological diversity regulation. Both the CBD and the UNFCCC steer clear of the concept of CHM, probably to avoid overload of responsibilities. The chosen solution was a framework convention establishing guiding principles on the subject, which was expected to have, in addition to normal treaty effects, the ability of influencing the implementation of the pre-existing legal instruments. The CBD applies to both terrestrial and marine resources, with differences depending on whether the resources lie in areas under or beyond national jurisdiction. In marine areas, application must be consistent ‘*with the rights and obligations of states under the law of the sea*’ (UNCLOS, 2004) This proviso is interpreted in various ways, and not necessarily as a without-prejudice clause in favour of UNCLOS; it refers to specifically the rights and obligations of the states, rather than the law of the sea in its entirety as discussed and proposed by Wolfrum and Matz (2000).

In 2007, the International Union for Conservation of Nature (IUCN, 2007) and its World Commission on Protected Areas hosted an international Marine Protected Areas (MPAs) Summit in Washington DC that resulted in a global Plan of Action, within which Marine World Heritage was identified as a key global strategic priority, through the Bahrain Action Plan for Marine World Heritage (2009), reported and discussed by Laffoley and Langley (2010), and concluding that:

It is critical that actions now commence to consider what might be protected in the open ocean and deep sea beyond national jurisdiction so that when mechanisms are identified, there is information available of how the Convention can play a similar role to the one it has played for areas currently under its jurisdiction.

In a UNESCO position paper of 2016, consideration is given to how exceptional sites could be afforded the same level of recognition and protection that are currently given to natural and cultural sites under the 1972 World Heritage Convention. UNESCO (2016) decides now is the time to expand the Organization’s horizons and bring such areas into consideration for their potential Outstanding Universal Value (OUV), but fail to give any reasons why it was not done earlier.

In December 2017, The United Nations General Assembly (UNGA) launched an intergovernmental conference (IGC) to formally negotiate a new treaty under UNCLOS on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. Since 2018, states have been negotiating a new treaty on the conservation and sustainable use of marine biodiversity beyond national jurisdiction (BBNJ) to fill legal gaps in the United Nations Convention on the Law of the Sea (UNCLOS) related to BBNJ, including the four elements discussed by Tessnow-von Wysocki and Vadrot (2020):

1. Marine genetic resources (MGRs);
2. Area-based management tools (ABMTs), including marine protected areas (MPAs);
3. Environmental impact assessments (EIAs); and
4. Capacity building and the transfer of marine technology (CB&TT)

Vito De Lucia (2019) finds no end in sight for the eternal discussions that have been going on for the past 3 decades or so, and prefers to see an ecosystem approach to managing and utilizing resources of the open oceans. However, Gjerde et al.(2016) and Tessnow-von Wysocki and Vadrot (2020) are amongst those finding that the BBNJ treaty is expected to be

one of the most significant agreements protecting the marine environment in the High Seas, which constitute two-thirds of the world's ocean. Throughout her discussions, Aline Jaeckel (2020) finds that there are already too many divergent views as to how to strike a balance between resource exploitation and resource protection and conservation, and already several delegations at the Preparatory Committee have queried the use of the notion of acceptable harm to the marine environment and have stated their unwillingness to accept it in the absence of knowledge of the criteria that would be used to determine it. The discussions of Folkersen et al. (2019) have clearly demonstrated that while it is clear that any seabed mining will cause ecological harm, other delegates noted that the concept of '*serious harm*' could '*result in utilizing an economic rather than ecological basis in the formulation of regulations,*' a possibility discussed by Ranganathan. (2019) in a treatise on what he terms: '*Ocean Floor Grab.*'

Escalating global ecological degradation and ongoing inability to arrest the so-called tragedy of the commons (Hardin 1968) will ensure the continued relevance of the common heritage concept, despite the difficulties surrounding its acceptance by states. Evidence for this can be found in a range of efforts to apply CHM to natural and cultural heritage, marine living resources, Antarctica and global ecological systems such as the atmosphere (Taylor 1998) or climate systems. Taylor (2011) finds the concept to be both an ethical and a general concept of international law, since it establishes that some resources belong to all humanity, that they should be available for everyone's use and benefit, including future generations and the needs of developing countries.

Concentrating her arguments on the concept as applied to the Deep Seabed, Outer Space and Antarctica, Jennifer Frakes (2003) identified five core components of the Common Heritage of Humanity concept.

1. There can be no private or public appropriation; no one legally owns common heritage spaces.
2. Representatives from all nations must manage resources contained in such a territorial or conceptual area on behalf of all since a commons area is considered to belong to everyone; this practically necessitating a special agency to coordinate shared management.
3. All nations must actively share with each other the benefits acquired from exploitation of the resources from the commons heritage region, requiring
 - a. Restraint on the profit-making activities of private corporate entities;
 - b. Linking the concept to that of global public good.
4. There can be no weaponry or military installations established in territorial commons areas.

However, and according to the discussions and propositions of Baslar (1998) and Taylor (2011), there are a number of core elements, debatable in some instances that need to be mentioned, including:

- No state or person can own common heritage spaces or resources (the principle of non-appropriation). They can be used but not owned.
- When CHM applies to areas and resources within national jurisdiction, exercise of sovereignty is subject to certain responsibilities to protect the common good.
- The use of common heritage shall be carried out in accordance with a system of cooperative management for the benefit of all humankind.
- There shall be active and equitable sharing of benefits (financial, technological, and scientific) derived from the CHM.

- CHM shall be reserved for peaceful purposes (preventing military uses).
- CHM shall be transmitted to future generations in substantially unimpaired conditions.

In recent years, concludes Baslar (1997; 1998), these core elements have ensured that CHM remains central to the efforts of international environmental lawyers. It is recognized as articulating many key components of sustainability. It therefore challenges traditional international law concepts such as acquisition of territory, sovereignty, sovereign equality, and international personality, as well as the allocation of planetary resources and consent-based sources of international law.

States might be reticent to embrace the possible applications of CHM, but international law is no longer the sole province of states and international lawyers. Global civil society is playing an increasing role in the development of, and advocacy for, concepts such as CHM. It is linked to renewed interest in cosmopolitanism, global constitutionalism, global ecological citizenship and justice, and the search for shared ethical principles to guide progress towards a more peaceful and sustainable future for all, as prescribe in the Earth Charter Initiative (2000).

In an ecological and generational context, it is possible to argue that the Earth itself is a global commons shared by each generation and that CHM should *‘extend to all natural and cultural resources, wherever located, that are internationally important for the well-being of future generations,’* elaborated upon by Weiss-Brown (1989) and Taylor (1998). It also recognizes the interdependence of ecosystems and acknowledges human use. It therefore has much in common with ecosystem management approaches that aim to move away from piecemeal resource-specific management regimes. CHM is also relevant to the wider debate on transforming the role of the state from exclusive focus on protection of national interests to include responsibility to protect ecological systems, wherever they are located, for the benefit of all.

In his essay *‘Perpetual Peace’*, Immanuel Kant (1999) claims that the expansion of hospitality with regard to *‘use of the right to the earth’s surface which belongs to the human race in common’* would *‘finally bring the human race ever closer to a cosmopolitan constitution’*. The commons should be preserved for the benefit of future generations to avoid a *‘tragedy of the commons’* scenario. Discussing global commons, Schrijver (2016) sustain that it can further be argued that certain global natural assets, such as the climate system, the air, water, seeds, winds and sunshine, could also be viewed as global commons in view of the vital ecological functions that they perform for the Earth and its population.

In another study, Noyes (2011) finds that the international community has already developed several different types of legal regimes to govern natural resources, and that these brush on the principle of CHM. In general terms, these include:

- According states exclusive permanent sovereignty over natural resources, a system associated with territoriality;
- Sharing resources, as in the cases of international rivers and migratory species;
- Recognizing common property rights, as in the case of the high seas, where no one user has exclusive rights to resources and no one can exclude others from exploiting them, but capturing resources results in exclusive property rights; and
- Recognizing property as the common heritage of mankind-or, to use a more contemporary phrase, the common heritage of humankind (CH)-whereby all manage

resources and share in the rewards of exploiting them, even if they are not able to participate in that exploitation.

- The vesting of rights to the resources in question in humankind as a whole;
- Reservation of the area in question for peaceful purposes;
- Protection of the natural environment;
- An equitable sharing of benefits associated with the exploitation of the resources in question, paying particular attention to the interests and needs of developing states; and
- Governance via a common management regime

Some formulations of the CHM principle explicitly provide that protection of the environment entails a sharing of burdens as well as benefits, Baslar (1998) notes that such protection involves an obligation to take into account the interests of future generations, as discussed by Joyner (1986). Since non-peaceful uses of an area could destroy its resources, the peaceful purposes element may also encompass concern with future generations. The equitable sharing of benefits, implying distributive justice, is the most novel and most controversial feature of the CHM principle. This element may imply a sharing or broadening of the base of knowledge about resources. It also encompasses sharing the material benefits or proceeds derived from exploiting resources. Nanda and Pring.(2012) elaborates on how opposition to the benefit-sharing feature, as well as to restrictions on sovereignty, help explain why the CHM principle has not been applied to tropical rain forests or other resources located within national territory.

However, The World Heritage Forest Programme of UNESCO (2011) proposes a framework that can request the implementation of appropriate conservation measures and annually monitor the state of conservation of forests, and the ins and outs of the proposition has been discussed by Kovič Dine (2019), and there has been a growing recognition of forests as global commons (Tarlock 1991; Hooker 1994; Peel 2001). This recognition brings with it the need to regulate forest management at the global/international level, for which REDD+ appears to have been given the responsibility. However, such globalization challenges traditional notions of permanent sovereignty over natural resources, which grants the states the right to freely exploit its forests. Kovič Dine (2019) suggested there may be a need to revisit the current understanding of the concepts of ‘*Common Concern of Humankind*’ and ‘*Common Heritage of Mankind*’ with regards to specific forests as global commons, through the lens of how international laws defines and regulates global commons. Kovič Dine further elaborates on the key international principles which may facilitate recognition of forests as a global commons, but the hurdle of sovereignty will always stand in the way.

Equal access to and sharing of revenues from the utilization of resources from areas beyond national jurisdiction have come into focus also with regard to marine genetic resources (MGRs). State and private interests in prospecting and utilizing these resources are continuously and so are the fields of scientific research and discovery activities, which are for the most part oriented towards commercial use. This situation raises novel and complex legal questions, as elaborated upon by Heafy (2014). Whether adequate principles to govern such activities currently exist under international law remains unclear.

According to some scholars, non-consolidation of CHM in international law is primarily due to the predominance of a ‘*legal positivistic*’ approach taken by jurists, and the excessive weight accorded to the will of the states in the making of international law. The view of such scholars regarding this argument is not entirely convincing argues Heafy (2014), especially if

the underlying idea is that further CHM achievements are only possible by drastically changing the fundamentals of international law.

Discussing the Juridical Status of CHM, Joyner (1986) concludes that the United States has historically argued that the CHM principle is simply another verbal formulation of a freedoms regime, under which no country has sovereignty over a common space but may acquire exclusive property rights in its resources. Brown-Weiss (2014) finds that it is necessary to distinguish the concept from the one specifically developed and primarily used to refer to the deep seabed resources and to outer space. Taylor and Stroud (2013) argue that traditionally the doctrine of common heritage of mankind has been associated with notions of property in the sense that everyone or every State may have a property interest in anything that is so designated.

One may argue that such property could be regarded as “*res communis*” or owned in common. This need not follow, claim Taylor and Stroud (2013), for the 1972 World Heritage Convention provides for States to put natural or cultural sites located within their country on a World Heritage List, and yet that does not mean that the site has become *res communis*. According to the discussions of Blake (2011) and Cullet (2011), the principle of common heritage of humankind is based on the idea that there should be no individual ownership claims over the matter covered. It recognises that all states have a stake in its conservation and sustainable use and seeks to ensure joint management to the broadest possible extent.

The discussions of Ferrajolo (2018) concentrate on how CHM appears to have found new roots in international environmental law and human rights law, but the author feels that this approach may not be effective in practice. Ferrajolo’s conclusion is that while CHM has a great past, its future looks less promising. There are limited prospects of implementation, or of a broadened scope of application. The potential of the CHM to address both prevention of overexploitation and equality issues, discussed by Ridings (2018) and Wang and Chang (2020) has stimulated its mention in intergovernmental negotiations on a new legally binding instrument for the conservation and sustainable use of marine biodiversity beyond national jurisdiction (BBNJ), including access to, and use of Marine Genetic Resources (MGRs).

Earlier, Jaeckela et al. (2017) postulated that The International Seabed Authority (ISA), tasked with conceptualizing the CHM principle in the context of deep-seabed mining, has not yet defined which measures it will take to give effect to environmental aspects of the CHM principle. And even earlier, Kemal Bascar (1998) has stated that the Common Heritage of Mankind principle is a philosophical idea that questions the regimes of globally important resources regardless of their situation, and requires major changes in the world to apply its provisions. In other words, claims Bascar,

The application and enforcement of the common heritage of mankind require a critical reexamination of many well-established principles and doctrines of classical international law, such as acquisition of territory, consent-based sources of international law, sovereignty, equality, resource allocation and international personality."

In an intensive examination and assessment of the CHM concept, Vadrot et al. (2021) find that the governance of marine biodiversity in areas beyond national jurisdiction (BBNJ) lacks a legal framework that would ensure the conservation and sustainable use of the oceans. In order to fill this gap, governments have been negotiating a new treaty under the United Nations Convention on the Law of the Sea. Negotiations have been afflicted by polarisation between two principles:

1. The 'Freedom of the High Seas' (FOS) and
2. The 'Common Heritage of Mankind' (CHM).

Instead of discussing the CHM from a purely legal perspective, Vadrot et al. (2021) recommends doing so through an ethnographic lens. The authors find it has become an ideology for contestation, used as a tool and negotiating technique to challenge deeply rooted inequalities in the current world order. CHM could make a difference if it was integrated into the text as a general principle committing all states to protect and preserve BBNJ for future generations, regardless of their imminent economic value as commercial assets, conclude the authors.

Examining the present state of the world, Denise Garcia (2021) of the Toda peace Institute (Japan), is concerned about intensifying climate crisis, melting polar ice caps, ocean acidification, record temperatures, all pointing to one direction: humanity is exceeding the planetary boundaries. The authors observe that Multilateral processes are now underway to update the outdated Global Commons legal architecture. As such Garcia finds that global commons law is an uncommon realm within international law because it serves a distinctive purpose and is characterised by a commonality of interests that transcend the state. To clarify what global commons law means, Garcia (2021) assigns to it three main purposes:

1. Guardianship of future generations;
2. Setting norms as the foundation for peaceful relations; and
3. Creation of a comity for peace and settling disputes peacefully.

Garcia further contends that the global commons law norms should have three key purposes:

1. Providing common ground for peace and cooperation;
2. Bridging the gap between the rich and poor countries; and
3. Preventing future harm.

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Concept of Intergenerational Equity

Karl Marx proposed that all communities were only in possession, or users, of the Earth, with obligations to conserve it for future generations (discussed by Megill, 1970). African customary law is striking in that it generally recognizes that we are only tenants on Earth, and thus have obligations to both past and future generations to care for the Earth (discussed by Ndulo, 2011). Both the common law and civil law legal traditions also reflect the perspective of a trust to be used and cared for by each generation. In the common law tradition, and quoting the work of John Locke, Brubaker (2012), posits that whether by natural reason or by God's gift to Adam and his posterity, humankind holds the planet in common.

We have an obligation not to take more of the fruits of nature than we can use, so that they remain for others to use.

Customary laws and practices of many traditional peoples all over the world also view nature as held in common by the community and thus impose obligations on its use so that it will be available to not only present but also future generations, a reflection on both intra and intergenerational equity even in ancient times. Moving on from the wisdom of the past, Intergenerational Equity (IGE) concept and principle has been creeping into the policy framework of many, if not all, of the existing international organisations, institutions and agreements, but not yet into legal frameworks.

Within international institutions, the principle of IGE is noted in the Stockholm Declaration on the Human Environment (1972), which begins by highlighting that most famous dictum:

....man bears a solemn responsibility to protect and improve the environment for present and future generations.

It further stresses that:

The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

The principle is reaffirmed in the Brundtland Commission Report (WCED-1987), in which, taking intergenerational equity into consideration, sustainable development is defined as:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs, that is without omitting intra and intergenerational considerations.

The report further emphasized that:

Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.

The Brundtland Commission (1987) further emphasized that meeting this obligation of sustainability requires that:

The enforcement of wider responsibilities for the impacts of decisions.....some necessary changes in the legal framework start from the proposition that an environment adequate for health and well-being is essential for all human beings including future generations

Following the Brundtland Report, Agenda 21, adopted at the Earth Summit (UN Conference on Environment and Development (1992), took the form of a non binding action plan of the United Nations with regard to sustainable development. At the same time, the UN published

the Earth Charter (2000), a document outlining the building of a just, sustainable, and peaceful global society. At the subsequent United Nations Conference on Sustainable Development (RIO+20-2012) attending members reaffirmed their commitment to Agenda 21 in a new document: "The Future We Want," a declaration on sustainable development and a green economy, adopted at the Conference without further ado

The 2002 World Summit on Sustainable Development in Johannesburg adopted a Political Declaration and Implementation Plan, including provisions for a set of activities and measures to be taken in order to achieve development that takes into account respect for the environment. In 2015, the United Nations proposed the Sustainable Development Goals, (UN.SDGs-2015), tending to concentrate more on economic development following the model of developed countries, and remaining remote from any environmental, social, cultural or legal considerations or frameworks. It is observed that from the Stockholm Declaration, through to the SDGs, there has been a consistent dilution of incorporating IGE's principles into development frameworks.

Analyzing progress in recognizing the principles of IGE, Vojnovic (1995) finds that sustainability as currently conceived seems unlikely ever to be achieved, due to the existence of entropy, exhaustible resources, and resource scarcity. According to Vojnovic, efforts to ensure equitable access to resources within the current generation is a prerequisite to achieving intergenerational equity. The author concludes that the precise meaning of 'adequacy' should be to a large extent determined by prevailing social, economic, cultural, climatic, ecological and other conditions, while 'sustainability' should incorporate the notion of long-term availability and accessibility, shortcomings that remain unaddressed.

Discussing the evolution of the concept of sustainable development, Sachs (2015) proposes that sustainable development should be defined as a systems approach to growth and development and to manage natural, produced, and social capital for the welfare of their own and future generations. Sachs concludes that:

It appears the concept of sustainable development has developed beyond the initial intergenerational framework to focus more on the goal of socially inclusive and environmentally sustainable economic growth.

Given that sustainable development has taken a new direction, uncontrolled economic growth rather than judicious management of planet and people, Richard Horton (2014) finds that:

The SDGs are fairy tales, dressed in the bureaucratise of intergovernmental narcissism, adorned with the robes of multilateral paralysis, and poisoned by the acid of nation-state failure.

There have been since several severe criticisms of the concept of sustainable development, and following a different route, The International Covenant on Economic, Social and Cultural Rights (ICESCR) links right to food (1999), right to education (1999), right to clean air (1994), right to water (2003), and several other human rights, to sustainable development and equity. The ICESCR (1999) stipulates that the notion of sustainability is intrinsically linked to the notion of human rights, implying that ensuring human rights would also ensure equity to both present and future generations. And further, the ICESCR has the power of enforcement through legal instruments, as exist within the Universal Declaration of Human Rights (1948), and the mandate of the Office of the United Nations High Commissioner for Human Rights - OHCHR.

Discussing the relationship between equity and sustainable development, Maggio (1997) states that:

Proponents of intergenerational equity as a legal norm have emphasized that equitable utilization, and in particular, its '*inter*'-generational dimension, concerning management and utilization of global as well as national resources, is the primary factor defining sustainable development.

The eternal debate appears to be identifying the links between equity and development, with the knowledge that indiscriminate economic development appears to be the cause of more than one problem to humanity and the planet as a whole. Maggio prefers to associate intergenerational equity with sustainable development, which the author considers as:

A distinct objective transcending the rigid confines of conventional views on economic development and environmental protection.

Maggio (1997) supports his argument with the statement of the WCED that describes sustainable development within an intergenerational context rather than focusing on economic growth, and the statement of Brown-Weiss (1993) to the effect that:

The notion that future generations have rights to inherit a robust environment provides a solid normative underpinning for environmentally sustainable development. In its absence, sustainable development might depend entirely on a sense of 'noblesse oblige' of the present generation.

It is interesting to note that one of the United Nations Report of 1990 goes even further by linking procedural rights to environmental decision making and equity by stating in its 1990 Resolution that:

The guarantee of procedural rights in environmental decision-making is necessary to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being.

However, it is noted that the principle of IGE remains to this day a component of environmental '*soft laws*,' except in the few instances where it has supported judiciary decisions in a few countries and cases.

Similarly, the United Nations Rio Declaration of 1992 on the Environment and Development crystallized these obligations to future generations as an emerging principle of international environmental law, highlighting that:

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Progress in that direction appears to be materializing since Judges of the International Court of Justice (ICJ) have increasingly relied on the IGR principle in their decisions, as reflected in Judge Weeramantry's declaration in the 1993 Denmark v Norway case. The judge stressed upon the fact that:

Global jurisprudence supported the notion of equity, with "respect for the rights of future generations, and the custody of earth resources with the standard of due diligence expected of a trustee.

The recognition of the relationship of the principles of sustainable development with those of inter-generational equity has been reiterated by ICJ Judge Cançado Trindade (2010) who also noted that framework environmental policies for the future have also included elements of IGR within its framework.

Within the same effort towards recognizing the principles of IGE, the ‘Institut de Droit International’ (1997) declares in its 1997 resolution on responsibility and liability under international law for environmental damage that:

Impairment of....inter-generational equity, and generally equitable assessment should be considered as alternative criteria for establishing a measure of compensation for environmental damage.

However, what is noted within that declaration is the notion of ‘compensation,’ which brings back the eternal conflict as to whether compensation should be equated to redress, or whether prevention should be resorted to as a more or less permanent prescription.

In defining the principles for a new climate regime, Article 3 of the UNFCCC (1992) provides that:

The parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.

The Paris Climate Agreement (2015) stepped in to reiterate the principle endorsed by the UNFCCC (1992), with a reminder that states:

Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights ... as well as intergenerational equity.

The statement of Horn (2007) to the effect that in order to achieve cooperation to reduce greenhouse gas emissions in the future, it is important to focus upon the role of equity in international environmental law and in the United Nations Framework Convention on Climate Change (UNFCCC). Horn finds that even if the principle of equity remains controversial within international law frameworks, equity can still enable states to consider justice and fairness within the rule of international law.

The discussion of Rayner and Malone (2001) examines the link between poverty and climate change, and proposes that since climate change and policy impacts on the poor do not conform well to instantiating intragenerational and intergenerational equity at either national or international level, climate protection and poverty elimination may be effectively achieved through local-level and global networks. The authors conclude that:

Equity is not just about how societies distribute resources. It is also the basis for generating social capital necessary, alongside economic, natural, and intellectual capital, for sustainability.

A general notion of IGE is also found in the Preamble to the Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters (The Aarhus Convention, 1998).

The concept of ‘In Fairness to Future Generations’ developed by Professor Edith Brown Weiss (1989), elaborates on the doctrine of IGE, and according to the discussions of the author, the doctrine of IGE holds that:

Presently existing human beings are simultaneously beneficiaries of a Planetary Trust passed down from our ancestors, and trustees of the planet for the benefit of future generations.

As such, Brown-Weiss (1989; 1990) postulates three principles:

1. Each generation should be required to conserve the diversity of the natural and cultural resource base, so that it does not unduly restrict the options available to future generations in solving their problems and satisfying their own values, and should also

- be entitled to diversity comparable to that enjoyed by previous generations (principle of conservation of options.),
2. Each generation should be required to maintain the quality of the planet so that it is passed on in no worse condition than that in which it was received, and should also be entitled to planetary quality comparable to that enjoyed by previous generations (principle of conservation of quality), and
 3. Each generation should provide its members with equitable rights of access to the legacy of past generations and should conserve this access for future generations (principle of conservation of access.)

Moving from innumerable declarations to prescriptions, the United Nations University (UNU-1992) proposes several models to defining intergenerational equity in the context of the relationship among generations to the planet Earth:

- The preservationist model, in which the present generation does not destroy or deplete resources or significantly alter anything; rather it saves resources for future generations and preserves the same level of quality in all aspects of the environment.
- The opulence model in which the present generation consumes all that it wants today and generates as much wealth as it can, either because there is no certainty that future generations will exist or because maximizing consumption today is the best way to maximize wealth for future generations.
- The technology model, in which there is not need to be concerned about the environment for future generations, because technological innovation will enable the introduction of infinite resource substitution.
- The environmental economics model, which argues that if proper natural resource accounting were to be performed, present obligations towards future generations would be fulfilled. Economic tools that have been developed today regarding environmental externalities and discounting would be sufficient in the application of ‘green’ economics as presently conceived.

The UNU further proposes two considerations for shaping any theory of intergenerational equity in the context of the natural environment:

1. Our relationship to other generations of our own species, and
2. Our relationship to the natural system of which we are a part.

In their discussions about equity, Martinez-Alier and O’Connor (2001) finds that even before any considerations for ‘*development*,’ leave alone ‘*sustainable development*,’ distributive justice preoccupations existed in all human societies. The authors fail to understand how distributional justice issues became incorporated into discourses and analyses of sustainable development. The authors prefer to focus on the issue of ecological distribution, which according to them refers to the following sorts of questions:

- What is the distribution of the benefits of present patterns of natural resource and environmental exploitation?
- What mechanisms of capital flow, institutional power, technological change, etc., determine these patterns over time?
- Who carries the principal burdens of the unwanted side-effects of resource exploitation and waste disposal?
- Which social groups benefit most, and which suffer most from the impairment of life-support functions and from the loss of environmental amenities resulting from environmental degradation?

- How are these benefits and burdens distributed across societies, across space and time?
- How are these asymmetries valued (or devalued)?

Analysis of ecological distribution also allows the establishing of the important link between inequalities between nations (across space, symbolized by the term North–South) and inequalities or injustices across time-. epitomized by the concept of the ‘*Ecological Debt.*’

The New Delhi Declaration on the Principles of International Law relating to Sustainable Development (WSSD-2002), discussed by Segger et al. (2003), and The International Law Association (ILA) made several declararations the gist of which could be synthesized as:

- The principle of equity is a key component of international law.
- The principle of equity refers to both inter-generational equity and intragenerational equity.
- The present generation has a right to use and enjoy the resources of the Earth but is under an obligation to take into account the long-term impact of its activities
- The present generation has a duty to sustain the resource base and the global environment for the benefit of future generations of humankind.
- The importance of the principle of integration and interrelationship in relation to human rights and social, economic and environmental objectives cannot be disregarded.”

Regarding yet another avenue for protecting the rights of future generations, Hiskes (2005) discusses how, at the request of the NGO Protect the Future, prominent jurist Dr László Sólyom presented a draft law to the Hungarian legislature in 2000 proposing the establishment of an Ombudsman for Future Generations. When the proposal was not acted upon, Protect the Future established its own independent Ombudsman for Future Generations that publishes annual reports parallel to those of Hungary’s official Ombudsman. and in 2008 the unique office of a Commissioner for Future Generations was created. Nesbit and Illés (2015) have discussed the new concept of establishing ‘*Guardians for Future Generations,*’ initiated in the EU, but also gaining acceptance elsewhere.

The concept is based the precinct that the fragility of purely administrative arrangements of many states are not supported by constitutional or legislative instruments, and therefore Guardianship roles focused on sustainable development can be established in law at sub-State level. Some of the countries in prominence over adoption of the concept, discussed by Nesbit and Illés (2015), include:

- The Committee for the Future in Finland, established in 1993,
- The parliamentary Commission for Future Generations in Israel (2001),
- The Parliamentary Advisory Council on Sustainable Development (PACSD) in Germany, created in 2004,
- The Act establishing a high-level committee on the Guardian of Future Generations in Malta (2012)
- Wales: with the creation of the Welsh Commissioner for Future Generations, through the ‘Well-being of Future Generations (Wales) Act 2015,

Discussing intergenerational justice as connected to human rights and environmental justice, Hiskes (2006) argues a novel way that lays the groundwork for a theory of intergenerational

environmental justice based in the human rights to clean air, water, and soil. Three issues foundational to such a theory are explored:

1. The broad question of whether justice is applicable to future (or past) generations in any real sense, or do such issues fall under the rubric of superogation.
2. Can environmental goods properly be contained in a theory of distributive justice at all, since superficially at least, they seem different in kind than the usual objects of justice?.
3. What is the relationship of justice to rights, and how can environmental human rights be included in justice distributions?

The arguments and propositions of Hiskes (2006) have been discussed earlier by Barry (1999) and Ball (1985), suggesting that both human rights and environmental justice are important elements within the IGE concept, and may by necessity be associated with distributive justice..

Moving away from prescriptions, and policy frameworks, which appear to have been either contested, or opposed, or simply ignored, and given that these may be simply lip-service, a number of legal scholars and jurists prefer to discuss and argue for the legal aspects of IGE. Analyzing the proposals and policy frameworks in connection with IGE so far, Collins (2007a) conclude that while courts, commentators and legislators in Europe and around the world recognize that environmental degradation may constitute a violation of human rights, and while the human rights model may be effective in addressing the environmental interests of existing human beings, there is a pressing need for a legal doctrine that effectively addresses the environmental rights of future generations..

Reviewing the aspects of environmental rights and equity for future generations, Collins (2007a) finds that even if the human rights approach appear to be a useful tool in promoting and protecting the environmental interests of existing human beings, questions remain regarding the capacity of environmental human rights to protect the environmental interests of future generations. The author argues that that a present-oriented right to the environment could fail to provide meaningful protection for the environmental rights of future generations, since certain activities that cause little environmental harm in the present can be devastating over the long term, as have been previously discussed by Cane (2001) and Hiskes (2005).

Consequently other tools for long-term assessment of present activities may be needed. In her discussion paper '*Commenting on the 'Doctrine of Intergenerational Equity in Global Environmental Governance'*' Collins (2007b) further argues that in the realm of international environmental law and policy, the notion of '*sustainable development*' has been almost universally accepted as a guiding principle in governing the environmental relationship between present and future generations. The concept of sustainable development denotes a form of development that could be described as one that:

Meets the needs of the present without compromising the ability of future generations to meet their own needs.

The discussion of Brown-Weiss (2008) bases arguments on the fact that climate change being an inherently intergenerational problem with extremely serious implications for equity involving both present and future generations and among communities in the present and the future. Bown-Weiss refers to The Villach Article (Villa Conference-1987) which proposes a global strategy for climate change, respecting principles of intergenerational equity and a declaration as an initial step. Since then, UNESCO (1997) adopted a Declaration on the

Responsibilities of the Present Generations Toward Future Generations, which focuses on obligations of present generations to future generations (but not their rights). At the end of March 2008, the Human Rights Council adopted a resolution on Human Rights and Climate Change (OHCHR, 2008), which requests the Office of the United Nations High Commissioner for Human Rights to conduct ‘*a detailed analytical study of the relationship between climate change and human rights.*’

The principle of intergenerational equity holds that all generations are partners in caring for and using the planet and its resources. The present generation must pass the planet and our natural and cultural resources on to future generations in at least as good a condition as it received them so they can meet their own needs. This obligation applies both to diversity and quality. And according to the thesis of Edith Brown Weiss (2008), it leads to robustness and resilience of the human environment, as long as:

Every generation needs to pass on the Earth and its natural resources in no worse conditions than it received them, by preserving the diversity of natural resources, maintaining the quality of the environment, and ensuring non-discriminatory access among generations to the Earth and its resources.

At the international level, civil society has led a push to establish a formal position representing the interests of future generations within the United Nations. The August 2013 Report of the UN Secretary-General on Intergenerational Solidarity and the Needs of Future Generations references several options, including a United Nations High Commissioner for Future Generations (2012) or a Special Envoy for Future Generations.

At the national level, Finland has established a permanent parliamentary Committee for the Future; the Hungarian Parliament created an Ombudsman for Future Generations, which is now under the Commissioner for Fundamental Rights; the Israeli Knesset created a Commission for Future Generations, which while dissolved is now under consideration to be recreated, and the German Bundestag established the Parliamentary Advisory Council on Sustainable Development to serve as the advocate of long-term responsibility. The functions vary from issuing reports to intervening in the judicial process, as in the case of Hungary.

The first meeting of all the national institutions concerned with future generations was held in Budapest, Hungary, in late April 2014. The principals have agreed to meet annually to exchange information and experiences on a regular basis. National courts have also used a principle of intergenerational equity in their decisions. These developments are especially significant because a principle of international law is being invoked domestically or otherwise found in national constitutions or statutes. To implement a principle of intergenerational equity in a broader context, we need to adopt an intergenerational lens to identify appropriate strategies. These strategies may include, but are not limited to the following:

1. Representation for the interests of future generations in decision-making and in other appropriate venues
2. Sustainable use of resources, especially including soils
3. Long-term integrated, intergenerational assessments, monitoring, and transparency
4. Scientific and technological research and development on long-term issues that the private sector does not otherwise fund, such as monitoring of ground water pollution and certain resource use
5. Attention to the cost and ease of maintaining projects or programs when deciding whether to undertake them

6. Codification of norms and promotion of shared values
7. Education for conserving diversity, quality, and access for present and future generations

The principle of intergenerational equity, as further expounded by Weiss-Brown (2014) has three intergenerational elements: comparable options, comparable quality, and comparable or nondiscriminatory access. These elements are consistent with the following criteria:

1. To encourage equality among generations;
2. Not to require the present generation to predict the values and preferences of future generations, but rather to give future generations flexibility to achieve their own goals;
3. To be reasonably clear in application to foreseeable situations; and
4. To be generally shared by different cultural traditions and generally acceptable to different economic and political systems.

One can further argue that intergenerational equity encompasses intragenerational equity as an integral element of the principle. Once future generations become part of the present generation, they have obligations toward members of the present generation that reflect their intergenerational obligations.

Intergenerational equity (IGE), despite being widely referred to in the discourse and instruments of international institutions and organisations, is often either provided for in the form of non-binding ‘*soft law*,’ or remains undefined and open to interpretation. The status of the principle before the courts has always been contested, and Bell et al. (2017) observes that the inherent difficulty in defining intergenerational equity means that it is very seldom invoked in judicial decisions. But according to The Center for International Environmental Law CIEL (2017) more and more case laws are being brought about in countries around the world, and with successful outcome for the recognition of IGE.

In its ‘*Submission to the UN Special Rapporteur on Human Rights*,’ (CIEL, 2017) argues that since the principle of responsibility towards future generations is embodied in the core objectives of the 1945 UN Charter, and even if it has been reiterated through key declarations in connection with the principles of international environmental law, and in numerous legally-binding multilateral agreements, there has been little practical effect to this day. CIEL (2017) informs that at least forty-four international legal instruments explicitly incorporate or refer to the principle of intergenerational equity and/or to the need to preserve the rights and the interests of future generations. Further, at least sixty-three national constitutions include explicit provisions articulating the right of future generations to a healthy environment, defining duties for the States towards future generations or enshrining intergenerational equity as a core principle for environmental and developmental policies. The number of these constitutional provisions has increased four-fold over the past thirteen years, reflecting the growing and increasingly commonplace recognition by States of the rights of future generations and the principle of intergenerational equity.

Analyzing developments so far, CIEL (2017) expounds on the growing body of jurisprudence elaborating on the nature and the scope of the State’s duty to future generations has emerged across a diverse range of jurisdictions involving case laws. CIEL considers case laws to be of value in more precisely delineating the obligations of the State related to the rights of future generations to a healthy environment and to the management of natural resources in line with the principle of intergenerational equity.

Amongst the several case law cases so far, some need mentioning. In the 1997 ICJ ruling in the Gabčíkovo-Nagymaros dispute, the judge made two landmark statements::

Owing to new scientific insights and to a growing awareness of the risks for mankind - for present and future generations - of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weigh.

And Judge Weeramantry of the ICJ stressed that:

.....the rights of future generations have passed the stage when they were merely an embryonic right struggling for recognition. They have woven themselves into international law through major treaties, through juristic opinion and through general principles of law recognized by civilized nations”

In a judicial decision, the Supreme Court of India (1987) invoked the principle of intergenerational equity as provided in the Stockholm Declaration, and concluded that the State must endeavor to protect and improve the environment and to safeguard the country’s ecosystems. In the ensuing decades, judicial rulings in ten jurisdictions have relied on the concept of intergenerational equity to order the States to protect the environment or to cancel administrative decisions that had been made without sufficiently taking into account the interests of future generations.

In *Oposa v. Factoran*, the Supreme Court of the Philippines (1993) accepted that plaintiffs could file a petition on behalf of succeeding generations to denounce logging licenses. The Court ruled that:

Their personality to sue in behalf of the succeeding generations can only be based on the concept of intergenerational responsibility insofar as the right to a balanced and healthful ecology is concerned.”

Two notorious case laws related to intragenerational equity have been mentioned by UNEP (LEAP-2019)

1. Gloucester Resources Limited vs. Minister for Planning, Australia, National case law 2019), where Gloucester Resource Limited (GRL) proposed to establish an open cut coal mine near the town of Gloucester. Residents of Gloucester generally opposed the project, concerned about the mine’s amenity impacts, visual impacts, social impacts, and potential contribution to climate change. GRL unsuccessfully applied for approval, and appealed to the Land and Environment Court of New South Wales
2. Sheikh Asim Farooq vs. Federation of Pakistan, National case law (2019). Members of civil society filed a petition highlighting inactions of the relevant Government Departments (Respondent) for not implementing the laws, policies and strategies regarding protection of the forest of Pakistan and to implement them by passing certain directions to the concerned quarters to perform their duties as per law, and were successful.

It is also interesting to note that the Judge in the Sheikh Asim Farooq vs. Federation of Pakistan case referred to both intra and intergenerational rights in formulating a decision, with a final statement that:.

Right to life implies the right to food, water, decent environment, education, medical care and shelter, thus fundamental right cannot be snatched away or waived off pursuant to any agreement.

In a discussion about social justice and climate change, Alice Venn (2019) argues there is widespread agreement on the importance of taking the needs and rights of future generations into account. The author refers to Simon Caney's (2018) arguments that intergenerational duties represent a core facet of global climate justice due to the temporal dimension of climate change, which means that the adverse impacts of current greenhouse gas emissions will be experienced by future generations of people.

However, Alice Venn (2019) finds it unclear as to which of the existing prescriptions and principles underpin obligations, or how they are being conceptualized. The author opts for the application of liberal principles of fairness such as Rawls' *'just savings'* principle, described as *'an understanding between generations to carry their fair share of the burden of realizing and preserving a just society,'* previously discussed by Paden (1997) and Wall (2003), whereby the present generation has a duty to save a *'fair share'* of resources for the next, and which has also been advocated for in the climate change context. Perhaps by looking deeper into the implications of the judgement of The Hague Court in the Urgenda case (2019), Alice Venn's queries would be answered, even if partially, and the proponents of IGE can finally rest their case on the foundation of that historical judgement.

Discussing the significance of the Hague Court of Appeal judgement in the Urgenda case (2019), Nollkaemper. and Burgers (2020) observe that:

The judgment is significant as it demonstrates how a court can determine responsibilities of an individual state, notwithstanding the fact that climate change is caused by a multiplicity of other actors who share responsibility for its harmful effects.

In the Urgenda case, the judges justified their verdict by stating that:

.....to prevent the Netherlands from causing (more than proportionate) damage, from its territory, to current and future generations in the Netherlands and abroad

Bringing out the concept of IGE within the human rights sphere further adds weight to the concept and gives credence to the principle within legal frameworks. Even if not being the first climate change litigation, the ruling against the Netherlands was heralded worldwide as the first successful tort action against a government to address climate change to protect human rights, with the IGE principle as the basis. The ruling on the Netherlands case is known to have led to similar climate justice lawsuits in other countries, including Belgium, France, Ireland, Germany, New Zealand, Britain, Switzerland and Norway, according to the Grantham Research Institute on Climate Change and the Environment (2019).

While most of the guardians of Intergenerational Equity, and similar bodies have an advisory role, some of them also act as an ombudsman, with the authority to respond to the requests of the public. In this sense, the Hungarian Commissioner for Future Generations operates as a traditional ombudsman office where the citizen's complaints are investigated.

The European Institute for Environmental Policy (2020) proposes that beyond the issue of the unequal representation of interest in decision-making and democratic processes, intergenerational equity requires the following issues to be addressed:

1. Assessment of the cost of delayed or insufficient action to younger and future generations;
2. Principles for the equitable sharing of the remaining carbon budget;
3. Application of the precautionary principle in terms of the effects of long-term pollutants on future generations and the environment;

4. Carbon lock-in effects, lack of adaptation and resilience of infrastructure and investments.

In their discussion, Wiles and Kobayashi (2020) posits that:

- Equity should be about achieving social justice and fairness, and as such should reflect a concern to reduce systematic discrimination and marginalization.
- As an ethical principle, equity implies that selective priority should be given to improving the situation of the most socially disadvantaged groups in society.
- It also requires recognizing and addressing the invisible effects of privilege for the most advantaged groups in society.
- Equity is not the same as equality, although these concepts are closely related.

The authors propose that equity can only be achieved if systematic disparities between social groups with different levels of underlying social advantage do not exist. Further, the authors associate equity with Geography, since inequitable situations can only be understood spatially, as the geographical community struggles to overcome inequity, injustice, and unequal access within its disciplinary settings.

Although the concentration presently is intergenerational equity, issues of intragenerational equity cannot be overlooked. Ensuring justice and equity in present day economic and development systems have proved problematic, and disparities between developed and developing countries keep accentuating. Referring to the soft law Principle 6 of Rio (1992), Shelton (2008) stresses on the reality that:

Intragenerational equity is concerned with equity between people of the same generation and aims to assure justice among human beings that are alive today, as reflected in Rio Principle 6, mandating particular priority for the special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable.

Earlier, Brown-Weiss (1990) argued that apart from discussing an explicit and academic intra-generational equity theory, the doctrine requires wealthier members of the present generation to assist less wealthy members in benefitting from the planetary legacy, as proposed by Paul Barresi (1997). In other words, the wealthy developed nations have a duty to assist poorer nations in actualizing their right to development. The intra-generational aspect of the doctrine of IGE also requires wealthier members of the international community to assist poorer members in meeting their Planetary Obligations as discussed by Collins (2007a,b) Coupled with Brown Weiss's articulation of a middle way between strict preservationism and unbridled exploitation, Collins (2007a,b) proposes that this intra-generational component should accommodate the right to development and allows for a form of global environmental governance that respects North-South equity (discussed by Okereke, (2008).

Interestingly, The CESCR (2003) stressed in its General Comment on the Right to Water that this right implies a duty to guarantee the protection of this right for future generations. Water should be treated as a social and cultural good, and not primarily as an economic good. The manner of the realization of the right to water must also be sustainable, ensuring that the right can be realized for present and future generations..

There are enough elements that should be under consideration to devolve the heavy concentration of IGE on either sustainable development, or climate change, or environmental rights. And as Edith Brown Weiss (2021) puts it in a simple statement that means much:

The principle of intergenerational equity states that every generation holds the Earth in common with members of the present generation and with other generations, past and future.

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Earth Jurisprudence

Earth Jurisprudence (EJ) has been described as a philosophy of Law and Human Governance that is based on the premise that humans are only one part of a wider community of beings and that the welfare of each member of that community is interdependent and dependent on the welfare of the Earth as a whole system (Berry, 1988; 1996; 1999; 2002; 2006. Cullinan; 2002; 2010; 2011; 2013). Berry (1999) sees Earth jurisprudence as different from the Great jurisprudence, but can be considered as embedded within it. Being earth-centric or ecocentric rather than anthropocentric, the concept seeks to expand our understanding of the relevance of governance beyond humanity to the whole Earth community, and as Koons (2008) describes it as:

Earth Jurisprudence is an emerging field of law that calls us to pause as we enter the twenty-first century to consider the ground under our feet and the teachings bearing down on us from the horizon.

Consistent with the interrelation of legal categories proposed in natural law, Earth Jurisprudence holds that a law, which transgress principles of nature and jeopardises the purpose of law is not a law in the focal sense of the term. To be fair, Earth Jurisprudence does not invalidate human law in this manner. Instead, it provides a set of fundamental principles for a legal system that serves the true purpose of law and seeks to provide ‘*a rational basis for the activities of legislators, judges and citizens.*’ Further to these functions, it also provides criteria for deciding whether citizens are morally bound to follow the law in so far as positive law may diverge from the ideal standards proposed in the Great Law. This function is connected with ideas on legal authority, obligation to obey the law and civil choices. Definitions of EJ are many and varied; In one of its publications, the Gaia Foundation (2015) defines EJ as:

A growing global movement committed to systemic change through the philosophy and practice of Earth Jurisprudence – recognising Nature as the primary source of law and ethics.

The Foundation further stipulates that the Earth sustains life through a complex system of living processes and laws, functioning as a self-regulating planetary organism, and all species, including humans, are inextricably subject to these laws and processes. Thomas Berry (1999) assigned this understanding of the Earth as the primary source of law, and that disturbing the dynamic equilibrium which sustains the conditions for life, would ultimately lead to chaos. The dominant assumption that the industrial growth model, in which humans believe in their superiority and can extract from life endlessly, is both flawed and dangerous according to Berry (1999; 2002), and the consequences are already real:

We are now living the consequences of this inflated belief, as we face the chaos of multiple interconnected ecological, climate and social crises on a planetary scale.

It has already been established by geologists that humanity moved from the Holocene into the Anthropocene ever since the human influence on the natural environment became so significant. That new epoch we have entered into, the Anthropocene, fundamental change in the relationship between humans and the Earth System, and the implications have been discussed by Zalaseiwick et al. (2010) and Lewis and Maslin (2015), and earlier, Boulter (2002) expounded on how anthropocentric activities may actually bring humanity to the brink of extinction, given the level of irreversible disruptions to the Earth System (Boulter, 2002). This pattern of detrimental behaviour is also what Hardin (1968) refers to in his ‘*Tragedy of the Commons*’, where he concludes that ‘*the inherent logic of the commons remorselessly generates tragedy*’ (Hardin, 1968).

Thomas Berry has extensively analyzed and discussed anthropocentric forms of governance and strongly believes in a need for a transformation of human behaviour by redefining the main principles of governance. In one of his arguments, Berry (1999) points out that many current legal and political systems either legitimize or even strengthen human activities that allow the unbridled exploitation of Earth, and as a result he calls for reforms in present governance systems in a way that there would be a re-alignment from a human-centred view to a more earth-centred, in other words, ecocentric rather than anthropocentric. Nature should not be considered as a commodity or as a subject of property rights, but as a legal subject with its own rights, within the principles of Earth Jurisprudence and within the philosophy of ‘*Deep Ecology*.’ Both Devall (1980) and Berry (1999) have been calling for:

A contemporary ecological reformist stream, which advocates that the environment and its living beings have inherent worth, regardless of their utility to human needs.

While Cullinan (2011) proposes EJ as a ‘*philosophy of law and human governance*’ that is based on the idea that humans are only one part of a wider community of beings and that the welfare of each member of that community is dependent on the welfare of the Earth as a whole, to Judith Koons (2012), jurisprudence is ‘*a search for wisdom*,’ and Earth jurisprudence would not endorse short-term economic gain, but would regulate human activities to support mutually beneficial relations among humanity, other-than-human species, and Earth processes. The Gaia Foundation (2015) suggests that it is a way of life and of thinking about and relating to Earth, rather than a written law. Humphreys (2017) finds that Earth jurisprudence presents a critique of mainstream legal approaches under which, proponents argue laws have been passed that legitimise the exploitation and degradation of the natural world, with environmental problems treated primarily as anthropocentric concerns. However, Humphreys sees strong opposition from business corporations that rely on the exploitation of natural resources and political parties focused on short-term economic gains, about which there has been some interesting arguments raised by Agustin (2016).

Koons (2008; 2012) finds that treating of nature and its ecosystems and species as subjects with their own rights, in much the same way as liberal democracies treat people as subject citizens with rights, is what the proponents of EJ argue for, in other words ‘*Subjectification*’ as opposed to ‘*Objectification*.’ Proponents base their support on the fact that consideration nature as an assembly of objects is a false premise of traditional legal systems, which continue to treat the environment as resources that can be subject to property rights, while treating nature as a subject is to recognise its intrinsic worth (Koons 2008; 2009).

The concepts of Earth jurisprudence articulated by Berry have given birth to a growing international movement with various labels: Earth jurisprudence, wild law, rights of nature, Earth law, Earth democracy, community ecological governance, ‘*vivir bien*’ (*vivre bien*) and other expressions of indigenous and tribal peoples’ customs. The adoption of the Universal Declaration on the Rights of Mother Earth at the World Conference on Climate Change and the Rights of Mother Earth held in Cochabama, Bolivia in April, 2010 was a momentous event for the Earth jurisprudence movement. The Declaration looks to the experience and traditions of indigenous communities in demonstrating the capacity to ‘*vivir bien*’ (to live well), in part through the recognition of the rights of nature.

Earth jurisprudence can be differentiated from the Great Jurisprudence or the Great Law (discussed by Berry, 1999; Burdon, 2011b, 2015; Cullinan, 2013), but can also be understood as being embedded within it. Earth jurisprudence can be seen as a special case of the Great

Jurisprudence, applying universal principles to the governmental, societal and biological processes of Earth.

In his discussion, Burdon (2011b) elaborates on how The Great Law was established as the basis for Thomas Berry's arguments for constructing the concept of Earth Jurisprudence. Described as an original measure of Human Law, Burdon claims that for Human Law to attain legal quality and the power to bind a community in moral consciousness, it must be consistent with the Great Law, which states that:

Human Societies will only be viable and flourish if they regulate themselves as part of this wider Earth community and do so in a way that is consistent with the fundamental laws or principles that govern how the Universe functions, which is the 'Great Jurisprudence'.

Further, argues Burdon, any purported law that is in conflict with the Great Law is regarded as a mere corruption of law and not binding by virtue of its own legal quality. In this situation, Earth Jurisprudence upholds the moral right citizens have to disobedience and protest (Burdon, 2011a; 2011b). With regards to the issue of legal quality, Cullinan (2011a, 2011b) notes that the ecological first principles, such as interconnectedness, should not be applied literally, as a rule or principle might. Instead, he proposes that they can be understood as:

The design parameters within which those of us engaged in developing Earth Jurisprudence for the human species must operate.

Burdon (2011a, 2012) concludes his discussions by establishing that the one central factor contributing to the present environmental crisis is humanity's failure to understand and behave as members of the Earth community. The author contends that present day law has been developed to facilitate a one-way exchange with the Earth, and humanity's ever-growing extractive industrial economy. Today, there is a great need to develop a jurisprudence that seeks to develop a mutually enhancing and beneficial human-earth relationship, as suggested by Berry:

To be viable, the human community must move from its present anthropocentric norm to a geocentric norm of reality and value.....Plundering nature is the norm within our legal and economic systems. Our survival depends on charting a new course.

The discussions of Koons (2009) elaborates on how humanity, having reached a pivotal time in the history of Earth, with the imminent problem of having to increased global warming, the compromise of all major ecosystems of Earth, and the extinction of thousands of species. As the moral agents on this planet, Koons considers it is the duty of humankind to recreate human institutions to meet such challenges, and the emerging field of Earth jurisprudence and the transforming of law and governance may be the answer. Koons arguments for supporting the Earth Jurisprudence philosophy and mindset are based on:

1. Earth Jurisprudence advances the necessity of a shift in thinking from purely human-centered to Earth-centered systems of law and governance, similar to the calls to move from anthropocentric to ecocentric environmental laws...
2. The principles elaborated upon by Thomas Berry for the functioning of the universe centred around subjectivity, communion, and differentiation.
3. A vision of Earth Jurisprudence through corresponding principles of the intrinsic value of Earth, the relational responsibility of humanity toward Earth, and the democratic governance of the Earth community.
4. Jurisprudential principles anchored to a legal framework of rights, responsibilities, and duties, and through the representative legal doctrines of standing, the public trust doctrine, and intergenerational equity

Nash (1989) and Koons (2009) both prescribe that in considering a philosophical framework for Earth-centered systems of jurisprudence, citizens might focus on principles that govern the workings of Earth and the universe. With such a focus, human systems of governance would reflect the attributes of the natural systems in which they are embedded. According to ecological philosopher Thomas Berry, the universe is organized according to three main themes: subjectivity, communion, and differentiation. As precepts that arise out of scientific theory and philosophy, these themes could serve as a platform for rethinking law and governance, discussed by Cullinan, 2011).

Bosselmann (1994) and Burdon (2012) place Earth Jurisprudence within development generally from the environmental movement and environmental philosophy, as opposed to purely economic goals. Its proponents believe that society and the present legal order reflect a harmful and outdated anthropocentric worldview, and Earth Jurisprudence analyses the contribution that present legal systems make towards constructing, maintaining and perpetuating anthropocentrism, and looks at ways in which this orientation can be reversed, and its negative anti-environmental policies eliminated, argue the authors.

Reflecting on EJ through John Locke's philosophy and lens and its connection with the perception of private property, Timmons (2011) concludes that:

Yet human jurisprudence today is based on a number of premises that we know to be false, such as the belief that our well-being is not derived directly from the well-being of the Earth Community as a whole, and the belief that the Earth is an infinite resource for our use. Therefore, globally there must be a new jurisprudence, an Earth Jurisprudence that shifts this paradigm.

The discourses of Berry (1999; 2002) and Cullinan (2010; 2011a) elaborate on how Earth Jurisprudence should seek to expand our understanding of the relevance of governance beyond humanity to the whole Earth Community, it is Earth-centric rather than Anthropocentric. It is concerned with the maintenance and regulation of relations between all members of the Earth community, not just between human beings. Earth jurisprudence is intended to provide a philosophical basis for the development and implementation of human governance systems, which may include Ethics, Laws, Institutions, Policies, and Practices. It also places an emphasis on the Internalisation of these insights and on personal practice, in living in accordance with Earth jurisprudence as a way of life.

Summarising the main and basic elements proposed by Berry and Cullinan, these include:

1. A recognition that any Earth Jurisprudence exists within a wider context that shapes it and influences how it functions;
2. A recognition that the universe is the source of the fundamental 'Earth Rights' of all members of the Earth community, rather than some part of the human governance system and accordingly these rights cannot be validly circumscribed or abrogated by human jurisprudence;
3. A means of recognizing the roles and 'rights' of non-human members of the Earth community and of restraining humans from unjustifiably preventing them fulfilling those roles;
4. A concern for reciprocity and the maintenance of a dynamic equilibrium between all the members of the Earth community determined by what is best for the system as a whole (Earth Justice); and

5. An approach to condoning or disapproving human conduct on the basis of whether or not the conduct strengthens or weakens the bonds that constitutes the Earth community.

Discussing his thesis on the '*Principles of Earth Jurisprudence*,' Cullinan (2002; 2010; 2013) identifies the following principles that should be considered:

- The rights of each being are limited by the rights of other beings to the extent necessary to maintain the other beings to the extent necessary to maintain the integrity, balance, and health of the communities within it exists.
- Human acts or laws that infringe these fundamental rights violate the fundamental relationships and principles that constitute the Earth community and are therefore illegitimate and '*unlawful*.'
- Humans must adapt their legal, political, economic, and social systems to be consistent with the fundamental laws or principles that govern how the universe functions and guide humans to in accordance with these, which means that human governance systems at all times must take account of the interests of the whole Earth community and must:
- Determine the lawfulness of human conduct by whether or not it strengthens or weakens the relationships that constitute the Earth community;
- Maintain a dynamic balance between the rights of humans and those of other members of the Earth community on the basis of what is best for Earth as a whole;
- Promote restorative justice which focuses on restoring damaged relationships) rather than punishment/retribution; and
- Recognize all members of the Earth community as subjects before the law, with the right to the protection of the law and to an effective remedy for human acts that violate their fundamental rights.

And Cullinan concludes that:

The Earth Community and all the beings that constitute it have fundamental "rights", including the right to exist, to have a habitat or a place to be, and to participate in the evolution of the Earth community.

To transition towards a mutually enhancing presence on Earth, Cullinan (2010, 2011) elaborated on principles that need to be embedded in human governance systems, particularly law, education, economy and religion, and these include:

1. Wholeness: Earth is a single community webbed together through interdependent relationships.
2. Lawfulness: The Universe is lawful and ordered. Earth is the primary giver of law, human law is a derivative.
3. Duty of Care: Humans have responsibilities to care for all members of the Earth Community and maintain the integrity and well-being of the whole Earth Community for now and for future generations.
4. Rights of Earth: Earth is a living, self-regulating being, with intrinsic value. "Every component of the Earth community has three rights: the right to be, the right to habitat, and the right to fulfill its role in the ever-renewing processes of the Earth community. (Berry, 2002).
5. Mutual Enhancement: Relationships within the Earth Community are reciprocal: a cycle of giving and receiving.
6. Resilience: The inherent quality of all healthy living systems to grow, evolve and adapt to change and disturbance without losing their coherence.

Proposing a more ecocentric legal framework, Bosselmann (1994; 1995; 2013) elaborates on an interesting theory he terms ‘*strong sustainability*’ as a foundational principle for the grounding of the rule of law, since he believes in ethically strong, historically evidenced, and scientifically sound policies. Bosselmann formulates the environmental challenges humanity is facing in the following steps for a reformation of existing legal systems:

1. Recognition of the reality of ecological boundaries and bringing laws in touch with ecological realities, in line with ‘*strong sustainability*’ according to the following hierarchy:
 - a. Environment
 - b. Humans
 - c. Economy.
2. A need to reflect this hierarchal order in the design and interpretation of all laws governing human behaviour.
3. The recognition of planetary boundaries should be considered as a non-negotiable bottom-line for all human activities.

What Bosselmann proposes is actually reversing the anthropocentric present view of placing economic development before humans and environmental protection, in other words, profit before people and planet.

Analyzing the challenges of current environmental laws, Bugge (2013) propounds that to be able to understand the fundamental principles of existing laws, there should be an awareness of the ethical dimensions of EJ, for how we treat nature is fundamentally an ethical question. Bugge finds that the lack of strong ‘*nature ethics*’, and existing lack of ethical barriers against destruction and degradation of nature that only profits economic development and human well being in the short term. Bugge concludes that:

The continuous human-centric view of nature and law has significant repercussions for legal thinking and the role of law in environmental issues.

The publication of ‘*Should Trees have Standing?*’ by environmental lawyer in 1973 gave rise to innumerable discussions, on the basic legal rights of nature, and Stone (1972, 1973, 1996) continued his crusade for the rights of nature through further publications including his ‘*Other Essays on Law, Morals and the Environment*’ in 1996.

The debate about the rights of nature even impacted the U.S. Supreme Court, where in the case *Sierra Club v Morton* in 1971, Justice William O. Douglas ruled that:

... that natural resources ought to have standing of their own and should be able to sue in court making comparisons with other inanimate objects that already have standing, such as ships and corporations.

The court ruling proved to be a groundbreaking in environmental law, which led to further support for the rights of nature, and the engagement of other scholars in the debate about EJ. Almost 4 decades later Cullinan (2008a) questioned human society as to: ‘*Do Humans Have Standing to Deny Trees Rights?*’ with a later publication and manifesto ‘*Wild Law: a manifesto for Earth Justice*’ (Cullinan, 2011a, 2011b), in which he blended the concept of Earth Jurisprudence into his philosophy, which further accentuated the debate on the rights of nature, and the necessity for new legal and governance systems that would redefine the role of humans.

The way Cullinan (2008, 2011a, 2011b) describes the function of ‘*Wild Law*’ can be summarised as:

Wild laws are laws that regulate humans in a manner that creates the freedom for all members of the Earth Community to play a role in the continuing co-evolution of the planet.

Further, Cullinan (2011a) believes that the theory of the tragedy of commons, advanced by Harding (1968), is wrong in that Hardin concluded with the fact that ‘*the inherent logic of the commons remorselessly generates tragedy*’, while the tragedy is not specifically the consequence of common ownership, but of unrestricted access to a resource. Hence, the lack of an effective governance system that limits access and exploitation of natural resources is the real problem, not the nature of property rights, affirmed Cullinan.

One possible angle from which a legal framework for the implementation of the “Wild Law” philosophy of Cullinan (2011) would be to create a ‘*rule of law for nature*’, which, according to Bosselmann (2015) could, through a normative process of constitutionalisation, contribute to the paradigm shift that humanity needs. The 2008 constitutional reforms in Ecuador, and the Universal Declaration of the Rights of Mother Earth could serve as foundation argues Bosselmann. Recently, the development of the concept of ‘*Global Environmental Constitutionalism*’ (discussed by May and Daly, 2014, 2015; Kotzé, 2013, 2016) could be seen as a new mindset around international law and governance with the environment as universal concern, continues Bosselmann. The author has further critically analyze the concept of constitutional law as a possible approach to establishing Earth jurisprudence, and probably as a suitable tool to make Wild Laws effective too.”

However, Cullinan (2011a, 2011b) has elaborated on the history of wild law, concocting five basic principles of EF (discussed by Lampkin and Wyatt (2020) as:

1. The Universe is the primary law-giver, not human legal systems.
2. The Earth community and all the beings that constitute it have fundamental ‘rights’, including the right to exist, to habitat or a place to be, and to participate in the evolution of the Earth community.
3. The rights of each being are limited by the rights of other beings to the extent necessary to maintain the integrity, balance and health of the communities within which it exists.
4. Human acts or laws that infringe these fundamental rights violate the fundamental relationships and principles that constitute the Earth community (the Great Jurisprudence) and are consequently illegitimate and ‘*unlawful*.’
5. Humans must adapt their legal systems, political, economic and social systems to be consistent with the Great Jurisprudence and to guide humans to live in accordance with it, which means that human governance systems at all times take account of the interests of the whole Earth community and must:
 - a. Determine the lawfulness of human conduct by whether or not it strengthens or weakens the relationships that constitute the earth community;
 - b. Maintain a dynamic balance between the rights of humans and those of other members of the Earth community on the basis of what is best for earth as a whole;
 - c. Promote restorative justice (which focuses on restoring damaged relationships) rather than punishment (retribution); and
 - d. Recognise all members of the Earth community as subjects before the law, with the right to the protection of the law and to an effective remedy for human acts that violate their fundamental rights.

Analyzing Cullinan's prescriptive suggestions, Lampkin and Wyatt (2020) point out two important factors that could feed the architects of opposition to EJ:

1. An Earth-centric society would disrupt markets and industries and corporations would not want this to happen as it may impact (decrease) their profits.
2. Corporations and states would probably not agree to an Earth-centric society because at the core of this approach is a holistic inclusive attitude to governance and decision-making.

However, Berry (1988) and Berry and Swine (1992) argues differently:

The basic orientation of the common law tradition is toward personal rights and toward the natural world as existing for human use. There is no provision for recognition of nonhuman beings as subjects having legal rights.

While Filgueira and Mason (2009) argue that rights based approaches would:

Empower those in the human community who are anxious to restore balance when they find themselves in conflict with powers and authorities who prefer to consider nature solely as a resource to be exploited for human ends.

The authors find that many of the key elements of Earth jurisprudence and eco-centrism have long been debated in environmental philosophy and human ecology, and eco-centrism in the law has been explored by many scholars. They support their statement with a meaningful conclusion:

A rights-based approach is not just about conferring rights on nature; it is a means of giving legal recognition to nature's inherent worth by recognizing what is already there.

A rights-based approach is not just about conferring rights on nature; it is a means of giving legal recognition to nature's inherent worth by recognizing what is already there. In operational terms, it is largely for the purpose of redressing the balance between humans and nature, a perception also discussed by Borràs (2016).

Discussing his '*Ecologizing human rights*' thesis, Cavedon-Capdeville (2018) proposes the following:

1. Attribution of an environmental dimension to traditional human rights;
2. Affirmation of an autonomous environmental human right, represented by the formal recognition of a human right to the environment;
3. The interpretation and application of human rights on the premise that they are rights of human beings as members of the planetary community, inserted in an environmental context from which they can't be dissociated (interrelation between the integrity, quality and dignity of the nature and the possibility of realization of human dignity);
4. Overcoming current limits of ownership, time and space imposed by rationality and traditional legal concepts, extending to collectivities, future generations and encompassing global issues and conflicts beyond the limits of power and territory;
5. Integration within a broader system of rights recognized to Earth as a whole and all members of the planetary community, characterized by mutual reinforcement and enrichment, considering that human rights and the rights of Nature are inseparable for the attainment of an expanded dignity, which integrates the dignity attributed to the nonhuman elements of this community.

And to reinforce medium to long-term achievements, Cavedon-Capdeville proposes the following goals should be embedded within the Earth Jurisprudence perspective.

- To establish a Universal Declaration for Rights of Nature and Ecological Justice and to support regional, national and local regulations in this sense. –
- To develop guiding principles and recommendations on ecological law to guide governments and institutions on how to make de transition of law and policies on an ecological way based on the Earth-centered Jurisprudence and inspired by ecological justice. –
- To develop a plan of action or other strategy to disseminate this perspective of the Earth-centered Jurisprudence among other mandates of the United Nations System and identify the possibilities of any of them to contribute to the development and consolidation of this approach in international policy and law.

An interesting idea put forward is the creation of a Global Environmental Constitution. The concept has been discussed by Bodansky (2009), Bosselmann (2015). Rühls and Jones (2016), Kotzé (2019), and it aims at shifting the environment from *'the periphery to the centre of constitutions,'* a shift that could be termed *'eco-constitutionalism.'* Recently, claims Bosselmann (2015), there has been a development of global resolutions that aim to protect *'the global commons'* (oceans, atmosphere, biosphere) through a different pathway than human-centered environmental law. The most encompassing documents to do that so far include The Earth Charter (1987), the more ecocentric Universal Declaration of the Rights of Mother Earth (2010). Earth Jurisprudence with its emphasis on the rights of nature, human rights and environmental constitutionalism may present the right avenue for protecting the global commons.

Discussing the association of constitutionalism with sustainable development and the rule of law for nature, Kotzé (2013) summarises its functionality as follows:

- Being a part of environmental constitutionalism, the rule of law for nature, among others, provides the opportunity and the means by which to reform environmental governance and laws;
- It prioritizes environmental care by equating it at the higher constitutional level to fundamental rights, ethics and universal moral values;
- It provides a legitimate foundation and means for creating and enforcing environmental rights, values and other sources of ecological obligation;
- It provides the means to dictate the content of laws; and it establishes moral and ethical obligations with respect to the environment and a justificatory basis for, and authority to require proper performance of these obligations.

May and Daly (2015) formulates it as:

- It can hold government officials accountable and even increase the political pressure on them; It can use procedural rights to give people more access to information and to judicial and political process;
- It can impose fines and award damages; it can require action or forbearance; it can punish for harm done or prevent threatened harm; it can entrench common law principles, promote values, or establish new rules of engagement.
- Its legal responses can be structural and systemic or individual and incremental.
- It thus makes available to individuals and organizations the full range of legal process to ensure governmental responsibility for the protection of the environment

According to May and Daly (2015) environmental constitutionalism can further have two functions:

1. It can have a convergent function: bringing together governmental structures and individual rights modalities in '*advancement of an overarching legal-normative framework for directing environmental policy*'. This is a solution to the current problem of fragmentation of environmental laws.
2. It can have a mitigating function: protecting local concerns, such as access to fresh food, water or air, or global concerns like biodiversity and climate change that share elements of both human rights and environmental protection. Here, environmental constitutionalism can mitigate conflicts between the human and non-human world, where other legal mechanisms might have failed to do so.

The emerging culture of earth rights and eco-constitutionalism has the potential to become a potent force in protecting the rights of nature against the destruction of modern society by recognising and expressing human responsibilities towards the environment, explains Ruhrs and Jones (2016). To date, only small pockets of constitutional rights for nature exist, and the challenge is how a framework could be built for the implementation of Earth Jurisprudence, continues Ruhrs, who believes that concomitant to the progress of the rights of humanity over the last decades, the rights of nature will follow a similar course. The possibility of the rights of nature being developed into a universal global rights of nature alongside that of human rights has been discussed by Ruhrs and Jones (2016), Borràs (2016) and Guzmán (2019).

Most discussions about the proposed Earth jurisprudence's approach to a new legal decision-making process find it is still very much in its infancy, and the founder of the Earth jurisprudential concept, Thomas Berry (1999), author of '*The Great Work*', does not appear to have been in any haste to push his proposal forward until the very late twentieth century (Berry, 1999), until others (Cullinan) picked up the concept for in-depth discussions. That is probably why, since Berry's publication in 1999, only a limited amount of purely theoretical discussions on EJ has emerged within the academic and legal literary platforms (Koons, 2009; Murray, 2015), and there have been a small number of academic conferences specifically dedicated to issues of Wild Law and EJ, The Gaia Foundation (2018); University of Edinburgh (2016).

Real-world examples of social change and Earth-centered law and governance are slowly increasing, such as Ecuador's 2008 Constitution, Bolivia's 2010 legislation, the 150 local level Rights of Nature ordinances that now exist in the United States (Kai Huschke, 2014) the European Citizens Initiative on the Rights of Nature (2016), and the Greens (the Scottish Greens Party, Green Party of England and Wales) adopting Rights of Nature policies. The Global Alliance for the Rights of Nature (GARN) was formed in 2010 by an international group of Earth lawyers and advocates who attended the World People's Congress on Climate Change and the Rights of Mother Earth, held in Cochabamba, Bolivia. The lawyers who comprise the founding members of the Alliance played an important role in drafting the UDRME (2016) and agreed to create a permanent network of people committed to implementing Earth jurisprudence and the rights of nature. GARN is made up of around 70 organizations from around the world, including groups from the Global North, Global South, and First People's nations. The International Tribunal was created at a GARN Summit in Ecuador in January 2014, as a response to the perception by local Ecuadorians that the Correa administration was not implementing the Rights of Nature provisions in the Ecuadorian Constitution and was instead allowing the rights of nature to be violated. The Tribunal was created to hear both Ecuadorian and international cases.

To that end, The Center for Earth Jurisprudence was founded in 2006. Since that time, there has been significant expansion of community-based organizations and legal initiatives integrating legal protections for bio-diversity and natural systems into laws. For example, in

Another example of Earth jurisprudence in action is the resolution adopted in January 2012 by the Santa Monica City Council. The resolution supports a Sustainability Bill of Rights (2013) that guarantees citizens a series of ecological rights based on sustainability. An excerpt of that resolution provides: “

- The right to clean, affordable and accessible water from sustainable water sources for human consumption, cooking, and sanitary purposes;
- The right to a sustainable energy future based on sustainable renewable energy sources; the right to a sustainable natural climate unaltered by fossil fuel emissions;
- The right to clean indoor and outdoor air, clean water and clean soil that pose a negligible health risk to the public; and
- The right to a sustainable food system that provides healthy, locally grown food to the community.

Discussing the rights of nature and its connection to EJ, Fukurai (2020) finds that a few countries have recently enshrined the concept of the Rights of Nature into their legal system through transforming nature into rights-bearing entities in order to protect them from harmful human activities. The author concludes that:

A robust system of Earth Jurisprudence must be established, in which the Rights of Nature must be imbedded in the centre of legislative and constitutional discussions and deliberations.

According to Clark (2020), Earth system scientists are now suggesting a Second Copernican revolution, arguing that homo-sapiens, comprising just 0.01% of all life on earth must de-centre itself from the centre of earth, for we do not exist alone. Clark (2020) Brazil rewrote its constitution in 1988 to include recognition of indigenous and natural rights. Costa Rica in 2017 passed the Mother Earth peace and Wellness Act in support of environmental sustainability. Belize, granted legal rights to its Barrier reef. Indigenous Māori in New Zealand worked with government consensus to establish legal rights for the Whanganui River. In 2017 the Indian High court ruled in favour of equal rights to the Ganges and Yamuna rivers and its human population. The list goes on, says Clark, even if the global movement towards earth jurisprudence is just getting started.

The Center for Earth Jurisprudence (CEJ), created in 2006, expresses its mission is to advance law, policy, and governance systems aimed at legally protecting the sustainability of life and health on Earth, based on three principles:.

1. Humans are an integral part of nature.
2. We have a fundamental responsibility to protect the long-term health of nature.
3. Our current legal systems fail to recognize nature's rights to exist and flourish.

A statement from the Earth Jurisprudence Center (2019) establishes that:

The time has come for human civilization to realize that it can only sustain itself with harmonious interactions with nature and all the lifeforms that exist as a part of it. What we call ‘*progress*’ will only have real value when we strive to put the whole of earth into the context.

The Earth Law Centre, established in 2006, has as mission: We Envision A Future In Which Humans And Nature Flourish Together, and committed their affiliation to the EJ philosophy by stating:

Earth Law is the idea that ecosystems have the right to exist, thrive, and evolve—and that Nature should be able to defend its rights in court, just like people can.

With regards to the UN and its satellite organisations, there has been a welcome global surge in recognition of Earth Jurisprudence in recent years, ranging from the United Nations’ “Harmony with Nature” dialogues (2016, 2017), to the International Union for the Conservation of Nature (IUCN), and the African Commission for Human and Peoples’ Rights, as well as a growing number of institutions and organisations recognising Earth-centred customary governance systems and the Rights of Nature, including: The European Citizens Initiative (ECI) to propose Nature’s Rights to the EU legislative agenda (see Draft Directive) as well as citizens initiatives in other parts of the world; The International Earth Law Alliance is an organisation whose primary aim is to accelerate the development and implementation of laws and governance systems that recognise the interconnectedness of all life;

The Global Alliance for the Rights of Nature (GARN) is an organisation promoting Rights of Nature, Earth Jurisprudence and pioneering International Rights of Nature Tribunals; The Centre for Earth Jurisprudence is an organisation inspired by the writing of Thomas Berry based in Florida; The CELDF (Community Environmental Legal Defense Fund) is a Community Rights Movement of pioneers who have successfully worked with communities in the USA to create local legislation in over 36 municipalities, and The AELA (Australian Earth Laws Alliance) proposes to create human societies that live within their ecological limits, respect Rights of Nature.

The United Nations Secretary-General Ban Ki-Moon and other speakers advocate for the Rights of Nature at the Interactive Dialogue of the General Assembly on Harmony with Nature (2013), declaring:.

I look forward to your discussions on living in harmony with nature. And I will join you in acting on our promises.

Since that time, there has been significant expansion of international and national NGOs, community-based organizations and legal initiatives integrating legal protections for biodiversity and natural systems into laws.

On 22 December 2015, the General Assembly adopted resolution 70/208, specifically acknowledging that Earth Jurisprudence is advancing Harmony with Nature.

Earth Jurisprudence recognizes that the Earth is the source of laws that govern life. It provides a cohesive framework that underpins many disciplines, weaving them together to create a more effective, holistic governance approach, one that reflects the integrated nature of the world in which we live

The ‘*experts*’ report further recommends that our governance systems ‘*recognize the fundamental legal rights of ecosystems and species to exist, thrive and regenerate,*’ observing that nature’s rights ‘*are not in opposition to human rights: as part of Nature, our rights are derived from those same rights*’. The report concludes that human rights ‘*are meaningless if the ecosystems that sustain us do not have the legal right to exist*’.

The Dialogue of the General Assembly of the UN on Harmony with Nature was held in 2016. Given the breadth and depth of Earth Jurisprudence, Experts have addressed it from the following eight disciplines:

1. Earth-centered Law;
2. Ecological Economics;
3. Education;
4. Holistic Science (includes Biology, Chemistry, Cosmovisions, Geology, Physics, Holistic Food Systems including Fisheries and Water) and, Holistic Medicine;
5. Humanities (includes Anthropology, Linguistics, Psychology and Sociology);
6. Philosophy and Ethics;
7. The Arts, Media, Design and Architecture; and,
8. Theology and Spirituality.

However, in his discussion about ‘*A Rule of Law for Nature: New Dimensions and Ideas in Environmental Law*,’ Bratspies (2013) expresses his disappointment about the UN’s strong stand against supporting the philosophy of the EJ, commenting that the Green economy proposed by the UN (2012) will not build a rule of law for nature, arguing that little has changed to create a more sustainable future during the 25 years since the Brundtland commission report. During this time, continues Bratspies, a remarkable body of environmental law, protocols and frameworks have been adopted in all developed countries, most developing countries, and on an international level. However, in many cases, the objectives set by these environmental laws have not been fulfilled, prompting the author to conclude that:

It is clear that the objective of an effective coexistence of humans with nature towards a more sustainable future is far from being realised.

Lampkin and Wyatt (2020) believe that simply modifying existing legal structures would not sufficiently ensure environmental protection, but the proposal of Wolf and Stanley (2014) to explore an approach where humans are no longer considered the main stakeholder, but rather the environment instead. Obviously, as the authors realise, such a proposition would contravene the traditional foundations of human-made law, which reflects human power over nature and human interest in commodifying nature. However, both Wolf and Stanley (2014) and Lampkin and Wyatt (2020) believe that the objectives of Earth jurisprudence delineate a clear vision to institute an environmentally-centred approach to law-making, the environment rather than humans being at the core, thus ensuring adequate legal protection for the Earth. The rise and domination of the profit-seeking capitalist mode of production, an increasing human population, and excessive consumption and waste production have been alarming, calling for a change in course.

Since laws are drafted and created by humans and otherwise pro-human, the obstacle to the EJ proposition would be that laws cannot be free of human interference, note Lampkin and Wyatt, and as such question the feasibility of deconstructing existing laws indiscriminately so as to remove humanity from being the primary focus, which has been the accepted norm for too long, Rogers and Maloney (2017) and Lampkin and Wyatt (2020) discuss the recent propositions being debated, and ask some pertinent questions:

- Are we able to switch from human-centred thinking that has mostly has been individualistic in nature to being concerned with our actions from the perspective that humans are one small part of a larger ecological community?
- How do we disregard our own self- interest, our ingrained assumptions and presuppositions as part of the human species, and indeed as part of a particular subset

of the human species, to prioritise or at least recognise and respect Earth and its many communities and lifeforms in the process of wildly rewriting law?

Wilson (2020) of The Earth Law Centre informs that the Convention on Biological Diversity (CBD) has become the first international environmental treaty proposing to advance the Rights of Nature. The '*zero draft*' for a post-2020 global biodiversity framework, will be up for adoption during the 15th meeting of the "Conference of the Parties" (COP) to the CBD in 2021 in Kunming, China.

Discussing the participation of Original Nations in the ongoing EJ debate, Fukurai and Krooth (2021) summarise their findings as :

While the Original Nation scholarship proposes the eventual dissolution of coercive state structures, at this point the power of the state can be instigated to deter predatory corporate actions and destructive state projects

In her analysis, Helen Dancer (2021) recommends that to avoid a double colonisation of people and Nature, it will be important for people, states, and international organisations to remain open to exploring fundamental questions regarding a new direction for international environmental law. Dancer's opinion is that answers are needed for three crucial questions:

1. How could, or indeed should, unwritten laws of the Earth be recognised in human law?
2. Are citizens prepared to let go of the dominant legal paradigm that sees humans as the Earth's only subjects?
3. What sort of power-sharing arrangements could be developed between states, people and other living entities towards sustainable development and living well?

The same questions are being asked over and over again, and that trend will continue as long as the established anthropocentric mindset of humanity prevails. The present global environmental, political, social and physicals turmoil gripping the planet may require further reflections about the way forward in international environmental law.

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Conclusion

The Secretary General of the United Nations, Mr. U Thant, remarked in his address to the General Assembly of 29 October 1970 that:

As we watch the sun go down evening after evening through the smog across the poisoned waters of our polluted earth, we must ask ourselves seriously whether we really wish some future universal historian on another planet to say: *'With all their genius and skill, they ran out of foresight and air and food and water and ideas.'*

Five decades ago, Secretary General U Thant realized that humanity, after having through neglect and lack of foresight started the slow destruction of its own home planet, was hardly making the necessary efforts in the right direction. Since, the United Nations and its satellite organizations have come up with over 1000 mostly soft laws in the form of multilateral agreements (MEAs), and various other types of environmental prescriptions. However, despite the proliferation of international environmental agreements, environmental degradation has continued, and new environmental challenges continue to emerge. Why is it that, despite the huge volume of international environmental law, the state of the global environment has continued to worsen? There are numerous complex reasons for this and a number of explanations and strategies have been suggested by concerned scholars. However, suggestions outside the United Nations network appear to have failed to attract attention, and now the UN is proposing a new package, *The Global Environmental Compact*, which is no less than a recycled format of the failed MEAs.

There is little doubt that concentration on economic development and the rising influence of corporations, both national and transnational, have greatly influenced the development and direction of environmental law. The traditional command and control and prescriptive types of law have been found to affect economic development adversely on the one hand, increase the burden and capacity of compliance of states on the other, and more importantly, reduce the profits of corporations. As a result, the primary actors of environmental policy have shifted from states to corporations, thus shifting the duty of compliance to these new actors. The result has been a shift towards management and market-based laws, concentration on policies and governance, and a built up on guidelines and standards rather than hard laws.

Traditionally, international environmental protection and international economic law have been treated separately. A new model is arising whereby the focus is on ecosystems conservation, pollution prevention, and a precautionary approach, not purely as environmental prescriptions but as an integral component of sustainable practices. The obvious objective of this new format of environmental law is to make the entire production and consumption system environmentally sound, conforming to the philosophy of sustainable production and consumption. Such a new international environmental law will of necessity emphasize on performance standards to prevent pollution and minimize degradation, rather than on liability for damage or provision of incentives to adopt environmentally sound processes.

The question that has been asked before: *Quo Vadis International Environmental Law* still remains either unanswered or engulfed within a variety of pathways and labyrinths, a real maze where the world finds itself battling with profit on the one hand and protecting people and planet on the other. The scales appear to always tilt on the side of unbridled economic growth and profit, and ever increasing GDP, or competitive growth to improve the wealth of nations remains the priority of nations, no matter of the costs to the planet.

The last few years have similarly witnessed the concept of a '*green economy*' being added to the scoreboard of environmental economics, and adopted within the policy making circles, without even questioning the exact meaning of the term. And obviously, to attract global attention and perhaps approval too, the concept has been linked to sustainable development and poverty eradication. UNEP jumped into the fray by defining a green economy as:

One that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.

It needs to be remembered that for the past five decades the UN and its satellite organizations have been trying to do what the '*green economy*' proposed to do now, and have failed. Recycling failed models of environmental managements appears to be popular. It is widely believed that the change from past approaches to international environmental law, should now specifically focus on environmental protection, rather than bound up with sustainable development or green precepts. It has already been shown that economic growth has reduced and subordinated international environmental protection.

It appears the development of international law to this day has not been mindful of several of the interlinkages discussed by scholars, those that should act as catalysts in the law making process. The general consensus is that environmental law is linked to the growing acceptance of the notion of collective global responsibility, which also entails the notion of human well being and popular participation. It is believed that for international environmental law to achieve structural, ethical, and external re-invention there needs to be a transformation of the environmental, ecological and economic behaviour of society in general. Such transformations can only happen when the omitted linkages or catalysts are given due consideration. The closest the world came to laying the foundations to drive the type of transformations required was with the endorsement of the World Charter for Nature by the United Nations General Assembly in 1982, endorsed but forgotten.

However, it appears that international environmental law has not been, and still is not sufficiently ambitious to deal with the planetary crisis from all angles and with all available resources, and even omitted to consider the myriad socio-ecological injustices arising from human domination of the earth system. In other words, international environmental law has not been sufficiently ambitious to achieve the type of radical transformations necessary to ensure planetary integrity and socio-ecological justice. Despite these and other significant advances, there is still a continued need to further enhance efforts to meet the many current and future challenges, and to enable the international community to effectively address environmental issues of common concern. Emerging issues and opportunities as well as the new frontiers of environmental law would only help in ensuring that law continues to be used as a fundamental tool in meeting these challenges if the missing links are integrated within the law making processes.

What should also be of concern are the numerous unaddressed issues that are allowed to persist to this day, and even continue to plague compliance, in international environmental law. These are the issues that further emphasize the failure of international environmental law, at least in its present format and approach.