ISRG Journal of Multidisciplinary Studies (ISRGJMS)

ISRG PUBLISHERS
Abbreviated Key Title: isrg j. multidiscip. Stud.
ISSN: 2584-0452 (Online)
Journal homepage: https://isrgpublishers.com/isrgjms/
Volume – IV, Issue - VI (June) 2026
Frequency: Monthly

Assessing Legislative Gaps in Integrated Coastal Zone Management (ICZM): A Case Study of Lebanon

Raghda Saad

Ph.D in Environmental Management & Regional Planning, Integrated Coastal Zone Management (ICZM) Specialist

| **Received:** 19.05.2026 | **Accepted:** 26.05.2026 | **Published:** 01.06.2026

***Corresponding author:** Raghda Saad

Abstract

Lebanon, similar to various nations, does not possess a distinct legal structure focused on Integrated Coastal Zone Management (ICZM). Coastal governance relies on a collection of disjointed environmental and sectoral regulations that were developed in a fragmented and uncoordinated manner, *frequently lacking coordination and having weak integration among institutions. This article analyzes the key legal frameworks regulating Lebanon's coastal zone, including legislation concerning maritime public assets, urban planning, sediment removal, environmental safeguards, coastal investments, and maritime transportation, while evaluating their effects on the implementation of ICZM. The assessment underscores that these redundant and occasionally outdated legal regulations have led to coastal deterioration, encompassing swift urban development, shoreline encroachment, pollution, loss of habitats, erosion, and limited public access to coastal areas. Despite recent changes and updates, including revised maritime occupancy regulations and penalties intended to enhance governance and boost revenue collection, their impact is hindered by poor enforcement and fragmented institutions. The article also points out a distinct discrepancy between national laws and the principles of the Mediterranean ICZM Protocol, especially concerning sustainable coastal management, environmental safeguarding, and public access rights. Ultimately, it asserts that realizing effective ICZM in Lebanon necessitates enhanced legal harmonization, better inter-ministerial collaboration, and more robust enforcement mechanisms to guarantee the sustainable safeguarding of coastal resources.*

Keywords: *ICZM, Lebanon, Laws, Legislative Gaps, ICZM Protocols*

1. Introduction

According to Bermas and Thia-Eng (2018), the essential tools for the functional operation and implementation of a comprehensive, holistic, and integrative coastal management plan are the key elements of governance, including policy, strategies, and plans, institutional arrangements, legislation, information management and public awareness, financing mechanisms, and capacity development.

DOI: 10.5281/zenodo.20484138

ICZM is a governance process that involves the legislative and institutional framework necessary to connect coastal zone development and management plans to environmental and social objectives and develop them with the participation of those who will be affected by the project (Post and Lundin, 1996). The law establishes the legal structure within which the numerous public and private agencies and individuals involved in the management and use of the coastal zone operate by defining their authorities and responsibilities (Bermas and Thia-Eng, 2018).

Countries that have implemented ICZM have relied on laws and legal frameworks because legislation has an impact on all phases of an ICZM project, from collecting information to implementing policies (EU Demonstration Programme on ICZM, 1999). To protect coastal habitats, several legislative instruments have been created that target specific sectors or are tailored to the demands of Coastal Zone Management (CZM) (Meltzer, 1998). In the context of ICZM, guaranteeing the safeguarding of natural resources is of utmost importance. In this regard, the impact of EU legislation on national coastal laws, especially concerning fisheries, water quality, natural conservation, and environmental assessment, is increasingly significant. At the level of member states, land-use control mechanisms and programs aimed at protecting areas of special importance are typically utilized for the management and planning of the coastal zone (Anonymous, 2001).

In many countries, constitutional provisions mandate the development of adequate legislative frameworks and place responsibility on both the state and the public to protect the environment for the benefit of present and future generations (Menwar, 2013). One advantage of this legal framework is the establishment of zoning requirements to regulate the sustainable use of "coastal zones" and "protection zones" (Gerhartz-Abraham Adrian et al., 2016).

Furthermore, legislation can also aid in resolving conflicts related to coastal management. In many cases, there is a lack of clear legal guidance on how to preserve ecosystems and conserve natural resources, leading to disputes that may require judicial intervention. These disputes may arise over specific land use applications, interpretations of regulations and policies, property rights allocation in beach areas, preservation of the natural character of the coast, access to the coast, minimum building distances from the seashore, and appropriate development size and scale for an area (OECD_Memorandum ICZM 1992).

Therefore, local governments play a crucial role in the implementation of ICZM, with legislation representing one of their main responsibilities. To demonstrate their commitment to the establishment and long-term effectiveness of the Integrated Coastal Management (ICM) system, local authorities must develop, adopt, and enforce laws and regulations that support the development, implementation, and continuous improvement of ICM. This also requires regularly reviewing and updating existing legislation, while introducing new regulations whenever necessary (PEMSEA, 2015).

In this context, ICZM and coastal protection legislation differ considerably from one country to another. For example, the United States has established comprehensive legal frameworks, whereas Ecuador relies more on policy measures and institutional arrangements. National approaches also vary, with France emphasizing coastal conservation while Indonesia focuses on the economic utilization of coastal areas. Nevertheless, the existence of legislation alone is not sufficient to ensure successful ICZM implementation, as effectiveness largely depends on enforcement capacity, availability of resources, institutional coordination, and political commitment (Nandi, 2017).

The lack of a strong and coherent legal framework remains a major barrier to effective ICZM implementation in many countries (World Bank, 2019). Furthermore, even in countries where new ICZM laws have been adopted, progress is often confined to land-based coastal management issues because of weak enforcement mechanisms and delays in issuing implementing regulations. Combined with existing political and socio-economic challenges, these limitations create imbalances that hinder the achievement of integrated coastal zone management objectives (Nachite, 2019).

In 2014, the Lebanese government approved a draft decree for the ratification of the ICZM Protocol, which also provided for the establishment of an ICZM unit under the Department of Protection of Natural Resources. The Ministry of Environment (MoE) had previously prepared a draft ICZM law in 2003, which was later revised in 2015, although it still requires further review and updating (Napa, 2019). Following Decree No. 639 issued on 18 September 2014, Lebanon officially acceded to the ICZM Protocol on 1 August 2017, with the accession entering into force on 31 August 2017. However, the protocol has not yet been fully transposed into a dedicated national legal framework (Diagnostic & Report, 2025).

Similar to many countries, Lebanon still lacks a dedicated legal framework specifically addressing ICZM. Instead, coastal governance relies on a collection of general environmental laws that were often developed in a fragmented and ad hoc manner, with limited integration into existing legislative structures. This has led to regulatory overlaps, inconsistencies, and outdated provisions that are frequently difficult to implement and enforce (Meliadou et al., 2012). Therefore, this article aims to examine several laws related to ICZM in Lebanon, critically exploring their shortcomings and assessing their impacts on coastal zones and the effective implementation of ICZM principles.

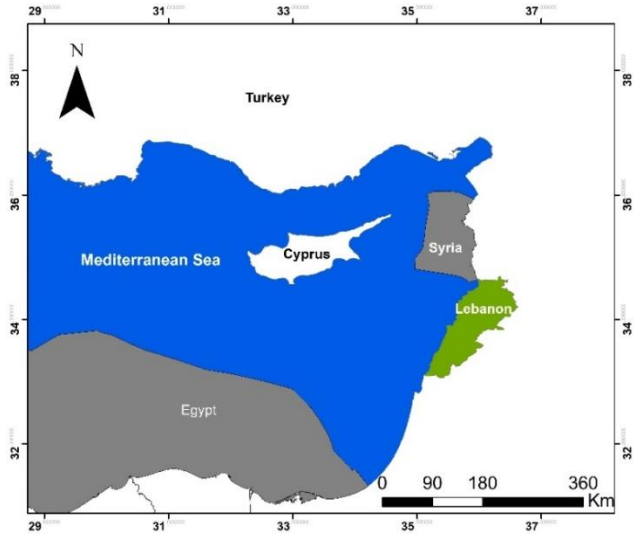
2. Study Area

2.1 Geographical and Environmental Features

The eastern part of the Mediterranean basin, known as the Levantine Sea (Figure.1), is where the Lebanese coast is situated. This coast extends approximately 230 kilometers from Aarida in the northwest to El Naqoura in the southwest (CDR, 2005). The continental shelf of Lebanon is relatively narrow, with its widest section situated in the region that spans from Enfe (between Batroun and Tripoli) to the Syrian border and beyond, where it reaches a width of 18 km, providing ample support for marine life and fisheries. However, the shelf narrows to less than 3 km between Enfe and the headland of Ras Beirut. Moving southward from Ras Beirut towards Sidon and Tyre, the shelf expands again, reaching 5 to 7 km in width (Sursock et al., 2014).

Figure 1. Geographic location of Lebanon along the Mediterranean coast

DOI: 10.5281/zenodo.20484138



Lebanon's marine domain includes the territorial sea, which extends 12 nautical miles from the coast, and encompasses the sea, the seabed, and the seafloor, as well as the coast, which is considered part of the public marine domain (ECODIT/IAURIF, 1997). The coastline is mainly composed of rocky shores and pebble beaches, with sandy beaches comprising only a small portion, about 20%, of the total coastline (MOE/UNDP/ECODIT, 2011).

The Lebanese coastal region is situated in the warmest part of the Mediterranean basin and is separated from the Arab-Syrian desert by two mountain ranges. However, it remains highly exposed to prevailing winds. Bathymetric data indicate that the seabed is relatively deep between Enfeh and Ras Beirut, exceeding 200 m in depth at a distance of approximately 3 km from the coastline (Almagor and Hall, 1980). The coastal waters of Lebanon are relatively deep and cover an area of approximately 19,516 square kilometers (Napa, 2019).

Lebanon, like other Mediterranean regions, is characterized by unique marine and coastal biodiversity. The coastal waters of Lebanon are home to thermophilic biota of Mediterranean and Indo-Pacific origin, as well as various remarkable habitats and marine biodiversity (Napa, 2019). These habitats range from shallow ecosystems such as vermetid reefs, coralligenous habitats, seagrass meadows, and seagrass beds, to deep-sea ecosystems such as undersea canyons (Bellan-Santini et al., 2015).

The Lebanese coastal zone hosts a diverse range of marine life, including 21 species of cephalopods, 4 species of turtles, and 6 marine mammals (CAMP, 2003). In addition, the area is home to hundreds of species of phytoplankton, algae, lichens, mushrooms, phanerogams, zooplankton, and benthos, as well as 357 fish species. Due to its biodiversity, the Lebanese coastal and marine ecosystems are considered a hotspot of global significance in the Mediterranean (Harmelin et al., 2016).

Lebanon's coastline features are crucial structures due to their role in supporting vital communities, acting as nursery and shelter habitats, enhancing carbon sequestration, and providing various goods and services to human society. These features are known as "keystone structures" (Badreddine et al., 2018). However, several benthic environments and flagship species such as the coral Desmophyllum dianthus are considered endangered, highlighting the importance of protecting and preserving these habitats (Gubbay et al., 2016).

2.2 Coastal Environmental Issues and Some Challenges of ICZM

A study conducted by the National Council for Scientific Research in Lebanon demonstrated the modifications that have occurred in the Lebanese coastal zone over time (Faour and Abi Rizk, 2014). The study revealed that the artificial coast has expanded significantly, growing from 36.03 km in 1962 to 147.01 km in 2003 due to the construction of artificial facilities related to the sea, such as fishing ports, trade and leisure facilities, dams, and large urban developments. However, the rocky coast, sandy beach, and pebble beach have decreased by 9%, 15.5%, and 3%, respectively, which is attributed to human pressure and residential buildings (table.1).

Table 1. A comparison between the coastline components of 1962 and 2003

Morpho sedimentary Type	Linear in 1962 (Km)	% in 1962	Linear in 2003 (Km)	% in 2003
Artificial coast	36.03	12.91 %	147.01	41.03 %
Rocky coast	111.09	39.85 %	110.44	30.82 %
Sandy beach	108.28	38.8 %	81.90	22.86 %
Pebble beach	23.52	8.42 %	18.99	5.30 %

The Lebanese coastal area is the most important and vulnerable zone in the country. It is a region where a large number of industrial, commercial, and financial activities are concentrated, as well as major Lebanese cities. Within a stretch of 500 meters all along the coast, 40% of the total area is occupied by urbanization, 41% by agriculture, and 19% is made up of natural areas such as beaches and dunes (CDR, 2005).

The Lebanese coastline has suffered significant degradation as a result of uncontrolled urban expansion and economic pressures, particularly during the war and post-war period. The period of the civil war from 1975-1990 saw a significant increase in urbanization, with the proportion of the population living in urban areas rising from 67% to 83.1% (CDR, 2005).

According to the results reported by (Nader,2015), coastal regions house 80% of the Lebanese population and 33% of the built-up area. On the other hand, according to a report by UNEP GRID in 2017, Lebanon

has the second highest built-up area in the 150 m coastal belt among Mediterranean countries (38.3%). Although recent UN estimates predict a decline in Lebanon's total population from 2019 onwards due to multiple ongoing crises in the country, the urban population is still projected to increase, reaching 90.6% by 2030 (UNDESA, 2018b).

It is worth noting that the current figures are likely higher than before due to population growth in Lebanon, which reached approximately 5,893,315 inhabitants in 2024[1]. Therefore, the average population density in coastal areas may have risen.

[1] https://statisticstimes.com/demographics/country/lebanon-population.php

DOI: 10.5281/zenodo.20484138

Severe winter storms, rising sea levels, sand extraction from beaches, port expansion, recreational activities, and encroachment on public spaces all contribute to a decrease in marine sediments, resulting in sediment scarcity along Lebanon's coast (IMAC, 2009). The Lebanese coastal zone is highly susceptible to coastal erosion due to both natural and human-induced factors (MoE and UNDP, 2011). Beaches may vanish, particularly in areas where buildings are near the shoreline, and sandy beach stretches are limited (El-Raey, 2009). A study by Abi Rizk (2005) (Table .1) found that between 1963 and 2003, coastal erosion rates for rocky, sandy, and pebble beaches were approximately 8.2%, 45.2%, and 24.0%, respectively.

Additionally, the coast's vast potential is threatened by increased commercialization of the shorefront, limited public beach access, solid waste dumping, wastewater discharges, sea filling, and sand mining (IMAC, 2009), as well as the conversion of agricultural areas into human settlements, habitat destruction, and species displacement (Nader, 2015). Given these coastal challenges and various other obstacles, implementing ICZM in Lebanon remains difficult, with success and proper execution proving elusive.

According to Nader (2015), Lebanese coastal management faces various issues, including the absence of land use plans at local, regional, and national levels; ill-defined national planning authorities; uncoordinated and overlapping environmental management responsibilities; outdated and inconsistent environmental legislation; and privatization of public lands and beaches.

3. Material and Methods

This research utilizes a qualitative methodology to analyze the legal and institutional structures that regulate ICZM in Lebanon. The examination relies on a thorough assessment of secondary information, encompassing national laws, policy papers, government reports, and pertinent academic literature. Essential documents like environmental regulations, orders, and the ICZM Protocol are thoroughly examined to uncover deficiencies, redundancies, and contradictions in coastal management. Furthermore, peer-reviewed studies and institutional documents are utilized to place Lebanon's ICZM framework within the larger scope of regional and global practices. This document-centered method permits a thorough evaluation of the existing legislative and institutional issues impacting coastal management in Lebanon.

4. Results and Discussion

4.1 Legislative Framework Governing the Lebanese Coastal Zone

Table 2. Laws, decrees, articles, and decisions related to the Lebanese coastal zone[2]

Laws, decrees, arts, decisions	The mission
Law 1925 144/S	Order 144/S defines public property as inalienable, meaning it cannot be sold, transferred, or permanently built upon. It classifies the public domain into maritime public domain and maritime lots owned privately, municipally, or by the State. Under Act 17, owners of adjacent properties may obtain renewable licenses to use the beach and sea for private purposes, although these licenses can be revoked at any time and cannot be transferred to others.
Law 1926	The establishment of the Land Registry defined the boundaries of the maritime public domain according to Order 144/S. However, legal disputes by private landowners later enabled parts of the seafront to be divided into individually owned properties with official deeds. Decision No. 320 focuses on the protection and regulation of public waters and their use.
Decision No 2775/1929	Fishing regulation and Control
Law of 8/7/1939	Protection of Natural Sites and Vistas
Law 1952	Establishment of land registry on coastal zone for private landlords
Law 1954	Prohibition of building on all seafront zone
Law 1955	Retrieve coastal leased properties
Law 1962	Permitting procedures for sand and gravel extraction from the maritime public domain
No.4810/ 1966	Allows any resort owner to use three times the surface area of the resort plot to construct a marina
Law 1968	Impose criminal penalties against anyone who violates the provisions of public property occupancy.
Decree 151649/1974	Prohibition of sand extraction with exceptions
Decision No 7/ 1974	Issuance of joint instructions to coordinate the pursuit and removal of infractions on maritime public domain
Decree No 1300/1978	Allows the occupation of maritime public domain for tourist purposes
Decree No 3543/ 1980	Occupancy is allowed along the coast, Prevention of coastal pollution.
Decree No 4918/ 1982	Extends construction on Zone 10, 25% of the lot surface area is conceded as municipal public land.
Law 1984	The United Nations Convention on the Law of the Sea defines the territorial sea as extending 12

[2] https://www.aub.edu.lb/ifi/Documents/publications/docs/beirut_zone/20180921_beirut_zone_10_location_map_16.pdf

DOI: 10.5281/zenodo.20484138

	nautical miles from the coast and highlights the importance of protecting the marine environment by preventing pollution and conserving marine resources and biodiversity.
Decree 169/ 1989	Cancels the requirement of allocating 25% of a lot to municipal public land if development is allowed under decree 4918 of 1982.
Article 30 of Law 14/ 1990	Dissolution of all illegal occupancy permits on maritime Public Domain
Law 58/ 1991	SOLIDERE Master Plan
Decree No 2522/1992	Definition of annual fees paid for the legalized occupation of maritime public domain.
Law 402, law 309,decree No 7464, decree No 7505, decree No 7660/ 1995	Allows the increase of built up ratio by 20% and far by 60% for lots above 20,000 m^2 and more than.
Decision 52/1/ 1996	Limiting pollution on coastal zone
Law 444/ 2000	Recognizes citizens' right of free and open access to the seashore and their right to live in a healthy environment
Law 296/2001	Modifies condition for the acquisition of property for non-nationals.
Article 33 of Law number 444/2002	This law recognizes citizens' right to free access to the seashore and to live in a healthy environment. It also promotes environmental protection through pollution control, biodiversity conservation, and the use of clean technologies. In addition, it requires tools such as Environmental Impact Assessments (EIA) and Environmental Management Plans (EMP) before approving development projects.
Decree No 689: Barcelona Convention/ 2008	Adoption of the Barcelona Convention protocol aimed at protecting the Mediterranean Sea from pollution.
Decrees No 8633, 8213, and 8471: EIA, SEA, and ECE/2012	This law aims to establish a "non aedificandi" marine protected area strategy under Lebanon's 2012 Marine Protected Area Strategy, in collaboration with the Ministry of Environment (Lebanon) and International Union for Conservation of Nature, designating two sites for protection and prohibiting construction within them.
Law 264/ 2014	Extension of Law 402 for 19 Years as of 2014 (Allows the increase of built up ratio by 20% and far by 60% for lots above 20,000 m^2 and more than)
Law 2017	Abolition of Law 45 on taxation, which was intended to regulate the legal framework of holding companies, by the Constitutional Council.

ICZM depends on different legislative instruments such as laws, decrees, policies, and action plans. Laws establish the legal framework and institutional responsibilities, while decrees support the implementation of specific regulations and procedures. Policies and strategies provide guidance for sustainable coastal planning and resource management. Together, these governance tools strengthen coordination and support effective coastal management (UNESCO, 2001).

According to a report on coastal law (table.2) there is a multitude of coastal laws in Lebanon. As shown in the table 2, Lebanese coastal legislation addresses multiple domains, including the maritime public domain, pollution control, sand extraction, private development, fisheries, and public access rights, Marine protected areas. However, despite this broad legal coverage, the existing framework remains insufficient and fragmented. These laws are issued and managed by several ministries, such as the Ministry of Energy and Water, Ministry of Agriculture, Ministry of Environment, and the Ministry of Public Works and Transport.

Since the laws are also derived from other sources, Law of 2018 and Law No. 192/2020 forbid the discharge and dumping of waste into surface waters and seawater, aiming to prevent marine pollution and safeguard coastal ecosystems. In addition, Decision No. 346/1 (2010) regulates maritime transport activities and defines the required categories and equipment for marine transportation operations (PAP/RAC, 2025).

The Lebanese coastal legal framework is composed of a wide range of laws, decrees, and administrative decisions that regulate ownership, use, development, and protection of the maritime public domain, and it has a direct influence on the implementation of ICZM. The framework began with foundational regulations such as Order 144/S (1925), which defined the maritime public domain as inalienable and established the distinction between public and private coastal areas, followed by the establishment of the Land Registry in 1926, which formalized coastal boundaries and ownership structures. Early legislation also addressed specific coastal uses, including fishing regulation, protection of natural sites, construction control, and resource extraction activities. Over time, additional laws and decrees expanded coastal governance to include maritime occupation permits, tourism development, marina construction, and enforcement measures against violations of public property.

From the 1980s onward, the legal framework increasingly incorporated environmental and planning dimensions, including alignment with international agreements such as the United Nations Convention on the Law of the Sea (1984) and the Barcelona Convention (2008). Environmental instruments such as EIA, SEA, and environmental protection decisions further strengthened regulatory oversight of coastal development and

DOI: 10.5281/zenodo.20484138

resource use. More recent legislation reinforced public access to the shoreline, pollution control, biodiversity conservation, and penalties for illegal occupation, reflecting a growing emphasis on sustainability and public rights.

In terms of ICZM, this evolving legal framework provides a broad but fragmented foundation that covers key coastal management dimensions, including land tenure, sectoral resource use, environmental protection, and public access. It also supports ICZM through the introduction of planning tools and environmental assessment mechanisms that link development activities with ecological considerations. However, the diversity of laws, the involvement of multiple institutions, and the sectoral nature of many regulations make coordination a central requirement for effective ICZM implementation.

Overall, the Lebanese coastal legal system contributes essential legal and institutional elements for ICZM by progressively integrating environmental protection, public access rights, and development control, while also illustrating the complexity of achieving coordinated coastal governance across multiple legal instruments and institutions.

4.2 Legislative Constraints and Gaps

If we examine the historical background of laws related to the coastal zone, it becomes evident that many of them have unintentionally contributed to coastal degradation and environmental damage due to financial and political interests.

Decree no. 144/S, a legally binding directive issued on June 10, 1925, during the French mandate by High Commissioner General Sarrail, defined the maritime public domain as follows: "It includes the seashore extending to the farthest point that waves reach during winter, as well as sand and gravel beaches." Consequently, the boundaries of maritime public property are not fixed and can change due to natural processes, such as beach erosion or sand accretion. The law also states that maritime public property "can neither be sold nor acquired as a property over time" (The Legal Agenda, 2016)[3]

If the sea level drops, no part of the public property can be privatized, if the water level rises and encroaches on neighboring private property, the boundaries of the public property area are revised to include these sections. Thus, this law aims to expand rather than reduce the maritime public domain's scope. However, there have been numerous instances of non-compliance with this law, such as the presence of real estate developments on the seashore in recent years. Additionally, as shown in table this law (Act 17) promotes temporary private investment on the shoreline (Fadel, 2017).

Over time, French law has been gradually eroded and weakened by several subsequent decrees that granted real estate developers the right to build on coastal lands and privatize the seashore for personal interests. These decrees were based on the belief that investments and private management of natural resources would enhance economic efficiency.

Decree 4810/1966 governs privately owned coastal lands and regulates the use of the maritime public domain, requiring prior governmental approval for both the nature of the proposed project and its designated development area. It also allows resort developers to build marinas with a surface area up to three times larger than their resort property, on the condition that they possess all adjoining land parcels linked to the marina site. Nevertheless, weak enforcement and limited implementation of permit procedures have contributed to environmental and ecological degradation, as well as shoreline disruption caused by unauthorized or inappropriate coastal encroachment (Fadel, 2017).

Furthermore, the law stipulates that the maritime public domain should, in principle, remain accessible to all users. To obtain authorization, specific conditions must be met: projects must serve a public, tourism, or industrial purpose as validated by the competent authorities; privately owned coastal lands must be of adequate size (including area, shoreline length, and depth) to support large-scale developments; and investments must not compromise the visual or environmental harmony of the beach. Subsequently, Decrees No. 1300/1978 and No. 3543/1980 (as shown in Table 2) were introduced to further promote investment and expansion of coastal zone occupation.

In 1995, Law No. 402 was enacted, permitting a 20% increase in the built-up ratio and a 60% increase in the floor area ratio for lots measuring 20,000 m2 or larger. To take advantage of the exception clauses in this law, applicants had to seek a special decree from the Higher Council for Urban Planning and the Council of Ministers. The legislation was introduced under the pretext of revitalizing Lebanon's economy after years of civil unrest, resulting in the predominance of artificial coastlines in the country. Law 264, issued in 2014, further reinforced this by extending its provisions for an additional 19 years, leading to ongoing coastal zone alterations and degradation.

In 2017, a decree was issued that undermined the public nature of the coast, aimed at dissolving Law 45, which established tax regulations for holding companies as determined by the Constitutional Council. Rather than focusing on creating systems that serve public interest, the emerging Lebanese state appeared to cater to the control of powerful individuals and vested interests. Consequently, laws were tailored to meet the needs of private investors and influential stakeholders. This approach led the government to imply that while beachfront construction was illegal, they could negotiate a compromise to legalize it if desired (Fadel, 2017).

As a result of these laws Encroachments along the Lebanese coastline now exceed 5 million square meters. These violations have contributed to the destruction of several archaeological sites, the degradation of the beach's ecological and economic value, and the loss of public spaces used for cultural and social activities. They have also limited free public access to the shoreline, created visual barriers, and disrupted the natural continuity of the coast. Today, only about 20% of Lebanon's 220 km coastline remains free from occupation—approximately 40 km[4].

A new law issued in 2024 regulates the use of Lebanon's maritime public domain by revising occupancy fees and reinforcing penalties to curb illegal coastal encroachment and increase state revenues. It establishes updated fees for the occupation of maritime public property, calculated as a percentage of real estate value and varying by region, alongside strict fines ranging from USD 10,000 to 35,000 for unauthorized use, which are doubled in cases of

[3] https://english.legal-agenda.com/framing-the-lebanese-seashore-crowding-out-public-interest

[4] https://nahnoo.org/public_spaces/the-coast-for-all/

DOI: 10.5281/zenodo.20484138

repeated or uncorrected violations[5]. The law further reaffirms that beaches, sand, and shoreline areas are part of the public domain and must remain freely accessible to all citizens, prohibiting privatization or excessive access charges. However, despite these legal provisions, a significant portion of the coastline remains occupied by private resorts and commercial establishments, where access fees can reach $35 to $60, revealing a continuing gap between regulatory framework and enforcement on the ground.

Alongside laws encouraging coastal investment, Lebanon also has regulations governing the extraction of sand and gravel, including legislation from 1962. Later, Decree 151649 (1974) was introduced to restrict sediment extraction, allowing it only in specific cases such as port and harbor maintenance or when materials are required for natural protective functions like filtration systems. However, the framework includes limited environmental safeguards for public interest, focusing mainly on protecting the maritime public domain, preserving the beach's visual quality, and maintaining a minimum buffer zone of ten meters from private properties, roads, railways, and public infrastructure (Fadel, 2017). It is also important to note that the long-term impacts of this legislation on coastal erosion and accretion have been discussed in several studies, including Saad et al. (2021).

Furthermore, legal instruments governing maritime transport, including those related to ports and shipping activities, provide limited environmental safeguards, particularly regarding the design, construction, and operation of maritime infrastructure and vessels. As a result, environmental considerations have often been overlooked in harbor development projects. Environmental Impact Assessment (EIA) studies have been carried out for only a small number of ports, largely because the EIA concept was only formally introduced into Lebanese legislation through Law 444/2002, Decree No. 8633/2012, and Decisions No. 229/1 and 230/1 dated 16/11/2012 (Fadel, 2017).

The MOPWT is responsible for granting permits for the disposal, filling, or incineration of materials in territorial waters or beneath the seafloor of territorial waters, provided these materials do not produce substances such as heavy metals, phenols, halogenated compounds, petroleum products, pharmaceutical by-products, peroxides, asides, ethers, chemical wastes, asbestos, and their derivatives, among others. These operations must be conducted with appropriate monitoring to assess potential impacts on the maritime environment. However, the necessary implementation decrees have not yet been established (Fadel, 2017). Although the Environmental Protection Law of 2002 provides a framework for public participation, its implementing decrees have not yet been issued, which limits its effective application (Meliadou et al., 2012).

5. Conclusion

Legislative and regulatory frameworks have significantly contributed to environmental degradation in coastal zones by facilitating urban expansion, increasing shoreline encroachments, accelerating erosion and pollution, and weakening coastal ecosystems in the Lebanese coastal zone. In addition, many legal amendments and newly adopted laws remain inadequately enforced and poorly implemented thereby hindering the effective implementation of ICZM principles.

Under Articles 5, 6, and 8 of the ICZM Protocol, Parties are expected to ensure the sustainable management and use of coastal zones to protect natural habitats, landscapes, resources, and ecosystems, while maintaining alignment with international and regional legal instruments and guaranteeing public access to coastal areas (The European Parliament and the Council of the European Union, 2009).

Although these laws were designed to balance the interests of both the public and private sectors in Lebanon, their fragmented and inconsistent implementation has limited the effective execution of ICZM and associated environmental initiatives. This situation reflects major gaps within the national legislative framework, contributing to increasing environmental degradation and adverse social impacts, including declining public confidence in governmental institutions and weakened social equity within local communities.

In this context, Article 29 of the Mediterranean ICZM Protocol underscores the obligation of participating Parties to mitigate the environmental impacts of economic and residential development in coastal zones by implementing suitable procedures and guidelines aimed at preventing harmful environmental consequences (The European Parliament and the Council of the European Union, 2009). Accordingly, it is recommended that Lebanon strengthen its regulatory framework by enacting new legislation, updating existing outdated laws, and ensuring robust enforcement through enhanced collaboration among relevant ministries and competent authorities. Addressing these challenges further necessitates improved policy coherence and stronger vertical coordination between ministries to ensure effective and integrated coastal governance.

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DOI: 10.5281/zenodo.20484138