

## ARTICLE

# Evaluating the Protection of Biodiversity and Environmental Resources under Saudi Environmental Law in Light of the Convention on Biological Diversity

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## ABSTRACT

In light of the significant rate at which global biodiversity is declining, the necessity of reinforcing the legal frameworks for transferring international environmental commitments into practical national mechanisms has become pressing. The Convention on Biological Diversity (CBD) serves as the international umbrella for biodiversity protection. Moreover, the effective application of the CBD is conditioned by the incorporation of its principles into domestic legislation. The purpose of this study was to verify the applicability of the CBD's preventive principles outlined in Article 14 to Saudi Environmental Law, especially Articles 6, 7, and 8 thereof, and to compare and correlate these two international and national systems. A doctrinal comparative legal analysis was undertaken to compare and correlate Article 14 of the CBD with the corresponding provisions of the Saudi Environmental Law through the application of analytical criteria for legal harmonization, consisting of preventive regulation, environmental risk management, resource governance, compliance enforcement systems, monitoring, accountability, and remediation of environmental harm. It has been concluded that there is a high degree of alignment between the CBD and Saudi Environmental Law; Article 14 of the CBD provides general procedural rules for preserving biodiversity, whereas Saudi Environmental Law Articles 6, 7, and 8 embody these principles in enforcement-oriented mechanisms. Finally, the paper recommends the internationalization of biodiversity governance and provides some recommendations for experience exchange on effective legislative practices. The study also advocates empirical research for further assessment of effective implementation and measurable biodiversity conservation outcomes.

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## 1. Introduction

In recent years, tensions have been rising between growing demand for economic growth and the necessity to ensure environmental quality in the face of a technology boom leading to faster progress in both domains and to increasingly complicated problems concerning environmental quality<sup>[1]</sup>. Today, one of the most important issues threatening humanity is environmental degradation as its quality degrades and changes in a manner which, in terms of intensity and scope, hasn't been seen at all in the entire history of the planet; this problem threatens the well-being of both humans and ecosystems. Even though many of the negative effects from the Industrial Revolution are already irretrievable or unstoppable, one cannot neglect the great potential that modern industrial technologies offer in managing and protecting the environment, namely, contributing to climate decarbonization, biodiversity conservation, and safe provision of food and water resources<sup>[2]</sup>.

Land-use patterns are changing rapidly globally with expanding rates of industrialization and urbanization and, consequently, with increasing human land-use at the cost of natural habitat<sup>[3-5]</sup>. Considering such land-use changes, environmental resources are seen as finite and a foundation for all life on Earth, especially being vulnerable and depleting under the Anthropocene, since pollution (often with harmful industrial, agricultural or biological chemicals and heavy metals) accumulates worldwide and has seriously impoverished the functionality of ecosystem services<sup>[6-9]</sup>. However, local biodiversity, as an invaluable component acting as an umbrella of defense against biological invasions and pollution of environments, safeguards human life and health and assures us of sustained human well-being and ecosystem functionality; otherwise, biodiversity losses entail widespread loss of these ecosystem services, which cause a wide array of human-economic and cultural impacts<sup>[10-13]</sup>.

On the economic front, there is evidence of a complex, non-linear relationship between environmental degradation, on the one hand, and economic growth and trade policies around the world, on the other hand: with environmental

stress being higher in the early phases of economic growth, and decreasing beyond a certain level of income. Restrictions on trade and trade policies also put more pressure on the environment in numerous cases around the globe, especially in developing and middle-income countries, a result highlighting disparity in the environmental impact of economic development, and showing that cooperation is necessary in the world economy to strike a balance between economic and environmental objectives<sup>[14]</sup>. Along these lines, an important part of our international trade is about "footloose" industries being transferred from rich to less developed countries, in East Asia, like in China and Vietnam; in this situation of increased income and job creation, we have experienced greater industrial pollution and less biodiversity, and there has clearly been a sacrifice of the environment in favor of growth<sup>[15]</sup>.

Human activity has been the main driver for extensive changes in the terrestrial and aquatic ecosystems for the past century; such changes are reflected through decreasing natural vegetated land and wetlands, the growth of human land use and agriculture, degradation of water quality and the bad management of the water resources, increasing eutrophication, arrival of exotic species, and the decline of fish and wildlife<sup>[16]</sup>. Besides these factors, there are other environmental threats, such as the increase in water-resource disputes and the lack of regulations and policies, which undermine the sustainability and resilience of ecosystems. As a result, there is growing interest in incorporating institutional management into legal regimes and regulations so as to provide protection to biodiversity, stop the continued destruction of the environment and make them survive to our next generation<sup>[16]</sup>.

Various analyses over the last few years have analyzed the threats and opportunities to enhance the quality of biodiversity governance and implement global commitments on biodiversity. There has also been increasing research concerning the necessity of institutional coordination, enhanced implementation, and connections between global commitments and national legislation for the proper functioning of international biodiversity governance<sup>[17]</sup>. Similarly, re-

cent reviews of the Kunming–Montreal Global Biodiversity Framework underline the value of measurable targets, adaptive governance, science integration, and robust monitoring to translate global biodiversity goals into tangible conservation action<sup>[18]</sup>. Although the Kunming–Montreal Global Biodiversity Framework is a progressive step in global biodiversity governance, its effective implementation is reliant on solving key challenges regarding implementation capacity, accountability and coordination between national policy and global biodiversity objectives<sup>[19]</sup>. Moreover, more recently, research has drawn attention to comparative approaches to environmental governance in understanding how states, particularly through diverse types of law (regulatory) and legal mechanisms and institutional structures and compliance mechanisms incorporate international environmental obligations into domestic legal systems<sup>[20]</sup>. Likewise, recent research on implementing international environmental agreements also underlined the significance of appropriate legal and operational design, in particular environmentally responsible governance, robust monitoring and effective environmental compliance systems that allow the translation of environmental measures into effective legally enforceable, practical instruments involving a broad array of stakeholders and science-based approaches to enable an assessment of the relationship between the implementation of global commitments and national legal and regulatory frameworks<sup>[21]</sup>.

This study aims to examine the extent to which Saudi Environmental Law<sup>[22]</sup> has turned the underlying provisions of the Convention on Biodiversity (CBD)<sup>[23]</sup> into legislations and legal tools. In this paper a legal comparative analysis will be made between the provisions of Saudi Environmental Law and the provisions of the convention with emphasis on Articles 6, 7, and 8 of Saudi Environmental Law<sup>[22]</sup> to investigate them as the legal tools regulating the prevention of the pollution and controlling the degradation of the environment, while the comparison is made against Article 14 of the Convention<sup>[24]</sup>. Thus, the paper will discuss three main issues: the importance of Article 14 of the CBD, the importance of Articles 6, 7, and 8 of the Saudi Environmental Law for biodiversity, and whether there is a requirement for updating and further developing the CBD and other related international laws for biodiversity.

Considering the growing concerns with the global environmental crisis and the continued deterioration of global

biodiversity, the demand for more rigorous analytical frameworks for assessing the efficacy of legal regimes for biodiversity protection at both international and domestic levels has increased. While substantial work has been conducted on environmental governance and sustainable development, very little is known in the context of comparative law regarding the interface of the CBD and the Saudi Environmental Law and how the principles of preventive obligations embedded in Article 14 of the CBD have been embodied in legally binding forms in domestic Saudi law under its Articles 6, 7, and 8. Also, limited effort has been made to establish a systematic approach for evaluating legislative alignment between international environmental obligations and national regulatory systems.

As a result, this study addresses such a gap by providing a comparative doctrinal legal analysis of the extent to which the CBD and Saudi Environmental Law are consistent, with an intentional emphasis on Article 14 of the CBD, the Convention's main procedural provision on environmental impact assessment, risk prevention and integration of the environment in the decision-making process. This study goes beyond mere description of the comparative legislative texts; it lays down a framework for the comparative evaluation of how international principles are incorporated in legally binding mechanisms by going beyond substantive provisions. Hence, the analysis will not be restricted to the wording and contents of laws only but would assess compliance with international environmental standards through various angles of environmental governance such as the regulatory-preventive aspect, level of specificity, enforcement mechanisms, compliance standards, and institutional aspects in the environmental governance system. Therefore, these research results should be interpreted as an assessment of legislative design and regulatory alignment with the preventive principles embodied in Article 14 of the CBD. These results, in turn, are meant to provide the conceptual background for future comparative research.

## 2. Materials and Methods

This study adopts a doctrinal comparative legal analysis to examine how far the precautionary principles established in Article 14 of the CBD have been incorporated into the Saudi Environmental Law. The study considers the rele-

vant provisions of the Saudi Environmental Law such as its Articles 6, 7 and 8<sup>[22]</sup> concerning pollution prevention, protection of natural resources, environmental compliance, and ecological rehabilitation. These articles are compared with Article 14 of the CBD<sup>[24]</sup>, which comprises the Convention's principal procedure provision on environmental impact assessment, risk prevention, and mainstreaming environmental issues into decision-making. The study relied on a systematic legal text analysis methodology supplemented with scientific literature and the reports from relevant nationally and internationally accredited entities involved in biodiversity protection and environmental governance. The comparative analysis was guided by six predetermined legal analytical criteria derived from the procedural obligations established under Article 14 of the Convention on Biological Diversity and the corresponding regulatory functions of the Saudi Environmental Law. These criteria comprised: (i) preventive environmental regulation; (ii) environmental impact assessment and risk prevention; (iii) conservation-related natural resource management; (iv) environmental monitoring, compliance and enforcement; (v) legal liability, ecological restoration and remediation; and (vi) institutional implementation arrangements, including the allocation of legal responsibilities. These analytical criteria were established before the comparative assessment commenced and were applied consistently to all legal provisions examined.

The comparative analysis of national and international instruments was executed in four steps namely: first, identify Article 14 of the CBD as international reference, second, select Articles 6, 7 and 8 of the Saudi Environmental Law as national counterparts, third, determine the extent of legislative alignment, divergence and complementarity, divergence and complementarity of two systems against predetermined analysis parameters, fourth, conduct a qualitative assessment to determine if Saudi provisions merely reflect the overall CBD goals for Article 14 or if they establish binding domestic duties.

To enhance analytical objectivity, all legal provisions were evaluated using the same predetermined analytical criteria and an identical comparative procedure. The assessment focused exclusively on the legal content, normative functions, and regulatory obligations of the examined provisions rather than on subjective interpretation or policy preferences. Applying the same analytical framework to all legal texts

ensured consistency, transparency, and replicability throughout the comparative legal assessment. Since this study was conducted exclusively within a doctrinal legal framework, it provides a legal assessment of legislative alignment and normative alignment rather than an empirical evaluation of implementation effectiveness. Accordingly, the study examines the extent to which international environmental principles have been incorporated into the Saudi legal framework. Future empirical research based on judicial decisions, regulatory compliance data, environmental enforcement records, and biodiversity monitoring indicators could provide additional evidence regarding the practical effectiveness of implementing these legal provisions.

### 3. Results and Discussion

#### 3.1. The Importance of Article 14 in Biodiversity Protection and Environmental Impact Management

The CBD is seen as one of the most significant international agreements made as part of the results of the Earth Summit at Rio de Janeiro in 1992 to counter the ever increasing concerns of the world community over damage to the ecosystems and degradation of natural resources, with deforestation rising in several regions such as the Amazon and illegal trade in animals with the adoption of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1972<sup>[17]</sup>. The purpose of this convention was to combat loss of biodiversity and conserve it but the reports by later agencies especially the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services<sup>[25]</sup> demonstrate that a number of global trends have led to a continued decline in global biodiversity; more than 25% of all species assessed are threatened with decline and around a million are predicted to be lost over the coming decades. These can largely be attributed to 5 key drivers: land and sea use change, over-exploitation of resources, climate change, pollution, and invasive alien species. The loss of biodiversity is not an ecological issue only; it represents an issue of social justice because of the differential impacts of its decline on communities that rely more on ecosystem services, particularly indigenous people and other local communities<sup>[25,26]</sup>. In addition to being the first global treaty to cover all three pillars of biodiversity, the Convention was

drafted in Rio de Janeiro, Brazil, in 1992 and entered into force on 29 December 1993. The Convention is a multilateral treaty with three major objectives: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of benefits arising out of the utilization of genetic resources<sup>[27]</sup>.

Furthermore, Article 14 of the Convention<sup>[24]</sup> is considered to be one of the most important of the Convention's procedural provisions. Indeed, it lays down the basic legal structure to guarantee the inclusion of environmental concerns into the planning, decision-making and implementation of development activities. The aims of Article 14 are to prevent and reduce, at the planning stage and throughout implementation, the potential negative impacts on biodiversity resulting from the planning of such activities through environmental risk assessment and management processes on the basis of systematic and scientifically founded procedures. Its main merit has been to bring up the question of the protection of biological diversity from an abstract level, where only objectives were laid down to be applied in the planning phase, to a concrete level that brings preventive instruments and processes to lessen environmental damage and to protect its biodiversity components.

In addition, CBD Article 14 sets forth the procedural requirements to protect biodiversity through the preventive application of measures such as environmental impact assessment, the inclusion of environmental concerns in development policies and planning processes, cooperation among states for transboundary environmental concerns, management of environmental risks and emergencies, and establishment of liability regimes and remedies to make good the environmental damage<sup>[24]</sup>. Its importance to translate CBD objectives into legally binding obligations relies on the degree to which States transpose into their national legal and administrative procedures the procedural obligations laid down in CBD Article 14, and the effectiveness in meeting these goals hinges upon the effective incorporation of such procedures into national legal and administrative systems. Therefore, it represents the legal touchstone for the study in question that will serve as a benchmark to investigate the consistency between Saudi Environmental Law and CBD, and examine the sufficiency of the Saudi regulatory framework to ensure effective biodiversity conservation and sustainable environmental management. Article 14<sup>[24]</sup> could be perceived as the procedural and pre-

ventive basis of CBD since it supplies the legal tools required for environmental impact evaluation and risk assessment, the consideration of the environment in the development process, and enhances collaboration in areas related to cross-border impacts and emergency risk management, besides its role in creating liability framework and mechanisms. As a result, it becomes instrumental for the realization of a legal framework, contributing to biodiversity protection and securing the sustainability of ecosystems in the long run.

### **3.2. The Legal Significance of Articles 6, 7, and 8 of the Saudi Environmental Law in Strengthening Biodiversity Protection and Ensuring the Sustainability of Natural Resources**

In light of the legislative and institutional changes that have been adopted by the Kingdom of Saudi Arabia for the purpose of consolidating and enhancing environmental sustainability, and achieving the goals of the Saudi Vision 2030, the State has been paying increased attention to establishing a comprehensive system for environmental protection and conservation of natural resources based on solid legal and regulatory standards in the modern era. This orientation represents a deepened perception that the environment is an integral element for achieving sustainable development and a guarantee of the sustainability of natural resources and the maintenance of natural balance and the quality of life of human beings. Therefore, several legislative and institutional procedures and legislative decisions have been issued to improve environmental performance and to monitor and regulate developmental activities and their compliance with international and local environmental standards. Under this aspect, the National Center for Environmental Compliance (NCEC) was founded in 2020 as a main piece of the national environmental infrastructure and operates with a distinct legal identity and administrative, operational, and financial autonomy. The task of NCEC is the oversight of the compliance of persons, facilities, and operations with the environmentally endorsed requirements, the designation of environmental controls and standards, the designing of the monitoring and inspection procedures and mechanisms, as well as supervision over the discharge of legal duties within the scope of the environmental legislation. These activities contribute to improved compliance with the law and a higher

degree of accountability, transparency, and environmental governance<sup>[28]</sup>. The creation of this institution supports the move away from the traditional model of environmental management towards a comprehensive approach built upon risk management and continual assessment of environmental impact and the performance of the regulated operations<sup>[28]</sup>.

Furthermore, the Kingdom of Saudi Arabia is a party to the CBD since January 2002<sup>[29]</sup>. Also, to bolster the existing institutional infrastructure of the country, the Kingdom enacted the Environmental Law vide Royal Decree No. (M/165) issued on 10/7/2020. Additionally, the Environmental Law is a kind of legal regulation that provides a clear and holistic framework covering several elements related to the protection of and management of the environment. It is intended to protect components and factors of environment, and prevent and combat pollution and its consequences, protect and prevent depletion or deterioration of natural resources, protect their utilization on a sustainable basis and enhance national endeavors for achieving sustainable development and adapting to global environmental challenges, along with, adherence to principles of modern environment law such as the precautionary principle, the prevention principle, the sustainable development principle, and the polluter pays principle as legal basis for regulating the environment at the state level, and international community<sup>[28]</sup>.

Moreover, Article 6 of Saudi Environmental Law. Saudi Environmental Law, its provisions are especially interesting in that it not only puts in place general principles on environmental protection, but sets forth an integrated system of duties and regulatory requirements which control the interaction between man's action, his exploitation of natural resources, and the media constituting the environment. This point is vividly evident in Articles 6, 7 and 8 of the said Law, as they represent one of the key pillars of the Saudi environmental legal system and cover three related fields which constitute the functional basis for the protection of the environment. One of the basic articles to lay down the foundation of Environmental Protection in the Kingdom of Saudi Arabia is Article 6 of the Saudi Environmental Law, which very precisely and clearly includes, inter alia, a prohibitive preventive principle against any harmful pollution and impact on the media and water resources. The importance of this provision comes from the fact that it is the basic principle setting forth environmental rules of conduct, and stipulating the rights of

people to act against and not for environmental harm. In this regard, it not only governs how the environment could be utilized, but sets it at a level of a general and direct prohibition against any deed or action which could directly harm the environment, or diminish the capacity of the environment, or impact its ability to produce its ecosystem services. This Article of the Saudi Law then becomes a principal column on which the whole Environmental Legal system is built, as it reflects the state's commitment to a complete direct approach toward safeguarding environmental essential components, as shown in **Table 1**.

Furthermore, Article 6 provides the precautionary pillar of the Saudi Environmental Law by outlawing any conduct that would lead to environmental pollution or degradation prior to the occurrence of environmental damage. It represents a legal policy that not only allows but enables proactive measures, with a focus on addressing both conventional and new environmental problems, in any environmental compartment. In addition to its general prohibition, the article is the backbone that allows the implementation of various regulations dealing with licensing, monitoring and enforcement to take place. It also indirectly contributes to the conservation of biodiversity by mitigating pollution, which is a key driver of degradation in our ecosystems; in line with the precautionary principle found in CBD Article 14. Further building on this prevention rationale, Article 7 then turns from an exercise in pollution prevention to that of effective management and sustainable utilization of natural resources. In that Article 7 establishes a system for granting licences and authorizations over land and marine resources so that the use of those resources will continue to operate within a legal framework and taking ecological factors into consideration. Through that mechanism, Article 7 alleviates pressure that can cause loss and degradation of habitat and biodiversity while contributing to economic growth and sustainability. Additionally, Article 7 in that sense is, again, aligned with CBD's goal of integrating biodiversity conservation and management in national resource management programmes.

The framework for Articles 6 and 7 is transformed into an effective implementation process in Article 8 of the Saudi Environmental Law. Continuous compliance, monitoring, reporting and remediation of licensed activities are enshrined in Article 8 of the law, in addition to prohibition, which transforms environmental protection from an act of proscription

to one of measurable activity-based operations and increases the oversight and institutional liability mechanisms. The prevention principle and polluter pays principle, as well as other international guidelines on biodiversity conservation, have influenced Article 8 in promoting the proactive aspect

of environmental protection through constant assessment and remediation of environmental degradation, and can be considered the operating mechanism for realizing the aims and objectives of Article 14 of the Convention on Biodiversity within the Saudi Environmental Law.

**Table 1.** Legal Text of Articles of Saudi Environmental Law and Article 14 of Convention on Biological Diversity (CBD).

| Saudi Environmental Law                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Convention on Biological Diversity (CBD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p><b>Article 6:</b><br/>It is prohibited to undertake any activity that may cause pollution of the environmental media and water resources, or cause harm to them, or negatively affect their utilization, in accordance with the provisions specified in the regulations.</p> <p><b>Article 7:</b><br/>It is prohibited to exploit, transport, store, sell, or promote any natural resources and their products located within the territory of the Kingdom, which includes its lands (including islands), its airspace, internal waters, territorial sea and its seabed and subsoil, the airspace above them, and all other maritime zones over which the Kingdom exercises sovereign rights or jurisdiction in accordance with international law, without obtaining a permit or license, in accordance with the regulations.</p> <p><b>Article 8:</b><br/>Any permit holder or licensee who engages in activities that may generate emissions or pollutants, or that may affect the environmental media, shall comply with the following:</p> <ol style="list-style-type: none"> <li>1. The environmental requirements, controls, procedures, standards, and criteria specified in the regulations.</li> <li>2. Take the necessary measures and actions when approaching the exceedance of environmental standards, in accordance with the provisions specified in the regulations.</li> <li>3. Establish monitoring, measurement, and control programs and systems for the quality of environmental media, in accordance with the provisions specified in the regulations.</li> <li>4. Provide the competent authority, on a periodic basis, with data and reports related to emissions or pollutants resulting from its activities, for review, verification, and determination of any violations of standards, criteria, and requirements, in accordance with the provisions specified in the regulations.</li> <li>5. Submit environmental audit studies to the competent authority, in accordance with the provisions specified in the regulations.</li> </ol> <p>Restore environmentally degraded media resulting from the practice of its activities, in accordance with the provisions specified in the regulations, and identify the competent authority for the activities referred to in this article.</p> | <p><b>Article 14. Impact Assessment and Minimizing Adverse Impacts</b></p> <ol style="list-style-type: none"> <li>1. Each Contracting Party, as far as possible and as appropriate, shall: <ol style="list-style-type: none"> <li>(a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures;</li> <li>(b) Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account;</li> <li>(c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate;</li> <li>(d) In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage; and</li> <li>(e) Promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biological diversity and encourage international cooperation to supplement such national efforts and, where appropriate and agreed by the States or regional economic integration organizations concerned, to establish joint contingency plans.</li> </ol> </li> <li>2. The Conference of the Parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is a purely internal matter.</li> </ol> |

### 3.3. The Extent of Alignment between Articles 6, 7, and 8 of Saudi Environmental Law and Article 14 of CBD in Strengthening Environmental Protection and Biodiversity

In this sense, Article 14 provides a framework for the general procedure required to avoid significant adverse impacts upon biodiversity and is to be applied in practice through

environmental impact assessment, the mainstreaming of environmental concerns in decision-making, risk management and the implementation of the Convention. However, because this provision forms part of an international instrument, it sets out general legal obligations, leaving the implementation of such to the different legal, legislative and administrative schemes that may be available to a State Party. It can be noted that in Saudi Arabia's environmental legal framework,

Articles 6, 7, and 8 embody significant substantive and procedural similarities with Article 14 of the CBD, while they offer much more specific regulations and measures than the Convention's procedural commitments in Article 14. Rather than only giving a reflection of the objectives set forth in Article 14 of the Convention, the aforementioned Articles can be seen to concretize those objectives by giving them operational substance in the form of positive obligations at the domestic legal level. The provisions address each of the various procedural obligations stipulated in Article 14; Article 6 establishes the precautionary aspect; Article 7 addresses the incorporation of environmental concern in decision-making by making the authorization of use of natural resources contingent upon environmental considerations, and Article 8 gives practical shape to risk management and implementation measures.

Additionally, the comparison highlighted an interesting legislative alignment. Unlike Article 14 of the Convention, which basically provides international guidance and has to be enforced at the State Parties' level, the Saudi Environmental Law offers directly binding legal provisions with the addition of administrative control mechanisms. Such feature reinforces the legal certainty and enhances the control over the enforcement and implementation measures. Nonetheless, the implementation of such regulatory adaptation still hinges on several factors in addition to the legal structure: efficient enforcement, coordination of governmental agencies and effective execution of executive regulations. Consequently, the comparative analysis illustrates that the Saudi Environmental Law not only captures the intentions and objectives stipulated in Article 14 of CBD but goes beyond by transforming

them into a coherent practical legal scheme combining prevention, regulation and monitoring. In addition, whereas the comparative analysis demonstrates a high degree of legislative alignment, the Saudi Environmental Law represents a notable example of regulatory adaptation of the CBD preventive principles. It is worth mentioning that, this study represents a legal analytical exercise based on legislation rather than an empirical investigation of its application. As such, the degree of regulatory adaptation noted corresponds to the legislative structure, regulatory methods, and process coherence between Saudi Environmental Law and Article 14 of the Convention; rather than reflecting their actual impact and effectiveness in achieving the desired goals. Although the Saudi regulatory framework offers in detail the domestic legal mechanisms which will support the realization of preventive provisions embodied in the Convention, their practical application would certainly be subject to consistent enforcement, relevant governmental institutional resources, and effective agency collaboration, functioning executive rules and availability of precise environmental information. For these reasons, the results reported should be interpreted as an assessment of the level of legislative alignment and adaptation; an empirical analysis should, consequently, be the object of another investigation where relevant data, reports and compliance information may be available in order to assess the impact and efficiency. Transforming international principles into domestic binding provisions and a set of administrative procedures could therefore be regarded as one of the most salient strengths of the Saudi regulatory framework that may be presented as demonstrated in **Table 2**.

**Table 2.** Comparative Analysis of Articles 6, 7, and 8 of the Saudi Environmental Law and Article 14 of the Convention on Biological Diversity (CBD).

| Comparison Criterion    | Saudi Environmental Law           |                                   |                                          | Convention on Biological Diversity (CBD)            |
|-------------------------|-----------------------------------|-----------------------------------|------------------------------------------|-----------------------------------------------------|
|                         | Article 6                         | Article 7                         | Article 8                                | Article 14                                          |
| Preventive approach     | Explicit prohibition of pollution | Licensing of natural resource use | Continuous compliance and monitoring     | Environmental impact assessment and risk prevention |
| Regulatory instrument   | Statutory prohibition             | Licensing system                  | Monitoring, auditing and rehabilitation  | Procedural obligations for States                   |
| Biodiversity relevance  | Pollution prevention              | Sustainable resource management   | Environmental compliance and restoration | Biodiversity impact assessment                      |
| Enforcement mechanism   | National legal obligation         | Administrative authorization      | Monitoring and reporting obligations     | Implementation through domestic legislation         |
| Institutional mechanism | Competent national authorities    | Licensing authorities             | Environmental oversight authorities      | States Parties                                      |

Additionally, **Table 2** provides a clearer picture regarding the extent of legislative alignment between the Saudi Environmental Law (Articles 6, 7 and 8) and Article 14 of the CBD. It is clear that while Article 14 has stipulated an international procedure to ensure biodiversity protection, the Saudi Environmental Law has incorporated the universal provisions into national procedural and normative instruments including prohibitory measures, permit and registration systems, procedures to ensure compliance with the Saudi Environmental Law, the assignment of legal responsibility for biodiversity management, and legal authority for different governmental bodies to perform their roles and functions as related to biodiversity management. The table would seem to point out that there has been more procedural specificity on the national legal side, hence helping in putting into effect and operation the measures required by the CBD about biodiversity. That may influence ensuring the practical enforcement and success of the proposed law, institutional harmony and cooperation and operation of relevant regulations that accompany it. All in all, a reading of the above table gives one the indication that Saudi Environmental Law embodies a structured approach for the establishment of mechanisms for compliance with the provisions of the procedural aspects of the CBD at the national level with certain flexibility as to conform with domestic legal and administrative framework.

### **3.4. Updating the Convention on Biological Diversity and Strengthening Legal Protection for Biodiversity**

Given the accelerated rate of global environmental change, and the continued rate of decline in biological diversity at the genetic, species and ecosystem levels<sup>[30]</sup>, periodic review and adaptation of the CBD implementation framework is therefore necessary to meet changing environmental and scientific challenges. Although the Convention was designed as a framework treaty that imposes a normative framework on State parties whilst affording them latitude on how to adopt concrete implementation in the national realm, more than thirty years have elapsed during which extensive experience has been acquired concerning legislative, regulatory and institutional practice in numerous countries. Thus, this paper does not contend that the Convention is deficient in certain national legal systems having been furnished with

more specific regulatory provisions. Instead, it argues that the cumulative experiences of national implementation of the Convention provide valuable lessons that can help to guide the evolving framework of biodiversity governance, and assist the practical implementation of the Convention given new environmental and scientific developments. Biodiversity governance has undergone considerable change over the last three decades given changing environmental circumstances including: the continued rate of habitat degradation, accelerated climate change, increased levels of pollution, prevalence of invasive alien species, as well as new digital technologies and rapid advances in scientific research into ecological systems and environmental protection. A range of initiatives have begun to recognize, together with biodiversity monitoring systems, digital technologies and evidence-based policy making systems, the necessity of employing a range of techniques, in support of robust governance, including in respect of climate change and other environmental factors<sup>[19]</sup> included. This has demonstrated that effective environmental governance depends on a variety of mechanisms including those based on scientific data, monitoring, innovative implementation instruments, institutional arrangements, environmental information systems and effective institutions<sup>[30]</sup>. Consequently, in relation to the future, ongoing dialogue among States Parties will facilitate continued exchanges on successful legislative experiences and regulatory innovation, and on the exchange of institutional best practices developed in various jurisdictions. This should serve to support the development of effective implementation guidance, encourage institutional collaboration and cooperation, contribute to effective environmental monitoring and governance, and support biodiversity conservation, all within the existing role of the Convention as the principal instrument of biodiversity protection. Moreover, the process of development of biodiversity governance in the context of this study has been considered one of the refinements and enhancement of the existing legal principles and provisions of the Convention, and not its revision or replacement.

## **4. Conclusion**

This study examined the relationship between Article 14 of the CBD and Articles 6, 7, and 8 of the Saudi Environ-

mental Law through a doctrinal comparative legal analysis. Its principal contribution lies in providing a structured analytical framework for assessing how international procedural obligations relating to biodiversity conservation are reflected in domestic environmental legislation. Rather than focusing solely on textual comparison, the study evaluates legislative correspondence through multiple dimensions of environmental governance, thereby offering a systematic approach for comparative legal analysis in this field. The findings demonstrate a substantial degree of legislative alignment between the preventive principles established under Article 14 of the CBD and the corresponding provisions of the Saudi Environmental Law. While the Convention establishes the international procedural framework for biodiversity protection, the Saudi legislation translates these principles into enforceable national obligations governing pollution prevention, sustainable natural resource management, environmental monitoring, compliance, auditing, and ecological restoration. From a comparative legal perspective, this illustrates how international environmental commitments may be operationalized through domestic legislative mechanisms while remaining consistent with the objectives of the Convention. At the same time, the study remains limited to the analysis of legislative design and legal consistency. It does not evaluate the effectiveness of implementation, institutional performance, or biodiversity conservation outcomes in practice. Consequently, the findings should be interpreted as an assessment of legal and regulatory alignment rather than empirical evidence of policy effectiveness. Future research should build upon this analytical framework through empirical investigations examining judicial practice, environmental compliance, environmental impact assessment implementation, biodiversity monitoring, and institutional performance. Comparative studies involving additional national legal systems would also contribute to a broader understanding of how international biodiversity obligations are implemented under different legal and administrative contexts.

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## Institutional Review Board Statement

Not applicable.

## Informed Consent Statement

Not applicable.

## Data Availability Statement

The data used for this study are available upon request from the author.

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## Conflicts of Interest

The author declares no conflict of interest.

## AI Use Statement

The author declares that no artificial intelligence (AI) tools were used in the preparation of this manuscript.

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