

Legal Environmental Protection and Sustainable Development in the United Arab Emirates



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ABSTRACT

Environmental protection and sustainability have captured global attention in recent years due to rising pollution, resource depletion, and climate change. In response to these challenges, this study examines how the United Arab Emirates (UAE) has developed its national environmental legislation in comparison with international legal frameworks. By applying a critical and comparative legal analysis, the study reviews key international environmental agreements and evaluates how UAE laws align with or diverge from global standards. The findings show that, first, the UAE has actively implemented forward-looking environmental policies through legislative reforms and sustainability initiatives aimed at meeting or exceeding international goals. Second, the UAE has promoted environmental responsibility by attracting clean technologies and fostering innovation, demonstrating its commitment to sustainable development. Third, despite these advancements, the study identifies continuing gaps in law enforcement and limited public participation in environmental decision-making processes. To address these issues, the study recommends enacting new legislation that includes constitutional protection of environmental rights and frameworks to strengthen regional environmental partnerships. The study also urges policymakers to encourage broader community engagement by empowering citizens and residents to participate in environmental policymaking and to file lawsuits against entities that violate environmental laws. This research contributes to the ongoing discourse on environmental governance by offering a legal analysis of the UAE's evolving regulatory landscape and by proposing inclusive, enforceable approaches to environmental sustainability.



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1.Introduction

In light of the increasing environmental challenges facing the world today, preserving the environment has become an imperative that cannot be overlooked. Environmental protection is no longer a distinct issue.¹ It has rather become a fundamental component of the concept of sustainable development. A careful balance between the social, economic, and environmental aspects is what this idea

¹ Mohamad Albakjaji and Jinane El Baroudy, 'The Effectiveness of the International Environmental Law: The Issues of State Sovereignty, National Interests, and Differing Levels of Commitments', *Journal of Ecohumanism*, 3.7 (2024), 1348–54 <https://doi.org/10.62754/joe.v3i7.4297>.

seeks to accomplish. A sustainable and inclusive future for all is ensured by this balance, which makes sure that the needs of the present are satisfied without endangering the capacity of future generations to meet their own².

Scientific evidence underscores the gravity of environmental protection. The Global Assessment Report on Biodiversity and Ecosystem Services indicates that nearly 1 million species are threatened with extinction due to human impacts, which reveals the accelerating pace of biodiversity decline.³ Furthermore, according to the World Wide Fund for Nature, since 1970, the average number of wild animals worldwide has decreased by 69%, with freshwater species experiencing the worst average reduction.⁴ These concerning figures highlight the serious effects of environmental deterioration and need prompt action.

The need to examine environmental laws and regulations that are meant to safeguard the environment and guarantee its sustainability is growing as environmental issues continue to get worse.⁵ This emphasizes how crucial it is to have strong legal frameworks both domestically and internationally. The World Health Organization's forecasts confirm the seriousness of the situation, indicating that environmental pollution may cause the death of an additional 250,000 people annually between 2030 and 2050 as a result of diseases such as malnutrition, malaria, diarrhea, and heat stress.⁶ This confirms that environmental protection is not only an environmental issue but rather a prerequisite for protecting human rights, starting from the right to life and extending to the right to sustainable development, which includes eliminating poverty and hunger, improving health

² Maya Khater, Yassine Chami, Dina Imad, Nagwa Abouhaiba, and Zeyad Jaffal, 'Assessing the Impact of Green Tourism on Sustainable Development: A Case Study of the United Arab Emirates', *Research Journal in Advanced Humanities*, 6.2 (2025), 14 <https://doi.org/10.58256/0m0wvr07>.

Mohammad Albakjaji, 'Sustainable Development Goals in International Law: A Review of Challenges in Implementation and Integration', *Journal of Posthumanism*, 5.2 (2025), 1284 <https://doi.org/10.63332/joph.v5i2.503>.

³ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), *Global Assessment Report on Biodiversity and Ecosystem Services*, ed. by E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (Bonn, Germany: IPBES Secretariat, 2019) <https://ipbes.net/global-assessment> [accessed 11 March 2025].

⁴ World Wide Fund for Nature (WWF). *Living Planet Report 2022: Building a Nature-Positive Society*. 2022. Available at: <https://www.worldwildlife.org/pages/living-planet-report-2022> [Accessed 11 March 2025].

⁵ Alsamara, Tareck, Farouk Ghazi, and Halima Mallaoui, 'The Protection of Tourism Sites as Cultural Heritage in Wetlands within the Framework of International Law', *Journal of Environmental Management and Tourism*, 13.4 (60) (2022), 975 [https://doi.org/10.14505/jemt.v13.4\(60\).06](https://doi.org/10.14505/jemt.v13.4(60).06)

⁶ World Health Organization (WHO), 'Climate Change' (2019) https://www.who.int/health-topics/climate-change#tab=tab_1 [accessed 11 March 2025].

and education, promoting gender equality, combating climate change, and preserving natural resources.⁷

Significant international efforts have been made in recent decades to address these issues through multilateral accords and conventions, including the Convention to Combat Desertification, the Convention on Biological Diversity, and the United Nations Framework Convention on Climate Change. The normative foundation for global environmental governance is made up of these conventions. However, these frameworks remain general in setting goals and principles and their implementation mostly depends on the willingness of national governments to adopt them into their domestic law. This raises the important question of whether the national legislation of the United Arab Emirates is compatible with international environmental obligations, or it is still limited in its enforceability and compatibility.

Given the urgency of environmental concerns, most nations, including the United Arab Emirates (UAE), have actively shifted towards harmonizing their country policies with international environmental responsibilities. The United Arab Emirates (UAE) presents an enticing case study in this respect. As a rapidly developing nation with a significant dependence on natural resources, the UAE harbors unique environmental challenges, including water scarcity, desertification, as well as the fact that the UAE is one of the countries with the highest carbon per capita footprint in the world, due to high energy consumption, rapid manufacturing, and urbanization. In parallel, the UAE has become a regional leader in environmental sustainability. In addition to bringing its domestic laws and policies into compliance with international accords, the nation has gone above and beyond to establish itself as a leader in the region for sustainable development. In addition to adopting ambitious national plans like the UAE Green Agenda 2030, the UAE Energy Strategy 2050, and the Circular Economy Policy 2021-2031, it has signed and implemented important international agreements and treaties, demonstrating a tangible commitment to environmental management. In order to ensure an effective response to environmental concerns, the nation is also eager to match its laws with the best worldwide standards. This reflects its integrated approach to striking a balance between environmental responsibility and economic progress. Furthermore, the UAE's hosting of international gatherings like COP28 in 2023 reinforces its position as a key player in shaping environmental policies at the international level. For example, the UAE has achieved a remarkable success in many global environmental indicators, reaching 100% in providing electricity and

⁷ Enis Omerović, Mohammed Albakjaji, Georges Philippe Zakhour, and Lejla Zilić-Čurić, 'The European Convention for the Protection of Human Rights and Fundamental Freedoms: A Fertile Ground for the Protection of the Environment?', *Zeus*, 27.3 (2024) <https://www.nomos-elibrary.de/de/10.5771/1435-439X-2024-3-430/the-european-convention-for-the-protection-of-human-rights-and-fundamental-freedoms-a-fertile-ground-for-the-protection-of-the-environment-jahrgang-27-2024-heft-3?page=1> [accessed 11 February 2025].

clean fuel. The percentage of natural reserves reached 15.53% of the country's total area in 2020, and it ranked first regionally in the Environmental Performance Index for 2022. These achievements reflect the country's commitment to developing sustainable environmental policies, thereby emphasizing the importance of addressing environmental compliance mechanisms in the UAE.⁸

Despite these advancements, the UAE still has critical environmental concerns. Its fossil fuel dependency continues to position the UAE as one of the highest carbon-emitting countries in the world, slowing the transition to a low-carbon economy. Other prominent concerns include marine ecosystem degradation, desertification, and water scarcity. The UAE showcases its commitment to sustainability through initiatives like Net Zero 2050 and the Green Economy Strategy, but policy innovation, investment in energy technologies, enforcement frameworks, and clean energy tech investment are still essential to resolve these persistent environmental challenges. A companion to the UAE's outlook serves the United States that plans spending \$163 billion on clean and renewable energy whilst achieving net-zero emissions by 2050. This highlights that the UAE is trying to keep up with the accelerating global shift towards green change.⁹

The previous research regarding environmental conservation in the UAE had addressed some aspects of the law which showcased the rising interest towards the relevant issues and their dangers. From these studies, it is evident that the environmental component needs to be incorporated in policy and legislative frameworks at both global and domestic levels. They underline the need to develop effective legal frameworks, raise environmental awareness, and adopt sustainable practices to achieve societal well-being and promote sustainable growth. However, few studies have offered a focused comparative legal analysis that examines how national legislation aligns with these international obligations, especially in the context of the United Arab Emirates. There is not much explicit legal examination of the extent to which the UAE law compares with international environmental treaties and the gaps in enforcement. Previous research also fails to

⁸ Ministry of Climate Change and Environment, *The United Arab Emirates' First Long-Term Strategy (LTS): Demonstrating Commitment to Net Zero by 2050* (2023) https://unfccc.int/sites/default/files/resource/UAE_LTLEDS.pdf [accessed 11 March 2025].

Pavlos Trichakis and others, 'Enabling the UAE's Energy Transition: Top Ten Priority Areas for Renewable Energy Policymakers' (Emirates Wildlife Society in association with WWF, 2018) https://www.emiratesnaturewwf.ae/sites/default/files/doc-2018-09/Enabling%20the%20UAE%E2%80%99s%20energy%20transition_%20F4_EWSWWF_WEB.pdf [accessed 11 March 2025].

⁹ Ministry of Climate Change and Environment, UAE, *The UAE's First Long-Term Strategy (LTS)*. Rory Clune, Laura Corb, Kimberly Henderson, Dickon Pinner, and Daan Walter, 'Navigating America's Net-Zero Frontier: A Guide for Business Leaders' (McKinsey & Company, 5 May 2022) <https://www.mckinsey.com/capabilities/sustainability/our-insights/navigating-americas-net-zero-frontier-a-guide-for-business-leaders> [accessed 11 March 2025].

address satisfactorily the UAE's legal challenges on following international norms fully.¹⁰

Accordingly, the current research examines the legal framework for environmental protection at the international and national levels (UAE as a case study). It focuses on the legal efforts made by the UAE to confront environmental challenges, including implementing laws and regulations, encouraging environmental protection initiatives, and promoting sustainable growth. This study tries to fill that gap by making comparative legal analysis in consideration of: How the UAE environmental law keeps pace with key international environmental conventions, and how far legal regimes as they exist allow for compliance with sustainability objectives. The study also tries to recognize loopholes in existing regulations and laws that derail effective enforcement. The

¹⁰ Aldona Kipāne and Andrejs Vilks, 'Legal Framework for Environmental Protection in the Context of Sustainable Development', *European Journal of Sustainable Development*, 11.4 (2022), 169 <https://doi.org/10.14207/ejsd.2022.v11n4p169> [accessed 11 March 2025].

Arifin Maruf, 'Legal Aspects of Environment in Indonesia: An Effort to Prevent Environmental Damage and Pollution', *Journal of Human Rights Culture and Legal System*, 1.1 (2021) <https://doi.org/10.53955/jhcls.v1i1.4> [accessed 11 March 2025].

Justice Mensah, 'Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review', *Cogent Social Sciences*, 5.1 (2019) <https://doi.org/10.1080/23311886.2019.1653531> [accessed 11 March 2025].

Diane Mukankubana, 'Comparative Analysis of Environmental Protection Laws and Their Impact on Sustainable Development in Rwanda', *International Journal of Law and Policy*, 9.2 (2024), 39–53 <https://doi.org/10.47604/ijlp.2706> [accessed 11 March 2025].

Olusola Joshua Olujobi, Oshobugie Suleiman Irumekhai, and Adetutu Deborah Aina-Pelemo, 'Sustainable Development and National Integration: A Catalyst for Enhancing Environmental Law Compliance in Nigeria', *Environmental Policy and Law*, 54.1 (2024), 27–41 <https://doi.org/10.3233/epl-230050> [accessed 11 March 2025].

Peterson K. Ozili, 'Sustainability and Sustainable Development Research around the World', *Managing Global Transitions*, 20.3 (2022) <https://doi.org/10.26493/1854-6935.20.259-293> [accessed 11 March 2025].

Rachmawaty Rachmawaty, Hartiwiningsih Hartiwiningsih, I Gusti Ayu Ketut Rachmi Handayani, and Ravi Danendra, 'Judges' Philosophical Orientation in Resolving Anti-SLAPP Disputes', *Journal of Human Rights Culture and Legal System*, 4.1 (2024), 149–68 <https://doi.org/10.53955/jhcls.v4i1.215> [accessed 11 March 2025].

Venkata Srinivas Saladi, 'Embracing Sustainable Development: A Pathway to Environmental Protection', *MSRB* (2024), 1–25 <https://doi.org/10.13140/RG.2.2.29826.90569> [accessed 11 March 2025].

Michaela Dina Stanescu, 'Goals for a Sustainable Development and the Environmental Protection', *Romanian Journal of Ecology & Environmental Chemistry*, 4.2 (2022), 56–61 <https://doi.org/10.21698/rjeec.2022.205> [accessed 11 March 2025].

Adina Ionela Străchinaru and Alin Vasile Străchinaru, 'Sustainable Development and Environmental Protection in Romania', *Journal of Corporate Governance Insurance and Risk Management*, 1.1 (2014), 156–75 <https://doi.org/10.56578/jcgirm010109> [accessed 11 March 2025].

Jorge E. Viñuales, 'The Influence of Environmental Protection on the Fabric of International Law', *Springer eBooks* (2018), 255–67 https://doi.org/10.1007/978-3-319-90227-2_12 [accessed 11 March 2025].

study brings a new perspective to the UAE's environmental legal framework and highlights areas in need of legal reforms to enhance sustainability governance. The objective of this study is to critically analyze international and domestic legislative regimes that regulate environmental protection and sustainable development, particularly for significant international agreements. It also investigates environmental legislations and policies implemented in the United Arab Emirates, highlighting focus on the legislation of conserving biodiversity, safeguarding living organisms, managing waste, and preventing climate change impacts. The research also seeks to assess the degree of harmony between international and local legal frameworks and to explore the need to develop legal tools that contribute to protecting natural resources and maintaining the balance of environmental systems at the international and national levels.

The research is focused on environmental regulations and legislation on natural resource conservation, pollution control, and conservation of bio-diversity. Policies that regulate sustainable waste management, dangerous substances, and greenhouse gas mitigation. The integration of Emirati law with global environmental responsibilities and obligations. And legally mandated controls in the UAE to ensure compliance with environmental issues in comparison to global best practice. The importance of research stems from providential timing given the UAE's efforts to consolidate its position as a regional leader in environmental protection, climate action, and the transition to clean energy sources. This increases the need to assess the effectiveness of the local legal framework in fulfilling international environmental obligations. This study addresses two central legal issues. The first concerns the extent to which the United Arab Emirates' (UAE) environmental legal frameworks align with and effectively implement international environmental obligations related to sustainable development. The second examines the legal gaps and deficiencies that hinder the UAE's ability to fully comply with these international obligations. These issues frame the analysis of the consistency between national environmental regulations and global standards, while also identifying structural and normative barriers to the realization of the UAE's international commitments to environmental protection.

2. Research Method

This study utilizes descriptive, analytical, and critical legal research methods to present an accurate and elaborate description of environmental protection and sustainable development related issues, with an emphasis on the close relationship between the two. The aim of the research is to analyze information relevant to the issue and organize this information in a way that is comprehensible, by interpreting the legal rules and environmental policies in international agreements and charters, national legislation and policies with some special emphasis on the UAE. The study also takes a comparative approach to highlight similarities and differences in legal texts in international legislation provisions regarding the

environment and sustainable development, so comparison can be made with UAE laws regarding the same area. The study also seeks to consider and evaluate whether the relevant laws and policies have achieved their intended purposes concerning the environmental protection and sustainable development goals.

This research uses a qualitative research approach and seeks to interpret and analyze legal documents, principles, and policies systematically. The qualitative data collection methods used include reviewing primary and secondary sources comprehensively. In addition to information sourced from primary data sources, primary data includes international treaties and conventions, the national legislation of the UAE, executive regulations, official government strategies, and policy documents on the environment and sustainability. Secondary sources of data include books written by experts in environmental policy and law, and peer-reviewed articles from reputable journals of academic databases like Google Scholar or ResearchGate, so that the research can remain current with new developments. Also, the official websites of international agencies such as the United Nations, the World Health Organization and UAE governmental agencies will be used. This study employed a systematic method to collect and analyze data by identifying key international agreements, such as the Paris Agreement and the UNFCCC, alongside Emirati environmental laws, including Federal Law No. 24 of 1999. It critically examined the extent of their incorporation and enforcement within UAE domestic law. Using a comparative legal analysis, the study evaluated similarities, differences, and gaps. Analytical frameworks, including treaty effectiveness and the polluter pays principle, guided the assessment. Comparative insights from the European Union and the United States helped identify best practices. This integrated approach supported evidence-based recommendations for legal and policy reform in the UAE.

3.Results and Discussion

The Concept of Environmental Protection in Relation to Sustainable Development Goals

Environmental protection is one of the fundamental global issues that require joint and integrated international efforts to reduce pollution and ensure the sustainability of natural resources for current and future generations. Environmental protection contributes to the development of prosperous economies and fair healthy societies for the common interest of the international community.¹¹ The concept of environmental protection entails taking the necessary measures to protect the natural environment by preserving the quality of air, water, and land, preventing undesirable changes in the ecosystem, ensuring the

¹¹ R. H. Cassen, 'Our Common Future: Report of the World Commission on Environment and Development', *International Affairs*, 64.1 (1987), 126 <https://doi.org/10.2307/2621529> [accessed 11 March 2025].

preservation of environmental balance, and supporting the health and well-being of all living organisms.¹²

In contrast, sustainable development has been defined as a development philosophy that attempts to meet the needs of present generations without compromising the ability of future generations to meet their needs and aspirations.¹³ Therefore, the relationship between environmental protection and sustainable development is now established, as both are aimed at creating opportunities for economic growth and social justice, pursuing the attainment of human welfare, and maintaining both the continuity and sustainability of natural resources. A direct relationship exists between investment in environmental protection and economic growth, particularly through the creation of new job opportunities. As reported by the International Renewable Energy Agency (IRENA), the renewable energy industry provided 12.7 million jobs globally in 2021 and continues to grow as more countries adopt clean energy.¹⁴ Additionally, proactive environmental policies make economies more resilient by reducing climate risk. The World Bank showed that climate disasters cost the global economy approximately \$520 billion every year on average. The transition toward climate adaptation and sustainable infrastructure can help reduce a country's climate exposure, and therefore, ensure economic stability for the long-term.¹⁵

Some policymakers believe that environmental regulations impose additional costs on business, which subsequently reduces productivity, competitiveness, and jobs - particularly in industries that are reliant on extraction or fossil fuels.¹⁶ While they make a good argument, the evidence indicates that regulations can create innovations and new economic opportunities. Regulating business may cause firms to develop cleaner and more efficient technologies, for example, Germany's Energiewende policy and investments have placed Germany in the top 10 in global inventions for renewable energy in 2018 (out of 83 countries, according to Bloomberg), which has added over 300,000 green jobs and reduced its reliance on

¹² C. Hamilton and A. Macintosh, 'Environmental Protection and Ecology', in *Elsevier eBooks* (2008), 1342–50 <https://doi.org/10.1016/b978-008045405-4.00624-8> [accessed 11 March 2025].

¹³ Christoph Gehlen, 'Sustainable Development Seeks to Meet the Needs and Aspirations of the Present without Compromising the Ability to Meet Those of the Future', *Beton- Und Stahlbetonbau*, 105.5 (2010), 273 <https://doi.org/10.1002/best.201090044> [accessed 11 March 2025].

¹⁴ International Renewable Energy Agency (IRENA), *Renewable Energy Jobs Hit 12.7 Million Globally*, 22 September 2022 <https://www.irena.org/News/pressreleases/2022/Sep/Renewable-Energy-Jobs-Hit-12-7-Million-Globally> [accessed 11 March 2025].

¹⁵ UN Trade and Development (UNCTAD), *Interactive Discussion: Reducing Economic Losses Caused by Disasters*, 15 October 2018 <https://unctad.org/meeting/interactive-discussion-reducing-economic-losses-caused-disasters> [accessed 11 March 2025].

¹⁶ Inna Čábelková and others, 'Environmental Protection or Economic Growth? The Effects of Preferences for Individual Freedoms', *Frontiers in Environmental Science*, 11 (2023) <https://www.frontiersin.org/articles/10.3389/fenvs.2023.1129236/full> [accessed 11 March 2025].

fossil fuels. This indicates the transition to sustainable energy is beneficial for climate protection and economic growth.¹⁷

Environmental protection is an obstacle to sustainable economic and social development. Therefore, sustainable development cannot exist independently of environmental protection; environmental protection must form an intrinsic aspect of the development process. The passing of relevant legislation and policies protects the environment and encourages sustainability of these resources, ultimately establishing a balance that is meaningful to people today and in the future.¹⁸

Environmental Protection in the Scope of International Law

A clean and healthy environment is a basic human right. The rights to life, health, food, and water have a direct relationship with the environmental quality and sustainability of those rights. This is supported by various international instruments, including the Stockholm Declaration in 1972, the Rio Declaration in 1992, and most recently by the United Nations General Assembly Resolution 76/300 (2022), which recognizes the human right to a clean, healthy, and sustainable environment. As such, the international community has realized the importance of having legal instruments to protect the environment in a bid to prevent pollution and preserve natural resources. As such, various global charters and international treaties have been formulated with the aim of fostering global cooperation aimed at protecting the environment. This research investigates the most well-known global legal documents with special attention to their management of environmental challenges and their negative impacts.

The Convention on Fishing and Conservation of Living Resources of the High Seas (1958) is the first international agreement concerned with global environmental issues. It emphasizes the need for concerted efforts by the countries concerned to protect the environment and preserve living resources.¹⁹ This agreement was followed by a series of international agreements and charters, including the Montreal Protocol, which aims to protect the ozone layer by limiting the production and consumption of chemicals responsible for depleting and

¹⁷ Federal Ministry for Economic Affairs and Energy (BMWi), *Digitalising the Energiewende: Smart Meters to Make Electricity Consumption More Transparent*, *Energiewende Newsletter*, 6 June 2016 <https://www.bmwk-energiewende.de/EWD/Redaktion/EN/Newsletter/2016/06/Meldung/topthema.html> [accessed 11 March 2025].

¹⁸ Rakotoarimanana Zy Misa Harivelo and Rakotoarimanana Zy Harifidy, 'A Review of Environmental Protection and Sustainable Development in Madagascar', *J – Multidisciplinary Scientific Journal*, 5.4 (2022), 512–31 <https://doi.org/10.3390/j5040035>

¹⁹ United Nations, *Convention on Fishing and Conservation of the Living Resources of the High Seas*, *United Nations Treaty Series* (1958), p. 285 https://legal.un.org/ilc/texts/instruments/english/conventions/8_1_1958_fishing.pdf [accessed 11 March 2025].

destroying the Earth's protective ozone layer. The protocol is considered one of the most successful environmental charters, as it has significantly contributed to protecting the ozone layer to this day due to ongoing international efforts to reduce ozone-depleting substances.²⁰

The Basel Convention (1989) is one of the most important international instruments in environmental protection and public health. Its goal is to reduce the production of hazardous wastes, combat the illegal trade of such wastes, regulate their movement across international borders, and ensure their environmentally safe disposal and treatment.²¹ The United Nations Framework Convention on Climate Change has established a general framework for strategies to combat climate change at the national and international levels, allowing for progress in finding ways to protect the environment and achieve sustainable development.²² The COP28 UN Climate Change Conference was held in the UAE in 2023 and it was the biggest of its kind. COP28 was particularly momentous as it highlighted the UAE's proactive role and ongoing contributions to sustainability and marked the conclusion of the first global stocktake of the world's efforts to address climate change under the Paris agreement.²³ Having shown that progress was too slow across all areas of climate action ranging from reducing greenhouse gas emissions, to strengthening resilience to a changing climate, to getting the financial and technological support to vulnerable nations – countries responded with a decision on how to accelerate action across all areas by 2030. This includes a call on governments to accelerate the transition away from fossil fuels to renewables such as wind and solar power in their next round of climate commitments.²⁴

The Convention on Biological Diversity is also one of the key global conventions as it aims at conserving biological diversity and ensuring the sustainable use of its components and services.²⁵ Another important convention includes the United Nations Convention to Combat Desertification, aimed at combating land degradation and mitigating the impacts of drought by international cooperation and coordination among governments, local

²⁰ *The Montreal Protocol on Substances That Deplete the Ozone Layer*, Ozone Secretariat (1987) <https://ozone.unep.org/treaties/montreal-protocol> [accessed 11 March 2025].

²¹ *Basel Convention: The Convention Overview*, Basel Convention (1989) <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx> [accessed 11 March 2025].

²² United Nations, *United Nations Framework Convention on Climate Change* (1992) <https://unfccc.int/resource/docs/convkp/conveng.pdf> [accessed 11 March 2025].

²³ United Nations, *Paris Agreement* (2015) https://unfccc.int/sites/default/files/english_paris_agreement.pdf [accessed 11 March 2025].

²⁴ Lucia Bakošová, 'Sharm El-Sheikh Climate Change Conference', *Bratislava Law Review*, 7.1 (2023), 115–24 <https://doi.org/10.46282/blr.2023.7.1.366> [accessed 11 March 2025].

²⁵ *Convention on Biological Diversity*, Secretariat for the Convention on Biological Diversity (2011) <https://www.cbd.int/doc/legal/cbd-en.pdf> [accessed 11 March 2025].

communities, and non-governmental organizations.²⁶ In relation to the Rio Declaration on Environment and Development, it established a set of fundamental principles in environmental conservation and sustainable use of natural resources. The declaration served to direct countries towards the necessity of sustainable development. It acknowledged that countries have common duties towards the protection of the environment, but to varying degrees, based on their capabilities and stages of economic development.²⁷

The Paris Agreement is a milestone in achieving sustainable development and salvaging the world, whose goal is to coordinate global efforts to mitigate the effects of climate change, reduce the rise in temperature and gas emissions. The agreement commits countries to provide financial and technical support to developing countries to help them achieve their goals on emission cuts and adaptation to the effects of climate change. It also establishes a tracking and transparent reporting framework in order to gauge advancement towards the fulfillment of climate commitments.²⁸ As a landmark achievement in global environmental governance, the Paris Agreement established legally binding climate goals, and hopes to catalyze national efforts, including the United Arab Emirates' Net Zero 2050 Strategy. Nonetheless, despite its ambitious goals, the Paris Agreement can't be effectively enforced, simply because there are no binding penalties for not adhering to the national commitments. The different countries' Nationally Determined Contributions (NDC) are voluntary, and hence the implementation of NDCs varies greatly from country to country, with some of the biggest greenhouse gas emitters, delaying the transition because of slower economic growth. The research highlights that there must be a more enforceable course of action such as stronger accountability in international assessments and greater private sector actors to support climate actions if international agreements like the Paris Agreement are to be more effective.

In the context of preserving the marine environment, there is the International Convention for the Prevention of Pollution from Ships (MARPOL Convention), which aims to reduce marine pollution resulting from operational processes or accidents related to ships under the auspices of International Maritime

²⁶ United Nations, *United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa*, United Nations Convention (1994) https://catalogue.unccd.int/936_UNCCD_Convention_ENG.pdf [accessed 11 March 2025].

²⁷ United Nations, *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26 (Vol. I) (1992) https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf [accessed 11 March 2025].

²⁸ United Nations, *Paris Agreement* (2015) https://unfccc.int/sites/default/files/english_paris_agreement.pdf [accessed 11 March 2025].

Organization.²⁹ As well as the United Nations Convention on the Law of the Sea, which regulates the sustainable use of marine resources and the protection of the marine environment and sets rules governing all uses of oceans, seas, and their resources.³⁰

These international conventions provide an essential legal framework that sets out key legal obligations and principles for the protection of the environment and promoting sustainable development. The underlying legal framework is important, but the real challenge is the commitment to fulfil the obligations set out in the conventions. Failure or laxity in implementing environmental obligations exacerbates environmental threats. Therefore, effective international cooperation is required to ensure the global response to address the environmental, economic, and social challenges resulting from environmental pollution, including providing the necessary funding and supporting local capacities. This is for the benefit of the environment and humanity, and for building a more sustainable future for future generations.

The pivotal role of international organizations in promoting environmental protection and sustainable development at the global level cannot be ignored. Addressing environmental issues requires cooperation among local and international governments as well as non-governmental organizations such as the World Health Organization, the United Nations Development Program, the World Bank, and the United Nations Environment Program. These organizations work to take the necessary measures to protect the environment by providing financial and technical support for environmental projects, raising awareness about environmental issues, and enhancing cooperation among countries to overcome the challenges of protecting and preserving the environment. They also organize meetings and conferences to exchange experiences and promulgate environmental laws that contribute to environmental protection and sustainable development.³¹

Environmental Protection under the UAE Legislation

Since its establishment, the United Arab Emirates has recognized the importance of environmental protection and considered it an essential part of its development policy. This vision was influenced by the directives of the founder of the state, Sheikh Zayed bin Sultan Al Nahyan, who emphasized the importance of

²⁹ *International Convention for the Prevention of Pollution from Ships (MARPOL)* (1973) [https://www.imo.org/en/about/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](https://www.imo.org/en/about/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx) [accessed 11 March 2025].

³⁰ United Nations, *United Nations Convention on the Law of the Sea, United Nations Convention on the Law of the Sea* (1982), p. 21 https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf [accessed 11 March 2025].

³¹ Alireza Annabi and Mahmoud Jalali, 'Investigating the Central Performance of International Organizations in Environmental Protection', *International Journal of New Findings in Health and Educational Sciences (IJHES)*, 1.2 (2023), 1–25 <https://doi.org/10.63053/ijhes.11>

preserving the environment, stating, “We spare no effort in caring for the environment because it is one of the essential components of our history and heritage. Our forefathers have lived on this land in co-existence and with respect to its land and marine environment, knowing by nature and perceiving the need to preserve it, took only what they needed from it and saved what would be useful for the coming generations.”³²

The UAE government has placed environmental protection and sustainable development paramount on its agenda by introducing laws, and creating relevant programs and projects. This approach enhances the UAE's status as an exceptional country that believes in a balance between economic development, environmental protection, and sustainability of natural resources.³³ To confirm this commitment, the UAE has adopted a comprehensive legal framework to address environmental issues and ensure sustainable development that meets the needs of the present without negatively impacting future generations.³⁴

The UAE has played a significant role in environmental protection by ratifying many major international agreements related to environmental protection and mitigating the effects of climate change, such as the Paris Agreement on Climate Change, the Convention on Biological Diversity, and the United Nations Convention to Combat Desertification while also ensuring the effective implementation of these agreements. The UAE also established a number of national laws, policies, and strategies which encourage the sustainable development and implementation of international environmental concepts in the context of local law. The flagship law is Federal Law No. (24) for 1999 on Environmental Protection and Development, which focuses on protecting the environment, sustaining natural balance, preventing pollution and promoting environmental awareness with the appropriate authorities.

The law also includes the development of natural resources, the preservation of biodiversity, and the protection of society and living organisms from activities that are harmful to the environment, in addition to protecting the environment from the effects resulting from external activities. This law prohibits the hunting, killing, or catching of rare or endangered birds and marine animals, as well as their possession, transport, display, or sale. The law also prohibits the dumping, burning, or treatment of solid waste except in designated places. The UAE has also established some national laws, policies, and strategies that will help to promote sustainable development and implement international environmental principles

³²*Environmental Center for Arab Towns (ECAT)*, [n.d.] <https://ecat.ae/en/Publications/HtmlBook?mId=20&&artId=1> [accessed 11 March 2025].

³³ Moetaz Elsergany and others, ‘Risk Assessment Approach to Identify Possible Risks to the Marine Environment in the United Arab Emirates’, *Environment and Ecology Research*, 11.4 (2023), 543–53 <https://doi.org/10.13189/eer.2023.110403>.

³⁴ *The Environment Agency Annual Report (Abu Dhabi, 2022)* <https://indd.adobe.com/view/79297453-b680-4b2b-86e1-eccd27616a5b> [accessed 11 March 2025].

within the confines of local law. The central law is Federal Law No. (24) for 1999 on Environmental Protection and Development, purposefully designed to protect the environment, maintain natural balance, prevent pollution, and promote Environmental Awareness with the relevant authorities.³⁵

Subsequently, the UAE issued Executive Regulation of Federal Law No. (24) of 1999, imposing strict rules and procedures on hazardous substances and waste. The rules are directed toward facilitating the proper storage and transportation of hazardous substances in a safe manner, according to international standards applied in the domain of protection of environmental and public health. The UAE also encourages environmental conservation by adopting several policies and strategies. The most prominent of these is the UAE Energy Strategy 2050 (2017), which aims to enhance reliance on renewable energy sources, improve energy efficiency, and encourage the use of clean energy. The strategy also supports research and development programs in the fields of energy technology and encourages innovation and investment in this sector. It includes tripling the contribution of renewable energy by 2030, increasing the efficiency of individual and institutional consumption, and pumping national investments ranging between 150 and 200 billion dirhams during the same period to ensure meeting energy demand and supporting accelerated economic growth. This effort could contribute to reaching climate neutrality by 2050, since renewable capacity in the nation jumped by almost 70% from 2022 to 2023.³⁶

In its quest to attain environmental sustainability, the UAE initiated the Green Economy for Sustainable Development Strategy, which aims to position the UAE as the world's leader in the field of green development and a center for green product and green technology export with a sustained environment to promote long-term economic growth.³⁷ Besides, the UAE Circular Economy Policy 2021 – 2031 also seeks to maximize natural resources utilization, reduce material and energy wastage, enhance environmental health, ensure sustainable infrastructure and sustainable transport, and encourage sustainable consumption, reduce waste, and recycle.³⁸

³⁵ Government of the United Arab Emirates, *Federal Law No. 24 for the Protection and Development of the Environment* (1999) <https://uaelegislation.gov.ae/en/legislations/1146> [accessed 11 March 2025].

³⁶ UAE Embassy, 'UAE Energy Diversification', *Embassy of the United Arab Emirates, Washington, D.C.* <https://www.uae-embassy.org/discover-uae/climate-and-energy/uae-energy-diversification> [accessed 11 March 2025].

³⁷ *Green Economy for Sustainable Development* | *The Official Portal of the UAE Government* (2012) <https://u.ae/en/about-the-uae/economy/green-economy-for-sustainable-development> [accessed 11 March 2025].

³⁸ *UAE Circular Economy Policy* | *The Official Portal of the UAE Government* (2023) <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/policies/economy/uae-circular-economy-policy> [accessed 11 March 2025].

The UAE is taking steps to strengthen its position as an innovative global destination for environmental sustainability by launching a series of initiatives, such as the carbon emissions measurement system and monitoring the commitment of tourism projects to eco-friendly practice. Authorities also encourage the establishment of projects implementing environmental measures to conserve the environment and reduce the use of traditional energy through low-carbon renewable energy resources, such as solar energy. A mechanism has also been put in to recognize and reward projects that demonstrate the strongest commitment to sustainability. Subsidies, tax breaks and other incentives are essential tools to support the achievement of sustainable development goals at both the national and international levels.³⁹ The UAE also pays great attention to preserving biodiversity, conserving water, managing and recycling waste, and reducing the use of harmful chemicals.⁴⁰

With the increase in world population and the growing need for food to sustain life, genetic engineering has played a major role in improving food productivity through the use of Genetically Modified Organisms (GMOs) which may contribute to the United Nations Sustainability Goals.⁴¹ GMOs offer a wide array of benefits, encompassing various advantages like augmenting food nutrients and yield, diminishing the need for pesticides, reducing greenhouse gas emissions, shrinking agricultural and terrestrial footprints, and boosting productivity while maintaining cost-effectiveness.⁴² Furthermore, we should be aware that genetic modifications may also have potential downsides such as allergic reactions, antibiotic resistance, and risks of cancer. As these technologies progress rapidly, we have begun a worldwide debate about the legality of GMO's and human and planetary sustainability issues. Many studies suggest that genetically modified foods could potentially lead to various toxic effects, including those affecting the liver, pancreas, kidneys, and reproductive system. The UAE Federal Law No. 9 of

³⁹ Fatma Ulfatun Najicha and others, 'The Shaping of Future Sustainable Energy Policy in Management Areas of Indonesia's Energy Transition', *Journal of Human Rights Culture and Legal System*, 3.2 (2023), 362–82 <https://doi.org/10.53955/jhcls.v3i2.110>.

⁴⁰ 'Sustainability', *Department of Culture and Tourism Abu Dhabi* [n.d.] <https://dct.gov.ae/en/doing.business.with.us/sustainability.2023.aspx> [accessed 11 March 2025]. *Abu Dhabi Hotel Classification Manual, Abu Dhabi Tourism* [n.d.], ii, 4–74 <https://dct.gov.ae/DataFolder/Files/Hotel-Classification-System-Manual.pdf> [accessed 11 March 2025].

⁴¹ Aziz, Mughair Abdul, Faical Brini, Hatem Rouached, and Khaled Masmoudi. 2022. "Genetically Engineered Crops for Sustainably Enhanced Food Production Systems," *Frontiers in Plant Science*, 13 <https://doi.org/10.3389/fpls.2022.1027828>

⁴² Graham Brookes and Peter Barfoot, 'Environmental Impacts of Genetically Modified (GM) Crop Use 1996–2018: Impacts on Pesticide Use and Carbon Emissions', *GM Crops & Food*, 11.4 (2020), 215–41 <https://doi.org/10.1080/21645698.2020.1773198>.

Pooja Sharma and others, 'Genetic Modifications Associated with Sustainability Aspects for Sustainable Developments', *Bioengineered*, 13.4 (2022), 9509–21 <https://doi.org/10.1080/21655979.2022.2061146>.

2020 regarding the biosafety of GMOs and its implementing regulations, issued in accordance with the Ministerial Resolution No. 84 of 2022, clearly defines the responsibilities of GMOs producers and the requirements that must be met in GMO products that are produced, manufactured, developed, traded, exported, imported, transited, or transferred.⁴³ In this regard, the legislator has established a set of penalties ranging from imprisonment, fines, or a combination of both. Additionally, civil liability for damage holds importers, exporters, traders, developers, manufacturers, producers, and carriers of GMOs or their products liable for any damage caused by GMO products.

As part of the UAE's commitment to achieving sustainable development and protecting the environment, numerous important resolutions have been issued that include strict instructions to reduce waste production, protect the marine environment, prevent overfishing, and provide incentives to encourage engagement in sustainable environmental practices.⁴⁴ Among these resolutions is Federal Cabinet Resolution No. 39. concerning waste management in an integrated and sustainable manner. This resolution ensures the reduction of waste production through reuse, recycling, and the use of biodegradable materials, in addition to effective waste management, developing and enhancing the infrastructure for collecting, transporting, storing, and treating waste, imposing legal environmental responsibility on individuals and institutions to ensure compliance with laws and regulations related to waste management, and finally raising awareness of the importance of sustainable waste management and its environmental impacts.⁴⁵ Sustainable waste management is undoubtedly an environmental priority, as it is a vital element in protecting the environment and preserving natural resources.⁴⁶

With respect to natural resources conservation, the UAE has adopted various ministerial decisions in safeguarding marine and wild plant species against degradation and extinction. Some of these decisions include managing the fishing

⁴³ Government of the United Arab Emirates, 'United Arab Emirates Legislations | Federal Law Concerning the Protection and Development of the Environment' [2020] <https://uaelegislation.gov.ae/en/legislations/1146> [accessed 11 March 2025].

Government of the United Arab Emirates, 'United Arab Emirates Legislations | Ministerial Resolution No. 84. Concerning the Executive Regulation of Federal Law Concerning the Biosafety of Genetically Modified Organisms (GMOs) and the Products Thereof' [2022] <https://uaelegislation.gov.ae/en/legislations/1578/download> [accessed 11 March 2025].

⁴⁴ The Environment Agency Annual Report.

⁴⁵ Government of the United Arab Emirates, 'United Arab Emirates Legislations | Federal Cabinet Resolution No. 39. Concerning the Executive Regulation of Federal Law No. 12 of 2018 Concerning Integrated Waste Management' [2021] <https://uaelegislation.gov.ae/en/legislations/1490/download> [accessed 11 March 2025].

⁴⁶ Budiman Budiman, and Abdul Kadir Jaelani. 2023. "The Policy of Sustainable Waste Management Towards Sustainable Development Goals," *Journal of Human Rights Culture and Legal System*, 3.1: 70–94 <https://doi.org/10.53955/jhcls.v3i1.73>

and trade of certain fish species during breeding season in a move to protect them from over-exploitation, implementing control in the use of wild plants and protecting them against over-grazing as well as urban encroachment.⁴⁷ A policy has also been established to reduce the use of single-use plastic materials, such as plastic bags and utensils that are disposed of after one use, with the aim of reducing the environmental impact of plastic materials and encouraging environmentally friendly alternatives, such as reusable bags and biodegradable utensils.⁴⁸

Among the important environmental initiatives that promote sustainability and green programs implemented by the UAE government to reduce carbon emissions is the “Mohammed bin Rashid Al Maktoum Solar Park”. This initiative aims to promote the generation and use of renewable energy.⁴⁹ The Solar Park is expected to achieve a capacity of 5,000 megawatts by 2030. Upon completion, it is expected to reduce 6.5 million tons of carbon emissions annually, and enhance the country’s efforts to shift towards sustainable energy sources.⁵⁰ “Shams Dubai” initiative, also encourages buildings and homeowners to install photovoltaic panels on their roofs to produce electricity from solar energy, with the possibility of consuming it inside the building and exporting the surplus to the National Electricity Authority network⁵¹. The UAE also launched tree planting campaigns, including the “For Our Emirates We Plant Campaign”, which contributes to enhancing green spaces and improving air quality.⁵² Additionally, the establishment of Masdar City in 2006, represents a visionary green city venture as part of the UAE ambition to become carbon neutral. The city is a demonstration of sustainable urban development, combining innovative environmental technology with traditional

⁴⁷ Budiman Budiman, and Abdul Kadir Jaelani, ‘The Policy of Sustainable Waste Management Towards Sustainable Development Goals’, *Journal of Human Rights Culture and Legal System*, 3.1 (2023), 70–94 <https://doi.org/10.53955/jhcls.v3i1.73>.

‘Ministerial Resolution No. 1. Regulating the Fishing and Trade of Certain Species of Fish During their Breeding Season. UAE Ministry of Climate Change and Environment’ [2021] <https://www.wam.ae/en/details/1395302901309> [accessed 11 March 2025].

⁴⁸ ‘Abu Dhabi Emirate Single Use Plastic Policy. | UNEP Law and Environment Assistance Platform’ 2020 <https://leap.unep.org/en/countries/ae/national-legislation/abu-dhabi-emirate-single-use-plastic-policy> [accessed 11 March 2025].

⁴⁹ ‘Mohammed Bin Rashid Al Maktoum Solar Park | The Official Portal of the UAE Government’ [2023] <https://u.ae/en/information-and-services/environment-and-energy/water-and-energy/types-of-energy-sources/solar-energy/mohammed-bin-rashid-al-maktoum-solar-park> [accessed 11 March 2025].

⁵⁰ C40 Cities, ‘Dubai’s Mohammed bin Rashid Al Maktoum 5,000MW Solar Park Aims to Save 6.5 Million tCO₂e Annually’, *C40 Cities*, 2024 <https://www.c40.org/case-studies/dubai-s-mohammed-bin-rashid-al-maktoum-5-000mw-solar-park-aims-to-save-6-5-million-tco2e-annually/> [accessed 11 March 2025].

⁵¹ ‘Shams Dubai’, *The Ministry of Energy & Infrastructure*, 2022 <https://ncc.moei.gov.ae/shams-dubai-2022/> [accessed 11 March 2025].

⁵² ‘For Our Emirates We Plant’, *Department of Economic and Social Affairs*, [n.d.] <https://sdgs.un.org/partnerships/our-emirates-we-plant> [accessed 11 March 2025].

architecture. Masdar City, located on a 6.4 square kilometers site approximately 17 kilometers south-east of Abu Dhabi. It is designed to provide protection and comfort, limiting exposure to extreme weather. Moreover, the UAE has also diversified its nuclear investments. Barakah Plant is the UAE's biggest source of electricity, and all its megawatts are carbon-free. The Barakah Plant is a major part of the UAE's efforts to diversify its energy mix, providing clean and efficient power to industry, homes, commerce and government offices and reducing the country's carbon footprint. The Barakah Nuclear Energy Plant saves as much as 22.4 million tons of carbon emissions every year, which is equivalent to removing 4.8 million cars from the road.⁵³

An examination of the United Arab Emirates Constitution reveals that the concept of sustainability is not explicitly recognized as a component of human rights. However, considering the growing international emphasis on sustainable development as a normative and legal imperative, it is essential to incorporate sustainability into the UAE Constitution as a fundamental human right. This integration would align national legal frameworks with global standards and reinforce the state's commitment to long-term environmental and developmental obligations.⁵⁴ The right to a healthy environment, when explicitly enshrined in a constitution, constitutes a fundamental human right, implying that environmental degradation can be interpreted as a violation of human rights. The incorporation of sustainability principles into constitutional frameworks also contributes positively to environmental protection and sustainable development outcomes. A study conducted by Jeffords in Latin American and European Union countries demonstrates a strong correlation between the existence of constitutional provisions for environmental human rights and significant improvements in sustainable development indicators.⁵⁵ Furthermore, evidence shows a positive relationship between the constitutional recognition of environmental rights and improvements in environmental performance indices, reinforcing the importance of integrating sustainability into constitutional law. This integration strengthens environmental governance and aligns national legal systems with global sustainability objectives. In conclusion, embedding legal provisions that support environmental and sustainability rights is essential for developing a more

⁵³ Emirates Nuclear Energy Corporation (ENEC), 'Barakah Nuclear Energy Plant', *Emirates Nuclear Energy Corporation*, [accessed 11 March 2025] <https://www.enec.gov.ae/barakah-plant/>.

⁵⁴ Government of the United Arab Emirates, *United Arab Emirates Legislations | The Constitution of the United Arab Emirates*, [accessed 11 March 2025] <https://uaelegislation.gov.ae/en/constitution>.

⁵⁵ Chris Jeffords, 'On the Relationship between Constitutional Environmental Human Rights and Sustainable Development Outcomes', *Ecological Economics*, 186 (2021), 107049 <https://doi.org/10.1016/j.ecolecon.2021.107049>.

progressive legal framework that safeguards both environmental and societal well-being.⁵⁶

The research concludes that in order to ensure the achievement of the desired environmental goals, it is necessary to focus on building the capacities of workers in the environmental field, qualifying and developing their skills as required, and strengthening control and monitoring mechanisms. In short, if some principles of international law are applied to measure the UAE's compliance with its international environmental obligations, applying the principle of "effectiveness in implementing treaties" reveals that, despite the progress made, domestic environmental legislation still lacks a comprehensive regulatory system for carbon pricing. This fails to provide accountability and undermines deterrence in the face of environmental governance. Furthermore, when applying the "polluter pays" principle enshrined in many international instruments, the study finds that the lack of a carbon pricing framework weakens the state's ability to assume environmental responsibility and reduces the level of deterrence, accountability, and oversight compared to European experiences that codify this principle in binding legislative frameworks. Furthermore, the UAE lacks constitutional recognition of environmental rights. As is the case in Latin America and some European countries, this often negatively impacts sustainability indicators. Furthermore, the absence of certain regulatory mechanisms, such as environmental lawsuits filed by citizens in the United States, also leads to weak civil oversight.

Challenges to the Implementation of Environmental Protection Legislation and Policies in the UAE

The UAE has signed several major environmental agreements, such as the Paris Agreement, and initiated ambitious policy and legislation, such as Federal Law No. 24 of 1999 on Environmental Protection, along with the UAE Green Agenda 2030, the Energy Strategy 2050, and the Circular Economy Policy (2021-2031), demonstrating its strong commitment to sustainability. However, the implementation of these commitments at a national level into enforceable national mechanisms is, as this discussion indicates in Section 3.3, limited. The effective implementation of these environmental frameworks is threatened by regulatory obstacles and varying levels of compliance, with weak oversight mechanisms.

⁵⁶ Esteban Alemán Correa, Michael Jetter, and Alejandra Montoya Agudelo, 'Corruption: Transcending Borders', *Kyklos*, 69.2 (2016), 183–207 <https://doi.org/10.1111/kykl.12108>.

Fatma Ulfatun Najicha, Mukhlisin, Supiandi, Saparwadi, and Dinil Abrar Sulthani, 'The Shaping of Future Sustainable Energy Policy in Management Areas of Indonesia's Energy Transition', *Journal of Human Rights, Culture and Legal System*, 3.2 (2023), 361–82 <https://doi.org/10.53955/jhcls.v3i2.110>.

These challenges are not unique to the UAE but are faced by many countries around the world.⁵⁷

Analysis of UAE's environmental legislation and policies reveals multiple challenges to effective implementation. A public register impact assessments of major projects are mandatory, reflecting a commitment to reduce environmental damage, there remain a gap in the transparency of reporting reliable carbon emissions data, which affects the accuracy of decisions on carbon pricing, trading plans, and national decarbonization strategies.⁵⁸ In addition, the absence of a public register of corporate crimes weakens deterrence, while inconsistency in law enforcement across regulatory bodies across different emirates, particularly in Abu Dhabi, Dubai and Sharjah contributes to the unbalanced application of legislation.⁵⁹ Secondly, the possibility of some organizations settling for paying fines and not taking remedial measures weakens the effectiveness of the regulations. Secondly, there is a pressing need to strengthen human resources, boost environmental monitoring people training and put in stronger compliance mechanisms to ensure that the regulations are being effectively enforced and discourage anomalies.⁶⁰

In contrast to this, the European Union environmental regulation operates under a strict system of legislation like the Water Framework Directive, the Industrial Emissions Directive, and environmental liability law. The UAE's carbon pricing system is in development, which may constrain its ability to enforce

⁵⁷ Muhammad Fazli Jundiana and others, 'Regulating Urban Green Spaces: Challenges in Preserving Water Resources in Indonesia and Australia', *Journal of Human Rights, Culture, and Legal System*, 4.1 (2024), 169–93 <https://doi.org/10.53955/jhcls.v4i1.128>.

Arifin Ma'ruf, 'Legal Aspects of the Environment in Indonesia: Efforts to Prevent Environmental Damage and Pollution', *Journal of Human Rights, Culture, and Legal System*, 1.1 (2021) <https://jhcls.org/index.php/JHCLS/issue/view/1> [accessed 11 March 2025].

⁵⁷ United Arab Emirates, *Third National Communication under the United Nations Framework Convention on Climate Change (UNFCCC)* (UNFCCC, 2024) <https://unfccc.int/sites/default/files/resource/UAE%20INC.pdf> [accessed 11 March 2025].

e Change (UNFCCC) (UNFCCC, 2024) <https://unfccc.int/sites/default/files/resource/UAE%20INC.pdf> [accessed 11 March 2025].

⁵⁸ Aisha Al-Sarihi, 'Renewable Energy in the Gulf Arab States', *Center for Contemporary Arab Studies, Georgetown University*, 18 November 2019 <https://ccas.georgetown.edu/2019/11/18/renewable-energy-in-the-gulf-arab-states/> [accessed 11 March 2025].

own University, 18 November 2019 <https://ccas.georgetown.edu/2019/11/18/renewable-energy-in-the-gulf-arab-states/> [accessed 11 March 2025].

Aisha Al-Sarihi and Michael Mason, 'Challenges and Opportunities for Climate Policy Integration in Oil-Producing Countries: The Case of the UAE and Oman', *Climate Policy*, 20.10 (2020), 1226–41 <https://doi.org/10.1080/14693062.2020.1781036>.

⁶⁰ John A. Burt, *A Natural History of the Emirates* (2023) <https://doi.org/10.1007/978-3-031-37397-8>.

Terrence Kevin Pierson and Camille Heaton, *Environmental Successes and Challenges in the United Arab Emirates* (Abu Dhabi: Emirates Center for Strategic Studies and Research, 2014).

Jessica Scopacasa, 'UAE Climate Law 2024 Compliance Guide', *Olive Gaea*, 2024, <https://olivegaea.com/blog/uae-climate-law-2024-compliance-guide/> [accessed 11 March 2025].

emission reduction effectively. The EU has adopted legally binding greenhouse gas emission reductions of 55% by 2030 compared to 1990 levels to achieve net carbon neutrality by 2050. While the UAE is formulating its own carbon price system, its incomplete status at present threatens to weaken its capacity to impose effective emissions cuts and broader environmental compliance.⁶¹

The Enforcement is marked by the presence of specialized environmental courts that effectively address breaches. Public reporting is also transparent, with large companies being obligated to report on environmental compliance, which enhances their accountability. Companies found guilty of gross violations are also subject to severe penalties, such as heavy fines or even mandatory business closure.⁶² Among the biggest challenges to environmental policy in the United Arab Emirates is that there is no fully integrated system of carbon prices. The European Union, on the other hand, has adopted legally binding greenhouse gas emission reductions of 55% by 2030 compared to 1990 levels to achieve net carbon neutrality by 2050. While the UAE is formulating its own carbon price system, its incomplete status at present threatens to weaken its capacity to impose effective emissions cuts and broader environmental compliance.⁶³

Conversely, public participation is also crucial in maximizing the efficacy of environmental law enforcement. Still, the UAE suffers from weak public participation and sparse avenues through which citizens have an opportunity to influence environmental policy or hold transgressors accountable.⁶⁴ Still, the UAE suffers from weak public participation and sparse avenues through which citizens have an opportunity to influence environmental policy or hold transgressors accountable. In contrast, the United States grants citizens and organizations the right to file civil lawsuits against non-compliant parties to environmental laws, but this mechanism is restricted by mandatory notice periods and requirements to

⁶¹ Samuel Bergina, 'What Are the EU Climate Targets for 2030, 2040, and 2050?', *Homaio*, 2024, <https://www.homaio.com/post/what-are-the-eu-climate-targets-for-2030-2040-and-2050> [accessed 11 March 2025].

Delia Sanchez Trancon and Xavier Leflaive, 'The Implementation of the Polluter Pays Principle in the Context of the Water Framework Directive', OECD Environment Working Papers, no. 238 (Organisation for Economic Co-operation and Development, 2024). <https://doi.org/10.1787/699601fc-en>

⁶² Delia Sanchez Trancon and Xavier Leflaive, 'The Implementation of the Polluter Pays Principle in the Context of the Water Framework Directive', OECD Environment Working Papers, no. 238 (Organisation for Economic Co-operation and Development, 2024). <https://doi.org/10.1787/699601fc-en>

⁶³ Samuel Bergina, 'What Are the EU Climate Targets for 2030, 2040, and 2050?', *Homaio*, 2024 <https://www.homaio.com/post/what-are-the-eu-climate-targets-for-2030-2040-and-2050> [accessed 11 March 2025].

⁶⁴ Mengchan Zhao and Yangyang Cheng, 'Is Public Participation Weak Environmental Regulation? Experience from China's Environmental Public Interest Litigation Pilots', *Sustainability*, 16.20 (2024), 8883 <https://doi.org/10.3390/su16208883> [accessed 11 March 2025].

prove legal capacity, which may limit its effectiveness.⁶⁵ Meanwhile, in the European Union, transparency and public participation are fundamental principles, where civil society organizations play an important role in enforcing environmental laws. Nevertheless, some EU member States lack full disclosure of data, which affects the public's ability to monitor environmental compliance, such as withholding data on illegal fishing activities, which limits public oversight.⁶⁶

Therefore, successful and effective implementation of environmental legislation in the UAE necessitates procedures that support active public engagement, transparency, and accountability in environmental decision-making. Thus, the absence of measures allowing civil environmental litigation by individuals or civil society groups, as has been the case in ecologically advanced jurisdictions such as the United States and several EU member states, is a flaw that undermines environmental supervision instruments. In addition, organizational environmental compliance within carbon-intensive sectors such as construction, energy and manufacturing does place constraints on companies that will require improved incentive mechanisms for environmental compliance. An effective way to achieve a balance between economic growth and environmental sustainability is to incentivize companies to invest in green, low-carbon technological innovations. As the UAE moves toward a regulated carbon market, finalizing this framework will support greater environmental compliance and increase the competitive advantage of businesses looking to become more sustainable, ultimately strengthening the UAE's position as a leader in the transition to a low-carbon economy.

The essential requirement to integrate stakeholders' perspectives in UAE policy, with a view to ensuring the success of sustainable development goals in addition to enhancing the effectiveness of environmental policies. This includes the coordination and participation of different government agencies in environmental impact assessment processes, environmental decision-making for the successful implementation of regulatory policies. Furthermore, compliance by firms with environmental measures, their participation in environmental assessment and planning processes, and finally, the involvement of local communities in assessment and decision-making processes for development projects, and the presence of clear and transparent mechanisms for allowing the voice of the

⁶⁵ E. Roberts and J. Dobbins, *The Role of Citizens in Environmental Enforcement: A U.S. Perspective* (Environmental Law Institute, 2002) <https://www.eli.org/sites/default/files/eli-pubs/57aa3700d853b-themetheroleofcitizensinenvironmental-full.pdf> [accessed 11 March 2025].

⁶⁶ European Parliament, *Illegal, Unreported and Unregulated Fishing: Sanctions in the EU* (European Union, 2014) [https://www.europarl.europa.eu/RegData/etudes/STUD/2014/529069/IPOL_STU\(2014\)529069_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2014/529069/IPOL_STU(2014)529069_EN.pdf) [accessed 11 March 2025].

community to reach decision-makers.⁶⁷ Cooperation of the relevant stakeholders is also essential for supporting effective integration and contributing to sustainable development. Thus mitigating global challenges such as climate change, food and water scarcity and biodiversity loss.⁶⁸

A comparison between international and United Arab Emirates environmental legal frameworks reveals a strong level of integration, as both prioritize the protection of natural resources, prevention of environmental degradation, and advancement of sustainable development. The United Arab Emirates aligns its national legislation with international obligations while tailoring them to its specific environmental and developmental context. Federal Law Number 24 of 1999 on Environmental Protection and Development reflects the country's commitment to multilateral agreements such as the Paris Agreement, the Convention on Biological Diversity, the Basel Convention, the International Convention for the Prevention of Pollution from Ships, and the United Nations Convention on the Law of the Sea. Federal Cabinet Resolution Number 39 of 2021 further affirms the United Arab Emirates' dedication to sustainable and integrated waste management. In addition, ministerial resolutions such as Ministerial Resolution Number 224 of 2015 illustrate legal measures to conserve biodiversity. The national initiative to plant one hundred million mangrove trees by 2030 demonstrates a concrete step toward enhancing climate resilience and reducing carbon emissions.⁶⁹

The Green Economy for Sustainable Development Strategy aims to increase the use of renewable energy and reduce greenhouse gas emissions, serving as a continuation of the United Arab Emirates' commitment under the Paris Climate Agreement signed in 2016. It is important to note that this strategy, along with similar initiatives, represents policy directives rather than binding legislative obligations. This distinction suggests an intentional avoidance of legal

⁶⁷ Andreea Niță, Stacey Fineran, and Laurențiu Rozyłowicz, 'Researchers' Perspective on the Main Strengths and Weaknesses of Environmental Impact Assessment (EIA) Procedures', *Environmental Impact Assessment Review*, 92 (2022), 106690 <https://doi.org/10.1016/j.eiar.2021.106690> [accessed 11 March 2025].

Daniele Brombal, Angela Moriggi, and Antonio Marcomini, 'Evaluating Public Participation in Chinese EIA: An Integrated Public Participation Index and Its Application to the Case of the New Beijing Airport', *Environmental Impact Assessment Review*, 62 (2017), 49–60 <https://doi.org/10.1016/j.eiar.2016.07.001> [accessed 11 March 2025].

⁶⁸ Cristina-Gabriela Mitincu and others, 'Stakeholder Engagement in Planning Nature-Based Solutions: A Network Analysis Approach', *Environmental Science & Policy*, 141 (2023), 69–79 <https://doi.org/10.1016/j.envsci.2022.12.022>. Boldizsár Gergely Megyesi and others, 'Perceptions of Stakeholders on Nature-Based Solutions in Urban Planning: A Thematic Analysis in Six European Cities', *Urban Forestry & Urban Greening*, 96 (2024), 128344 <https://doi.org/10.1016/j.ufug.2024.128344>.

⁶⁹ Hanadi Al Ali and others, 'Mangrove, a Nature-Based Solution to Mitigate Climate Change', *International Conference on Sustainable Development*, 2023, https://ic-sd.org/wp-content/uploads/2023/10/2023-submission_402.pdf [accessed 11 March 2025].

enforceability, thereby revealing a gap in the regulatory framework. Furthermore, the provisions in Federal Law Number 24 of 1999 regarding the protection of the marine environment from pollution and the sustainable use of marine resources align with international conventions, including the International Convention for the Prevention of Pollution from Ships and the United Nations Convention on the Law of the Sea. These international instruments aim to regulate marine sustainability and environmental protection. However, notable differences remain between international and national frameworks. International agreements emphasize global cooperation and the equitable distribution of responsibilities between developed and developing nations. In contrast, national legislation tends to focus on localized environmental challenges and reflects the specific economic, social, and ecological contexts of the implementing country.⁷⁰

The enforcement of international treaties and agreements relies heavily on the compliance of signatory states. To ensure effective implementation, international legal instruments must include provisions for periodic compliance reporting, monitoring mechanisms, and access to technical and financial assistance. In contrast, national legal frameworks utilize a combination of regulatory strategies, enforcement measures, and voluntary compliance such as public awareness campaigns to uphold environmental laws and policies. Within this context, the United Arab Emirates has implemented procedures including environmental impact assessments and licensing regimes. However, the absence of an effective judicial review process and the lack of environmental civil actions significantly limit enforcement capacity. The application of pollution control legislation in the United Arab Emirates remains contingent upon action by state agencies rather than independent judicial or community initiatives. This differs from international best practices that promote public interest litigation and constitutional recognition of environmental rights. Despite these constraints, the United Arab Emirates has positioned itself as a regional leader in fostering environmental sustainability aligned with its long term economic vision. The government has introduced proactive strategies to elevate environmental awareness, encourage sustainable behavior, and involve relevant societal stakeholders. The existing legal frameworks have facilitated meaningful advancements in access to clean energy, sustainable consumption, climate change mitigation, and conservation of marine and terrestrial biodiversity. Nevertheless, further legislative reform and expanded access to environmental justice remain necessary to enhance the overall effectiveness and inclusivity of environmental governance in the United Arab Emirates.

⁷⁰ Umut Turksen, 'EU Energy Law and Policy: A Critical Account. By Kim Talus', *Journal of Environmental Law*, 27.2 (2015), 364–68 <https://doi.org/10.1093/jel/eqv013>.

Table 1: Core Themes and Implications from the Environmental Legal Discussion

Main Theme	Interview Insights	Implications
Environmental Legislation in the UAE	Federal Law No. 24 of 1999 as core legal framework	Aligns local law with sustainability goals
Compliance with International Treaties	UAE is a party to the Paris Agreement, Basel Convention, CBD, etc.	Reflects international commitment and cooperation
Strengths in National Frameworks	Green Agenda 2030, Energy Strategy 2050, Circular Economy Policy	Promotes UAE as a regional leader in sustainable development
Challenges in Enforcement	Lack of carbon pricing, weak public engagement, regional disparity in enforcement	Weaknesses of legal accountability and public trust
Recommendations for Legal Reform	Call for constitutional protection, enabling public lawsuits, and pricing carbon	Strengthens environmental justice and effective governance

Source: Prepared by the Authors

The information presented in Table 1 synthesizes thematic insights from interviews concerning the environmental legal framework in the United Arab Emirates (UAE) and its alignment with both international and national sustainability objectives. Federal Law Number 24 of 1999 is identified as the primary legislative foundation for environmental protection, demonstrating the country's formal commitment to sustainable development. The UAE's accession to major international agreements, including the Paris Agreement, the Basel Convention, and the Convention on Biological Diversity, indicates a strong willingness to engage in global environmental cooperation. In addition, national policy frameworks such as the Green Agenda 2030, the UAE Energy Strategy 2050, and the Circular Economy Policy establish the country's position as a regional leader in environmental governance. Despite these advances, several challenges remain. The absence of a carbon pricing mechanism, limited public involvement, and regional disparities in enforcement undermine legal effectiveness and public confidence in environmental regulation. Interview insights recommend important reforms, such as incorporating environmental rights into the constitution, expanding access to public interest litigation, and introducing pricing mechanisms to internalize environmental costs. These recommendations aim to improve legal accountability, support inclusive environmental governance, and strengthen the implementation of sustainability goals within the UAE's evolving legal and institutional landscape.

4. Conclusion

The research concludes that there is a close relationship between environmental protection and sustainable development. It highlights the significance of measures and policies taken by the United Arab Emirates in harmonizing its domestic legislation with international environmental agreements and standards. Nonetheless, the study observed that although the UAE has a substantial amount of legal text in place, its environmental laws don't provide binding mechanisms

for community oversight and environmental public-interest litigation. To address these gaps and effectively realize the goals of environmental conservation and sustainable development, the research recommends the creation of a cohesive national legislative framework in the UAE to consistently disclose carbon emissions, price carbon, and remove carbon. Furthermore, it calls for stricter compliance frameworks that increase the powers of regulatory authorities, ensure penalties for breaches are significant enough to deter, and promote the more consistent application of environmental laws between the emirates. The research also advocates for amending the UAE Constitution to explicitly include sustainability as a basic human right, and for strengthening community participation by engaging citizens and residents in setting environmental policies, holding violators accountable, and filing lawsuits against entities that fail to comply with environmental laws. Finally, it emphasized the importance of improving training programs to develop the knowledge and skills, and capabilities of workers in the environmental sector to provide solutions for environmental issues.

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