Chapter 7
The Diverse Legal and Regulatory Framework for Marine Sustainability Policy in the North Atlantic – Horrendograms as Tools to Assist Circumnavigating Through a Sea of Different Maritime Policies

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Abstract Although considerable progress has been made in the management and planning of the marine environment, important gaps still exist in streamlining policies across governance levels, maritime sectors, and between different countries. This can hinder effective Maritime Spatial Planning (MSP) and prevent harmonious cross-sectoral cooperation, and importantly, cross-border or trans-boundary collaboration. These may in turn have serious implications for overall ocean governance and ultimately, marine sustainability. The North Atlantic presents an ideal

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S. Partelow et al. (eds.), *Ocean Governance*, MARE Publication Series 25,
https://doi.org/10.1007/978-3-031-20740-2_7

case-study region for reviewing these issues: North Atlantic countries have different governance structures, and as such, different approaches to marine policy. Therefore, for an effective marine management, cross-sectoral and cross-border MSP in the region, there is a need to review marine and maritime policies in order to identify differences and commonalities among countries. This chapter reviews major policies for the marine environment in the North Atlantic and assesses where differences between countries exist and at which governance level they are being created. Key research questions include: (i) Are there significant differences in marine policy between North Atlantic countries? Moreover, are there any substantial geographical/political differences? (ii) Are there differences in implementation of key policies? Such an analysis requires a sound framework for comparison among countries. To that end, the use of "horrendograms", a tool increasingly being used by the marine research and planning community to assess such issues, is adopted. Results indicate that key differences between countries are created primarily at a national level of marine governance. Although differences between countries exist, overall strategic targets are similar. For instance, whilst the political systems of certain North Atlantic countries may differ substantially, key objectives for major sectors, such as fisheries and conservation, are similar – even when such objectives are implemented at different levels. Findings from the study can enable targeted policy intervention and, as such, assist the development of future outlooks of ocean governance in the region. Results can also aid the development of future visions and scenarios for MSP in the Atlantic region.

Keywords Environmental legislation · Horrendogram · Maritime spatial planning (MSP) · North Atlantic · Ocean/marine governance · Ocean/marine policy

7.1 Introduction

7.1.1 The Need for Effective Marine Management and Governance

Maritime users and activities have pronounced impacts in the marine environment and their control is a fundamental aspect of maritime policy (Boyes and Elliott 2016). It is progressively being recognised that major global challenges such as overfishing, pollution, biodiversity and habitat degradation and loss, and the adverse impacts of climate change on the world's oceans, are frequently the result of ineffective marine and ocean governance (Crowder et al. 2006). Although considerable progress is lately taking place in novel, integrated approaches to marine and ocean management, obstacles still remain: marine and ocean management have historically focused on single-sector approaches resulting in numerous agencies having competencies for different issues. As such, institutions and organisations frequently have varied and non-comprehensive or limited mandates (Crowder et al. 2006; Durussel et al. 2019). Moreover, in the marine environment, political and

jurisdictional borders and delineations seldom correspond to the limits of maritime activities and ecosystems. The previous may result in turn in considerable differences in the national environmental governance systems of countries bordering the same marine region (Kern and Gilek 2015; Carval and Jarno 2019). Different policy timescales between authorities, countries, institutions, and organisations give rise in turn to temporal mismatches between environmental problems and human institutions (Crowder et al. 2006). Most importantly, marine governance systems are largely shaped by environmental problems and institutions, and this situation may frequently result in different outcomes, despite common objectives (Kern and Gilek 2015).

There exists rising consensus that major challenges facing the marine environment are complex and multifaceted, beyond the capacity of a single sector or country to resolve (UNDP 2015; Zaucha 2014). To that end, cross-sectoral and cross-border cooperation, namely the communication, coordination or planning across spatial jurisdictions (regional, national, sub-national), encompassing both *vertical* (collaboration among different levels of government) and *horizontal* (i.e. nation to nation) dimensions of governance (Carneiro et al. 2017), is progressively being recognised as fundamental for the sound governance of the marine environment (Boyes and Elliott 2016; Van Tatenhove 2017; Morf et al. 2019).

However, marine governance systems' architectures remain largely fragmented across different sectors and governance levels combining national, regional and international governance (Gold et al. 2011; Kern and Gilek 2015). As a result, key policies relating to the marine environment are still lacking cross-sectoral and cross-border integration and coordination in many regions. Also, although international legal frameworks for dealing with some of the most pressing threats to the marine environment have emerged, additional effort of capacity-building is still required to implement these frameworks for many countries (UN 2017), including EU countries. Harmonising maritime policy across countries and ensuring maritime plans are coherent and coordinated constitute key objectives of major policy frameworks [e.g. Article 11 of the EU Maritime Spatial Planning (MSP) Directive text; European Parliament and Council 2014]. There thus exists a vital need for a detailed assessment of the different policy frameworks for the marine environment, to ensure a sound understanding of such frameworks, which in turn is crucial for the effective coordination and ultimately cooperation across different sectors, governance levels and countries (Carneiro et al. 2017; Rudd et al. 2018).

7.1.2 The North Atlantic Marine Region: Key Challenges and Opportunities

The need of a thorough assessment and comparison of marine policy frameworks is especially evident in the North Atlantic. Such an assessment and comparison would enable realising transboundary planning objectives, as also dictated by major policy

provisions in the area. In the North Atlantic region, key policies specify the need for: (i) cooperation on transboundary issues; (ii) mechanisms for transnational consultations on marine spatial plans and issues arising from them; (iii) region-specific, tailor-made approaches to MSP for supporting the Ecosystem Based Approach (EBA); (iv) exchange of best practices and experiences with regard to MSP. For instance, the North-East Atlantic Environment Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic states that delivering these objectives requires consistency in assessment and monitoring methodologies and mutual compatibility of environmental targets (OSPAR 2010). To that end, policy harmonisation is set forward by key policy: OSPAR (2019a) for instance, stresses the need for contracting parties to harmonise policies and strategies relating with the prevention of maritime pollution.

There lately has been considerable progress in the review and assessment of various aspects relating to the policy and governance framework of the North Atlantic marine environment. Past studies include detailed reviews of the marine policy framework of individual countries (Boyes and Elliott 2014, 2016). Studies conducted within the framework of the Atlantic Ocean Research Alliance (AORA) (under the auspices of the Galway Statement on Atlantic Ocean cooperation), reviewed the role mandates play with respect to the implementation of Ecosystem-based Management (EBM), within and across jurisdictions in Canada, the US and the EU (Rudd et al. 2018). The CALAMAR project [Cooperation across the Atlantic for Marine Governance Integration, 2010–2011], developed a series of policy recommendations for improving integration of maritime policies and promoting transatlantic cooperation (Gold et al. 2011; Speer et al. 2011). Past projects (e.g. SIMNORAT – Supporting in the Northern European Atlantic) assessed a plethora of planning documents and concluded that heterogeneous spatial planning organisations are present in the region (Carval and Jarno 2019). Other projects in the wider region (Strong High Seas) also stressed the varying and non-comprehensive or limited mandates of authorities with reference to key maritime issues, notably Biodiversity Beyond National Jurisdiction (BBNJ) (Durussel et al. 2019).

The previous have generated considerable knowledge and a wealth of relevant information. However, a detailed assessment of the diverse and disparate marine policy and governance frameworks, encompassing multiple marine activities and maritime sectors, and the subsequent comparison between countries are largely missing. For the North Atlantic, such an assessment can help overcoming the following inherent difficulties: (i) different systems of marine policy (Gold et al. 2011; Rudd et al. 2018; Durussel et al. 2019), including a heterogeneous spatial planning organisation (Carval and Jarno 2019), which present challenges for a comparison between countries (especially with US and Canada); and (ii) varying degrees of maturity and progress with respect to implementation, even in the case of EU Member States (Marques et al. 2019). This requires a review of the different marine policy systems and a systematic assessment of commonalities and differences, especially at a national level.

7.1.3 *Aims and Objectives: A Framework for Policy Comparison in the North Atlantic*

The present study reviews the marine policy framework in the North Atlantic, while examining the compatibility of marine policies across different sectors and governance levels (international, regional, national). A key objective is to determine how national circumstances influence ocean governance, linking the implementation of regional initiatives and agreements of ocean management (Calado et al. 2018). Research builds on the expertise generated by past studies conducted in the wider North Atlantic region. As such, results from the analysis should be seen as complementary, in an "open dialogue" with respective findings from past (Boyes and Elliott 2014, 2016; Rudd et al. 2018) and ongoing studies.

In the present context, governance is understood as the sum of those policies, politics, administration and legislation pertaining to the marine environment, spanning from the global down to the local level of governance (Boyes and Elliott 2014, 2016). Regarding the mandate of competent institutions, this typically involves: "*an authorization to act in a particular way on a public issue*" which may include "*legally binding obligations as well as so-called soft law agreements, principles and declarations that are not necessarily legally binding"* (Rudd et al. 2018).

Key research questions include:

(i) How are marine- and maritime- related topics treated within the policy frameworks in the North Atlantic? Are there important differences between/within countries in the North Atlantic? Are there any substantial geographical differences (e.g., EU vs non-EU)?
(ii) Are there significant gaps in the implementation of key marine policies?

Such an analysis requires a methodical and systematic approach with attention to detail. For that matter, the use of "horrendograms", a tool increasingly being used by the marine research and planning community (Boyes and Elliott 2014, 2016) is adopted. Horrendograms constitute in essence comparisons between the organograms of the policy frameworks of countries under comparison. Main advantages include a methodical way of depicting relevant information, streamlining across different legislations, and importantly, allow for establishing where differences across policy frameworks are being created, and the essence of these differences. Meanwhile, such an approach enables a multi-sectoral assessment, not focusing on single sectors and themes, while enabling comparison between multiple countries. Such a framework can in turn disclose important information on the governance level where differences and commonalities exist, which in turn can enable targeted intervention, streamlining of relevant policies and ultimately promoting transboundary coordination of relevant activities.

7.2 Materials and Methods

7.2.1 The North Atlantic Marine Region

The North Atlantic marine region includes major administrative and jurisdictional units, including FAO Major Fishing Areas 21 (NW Atlantic) and 27 (NE Atlantic) (FAO 2015); OSPAR Regions V, III, IV (i.e. Wider Atlantic; Celtic Seas; Bay of Biscay and Iberian Coast respectively, OSPAR 2019b) and ICES Statistical Areas Xa, Xb; and XII (ICES 2019) (Fig. 7.1). The area borders some of the world's most industrialised nations and is home to a multitude of maritime uses and activities (Speer et al. 2011). Meanwhile, the region contains a wealth of natural resources and areas of high ecological diversity. Vital actions are required in dealing with the pronounced impacts of climate change in the region and their implications (Gold et al. 2011).

7.2.2 Comparing Marine Policy Across North Atlantic Countries

The present analysis is structured in three main phases (Fig. 7.2):

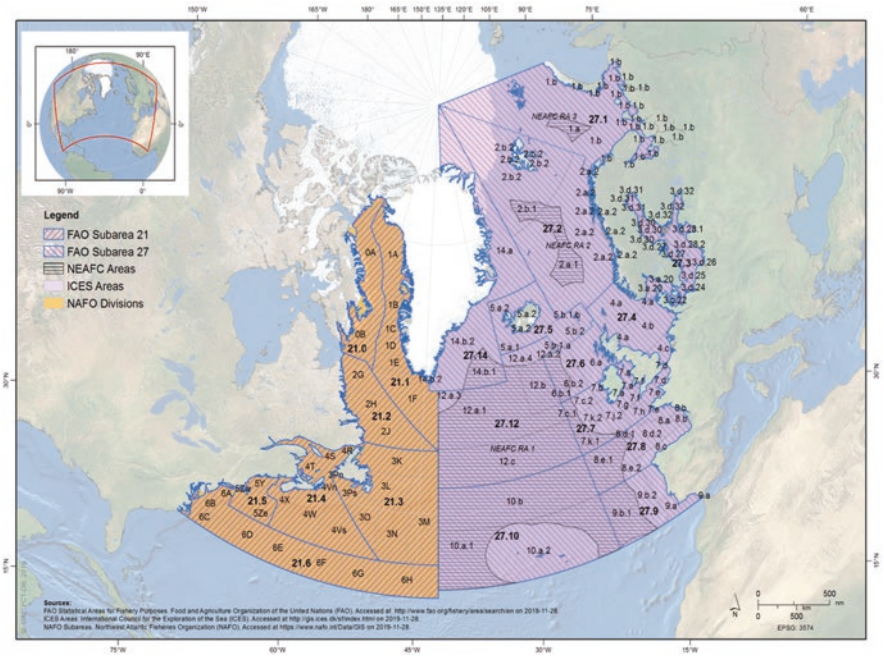


Fig. 7.1 Study area. (Source: Authors)

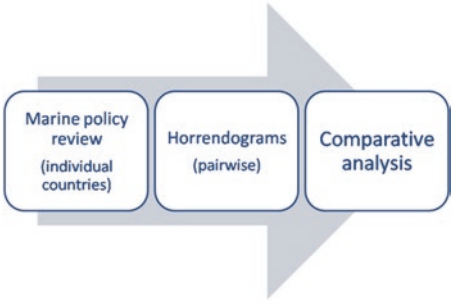


Fig. 7.2 Flowchart of methodological approach. (Source: Authors)

1. Review of international, regional and national legislation pertaining and influencing either directly or indirectly the marine environment in North Atlantic countries.
2. Development of an analytical framework that enables consistency in the comparison across countries: construction of horrendograms (after Boyes and Elliott 2014, 2016).
3. Comparison of countries' policies using horrendograms: assessment of the complexity of marine policies across different sectors and governance levels.

7.2.2.1 Marine Policy Review

An assessment of major national, regional and international legislation relating to the marine environment of the North Atlantic, management and governance of maritime activities and sectors is performed. Governance data are systematically gathered, collated and reviewed. Relevant data is obtained from major international (UN), regional/trans-national (OSPAR, EU) and national institutions and organisations (e.g. US National Oceanic and Atmospheric Administration, NOAA).

Key criteria for the selection of data include direct reference to the management, planning and governance of the marine environment, marine and maritime activities, users and sectors. Results from past and ongoing projects in the study area and scientific literature pertaining to the scope of the study are also addressed. Information is categorised to correspond to the respective marine governance levels, enabling the subsequent integration of information within the horrendograms framework. Collected data is subsequently validated by experts/officials at each country (e.g., practitioners at governmental agencies of environment and sea affairs).

7.2.2.2 Horrendograms

The horrendogram framework developed by Boyes and Elliott (2014, 2016) provides a suitable framework for analysis. Horrendograms summarize the marine policy framework for individual countries, streamlining and mainstreaming relevant information to enable the comparative analysis of regulatory frameworks and

ultimately establishing the major differences that exist between compared countries. Similar approaches have also been used in the framework of past projects in the wider region (e.g. Strong High Seas project, Durussel et al. 2019).

The horrendogram for the UK developed by Boyes and Elliott (2014) is the frame of reference for comparison between countries. The UK, has a robust tradition in MSP, while it being a unitary and island state, it has also made considerable efforts to address the complex issue of streamlining legislation across different subnational levels (known as "devolved administrations" in an UK context). Importantly, the UK has been instrumental in the development of EU environmental policy (Boyes and Elliott 2016), and as such, enables comparison with non-EU Member States. A pairwise horrendogram is also developed for the comparison of the US to the Canadian marine policy framework.

For the horrendograms development, policies pertaining to the marine environment are placed in co-centric circles, following a clockwise pattern, and structured along a vertical governance level. The centremost circle corresponds to international policy objectives and targets (e.g. UN conventions, laws and/or commitments) (Fig. 7.3). The following circle, i.e. the second circle from the centre, represents the directives, policies or strategies of a regional (North Atlantic, such as OSPAR) or trans-national level (e.g. EU) (Calado et al. 2018). As regulations usually have a stronger influence on policy than guidelines or recommendations

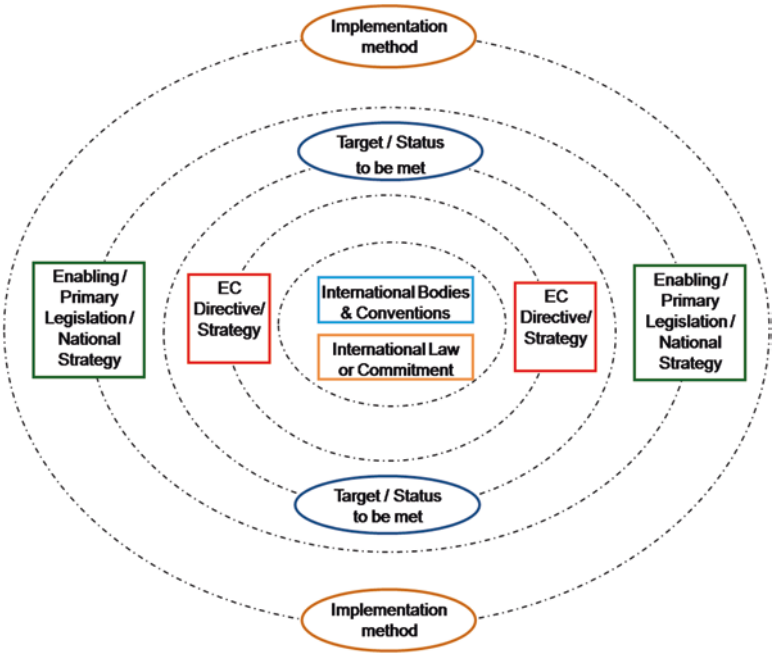


Fig. 7.3 Conceptual diagram of a horrendogram, describing the different categories across the circles. (Diagram adapted after: Boyes and Elliott 2014)

(frequently termed "soft laws", Rudd et al. 2018; Durussel et al. 2019), they are foregrounded in the horrendogram framework. Different colours are used to represent differences in the approaches between compared countries and enable comparison: highlighted boxes in green denote a given country's unique legislation or policy and highlighted boxes in yellow an approach different to the one followed by the UK.

Policies are grouped in the following key categories, to correspond to major maritime users, activities, and sectors requiring particular attention in the context of cross-border and/or transboundary cooperation:

- Fisheries and aquaculture
- Food security
- Flood and risk assessment
- MSP
- Nature conservation
- Maritime cultural heritage
- Strategic Environmental Assessment (SEA)
- Environmental Impact Assessment (EIA)
- Shipping
- Ocean management
- Water quality environmental standards

This grouping and comparison enable the review and assessment of key policies that affect, either directly or indirectly, the management and governance of the marine environment.

7.2.2.3 Limitations of the Analysis

A comparative assessment of maritime and marine policies across different countries has inherent limitations. The present study seeks to identify major differences in the marine policy frameworks of North Atlantic countries, and it was accepted from the beginning that it would not entail an exhaustive comparison of all regulations, laws, directives, recommendations and other policies. Greenland has been excluded from the scope of the present study as governance data required for the analysis are scarce to locate and assess. Major political developments in the region are currently ongoing (Table 7.1) and their implications for key marine activities and maritime sectors are still unclear, and have not been incorporated in the framework of the present analysis. These include most notably BREXIT; after BREXIT and the end of the transition period, no major changes are expected to occur in the short- or medium- term in the UK's legal framework for the marine environment: Fundamental EU Directives are integrated as UK domestic law, while close cooperation in key sectors (e.g. fisheries) with the EU will continue. Moreover, consolidate impacts of change are time-consuming and anticipated to result in an enlarged time-elapse.

Table 7.1 Adaptations from the initial UK horrendogram of Boyes and Elliott (2014) – Additional international policies assessed for the purpose of the analysis

Policy	Canada	France	Ireland	Iceland	Portugal	Spain	UK	US	Notes
CBD Cartagena protocol	–	X	x	–	x	x	X	–	Included
CBD Nagoya protocol	–	X	–	–	x	x	X	–	Assessed, excluded[f]
HELCOM convention for the protection of the Baltic[a]	–	–	–	–	–	–	X	–	Assessed, excluded
UNEP and NOAA Honolulu strategy[b]	–	X	x	x	x	x	X	x	Included
UNESCO[c]	x	X	x	x	x	x	X	?	Included
UN FCCC – Paris agreement	x	X	x	x	x	x	X	x	Included
World network of biosphere reserves (WNBR); UN man and the biosphere (MAB) Programme[d]	x	X	x	–	x	x	X	x	Included
UN regional seas Programme (RSP) – Protection of the Arctic marine environment[e]	x	–	–	x	–	–	–	x	Included

x: Country member of respective legislation/policy; –: Country not member;?: Unclear status

[a]Other than the UK, no other N. Atlantic countries are members of HELCOM, thus the Convention was not included in the horrendogram comparison

[b]No evidence of the Honolulu Strategy influencing relevant Canadian national policy

[c]Following the US recently rejoining the UN Framework Convention on Climate Change (UNFCCC) Paris Agreement (2/2021), it has been speculated that it could also pledge to rejoin UNESCO, after leaving the Organization in 2017

[d]There are currently no designated Biosphere Reserves contained within the global WNBR network for Iceland (UNESCO 2018a)

[e]Although the Arctic Seas Regional Programme is not in the N. Atlantic it was included as it affects the MSP policy of three major countries in the area; it was hypothesized that the comparison within the horrendogram would disclose important information on the differences in the MSP process for those countries and the rest

[f]Assessed in the case of the UK-Portuguese pairwise comparison (c/f section 3.2.4)

7.3 Results and Discussion

7.3.1 Marine Policy Review

The UK horrendogram developed by Boyes and Elliott (2014) constitutes the basis for the analysis, with the present study building and extending on this seminal work. Adaptations to the original UK horrendogram result from the inclusion of recent

(i.e. 2014–2019) policy developments in the field, the assessment of the legislative frameworks of other North Atlantic countries, and the subsequent addition and streamlining of relevant regulations within the horrendogram framework. Table 7.1 summarises key international policies that were assessed for the purpose of the present analysis and resulting adaptations to the original UK horrendogram.

The assessment of the policy frameworks of the North Atlantic countries enabled establishing (i) core regulations pertaining to the governance and management of the marine environment and key maritime sectors; and (ii) various instruments for the implementation of relevant policy. Amongst North Atlantic countries, Canada, Iceland, Ireland, the UK, and the US use Acts and Plans for regulating their marine environment and maritime sectors; Portugal and Spain use binding tools such as Law Decrees for governing marine resources and activities, while France utilises a set of different instruments for its MSP approach.

Canada has adopted an Ocean Act and individual Action Plans, but has no dedicated marine planning legislation. Iceland possesses an Ocean Policy and has not developed a dedicated integrated marine management framework. The marine policy framework in the US is established through numerous Acts, spanning the entire breadth of the country's Federal (>3 nm) and State (<3 nm) waters.

In France, marine policy is primarily comprised of Strategic Frameworks and Action Plans relevant to the marine environment, and the transposition of the EU MSP Directive to national law is ongoing (DIR 2017). In Portugal, the main policy framework for planning and management of the marine environment is established by the national law of Planning and Management of Maritime Space, adopted in 2014 prior to the EU MSP Directive, and subsequently entered into force with Law Decree 39/2015. In Spain, Royal Decree 363/2017 (Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente 2017) constitutes the national legislative framework for MSP, transposing the EU MSP Directive (European Parliament and Council 2014) into national law. In the UK, marine policy comprises three main themes: MSP, Marine Strategy and the Marine and Coastal Access Act (MCAA) (2009). The latter comprises the fundamental Act for marine policy, specifying regulations pertaining to fisheries, marine conservation, and setting the licensing and governance framework, further organising the administrative processes and competent authorities.

7.3.2 Horrendograms for the North Atlantic Countries

This section presents results from the comparison of the horrendograms for selected North Atlantic countries, summarising the major differences in their legislative frameworks for the marine environment. Horrendograms depicting the comparisons between UK and EU countries have been excluded on the grounds that key differences are mostly created at a national level. Figures 7.4, 7.5, 7.6, 7.7, 7.8 and 7.9 present the pairwise comparison between the frameworks of the UK and Iceland; the US and Canada; and the US and the UK. The respective horrendograms for

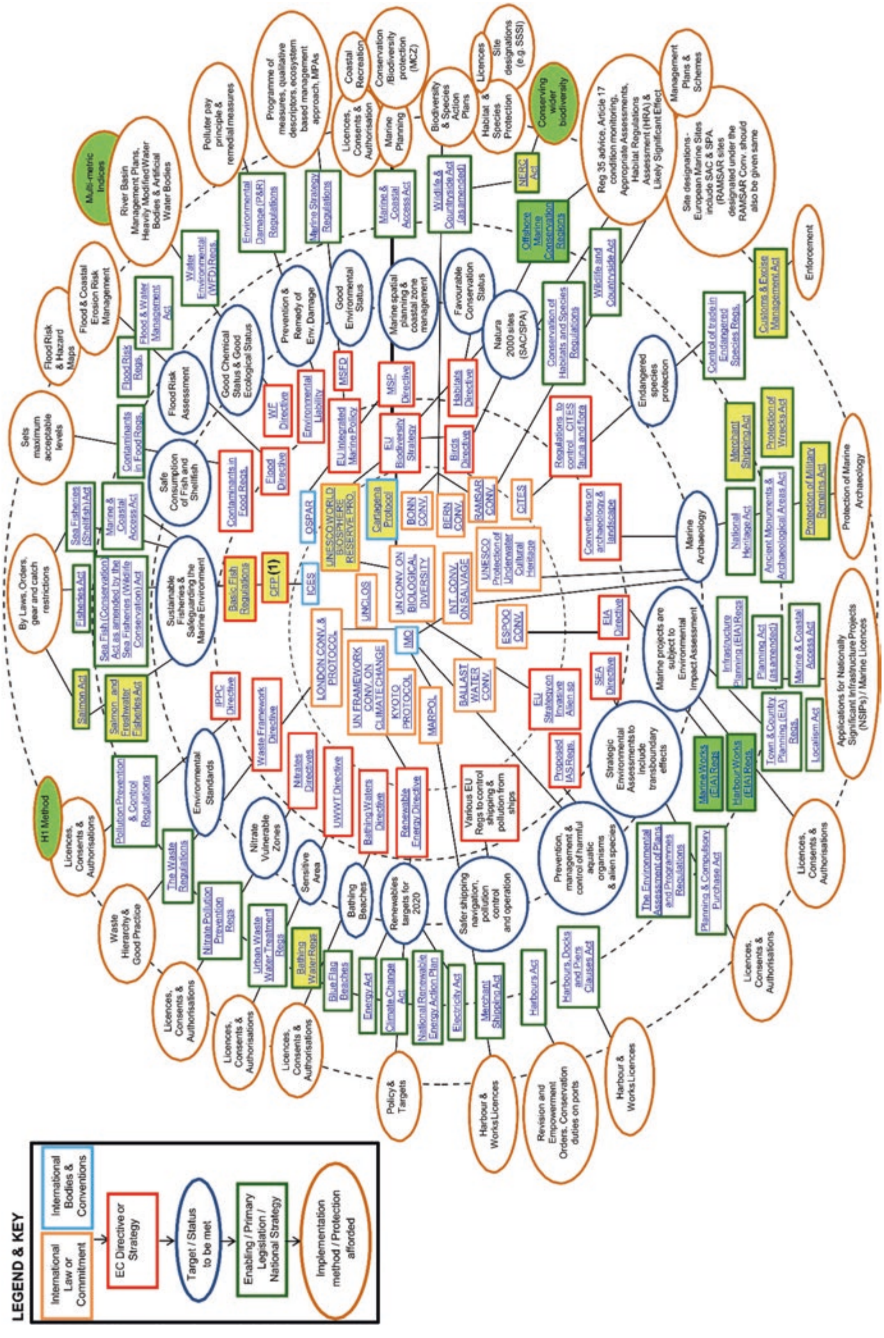
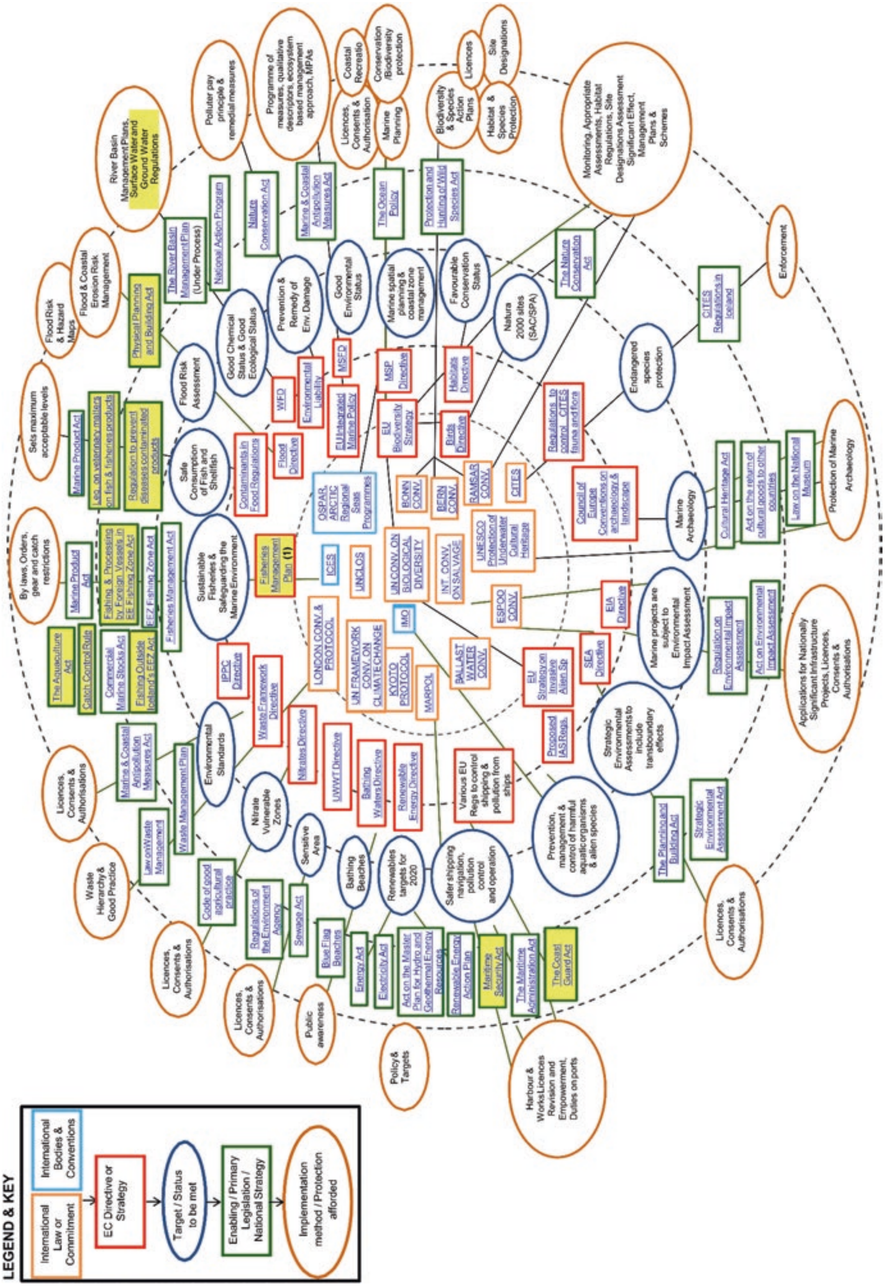

LEGEND & KEY
International Law or Commitment
International Bodies & Conventions
EC Directive or Strategy
Target / Status to be met
Enabling / Primary Legislation / National Strategy
Implementation method / Protection afforded
Multi-metric Indices
River Basin Management Plans, Heavily Modified Water Bodies & Artificial Water Bodies
Polluter pay principle & remedial measures
Programme of measures, qualitative descriptors, ecosystem based management approach, MPAs
Coastal Recreation
Conservation /Biodiversity protection (MCZ)
Licences, Consents & Authorisation
Marine Planning
Biodiversity & Species Action Plans
Licences
Site designations (e.g. SSSI)
Habitat & Species Protection
Conserving wider biodiversity
Reg 35 advice, Article 17 condition monitoring, Appropriate Assessments, Habitat Regulations Assessment (HRA) & Likely Significant Effect
Management Plans & Schemes
Site designations- European Marine Sites include SAC & SPA (RAMSAR sites designated under the RAMSAR Conv. should also be given same
Enforcement
Flood Risk & Hazard Maps
Flood & Coastal Erosion Risk Management
Water Environmental (WFD) Regs.
Environmental Damage (P&R) Regulations
Marine Strategy Regulations
Marine & Coastal Access Act
Wildlife & Countryside Act (as amended)
NERC Act
Offshore Marine Conservation Regulations
Wildlife and Countryside Act
Customs & Excise Management Act
Control of trade in Endangered Species Regs.
Conservation of Habitats and Species Regulations
Flood & Water Management Act
Flood Risk Regs.
Good Chemical Status & Good Ecological Status
Prevention & Remedy of Env. Damage
Good Environmental Status
Marine spatial planning & coastal zone management
Favourable Conservation Status
Natura 2000 sites (SAC/SPA)
Endangered species protection
Sets maximum acceptable levels
Contaminants in Food Regs.
Flood Risk Assessment
WF Directive
Environmental Liability
MSFD
MSP Directive
Habitats Directive
Safe Consumption of Fish and Shellfish
Flood Directive
EU Integrated Marine Policy
EU Biodiversity Strategy
Birds Directive
Regulations to control CITES fauna and flora
Merchant Shipping Act
Protection of Wrecks Act
By Laws, Orders, gear and catch restrictions
Sea Fisheries (Shellfish) Act
Marine & Coastal Access Act
Contaminants in Food Regs.
OSPAR
UNESCO WORLD BIOSPHERE RESERVE PRO.
Cartagena Protocol
BONN CONV.
BERN CONV.
RAMSAR CONV.
CITES
Conventions on archaeology & landscape
Marine Archaeology
National Heritage Act
Ancient Monuments & Archaeological Areas Act
Protection of Military Remains Act
Protection of Marine Archaeology
Fisheries Act
Sea Fish (Conservation) Act as amended by the Sea Fisheries (Wildlife Conservation) Act
Sustainable Fisheries & Safeguarding the Marine Environment
Basic Fish Regulations
CFP (1)
ICES
UNCLOS
UN CONV. ON BIOLOGICAL DIVERSITY
INT. CONV. ON SALVAGE
UNESCO Protection of Underwater Cultural Heritage
ESPOO CONV.
EIA Directive
Marine projects are subject to Environmental Impact Assessment
Infrastructure Planning (EIA) Regs
Planning Act (as amended)
Marine & Coastal Access Act
Applications for Nationally Significant Infrastructure Projects (NSIPs) / Marine Licences
Salmon Act
Salmon and Freshwater Fisheries Act
IPPC Directive
Waste Framework Directive
LONDON CONV. & PROTOCOL
IMO
UN FRAMEWORK CONV. ON CLIMATE CHANGE
KYOTO PROTOCOL
MARPOL
BALLAST WATER CONV.
EU Strategy on Invasive Alien sp
SEA Directive
Town & Country Planning (EIA) Regs.
Localism Act
H1 Method
Licences, Consents & Authorisations
Pollution Prevention & Control Regulations
Environmental Standards
Nitrates Directives
UWWT Directive
Bathing Waters Directive
Renewable Energy Directive
Various EU Regs to control shipping & pollution from ships
Proposed IAS Regs.
Strategic Environmental Assessments to include transboundary effects
Marine Works (EIA) Regs
Harbour Works (EIA) Regs.
The Waste Regulations
Nitrate Vulnerable Zones
Sensitive Area
Bathing Beaches
Renewables targets for 2020
Safer shipping navigation, pollution control and operation
Prevention, management & control of harmful aquatic organisms & alien species
The Environmental Assessment of Plans and Programmes Regulations
Planning & Compulsory Purchase Act
Waste Hierarchy & Good Practice
Nitrate Pollution Prevention Regs
Urban Waste Water Treatment Regs
Bathing Water Regs
Blue Flag Beaches
Energy Act
Climate Change Act
National Renewable Energy Action Plan
Electricity Act
Merchant Shipping Act
Harbours Act
Harbours, Docks and Piers Clauses Act
Policy & Targets
Harbour & Works Licences
Revision and Empowerment Orders, Conservation duties on ports
Harbour & Works Licences

Fig. 7.4 Horrendogram of the UK, when compared to the horrendogram of Iceland. Showing international, European and UK legislation for the marine environment (after Boyes and Elliott 2014). Highlighted boxes in yellow show common approaches between the UK and Iceland and highlighted ones in green show legislative policies unique to the UK within the comparison at hand


LEGEND & KEY
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Fisheries Management Plan (1)
UN CONV. ON BIOLOGICAL DIVERSITY
INT. CONV. ON SALVAGE
UNESCO Protection of Underwater Cultural Heritage
ESPOO CONV.
BONN CONV.
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MSFD
MSP Directive
EU Integrated Marine Policy
EU Biodiversity Strategy
Habitats Directive
Birds Directive
Flood Directive
Contaminants in Food Regulations
IPPC Directive
Waste Framework Directive
Nitrates Directive
UWWT Directive
Bathing Waters Directive
Renewable Energy Directive
Various EU Regs to control shipping & pollution from ships
EU Strategy on Invasive Alien Sp
Proposed IAS Regs.
SEA Directive
EIA Directive
Regulations to control CITES fauna and flora
Council of Europe Conventions on archaeology & landscape
Sustainable Fisheries & Safeguarding the Marine Environment
Safe Consumption of Fish and Shellfish
Flood Risk Assessment
Good Chemical Status & Good Ecological Status
Prevention & Remedy of Env. Damage
Good Environmental Status
Marine spatial planning & coastal zone management
Favourable Conservation Status
Natura 2000 sites (SAC/SPA)
Endangered species protection
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Marine projects are subject to Environmental Impact Assessment
Strategic Environmental Assessments to include transboundary effects
Prevention, management & control of harmful aquatic organisms & alien species
Safer shipping navigation, pollution control and operation
Renewables targets for 2020
Bathing Beaches
Sensitive Area
Nitrate Vulnerable Zones
Environmental Standards
The Aquaculture Act
Catch Control Rule
Commercial Marine Stocks Act
Fishing Outside Iceland's EEZ Act
Marine Product Act
Fishing & Processing by Foreign Vessels in EEZ Fishing Zone Act
EEZ Fishing Zone Act
Fisheries Management Act
Marine Product Act
Leg. on veterinary matters on fish & fisheries products
Regulation to prevent diseases contaminated products
Physical Planning and Building Act
The River Basin Management Plan (Under Process)
National Action Program
Nature Conservation Act
Marine & Coastal Antipollution Measures Act
The Ocean Policy
Protection and Hunting of Wild Species Act
The Nature Conservation Act
CITES Regulations in Iceland
Cultural Heritage Act
Act on the return of cultural goods to other countries
Law on the National Museum
Regulation on Environmental Impact Assessment
Act on Environmental Impact Assessment
Strategic Environmental Assessment Act
The Planning and Building Act
The Coast Guard Act
The Maritime Administration Act
Maritime Security Act
Renewable Energy Action Plan
Act on the Master Plan for Hydro and Geothermal Energy Resources
Electricity Act
Energy Act
Blue Flag Beaches
Sewage Act
Regulations of the Environment Agency
Code of good agricultural practice
Law on Waste Management
Waste Management Plan
Marine & Coastal Antipollution Measures Act
By laws, Orders, gear and catch restrictions
Sets maximum acceptable levels
Flood Risk & Hazard Maps
Flood & Coastal Erosion Risk Management
River Basin Management Plans, Surface Water and Ground Water Regulations
Polluter pay principle & remedial measures
Programme of measures, qualitative descriptors, ecosystem based management approach, MPAs
Licences, Consents & Authorisation
Coastal Recreation
Conservation /Biodiversity protection
Marine Planning
Biodiversity & Species Action Plans
Licences
Site Designations
Habitat & Species Protection
Monitoring, Appropriate Assessments, Habitat Regulations, Site Designations Assessment Significant Effect, Management Plans & Schemes
Enforcement
Protection of Marine Archaeology
Applications for Nationally Significant Infrastructure Projects, Licences, Consents & Authorisations
Licences, Consents & Authorisations
Harbour & Works Licences Revision and Empowerment, Duties on ports
Policy & Targets
Public awareness
Licences, Consents & Authorisations
Licences, Consents & Authorisations
Waste Hierarchy & Good Practice
Licences, Consents & Authorisations

Fig. 7.5 Horrendogram of Iceland, when compared to the horrendogram of the UK. Showing international, European and Icelandic legislation for the marine environment (after Boyes and Elliott 2014). Highlighted boxes in yellow show common approaches between Iceland and the UK and highlighted ones in green show legislative policies unique to Iceland within the comparison at hand

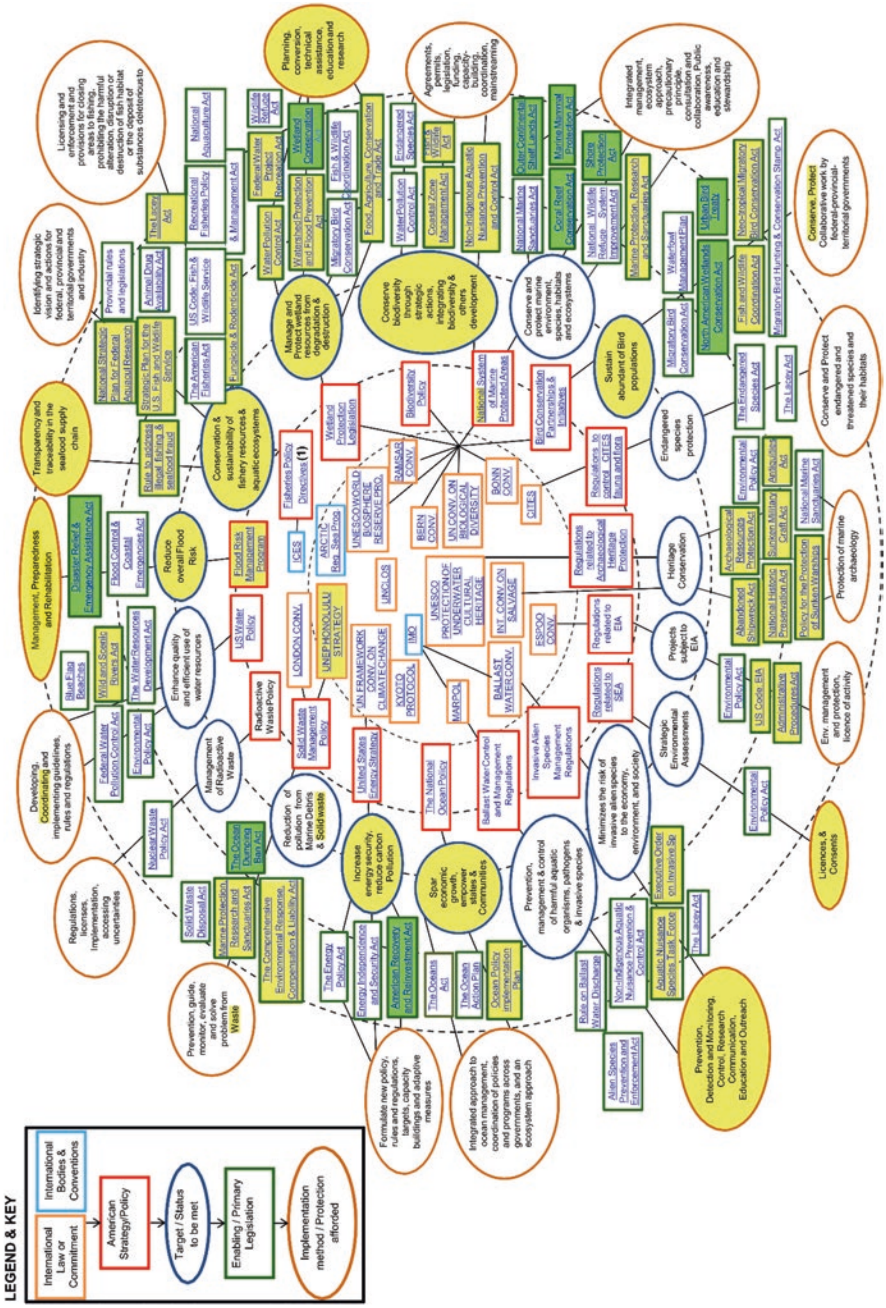
LEGEND & KEY
International Law or Commitment
International Bodies & Conventions
American Strategy/Policy
Target / Status to be met
Enabling / Primary Legislation
Implementation method / Protection afforded

Fig. 7.6 Horrendogram of the US, when compared to the horrendogram of Canada. Showing international and US legislation for the marine environment (after Boyes and Elliott 2014). Highlighted boxes in yellow show common approaches between the US and Canada and highlighted ones in green show legislative policies unique to the US within the comparison at hand

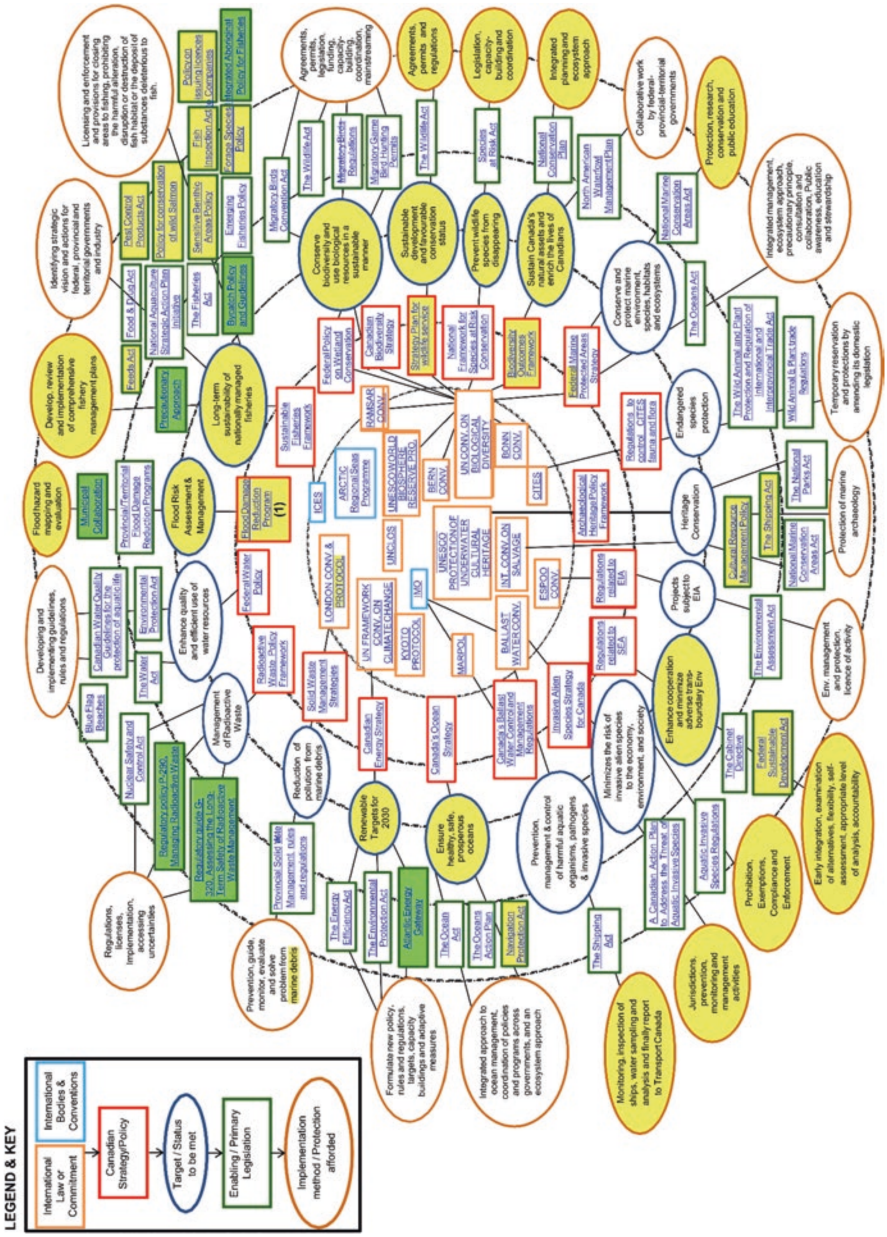
LEGEND & KEY
International Law or Commitment
International Bodies & Conventions
Canadian Strategy/Policy
Target / Status to be met
Enabling / Primary Legislation
Implementation method / Protection afforded

Fig. 7.7 Horrendogram of Canada, when compared to the horrendogram of the US. Showing international and Canadian legislation for the marine environment (after Boyes and Elliott 2014). Highlighted boxes in yellow show common approaches between Canada and the US highlighted ones in green show legislative policies unique to Canada within the comparison at hand

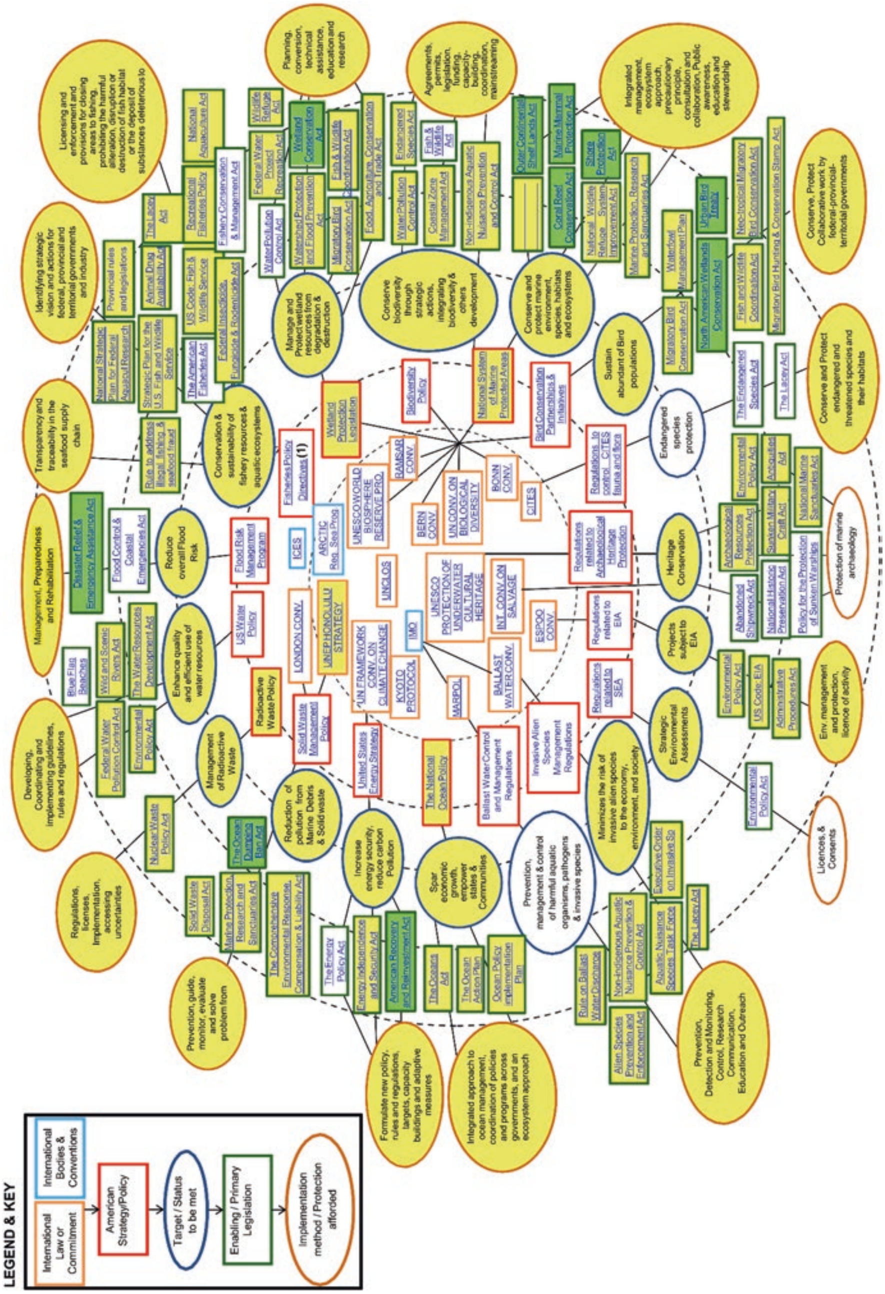
LEGEND & KEY
International Law or Commitment
International Bodies & Conventions
American Strategy/Policy
Target / Status to be met
Enabling / Primary Legislation
Implementation method / Protection afforded
UN CONV. ON BIOLOGICAL DIVERSITY
UNESCO PROTECTION OF UNDERWATER CULTURAL HERITAGE
UNESCO WORLD BIOSPHERE RESERVE PRO.
UN FRAMEWORK CONV. ON CLIMATE CHANGE
KYOTO PROTOCOL
RAMSAR CONV.
BERN CONV.
BONN CONV.
CITES
UNCLOS
ICES
ARCTIC Reg. Sea Prog
IMO
MARPOL
BALLAST WATER CONV.
INT. CONV. ON SALVAGE
ESPOO CONV.
LONDON CONV.
UNEP/HONOLULU STRATEGY
Fisheries Policy Directives (1)
Wetland Protection Legislation
Biodiversity Policy
National System of Marine Protected Areas
Bird Conservation Partnerships & Initiatives
Regulations to control CITES fauna and flora
Regulations related to Archaeological Heritage Protection
Regulations related to EIA
Regulations related to SEA
Invasive Alien Species Management Regulations
Ballast Water Control and Management Regulations
The National Ocean Policy
United States Energy Strategy
Solid Waste Management Policy
Radioactive Waste Policy
US Water Policy
Flood Risk Management Program
Conservation & sustainability of fishery resources & aquatic ecosystems
Manage and Protect wetland resources from degradation & destruction
Conserve biodiversity through strategic actions, integrating biodiversity & others development
Conserve and protect marine environment, species, habitats and ecosystems
Sustain abundant of Bird populations
Endangered species protection
Heritage Conservation
Projects subject to EIA
Strategic Environmental Assessments
Minimizes the risk of invasive alien species to the economy, environment, and society
Prevention, management & control of harmful aquatic organisms, pathogens & invasive species
Spar economic growth, empower states & Communities
Increase energy security, reduce carbon Pollution
Reduction of pollution from Marine Debris & Solid waste
Management of Radioactive Waste
Enhance quality and efficient use of water resources
Reduce overall Flood Risk
Transparency and traceability in the seafood supply chain
Identifying strategic vision and actions for federal, provincial and territorial governments and industry
Licensing and enforcement and provisions for closing areas to fishing, prohibiting the harmful alteration, disruption or destruction of fish habitat or the deposit of substances deleterious to
Planning, conversion, technical assistance, education and research
Agreements, permits, legislation, funding, capacity-building, coordination, mainstreaming
Integrated management, ecosystem approach, precautionary principle, consultation and collaboration, Public awareness, education and stewardship
Conserve, Protect Collaborative work by federal-provincial-territorial governments
Conserve and Protect endangered and threatened species and their habitats
Protection of marine archaeology
Env. management and protection, licence of activity
Licences, & Consents
Prevention, Detection and Monitoring, Control, Research Communication, Education and Outreach
Integrated approach to ocean management, coordination of policies and programs across governments, and an ecosystem approach
Formulate new policy, rules and regulations, targets, capacity buildings and adaptive measures
Prevention, guide, monitor, evaluate and solve problem from
Regulations, licenses, Implementation, accessing uncertainties
Developing, Coordinating and implementing guidelines, rules and regulations
Management, Preparedness and Rehabilitation
Disaster Relief & Emergency Assistance Act
Flood Control & Coastal Emergencies Act
Blue Flag Beaches
Wild and Scenic Rivers Act
The Water Resources Development Act
Federal Water Pollution Control Act
Environmental Policy Act
Nuclear Waste Policy Act
The Ocean Dumping Ban Act
Solid Waste Disposal Act
Marine Protection, Research and Sanctuaries Act
The Comprehensive Environmental Response, Compensation & Liability Act
The Energy Policy Act
Energy Independence and Security Act
American Recovery and Reinvestment Act
The Oceans Act
The Ocean Action Plan
Ocean Policy implementation Plan
Rule on Ballast Water Discharge
Alien Species Prevention and Enforcement Act
Non-indigenous Aquatic Nuisance Prevention & Control Act
Aquatic Nuisance Species Task Force
The Lacey Act
Executive Order on Invasive Sp
Administrative Procedures Act
US Code: EIA
Abandoned Shipwreck Act
National Historic Preservation Act
Policy for the Protection of Sunken Warships
Archaeological Resources Protection Act
Sunken Military Craft Act
Antiquities Act
National Marine Sanctuaries Act
The Endangered Species Act
Migratory Bird Conservation Act
Waterfowl Management Plan
North American Wetlands Conservation Act
Fish and Wildlife Coordination Act
Migratory Bird Hunting & Conservation Stamp Act
Neo-tropical Migratory Bird Conservation Act
Urban Bird Treaty
Marine Protection, Research and Sanctuaries Act
National Wildlife Refuge System Improvement Act
Shore Protection Act
Coral Reef Conservation Act
Outer Continental Shelf Lands Act
Marine Mammal Protection Act
Non-indigenous Aquatic Nuisance Prevention and Control Act
Coastal Zone Management Act
Fish & Wildlife Act
Water Pollution Control Act
Endangered Species Act
Food, Agriculture, Conservation and Trade Act
Migratory Bird Conservation Act
Fish & Wildlife Coordination Act
Watershed Protection and Flood Prevention Act
Wetland Conservation Act
Water Pollution Control Act
Federal Water Project Recreation Act
Wildlife Refuge Act
Federal Insecticide, Fungicide & Rodenticide Act
US Code: Fish & Wildlife Service
Fishery Conservation & Management Act
Recreational Fisheries Policy
National Aquaculture Act
The Lacey Act
Animal Drug Availability Act
Provincial rules and legislations
The American Fisheries Act
Strategic Plan for the U.S. Fish and Wildlife Service
National Strategic Plan for Federal Aquacul Research
Rule to address illegal fishing & seafood fraud

Fig. 7.8 Horrendogram of the US, when compared to the horrendogram of the UK. Showing international and US legislation for the marine environment (after Boyes and Elliott 2014). Highlighted boxes in yellow show common approaches between the US and the UK and highlighted ones in green show legislative policies unique to the US within the comparison at hand

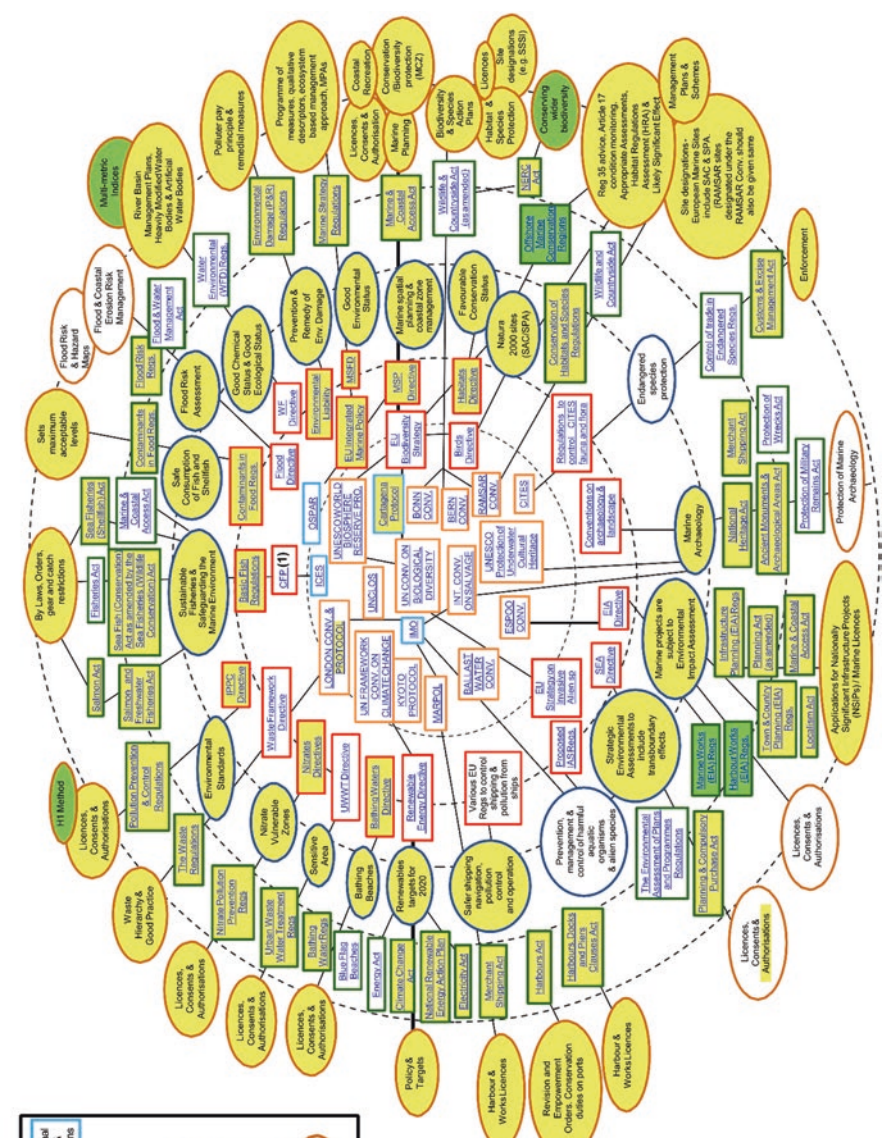
LEGEND & KEY
International Law or Commitment
International Bodies & Conventions
EC Directive or Strategy
Target / Status to be met
Enabling / Primary Legislation / National Strategy
Implementation method / Protection afforded
Sustainable Fisheries & Safeguarding the Marine Environment
Environmental Standards
Safe Consumption of Fish and Shellfish
Prevention, management & control of harmful aquatic organisms & alien species
Marine Archaeology
Endangered species protection
Conservation of Habitats and Species Regulations
Habitats Directive
Birds Directive
Natura 2000 sites (SAC/SPA)
Marine spatial planning & coastal zone management
Marine projects are subject to Environmental Impact Assessment
Strategic Environmental Assessments to include transboundary effects
Licences, Consents & Authorisations
Policy & Targets
Harbour & Works Licences
Revision and Empowerment Orders Conservation duties on ports
Applications for Nationally Significant Infrastructure Projects (NSIPs) / Marine Licences
Enforcement
Protection of Marine Archaeology

Fig. 7.9 Horrendogram of the UK, when compared to the horrendogram of the US. Showing international, European, and UK legislation for the marine environment (after Boyes and Elliott 2014). Highlighted boxes in yellow show common approaches between the UK and the US highlighted ones in green show legislative policies unique to the UK within the comparison at hand

Ireland, France, Portugal, and Spain are available at the website of the Geographical and Political Scenarios in Maritime Spatial Planning for the Azores and North Atlantic (GPS Azores) project.[1] Table 7.2 summarises the main national policies that were assessed in the scope of the present analysis and found to differ during the comparison between individual countries.

7.3.2.1 UK – Ireland

Ireland and the UK have similar marine policy frameworks, as shown by their respective horrendograms.[2] The content and color-coding of the boxes in the inner circles signify that international and regional/trans-national (North Atlantic/EU) marine policies are similar in scope and level of government implementation. Differences arise at a national and sub-national level (green boxes) and relate not as much to the scope of relevant policies, but mostly, the government implementation level (brown boxes). Notable differences are evident for the fisheries and aquaculture sectors. The UK has stringent and elaborate regulations for salmon fisheries [Salmon and Freshwater Fisheries Act 1975 (amended), UK Parliament, 1975] and specific policies and monitoring programmes regarding animal welfare, to ensure the safe consumption of fish and shellfish and the premium quality of final product. Ireland has specific regulations in place for aquaculture [Aquaculture (License Application) Regulations 1998, Statutory Instrument (S.I.) No. 236/1998], and has elaborated an environmental code of practice for aquaculture operators. These differences reflect the specificities of the two countries with respect to targeted and cultured species, the scale and size of fisheries' and aquaculture operators and the trade dimensions of final products. Other differences between the two countries involve the policy frameworks for marine conservation, marine heritage and EIA for key sectors and activities. The UK has dedicated regulations on offshore marine habitats and species [Conservation of Offshore Marine Habitats and Species Regulations 2017, S.I. 1013 of 2017)]; and elaborate regulations concerning marine works and harbours. Ireland has a dedicated Act on Planning and Development [Planning and Development Act 2000; 2018 (and amendments)] including several objectives relating to heritage. These differences also reflect the specificities of the two countries with respect to key maritime activities/uses. In the UK for instance, ports and harbours comprise vital assets for the local and national economy, with their ownership and governance framework being unique and showing distinct differences from port to port – with ownership and governance structure including private; municipal; or trust ports – and from the respective framework of Ireland.

With reference to the government implementation level, differences relate primarily to the use of specific objectives and implementation tools by relevant

[1] Analysis and Comparison of the Legal Frameworks of the N. Atlantic Countries Report, 55 pp. Available at: https://www.gpsazores.com/media/GPSAzores_Report_WP1-merged.pdf [Accessed: 2021/09/14].

[2] Ibid 1.

Table 7.2 Major national policies for the marine environment that were assessed for the purpose of the analysis

Country	Legislative and regulatory framework	Type of policy	Sector	Source
CN	Biodiversity Strategy 2006	National legislation (ratification of UN CBD)	Biodiversity	https://biodivcanada.chm-cbd.net/documents/canadian-biodiversity-strategy#TOClink
	Biodiversity Outcomes Framework 2006	Policy framework for Biodiversity Strategy (Council of ministers decision)	Biodiversity	https://biodivcanada.chm-cbd.net/documents/biodiversity-outcomes-framework
ES	State Maritime and Fisheries Law 2001 (3/2001); 2014 (amendment) (Provisions on IUU)	National legislation (Law)	Fisheries	
	Order ARM/2077/2010 of 27 July for the access control to port services of fishing vessels of third countries, transit operations, transhipment, import and export of fisheries products to prevent, deter and eliminate IUU (BOE num.185, of 31.07.2010)	Ministerial Order (Regulations)	Fisheries	https://www.boe.es/eli/es/o/2010/07/27/arm2077 (Available in Spanish)
FR	National Biodiversity Strategy (NBS) (2011)	National legislation (ratification of UN CBD)	Biodiversity	https://www.cbd.int/doc/world/fr/fr-nbsap-v2-en.pdf
	Public Health Code	National legislation (Law); and regulations	Bathing waters	Overview: http://baignades.sante.gouv.fr/baignades/editorial/en/controle/reglementation.html
IC	Fisheries Management Act 2006 (No. 38/1990)	National legislation (Act)	Fisheries	*extwprlegs1.fao.org › docs › texts › ice3455*
IE	Fisheries (amendment) Act 1995. No. 23. Regulations under the Act also set out the procedure for licensing for aquaculture	National legislation (Act)	Fisheries; Aquaculture	https://www.lawreform.ie/_fileupload/RevisedActs/WithAnnotations/HTML/en_act_19970023.htm
	Aquaculture (License application) Regulations 1998. S.I. No. 236 of 1998 (and amendments)	Statutory Instrument (Regulations)	Aquaculture	http://www.irishstatutebook.ie/eli/1998/si/236/made/en/print

(continued)

Table 7.2 (continued)

Country	Legislative and regulatory framework	Type of policy	Sector	Source
	Planning and Development Act 2000 (and amendments); Planning and Development (Amendment) Act 2018	National legislation (Act)	Marine heritage; MSP	http://www.irishstatutebook.ie/eli/2000/act/30/enacted/en/html
	Harnessing our ocean wealth – An Integrated Marine Plan for Ireland Roadmap New Ways New Approaches New Thinking. 88 pp.	Strategy; Roadmap	MSP, Marine Planning	https://www.ouroceanwealth.ie/sites/default/files/sites/default/files/Publications/2012/HarnessingOurOceanWealthReport.pdf
PT	National Ocean Strategy 2013-2020 [Resolution of the Council of Ministers 12/2014, of 12 February]	National legislation (Resolution of the Council of Ministers)	Cross-sector	https://dre.pt/application/conteudo/572585 https://www.dgpm.mm.gov.pt/enm-11-13
	Law 17/2014, of 10 April (basis for the Policy of Planning and Management of the National Maritime Space)	National legislation (Law)	MSP	https://dre.pt/application/conteudo/25343987
	Resolution of the Council of Ministers55/2018, of 7 May (National Strategy for Nature Conservation and Biodiversity 2030)	National legislation (Resolution of the Council of Ministers)	Conservation and Biodiversity	https://dre.pt/application/conteudo/115226936
UK	Salmon and Freshwater Fisheries Act 1975 (amended)	National legislation (Act)	Fisheries (esp. inland, freshwater)	http://www.legislation.gov.uk/ukpga/1975/51
	Customs and Excise Management Act (1979)	National legislation (Act)	Incl. provisions on endangered species	http://www.legislation.gov.uk/ukpga/1979/2/contents
	Wildlife and Countryside Act (1981)	National legislation (AAct)	Incl. conservation of wild birds	http://www.legislation.gov.uk/ukpga/1981/69
	Natural Environment and Rural Communities ("NERC") Act 2006 c. 16	National legislation (AAct)	Incl. provisions on wildlife; sites of special scientific interest, etc.	http://www.legislation.gov.uk/ukpga/2006/16/contents

	Marine and Coastal Access Act (MCAA) 2009 c.23	National legislation (AAct)	Cross-sector	http://www.legislation.gov.uk/ukpga/2009/23/contents
	Marine Policy Statement 2011 [HM Government, Northern Ireland Executive, Scottish Government & Welsh Assembly Government]	Policy framework for marine planning (for the purposes of section 44 of MCAA)	Marine Planning; MSP	https://www.gov.uk/government/publications/uk-marine-policy-statement
	Conservation of Offshore Marine Habitats and Species Regulations 2017. S.I. 1013 of 2017	Statutory Instrument (RRegulations)	Marine conservation (habitats, species)	http://www.legislation.gov.uk/uksi/2017/1013/contents/made
US	Magnuson–Stevens Fishery Conservation and Management Act (MSFCMA)	National Law	Fisheries, cross-sector	
	American Fisheries Act	National Law	Fisheries	https://www.maritime.dot.gov/ports/american-fisheries-act/american-fisheries-act
	Marine Protected Areas Executive Order 2000	Presidential Executive Order, 2000	MPAs	https://www.govinfo.gov/content/pkg/WCPD-2000-05-29/pdf/WCPD-2000-05-29-Pg1230.pdf

Policies include the ones found to differ in the comparisons between countries. Policies appear for each country in chronological order
Where: *CN* Canada, *ES* Spain, *FR* France, *ICE* Iceland, *IE* Republic of Ireland, *PT* Portugal, *UK* United Kingdom, *US* Unites States
IUU Illegal, Unreported and Unregulated fisheries. All sources last accessed: 2019/12/11

competent authorities. The UK has a substantial tradition in the development and implementation of Marine Plans (UK Marine and Coastal Access Act; HM Government, 2009), encompassing most maritime sectors, for all devolved administrations. In Ireland, the 2012 "Harnessing our Ocean Wealth" (HOOW) (MCG 2012) Strategic Vision for marine planning consisted a key development in the process of integrated, multi-sectoral maritime planning.

7.3.2.2 UK – Iceland

At the international level, a distinct difference in the marine policy framework between the UK and Iceland relates to the fact that Iceland has not designated Biosphere Reserves within the UN WNBR network (UNESCO 2018a) (although other similar concepts with a strong coastal dimension are present in the country, such as UNESCO Geoparks, e.g. the Reykjanes peninsula UNESCO Geopark, UNESCO 2018b). Again, major differences between the two primarily occur at a national government level (Figs. 7.4 and 7.5), especially regarding the management and governance of fish and fisheries. The UK, as a former EU Member State, has transposed many of the provisions of the Common Fisheries Policy (CFP) into domestic law – with a strong post-BREXIT co-operation stipulated in the EU-UK Trade and Cooperation Agreement- while Iceland has its own national Fisheries Management Act (1990) (Act No. 38/1980). Importantly, policies underline the different approaches to the management of fisheries followed by the two countries, with the UK showing particular attention to environmental protection while in Iceland, the main emphasis is on economic efficiency and resource sustainability (Paul et al. 2016) and management involves the use of economic, market-based incentives (i.e. Individual Transferable Quotas, ITQs) (Popescu and Poulsen 2012). Iceland has more thorough regulations concerning seafood product safety. There exists a bilateral agreement between the two countries concerning the management of fisheries, with Iceland conforming to several provisions of the CFP (European Economic Community and Republic of Iceland 1993). The UK policy framework is especially advanced with respect to flood risk assessment, with Iceland only recently developing a relevant flood directive. The two countries follow similar approaches as regards conservation measures, although the UK has a dedicated Customs and Excise Management Act (1979), with provisions on the protection of endangered species. Small differences also exist with respect to the government system of maritime heritage and shipping: In Iceland, fisheries play a centremost role in marine cultural heritage (Antonova and Rieser 2019) with museums and villages comprising key features, while maritime clusters are becoming progressively important structures for the promotion of blue bio-economy.[3] In the UK, maritime heritage encompasses a diversity of features, ranging from ports and harbours,

[3] European Commission, 2019: Iceland and the blue bioeconomy: making the most from fish Available at: https://webgate.ec.europa.eu/maritimeforum/en/node/4449 [Accessed: 2021/09/07].

seaside resorts, and maritime archaeology,[4] reflecting the respective diversity of such maritime cultural heritage elements.

7.3.2.3 UK – France

The marine policy frameworks of France and the UK are similar at international and regional levels,[5] with differences primarily arising at a national level. These include provisions relating to biodiversity protection, with France having developed a dedicated National Biodiversity Strategy (NBS) (2011). France possesses numerous provisions and regulations for the fisheries and aquaculture sectors implemented through a series of laws, decrees, codes and catch restrictions. France has also developed a dedicated Public Health Code, with provisions pertaining among others, to fish catches. With reference to nature conservation, in France, strong emphasis is placed on the need for stakeholder's mobilisation and commitment for delivering the objectives of the National Biodiversity Strategy (2011). The UK MCAA requires a statement of public participation (SPP) where relevant stakeholders can be involved and influence the development of a particular marine plan.

7.3.2.4 UK – Portugal

The international dimensions of marine policy are similar in both countries,[6] except that Portugal unlike the UK, is not party to the London Protocol (LP 1996; entry into force: 2006). Instead, Portugal is a party of the London Convention (LC) reflecting the general case of the challenges in the presence of those two global treaties of similar scope (Hong and Lee 2015). Once again, main differences occur mainly on the national policy level. These involve the fisheries and aquaculture sectors, with the policy framework in Portugal having a focus on deep-sea fisheries and a system of regulatory concessions for aquaculture farms; while in the UK, as discussed earlier, there is particular attention given to salmon and freshwater fisheries. As in the case for other countries, these differences reflect once again the specificities of the fisheries sectors in the two countries, with reference to the targeted species and scale of fisheries operators.

An important difference between Portugal and other EU countries lies in the fact that Portugal pioneered the development of a National Ocean Strategy 2013–2020 [Directorate General for Maritime Policy DGPM)] that also integrates ecological status objectives (which is the reason why no specific ecological policies are shown in the horrendogram for Portugal under the respective category). Differences also

[4] Historic England, 2021. Available at: https://historicengland.org.uk/research/current/discover-and-understand/coastal-and-marine/ [Accessed:2021/09/07].

[5] Ibid. 1.

[6] Ibid. 1.

relate to nature conservation policies for rural communities, with the UK having a set of Acts, the Wildlife and Countryside Act 1981 and the Natural Environment and Rural Communities (NERC) 2006 Act, whereas in Portugal the specific topics are dealt within provisions of the Nature Conservation and Biodiversity Strategy. Different approaches are also followed between the two countries for coastal recreation, biodiversity and species protection and site designations, with the UK having specific measures and action plans for those matters, while in Portugal relevant provisions are within the framework of a sustainable use of natural resources, in the context of the National Strategy for Nature Conservation and Biodiversity. Portugal is currently developing a national Animal Protection Law where key aspects relating with nature and species protection will be dealt within. Differences also relate to key environmental policy, notably EIA and SEA: in Portugal the framework for EIA and SEA is established through a set of Decrees and Laws, while in the UK these are regulated through Acts. Differences also relate to the competent authorities for the implementation of relevant regulations. In the UK, relevant provisions are also framed within the Marine and Harbour work Regulations, Town and Country Planning Regulations, and the Localism Act. Shipping and Marine Renewable Energy (MRE) are other categories where differences in the two arise at a national government level. The two countries also have different implementation methods for key marine policies, most notably the Water Framework Directive and Urban Waste Water Treatment (UWWT) Directive.

The Nagoya protocol was not adopted with specificities for the marine environment. However, it is worth referring that in the Azores (Portugal), the Regional Legislative Decree 9/2012/A, of 20 March, was created inspired by the Nagoya Protocol, developing and regulating the legal regime for access and use of natural resources of the Azores for scientific purposes, including the access of marine resources (Calado et al. 2014).

7.3.2.5 UK – Spain

At an international level, the two countries adhere to the same marine policy provisions.[7] Differences occur at the national level for certain maritime sectors, as shown for major categories of the respective horrendograms. For the fisheries and aquaculture sector, a difference relates to the issue of Illegal, Unreported and Unregulated (IUU) fisheries, with specific provisions in Spanish Law [State Maritime and Fisheries Law 2014 amendment] and relevant regulations [Ministerial Order ARM/2077/2010] available (ClientEarth 2017). Spain also has elaborate regulations, in the form of Royal Decrees, regarding the safe consumption of fish and shellfish, whereas the UK appears to have the least amount of dedicated regulations specifically for that matter, with relevant provisions mostly integrated within the context of the Salmon and Freshwater Fisheries Act 1975. The two countries also

[7] Ibid. 1.

possess different legislative tools regarding the transposition into national law and implementation of the EU Water Framework Directive (WFD) (European Parliament and Council 2010), with Spain having a dedicated Water Act and Water Policy. Regarding nature conservation, the UK has pioneered the development and designation of offshore Marine Protected Areas (MPAs) (Joint Nature Conservation Committee, JNCC 2019). Spain has a national declaration for MPAs and one for the protection of animals. Spain has pioneered the issue of alien, invasive species, with a dedicated Law on the issue, absent from the UK and most other EU countries. A key difference amongst the two relates to the fact that in Spain the management and governance of coastal uses is mostly dealt with through Marine Laws.

7.3.2.6 US – Canada

The marine policy framework of the two countries might differ overall, but there are also distinct similarities (Figs. 7.6 and 7.7). At an international policy level, the main difference relates to the fact that the US has not ratified the UNCLOS and is not a party to the London Protocol. Differences between the two also emerge as a result of the Honolulu strategy (UNEP and NOAA 2016) that applies to the case of the US and not Canada. Similarities also occur at a national level and primarily stem from the fact that, in both countries, the legislative and regulatory framework is mostly framed by international commitments. Radioactive Waste and Energy Strategies are found in both horrendograms. Small differences occur with reference to the flood and risk assessment category, with the US having developed a risk management programme, while Canada has one for flood damage reduction. The most distinct difference between the two countries seems to be in the nature conservation sector. Overall, the US has a large number of complementary regulations, in the form of Acts, applying to nature protection and conservation while Canada has a more straight-forward and streamlined approach: For instance, different approaches apply with reference to the conservation and protection of bird fauna and marine species and habitats: in Canada, a Biodiversity Strategy and Biodiversity Outcomes Framework (2006), a Strategic Plan for Wildlife Service, and a Federal Marine Protection Areas Strategy (Fisheries and Oceans Canada 2005) frame the governance of the sector. In the US, Birds Conservation Partnerships and Initiatives aim to sustain abundance of bird populations specifically, while a National System of MPAs [Presidential Executive Order, 2000) also largely influences conservation objectives for marine habitats and species, notably marine mammals.

However, at the level of legislation implementation, Canada exhibits larger diversity in implementation methods and competent authorities engaged in the process. Differences also relate to fisheries and aquaculture sectors. Canada manages fisheries resources based on a precautionary approach; in the US, there is a strong focus on economic efficiency of the sector, with economic, market-based incentives existing for the management of certain stocks and species.

7.3.2.7 US – UK

At an international level, the two countries show similarities with respect to key marine and maritime policies (Figs. 7.8 and 7.9): both are parties to major international conventions (Ramsar; 2001 UCH Protection, Espoo, Kyoto,[8] MARPOL) with the main difference being that the US has not ratified the UNCLOS and London Protocol. Also, the US has not signed the CBD Cartagena Protocol, as described in the methods section. The most distinct differences arise at the national policy level, and involve different approaches followed by the two countries, most notably for fisheries, nature (marine) conservation, ocean management, water quality and environmental standards sectors. Fisheries regulations in the UK derive primarily from previously adhering to provisions of the EU CFP, while in the US the framework for the management and exploitation of fisheries is governed by a fisheries Policy Regulation primarily framed though the Magnuson-Stevens Fishery Conservation and Management Act (MSA) 1976 (and amendments) but also through provisions of the American Fisheries Act (1998). The two countries show similar approaches with respect to their general environmental protection legislation, as argued in past studies (Boyes and Elliott 2016). The US has specific regulations, such as the Wetlands Protection Legislation and an elaborate national system for MPAs. Relevant policy in the UK is shaped through the EU Integrated Maritime Policy (European Commission 2007), and the provisions of key legislation, such as the Habitats Directive (European Council 1992) and the Environmental Liability Directive (European Parliament and Council 2004), as have been transposed in national legislation. The two countries also reveal differences in legislation pertaining to SEA and shipping, with the US having a stronger focus on environmental protection, whilst UK policy foregrounding aspects of navigation safety and pollution prevention.

7.4 Conclusions

A comparative analysis of marine policy can take many shapes and forms, as no pre-defined methodological framework exists (Van Hoecke 2015; Calado et al. 2018). The present analysis did not seek to provide an exhaustive assessment of national policies and subsequent comparison between countries, but aimed at determining the most distinct differences in national approaches. Such an analysis comprises a snapshot of the most current policies, not integrating ongoing developments in the policy arena. However, horrendograms substantially aided the process of analysis across the different policy frameworks, readily highlighting where new efforts, in the form of future research, but also in assisting targeted policy intervention, are required. This in turn can aid cross-border coordination and

[8] As discussed, the US has initiated the process of withdrawal from the UNFCC Paris Protocol.

decision-making, having significant advantages for transboundary cooperation. The existing institutional platforms for cross border cooperation in Marine Governance, outside the EU, are still much dependent on the UNCLOS provisions and follow-up bodies such as the Regional Seas Conventions (RSC) or the Regional Fisheries Management Organizations (RFMO). de Grunt et al. (2018) highlight the role of the RSCs in the cross-border coordination of major maritime economic activities. Specific attention to the desirability and perceived challenges of such an increased role for the RSCs is also addressed by the authors, concluding that even these mechanisms are far from achieving high performances on their roles worldwide. Although the UN Ocean Decade may open new paths, the world's ocean coordination mechanisms are still far from those that exist on Climate Change or Biodiversity. New opportunities, as the hopes for closer marine research cooperation between Atlantic nations raised by the Belem and Galway Statements, need better linkages to these existing mechanisms in order to profit from already functioning channels.

The comparison of the different policy frameworks disclosed some crucial differences but also similarities in marine policy for North Atlantic countries. No major differences were highlighted by the horrendogram-based approach between countries at the level of international marine policy as suggested by the innermost circle of respective horredongrams, except for UNCLOS and CBD for the US. Major ongoing political developments, most notably the UK BREXIT are envisaged to result in marked differences in policy relating to the marine environment at the international government level in the future, with reference to resource management and access of fishing fleets within EEZs. This however will happen gradually and at a time-horizon greater than 5 years (e.g. the "adjustment period" stipulated in the EU-UK Trade and Cooperation Agreement for the fisheries sector). Differences in marine policy mostly arise at a national level, with EU Member States showing more similarities than their non-EU counterparts, due to the transposition of EU legislation into national laws. Distinct groups of countries, reflecting major approaches to marine legislation, appear to be present in the region: (i) Ireland, Iceland and the UK have a similar approach, with policy delivered mainly though Acts and Regulations; (ii) Portugal and Spain also show similarities, with marine policy delivered through the use of Law Decrees; (iii) The US and Canada, being federal states, also exhibit similarities, with both of them using Acts; and (iv) France shows a similar approach to Ireland, Iceland and the UK but also uses a set of binding tools for delivering relevant policy. Identifying these differences is the first step to overcome barriers in scaling up sustainability policies and goals.

Results suggested that the difference in implementation of relevant marine policy in the North Atlantic countries stem from the different national approaches to marine policy. For instance, France and UK have a more bottom-up approach while other countries, such as Portugal, exhibit a more top-down approach to marine policy and governance (Pinto et al. 2015; Calado et al. 2018). In certain countries, such as the US, marine affairs and maritime issues are dealt through a multitude of different laws and regulations, highly relevant in scope and complementary in nature (Crowder et al. 2006). Other North Atlantic countries (e.g. Canada) might have a more streamlined policy framework, but implementation might frequently involve

several competent authorities and institutions, thus requiring attention in coordination.

There were many instances where major differences primarily resulted from the policy framework for specific maritime sectors: these included fisheries and aquaculture, marine conservation, and maritime cultural heritage. For fisheries and aquaculture, differences in the targeted and cultured species and the scale of operations (large vs small) often resulted in notable differences in national policy frameworks. For marine/coastal conservation, differences were also a result of different jurisdictions, i.e. transitional waters and the implications of different planning jurisdictions (terrestrial/marine). The previous denote that while harmonisation of policy between countries is essential, it is still crucial to consider local specificities especially for those sectors that exhibit the most pronounced differences. For ports, harbours and marine works, it is important to remember that the UK, which constituted our frame of reference for the present analysis, has a unique governance and ownership framework that may amplify differences, but also clearly echoes the need for taking into consideration such local specificities. With regard to MSP, the analysis also indicates that, even if not under the explicit designation of MSP, in all cases analysed, the spatial planning of marine spaces is supported by existing regulation or strategic tools, and not hindered by the existence of dissimilarities between States.

The study highlighted important tools and enablers in marine policy. Bilateral agreements between countries enable streamlining marine policy regulations and have a major role to play in transboundary cooperation. Good examples are the case of Iceland and the EU concerning major fisheries policies; or the Honolulu Strategy for the US and EU for marine litter. Results also highlighted the usefulness of dedicated Ocean Strategies (Portugal) and national Marine Plans (UK) in integrating different sectors and objectives. Such examples can constitute good examples and practices and guide the development of policies for other countries currently developing relevant legislation.

Future work will focus on reviewing and scrutinizing findings from the present study by members of the North Atlantic research and planning communities. Most importantly, future work aspires to integrate expert knowledge on the various issues raised by the present analysis. As such, the present study should be seen as a starting point for a constructive and open dialogue with members of the North Atlantic marine research and planning communities. This dialogue can be based on the already existing mechanisms as the RSC or RFMO thus taking advantage of existing dialogue channels. However, a more holistic and integrated approach is needed and that can be triggered under the opportunities opened by the UN Ocean Decade and subsequent actions.

Acknowledgements The study was conducted in the framework of the Geographical and Political Scenarios in Maritime Spatial Planning for the Azores and North Atlantic (GPS Azores) project (Ref: ACCORES-01-0145-FEDER-002 GPS Azores), financed by Azores 2020 Operational Programme (85% by FEDER and 15% by Regional Funds) and PADDLE project, which has received funding from the European Union Horizon 2020 Research and Innovation Programme 1.3.3. under grant agreement No. 734271. The authors would like to thank Fernando Lopes, Marie Bonnin, Ana Vitoria Magalhães, Evangelia Tzika and António Medeiros.

Conflict of Interest The authors have no conflict of interest to disclose. The views expressed are those of the authors and do not reflect official EU and national policy.

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