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Module 3: Conservation of Seagrass Ecosystems and Environmental Impact Assessment Studies in Mediterranean Countries

This module explores the critical importance of seagrass ecosystems in Mediterranean marine environments and examines the environmental impact assessment frameworks across different Mediterranean countries. We'll investigate both conservation approaches and regulatory mechanisms designed to protect these vital habitats.

by Şevki Danacıoğlu

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The Importance of Seagrass Ecosystems

1 Critical Habitats

Seagrass ecosystems serve as important habitats for migratory marine species, including sirenians, cetaceans, marine turtles and elasmobranchs. Their protection is vital for maintaining marine biodiversity throughout the Mediterranean region.

2 Global Recognition

The UN General Assembly Resolution 76/265 proclaimed March 1st as World Seagrass Day, highlighting the global importance of these ecosystems. The 2020 UNEP report "Out of the Blue: The Value of Seagrasses to the Environment and to People" provides comprehensive recommendations for seagrass conservation.

3 Ecosystem Services

Seagrass ecosystems provide vital services including carbon sequestration, nutrient cycling, food security, fisheries productivity, water quality enhancement and coastal protection. These services directly contribute to human wellbeing and environmental health.

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Climate Benefits and Threats to Seagrass

Carbon Sequestration

Seagrass ecosystems have significant carbon sequestration and storage potential. Protecting and restoring these habitats can contribute substantially to achieving the goals of the United Nations Framework Convention on Climate Change and the Paris Agreement.

Significant Threats

Seagrass ecosystems face numerous threats including habitat degradation, pollution (including noise pollution), climate change, overfishing, bottom trawling, dredging, and coastal development. These pressures have resulted in global decline of seagrass habitats and their associated biodiversity.

Awareness and Action

There is an urgent need to raise awareness at all levels and promote actions for conservation and restoration of seagrasses. Enhancing ecosystem services and functions is crucial for achieving the Sustainable Development Goals.

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International Frameworks for Seagrass Protection

Transboundary Collaboration

Many seagrass ecosystems are transboundary in nature, requiring collaborative and coordinated efforts among countries, regional organizations, international bodies, and stakeholders to conserve and sustainably manage these vital habitats.

UN Decades

The United Nations Decade of Ocean Science for Sustainable Development (2021-2030) and the United Nations Decade on Ecosystem Restoration (2021-2030) provide frameworks for seagrass conservation efforts.

International Obligations

Relevant international obligations include those in the Kunming-Montreal Global Biodiversity Framework (especially Targets 1, 2, and 3), the Paris Agreement, and the Sustainable Development Goals.

2030 Seagrass Breakthrough

The global initiative "2030 Seagrass Breakthrough," announced at UNFCCC COP28, aims to establish a collective framework of action by State and non-State actors for sustainable financing of seagrass ecosystem protection, conservation, and restoration globally by 2030.

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Impact Studies in Mediterranean Countries: Overview

European Community Influence

Seven Mediterranean countries (Cyprus, France, Greece, Italy, Malta, Slovenia, and Spain) belong to the European Community and are bound to apply Community Directives. Countries that joined the EU since May 2004 must harmonize their national regulations with European standards.

Varied Implementation

While the concept of environmental impact assessment is familiar to many Mediterranean countries, it does not appear systematically in all national laws. This section examines the current state of impact studies based on data provided by SPA National Focal Points.

Scope Limitations

This overview does not attempt to describe laws in all Mediterranean countries but rather provides a snapshot of environmental impact assessment frameworks across the region, with particular attention to how they address seagrass ecosystems.

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European Regulations on Environmental Impact Assessment

EEC Directive 85/337

1

The concept of impact studies appears in the Directive on assessing the effects on the environment of certain public and private projects. This was later modified by EEC Directive 97/11, establishing the foundation for environmental impact assessment across EU member states.

Directive 2001/42/EC

2

This directive, adopted on June 27, 2001, complements earlier regulations by addressing the assessment of environmental effects of certain plans and programs. It applies to plans prepared by authorities at national, regional, or local levels that are required by legislative, regulatory, or administrative provisions.

Directive 2000/60/EC

3

The Water Framework Directive makes Environmental Impact Assessment (EIA) obligatory for activities affecting water resources. This directive establishes a framework for Community action in the field of water policy, further strengthening environmental protection measures.

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Projects Requiring Impact Studies Under EU Directives

1 Energy Projects

Oil refineries (excluding lubricant production), large-scale gasification or liquification installations processing at least 500 tons of coal or bituminous schists per day, thermal power stations of at least 300 MW, and nuclear power stations (except research structures under 1 kW of permanent thermic duration).

2 Industrial Facilities

Installations for stocking or processing radioactive waste, steelworks, facilities where asbestos is extracted and processed, and chemical installations all require environmental impact assessments under EU directives.

3 Transportation Infrastructure

Heavy-use communication routes, airports with runways over 2.1 km, port infrastructures for vessels over 1,350 tonnes, and maritime routes for buildings over 1,350 tonnes all fall under mandatory impact assessment requirements.

4 Waste Management

Installations for eliminating, processing, or storing toxic waste must undergo environmental impact assessment before approval, ensuring that potential environmental hazards are identified and mitigated.

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Additional Projects Subject to Impact Assessment

Discretionary Assessments

Many developments may require an impact study if member states believe their features warrant this. These include projects affecting agriculture, mining, power industry, metalwork, glass-making, chemical industry, food industry, textile, leather, wood and paper industries, rubber industry, and various infrastructure projects.

Comprehensive Scope

Impact studies must anticipate both direct and indirect effects on humans, fauna, flora, soil, air, climate, landscape, material property, and cultural heritage. This holistic approach ensures that all potential environmental impacts are considered.

Required Information

Project managers must provide a description of the project (site, design, size), measures to avoid or reduce adverse effects, data to identify environmental impacts, alternatives considered, and a non-technical summary. This information must be accessible to the public and relevant administrative authorities.

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Public Participation in Environmental Impact Assessment

Public Disclosure

The complete impact assessment dossier must be made available to the public to enable opinion gathering. Administrative structures responsible for authorizing the project must also have access to all documentation.

Decision Transparency

The decision to give permission and any conditions attached to project authorization must be made available to the public. If national law permits, the elements that justified the agreement may also be disclosed to the public.

Seagrass Protection

While seagrass species are not specifically mentioned in the European Directive on EIA, the Habitats Directive (92/43/EEC) provides a legal framework for conservation of wild plants and animals and their habitats. Posidonia meadows are listed in Annex I as a natural habitat type requiring special conservation areas.

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Environmental Impact Assessment in Albania

1

Emerging Framework

Albania has regulations concerning impact studies in the context of coastal development, though historically few such studies have been conducted. Recent efforts through a World Bank project on integrated coastal zone management are working to include EIA for Posidonia meadows in environmental impact assessment processes.

2

Seagrass Protection

While seagrass meadows like Posidonia oceanica and Zostera marina are not specifically addressed in Albanian EIA regulations, they are protected under national legal framework by a Decision of the Council of Ministers on protected species (2003).

3

Implementation Challenges

Despite having regulatory frameworks in place, Albania faces challenges in implementing comprehensive environmental impact assessments, particularly for marine ecosystems. Capacity building and institutional strengthening remain priorities.

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Environmental Impact Assessment in Algeria

Legal Framework

Law n°03-10 (July 19, 2003) on environmental protection requires that development and construction projects be subjected to impact assessment studies. The application clauses are further specified by regulation.

Executive Decree

Executive Decree n°90-78 (February 27, 1990) on Environmental Impact Assessment studies explicitly refers to the protection of wild flora and fauna and natural habitats.

Assessment Components

According to Algerian regulations, an impact assessment study must include an analysis of the initial state of the environment and an analysis of the potential environmental effects of the proposed development.

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Environmental Impact Assessment in Bosnia-Herzegovina

1

Adapted Framework

Bosnia-Herzegovina has a Law on Physical Planning (Official Gazette no. 9/87), adapted from former Yugoslavian law in accordance with the Dayton peace treaties. While this law mentions impact studies, it doesn't detail how they should be conducted.

2

Environmental Requirements

Under current regulations, building activities must not endanger organisms and must maintain site conditions. Development work must not cause disturbances beyond what the environment can regulate or affect people's health and safety.

3

Implementation Challenges

Studies are carried out by accredited public or private organizations, though they don't need to demonstrate competence in marine environments specifically. New laws were expected to come into force in 2001 with more detailed requirements for impact studies.

Environmental Impact Assessment in Croatia

1 Regulatory Framework

Regulations on impact studies in Croatia appear in Decree no. 1324/59/2000, as expected by the law on environment protection (Official Gazette n°82/94, 128/99). This decree was modified in 2004 and 2006 (Official Gazette n° 136/04, 85/06), with the Ministry of Environmental Protection and Physical Planning as the responsible body.

2 Required Elements

Croatian impact studies must include a description of the original condition, the planned development, anticipated impacts and nuisances, suggested mitigation measures, and post-completion monitoring. Studies are conducted by accredited private or public bodies with proven marine experience.

3 Seagrass Protection

While marine plant formations aren't explicitly referenced in impact study regulations, seagrass species like Posidonia oceanica, Zostera marina, and Zostera noltii are nationally protected through the ordinance on "Proclamation of Wild Taxa as Protected or Strictly Protected" (Official Gazette n°7/2006).

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Environmental Impact Assessment in Egypt

1 Legal Foundation

The Law on the Environment (Law no. 4/1994) makes carrying out an impact study obligatory in Egypt. The Egyptian Environmental Affairs Agency (EEAA) is responsible for implementing this law through its Environment Development sector (EMS).

2 Study Requirements

Egyptian impact studies must describe the proposed project, present natural resources, outline steps to mitigate impacts, and provide alternative suggestions. The EMS works with university professors and disciplinary experts to assess submitted studies.

3 Implementation Focus

Between 1992-1994, projects requiring impact studies were predominantly tourist developments (84%, including marinas and jetties), with electric power stations (3%) and desalination stations (3%) making up smaller portions. Project managers have generally shown commitment to environmental protection.

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Environmental Impact Assessment in France

1

Pioneer Approach

France was the first Mediterranean country to adopt impact studies, with regulations appearing in the 1976 law on nature protection. The Decree of October 12, 1977 (no. 77-1141) defined general terms for impact studies, stating that content must relate to project size and foreseeable environmental effects.

2

Enhanced Framework

The 1993 Decree (no. 93-245) supplemented and clarified the impact study procedure, requiring analysis of the original site condition, direct and indirect effects on environment, assessment methods, project justification, mitigation measures with cost estimates, and a non-technical summary.

3

Comprehensive Scope

Unlike other countries, French regulations list both installations requiring impact studies and work exempt from them. The principle is that impact studies should be the rule and exemptions the exception. Only maintenance work and major repairs are specifically excluded.

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Public Participation in French Impact Studies

Public Access

If a public inquiry is required, the impact study is included in the dossier. Without an inquiry, the study must be made available to the public before work begins. The existence of the impact study must be published in regional and national press, with at least fifteen days allowed for public consultation.

Ministerial Review

The Minister of the Environment may review any impact study and has 30 days to provide an opinion. No work can begin nor public inquiry open before this period expires. For projects requiring public inquiry, the Minister's opinion should ideally be known before the inquiry starts.

Responsibility and Enforcement

The project manager ("petitioner") is responsible for the impact study and liable for incomplete or insufficient assessments. While not required to conduct the study personally, managers are encouraged to engage specialists. Absence of a required impact study may result in work stoppage.

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Public Inquiry Process in France

Legal Basis

Since 1983, French law has required public inquiries for developments likely to affect the environment. This ensures better public information and provides authorities with necessary decision-making elements (Law no. 86-630 of July 12, 1983).

Enhanced Protection

The 1993 Decree expanded impact study requirements to include town planning and tourist projects, integrated European Directive provisions, and made the process more effective. The 1989 Decree specifically regulates development in areas with remarkable sites or landscapes.

Process Requirements

The public must be informed fifteen days before inquiry starts, and the inquiry must last at least one month. This process allows the public to submit suggestions, observations, and counter-proposals. The investigating commissioner's conclusions are made public, with inquiry results valid for five years.

Financial Responsibility

The project manager bears inquiry costs, except for the investigating commissioner's allowance, which is paid by the state. While public inquiries and impact studies often overlap, they remain separate processes—an inquiry can occur without an impact study and vice versa.

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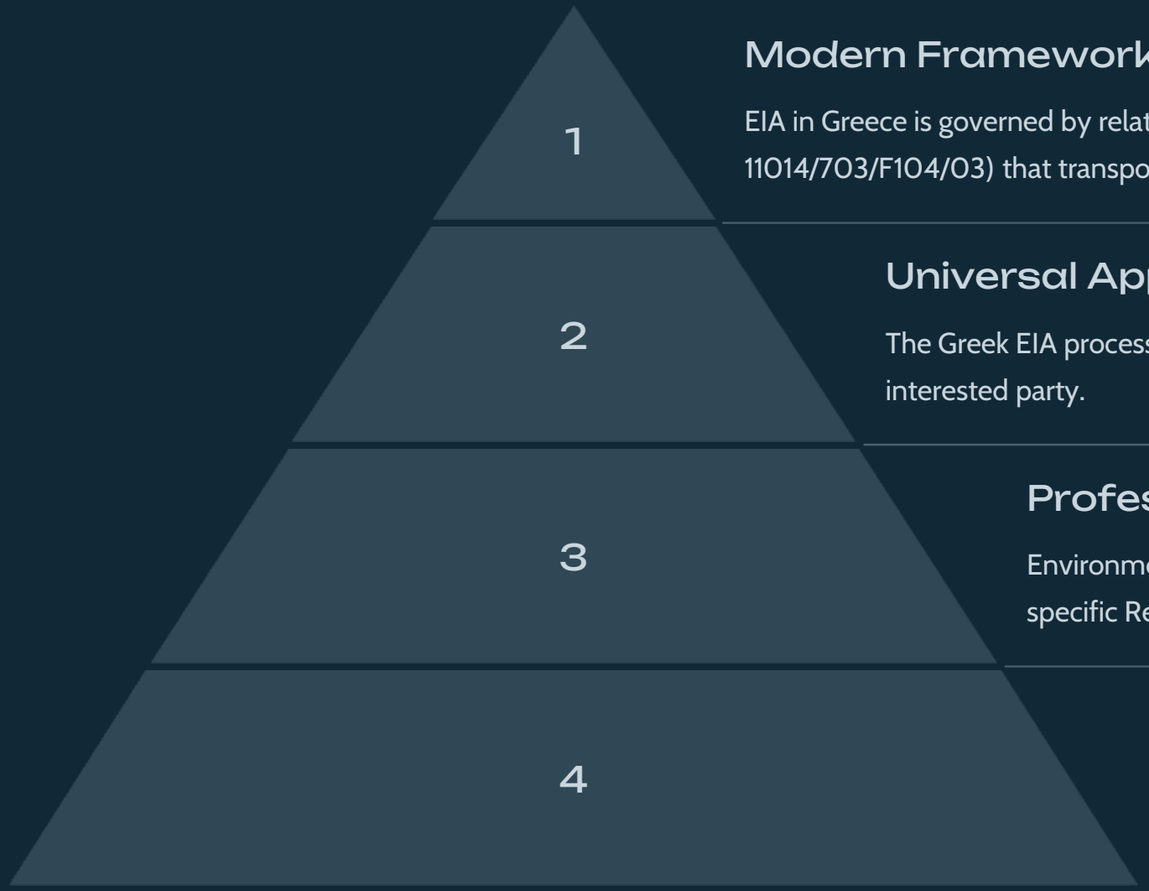
Environmental Impact Assessment in Greece



Modern Framework

EIA in Greece is governed by relatively recent national legislation (L. 3010/02, JMD 15393/2332/02, JMD 11014/703/F104/03) that transposes European Community requirements.

Universal Application

The Greek EIA process applies to both private and public investments and projects, with costs covered by the interested party.

Professional Requirements

Environmental Statements are only accepted if prepared by scientists accredited and enrolled in a specific Register of the Ministry of Environment, Physical Planning and Public Works.

Project Classification

Works and activities are classified into four major categories according to type and scale, with EIA mandatory for all categories (JMD 15393/2332/02).

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Greek EIA Process and Seagrass Protection

Two-Cycle Approach

The Greek EIA process follows a two-cycle approach: first, a Preliminary Environmental Statement with authorization for project type and location; second, a full Environmental Statement with final environmental terms for implementation. This approach enables intervention in project design and better application of the precautionary principle.

Required Information

Greek impact studies must include description of the original state, planned accomplishments, expected impacts and harmful effects, and measures to reduce adverse effects. The information required varies based on project type, size, and location.

Authorization Hierarchy

Depending on project type and size, authorization falls under Prefecture, Regional, or Central Environmental Services. For projects in Natura 2000 network areas (which include most important seagrass meadows), environmental authorization comes from more centralized services, with the Section of Nature Management always consulted.

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Environmental Impact Assessment in Israel

Legal Framework

In Israel, the law on buildings in the maritime domain falls under the Ministry of the Interior and the 1965 Law on development and construction. This law provides development guidelines and established the Territorial Waters Committee (TWC).

Maritime Authority

The Territorial Waters Committee deals with planning and building on maritime territory and coastline. All development in these areas requires TWC approval before proceeding.

Coastal Planning

TWC decisions are based on a general national plan for coastal areas that primarily considers terrestrial use of the shoreline and several hundred meters inland. This approach focuses on land-sea interface management.

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Environmental Impact Assessment in Italy

1 Established Practice

For over fifteen years, all sea development in Italy must undergo an environmental impact assessment study (VIA). Sicily, with its autonomous status, has always required environmental impact assessments for all marine operations, beyond just those mandated by European directives.

2 Legal Framework

The European Directive is adapted in Italy through a 1999 Decree (no. 152/1999) concerning "Provisions on protection of waters against pollution." Article 3.4.1.2 explicitly references marine phanerogams, stating that due to their major heritage interest, these species must be mapped and given specific monitoring.

3 Comprehensive Approach

Italian impact studies include all elements required by the European Directive plus post-development monitoring. Studies cover wide geographical areas based on preliminary project scope, with detailed assessment of environmental and biological features.

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VIA Procedure Requirements in Italy

1 Holistic Assessment

The VIA procedure must consider each site's natural and anthropic elements and their interactions with the overall environment. Specific elements for assessment are detailed in Appendix II of the regulations.

2 Air Quality

Studies must establish pre-existing air quality, project impacts on the water/air interface and marine organisms, and site meteorological features. This comprehensive approach ensures all potential atmospheric impacts are considered.

3 Water Environment

Marine waters must be analyzed both as environmental elements and resources. Water analysis includes monthly physico-chemical parameter measurements at three depths. Resource assessment examines plankton and nekton to evaluate biological importance and trophic efficiency.

4 Geological Features

Studies must assess soil and subsoil geological and geomorphological characteristics. The soil's physico-chemical composition must be analyzed to determine oxidoreduction processes, substratum/organism interaction, and receptive capacity.

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Vegetation Assessment and Seagrass Protection in Italy

Vegetation Analysis

Vegetation represents the most important part of Italian environmental impact studies. Vegetation must be mapped to show dominant species and bathymetric zoning. Rare and protected species must be identified, and a floristic inventory created. Phyto-sociological records may supplement these observations.

Ecosystem Evaluation

All parameters must contribute to understanding ecosystems and their functions. A 1:10,000 cartographical report of ecosystemic units must show possible anthropic pressure. Synecological indices and bio-tests help assess ecosystem functioning, self-purification ability, maturity, and quality.

Seagrass Protection

While Italian EIA law doesn't explicitly reference marine plant formations, seagrass species like Posidonia oceanica are nationally protected under Law n°175 (May 27, 1999). Some regions have implemented broader protections, such as Liguria's 2001 EIA regulation for projects in Sites of Community Interest including P. oceanica meadows.

Environmental Impact Assessment in Libya

1

Regulatory Framework

Libya has drafted regulations for impact assessment of economic projects and activities that may threaten the environment. Any entity requesting implementation, modification, or growth of an economic activity must submit an environmental classification form to the Environment General Authority with required documentation.

2

Assessment Process

The Design and Research Environment Department studies submitted documents to classify projects and determine whether an EIA is needed. EIAs must be prepared by specialized institutions or engineering firms affiliated with the Environment General Authority.

3

Evaluation Procedure

The competent authority evaluates the EIA and may request additional information before authorizing the project or requesting study revisions. This process ensures thorough environmental review before project approval.

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Required Elements for Libyan Environmental Impact Assessments

1 Non-Technical Summary

The EIA must include a summary of project components in simple, non-technical language, with a copy in Arabic. This ensures accessibility of the assessment to non-specialists and the general public.

2 Project Description

A detailed project description must include objectives, implementation schedule, site information (maps, surface area, land use), water resources, environmental conditions, and existing infrastructure. This comprehensive overview establishes the baseline for impact assessment.

3 Environmental Baseline

The initial environmental state must be described with all relevant environmental data, including natural and climatic conditions, water quality and resources, air quality, and noise pollution. This establishes the pre-project conditions for comparison.

4 Impact Analysis and Management

The assessment must identify direct and indirect impacts, propose measures to reduce environmental threats, evaluate alternatives, and include an environmental management plan describing actions to ensure compliance and monitoring throughout all project phases.

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Environmental Impact Assessment in Montenegro

Legal Framework

The Law of Environment (12/96) requires an EIA for projects that may have adverse effects on the environment. As part of the EIA, an environmental protection program must address impacts during accidents or emergencies, register hazardous substances, and establish implementation deadlines.

Regulatory Evolution

In 2005, Montenegro adopted new Laws on EIA and Strategic Impact Assessment (SIA) harmonized with EU directives, including provisions for public access to environmental information and participation in decision-making. Implementation was planned for 2008.

Project Categories

Montenegrin regulations prescribe 79 categories of activities requiring an EIA, including activities in protected areas, ports, marinas, and those that may cause changes to biodiversity. These categories are broadly defined with limited specifications regarding size, impact, or firm type.

Implementation Challenges

Public participation is not mandatory for EIAs in Montenegro but is left to the Ministry's discretion for major projects. The Ministry issues approximately 190 "ecological permits" annually based on EIA studies, though these are limited to biodiversity and air impacts.

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Environmental Impact Assessment in Slovenia

Legal Framework

Slovenia has specific laws on impact studies (Official Bulletin no. 66/1996 and no. 12/2000) administered by the Ministry of the Environment. These regulations establish the requirements and procedures for environmental impact assessment.

Required Elements

Slovenian impact studies must describe the original environmental condition, projected development, anticipated impacts and harm, and proposed mitigation measures. The Ministry of the Environment establishes case-by-case criteria, though marine plant formations aren't specifically referenced.

Mandatory Assessments

Impact studies are required for aquaculture structures larger than 0.5 hectares, ports or marinas with over 10c0 mooring rings, and land reclamation projects. Studies are conducted by Ministry-empowered bodies but financed by the developing firm.

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Environmental Impact Assessment in Spain

1

Regulatory Framework

Spanish EIA regulations follow the European Directive, with laws at both state level (Decree 1302/1986, BOE 155; Decree 1131/1988, BOE 239) and regional level, such as Catalonia (Decree 114/1988, DOGC 1000). These establish comprehensive requirements for environmental assessment.

2

Mandatory Assessments

Impact studies are required for projects defined in Appendix I of EEC Directive 85/337 and all interventions likely to damage protected natural areas as defined by Spanish law. The 1986 Decree supplements existing industry and water regulations while standardizing impact study procedures.

3

Enhanced Requirements

Beyond European Directive elements, Spanish impact studies must assess waste and energy quantities resulting from development, the environment's recovery ability, and include an environment-monitoring program. These additional requirements strengthen environmental protection.

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Regional EIA Requirements and Seagrass Protection in Spain

Catalonian Requirements

Catalonian regulations require analysis of ecological systems including benthic communities and sediment organic elements on the same scale as general bathymetry. Quantitative studies of representative species populations must be included, with methodology meticulously described to enable future comparison.

Enforcement Mechanisms

Any development requiring an impact study that proceeds without one will be suspended. Omissions, falsifications, or violations of conditions may result in work stoppage. When illegal interventions disturb the environment, responsible parties must repair environmental damage as directed by authorities.

Legislative Updates

The Royal Decree 1302/1986 was modified by National Law 9/2006 on strategic environmental evaluation, adapting European Directive 2001/42/CEE. Projects with potential direct or indirect effects on Natura 2000 sites require environmental impact assessment under environmental authority specification.

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Environmental Impact Assessment in Tunisia

Establishment

EIA was established in Tunisia in August 1988 and implemented in 1991 (decree n° 91-362). It aims to assess direct and indirect environmental impacts of planned developments before implementation, enabling informed decisions about project viability.

International Recognition

A joint study by the National Agency For the Protection of the Environment (ANPE) and the World Bank concluded that Tunisia's EIA system represents an important achievement in pollution prevention and environmental protection, with only limited differences from World Bank standards.

1 2 3 4

Implementation Scale

In 1991, 231 EIAs were conducted in Tunisia. For the following decade, between 1000-1200 EIAs were processed annually, distributed across infrastructure (2%), construction (15%), industrial (45%), tourism (4%), agricultural (10%), and waste management (16%) projects.

Regulatory Evolution

Decree n°1991 (July 11, 2005) improved consideration for sectors concerned by EIA, establishing that impact assessments must be conducted by qualified experts and engineering companies, with approval deadlines varying by project type.

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Environmental Impact Assessment in Turkey

1 Legal Foundation

Turkey's regulation of impact studies appears in the Law on the Environment (Law no. 9.8.1983). This general law requires organizations and establishments whose planned activities may create environmental problems to draft reports on expected impacts.

2 Project Categories

Projects requiring full impact studies include thermal and nuclear power stations, refineries, ports handling boats over 1,350 tons, pipelines, storage facilities, and industrial or naval repair units. Offshore rigs and large-scale dredging and filling activities also require comprehensive assessment.

3 Tiered Approach

Smaller developments like ballast tank reservoirs, fishing ports, marinas, or breakwaters require only preliminary studies. If these preliminary assessments indicate significant potential damage, the full impact study procedure becomes mandatory.

4 Sensitive Areas

The full impact study procedure is also required in all "sensitive" areas, including national parks, protected areas, and marine resource production sectors. While seagrass meadows aren't specifically mentioned in EIA regulations, species like Posidonia oceanica and Zostera noltii are protected under the "Circular on sea and inland waters n°37/1".

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Synthesis of Mediterranean EIA Regulations

Regulatory Evolution

Analysis of EIA regulations across Mediterranean countries shows that many have strengthened their existing legislation. Countries like Algeria and Montenegro have established specific legal frameworks for environmental assessment, while others like Libya are developing new regulations.

Implementation Effectiveness

In countries with established impact study laws, these procedures have generally proven effective. The generalization of EIA procedures represents progress, though assessments still focus more on terrestrial than marine environments.

Marine Focus Limitations

Regulatory appendices of impact study procedures list few developments concerning the marine domain, primarily addressing port infrastructure and maritime traffic routes. Some countries also include coastal protection works, marine dredging, aquaculture installations, land reclamation, and sea discharge pipes.

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Seagrass Protection in Mediterranean EIA Frameworks

Limited Explicit Mention

The coastal environment is rarely specifically mentioned in regulatory texts, and plant formations developing there even less so. However, some regional initiatives have emerged, such as Liguria region in Italy establishing regulatory procedures specifically addressing impacts on Posidonia meadows.

Legal Protection

The absence of specific mentions of seagrass meadows in impact study procedures is often compensated by legal protection status for marine phanerogam species. This protection can be direct (through national or regional laws) or indirect (through international conventions or directives).

Regional Cooperation

The Posidonia Interreg IIIB framework has facilitated cooperation between regions like Liguria (Italy), PACA (France), and Catalonia (Spain), resulting in a regional regulatory guidebook for managing impacts on Posidonia oceanica meadows. This represents an important step toward harmonized protection approaches.

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Strengths of Mediterranean EIA Systems

Balanced Decision-Making

Impact studies constitute a means of improving and rationalizing development decisions. They enable environmental considerations to be weighed alongside local community interests and economic profit expectations, creating more sustainable outcomes.

Default Requirement

In some Mediterranean countries, impact study procedures are the rule for developments, with exemptions being the exception. This approach, which should be extended throughout the region, ensures comprehensive environmental consideration for most projects.

Monitoring Systems

Several countries have established regulatory monitoring and checking systems during development phases and afterward. This ongoing analysis verifies the adequacy of recommended techniques and their effectiveness in reducing environmental impacts.

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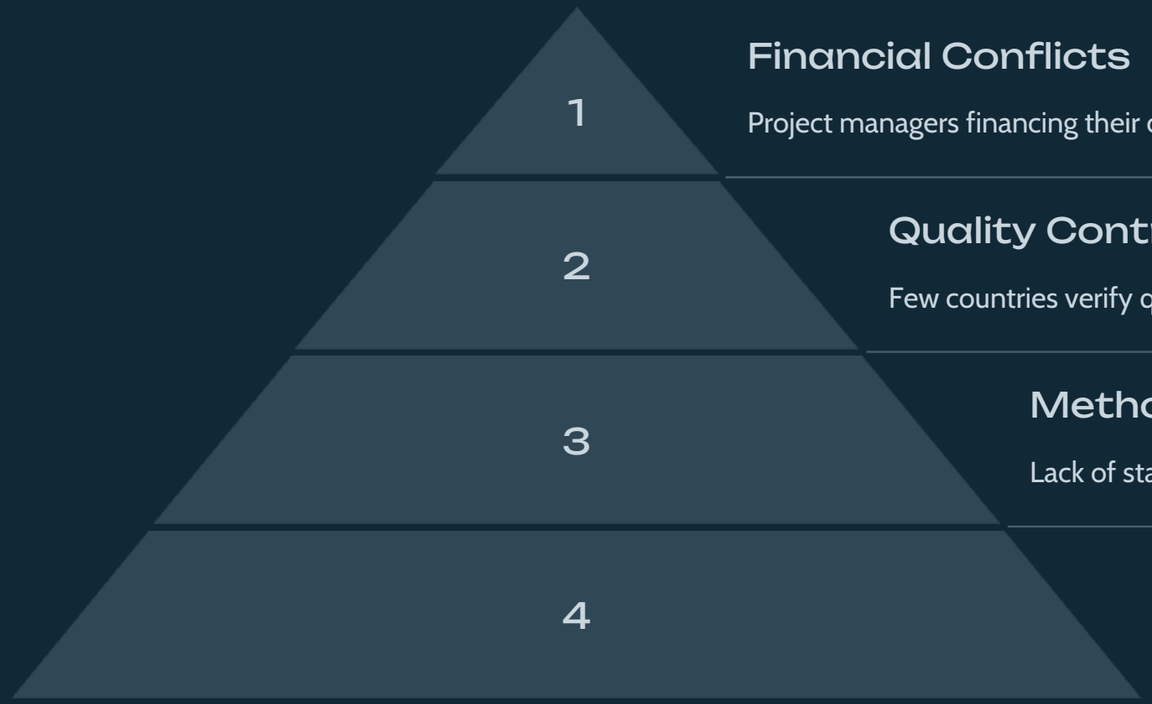
Weaknesses of Mediterranean EIA Systems



Financial Conflicts

Project managers financing their own impact studies creates potential conflicts of interest

Quality Control Issues

Few countries verify qualifications of those conducting impact studies

Methodological Inconsistency

Lack of standardized protocols hampers comparison and follow-up

Implementation Gaps

Delayed implementation regulations can render framework laws ineffective

When project managers finance their own impact studies, there's a risk that assessments may be superficial or entrusted to inexperienced personnel to reduce costs. This risk increases when countries don't accredit or verify the qualifications of those conducting studies, potentially leading to varied quality and competence levels, especially when procedural guidelines aren't detailed.

Financial relationships between developers and assessors may lead to systematic underestimation of potential environmental damage. Additionally, the absence of standardized protocols makes medium-term monitoring difficult and prevents meaningful comparison of results at national levels. Finally, even when EIA is defined in national legislation, delayed implementation regulations can render these laws ineffective in practice.

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Future Directions for Seagrass Protection in Mediterranean EIAs

7

Mediterranean Countries

EU member states with standardized EIA requirements for seagrass protection

79

Project Categories

Activities requiring EIA in Montenegro, showing the broad scope of assessment frameworks

1991

Implementation Year

When Tunisia began applying its EIA system, demonstrating the evolution of environmental protection

1000+

Annual Assessments

EIAs conducted yearly in Tunisia alone, highlighting the scale of environmental review processes

Despite the challenges, Mediterranean countries have made significant progress in developing environmental impact assessment frameworks. The protection of seagrass ecosystems, particularly Posidonia oceanica meadows, has increasingly been incorporated into these frameworks, either directly through specific regulations or indirectly through species protection laws.

Moving forward, standardization of assessment methodologies, stronger accreditation systems for environmental assessors, and greater emphasis on marine ecosystems in EIA requirements will be essential. Regional cooperation initiatives like the Posidonia Interreg IIIB framework demonstrate the potential for harmonized approaches to seagrass protection across the Mediterranean basin.