



Blue Tourism Initiative

Policy Pathways Towards a More Sustainable Cruise Sector

Working Document

Policy Pathways Towards a More Sustainable Cruise Sector (Working Document)

Authors: Giulia Balestracci (Eco-Union), Angelo Sciacca (IDDRI), Jérémie Fosse (Eco-Union), Julien Rochette (IDDRI)

Coordinator: Angelo Sciacca (IDDRI)

Reviewers and Contributors: Roberta Milo, Rosario Galán (IUCN-Med), Dylis McDonald (CANARI), Paul Baraka (CORDIO East Africa), Ioannis Pappa (GSTC), Pascal Viroleau (Vanilla Islands), Arnau Terrisse (Plan Bleu), Chloe Martin (Plan Bleu), Ross Klein, Narendra Ramgulam

Recommended citation: Balestracci, G., Sciacca, A., Fosse, J. and Rochette, J. (2024). *Policy pathways towards a more sustainable cruise sector*. Edited by Blue Tourism Initiative.

Layout: A. Chevallier

Publication date: September 2024

Cover photo: Bahamas, Fernando Jorge

About the Blue Tourism Initiative

The **Blue Tourism Initiative** is a global multi-stakeholder innovation program focused on the environmental management, governance, and planning of coastal and maritime tourism in three marine regions: the Mediterranean, the Western Indian Ocean and the Caribbean. The project supports the participatory development of sustainable blue tourism initiatives through policy actions and a multi-stakeholder approach to inform the scalability of sustainable blue tourism in other regions.

The objectives of the Blue Tourism Initiative are to:

1. Assess the current global and regional situation of blue tourism, focusing on challenges and opportunities, and recommend directions for sustainable blue tourism development.
2. Support and monitor the implementation of sustainable blue tourism initiatives in the Mediterranean, Western Indian Ocean, and the Caribbean.
3. Integrate sustainable blue tourism management and governance at the regional policy level, share best practices, and raise awareness among key local, national, and regional stakeholders.

www.BlueTourismInitiative.org

The Blue Tourism Initiative project partners:

IDDRI **IDDRI** is an independent think tank based in Paris (France) at the interface of research and decision-making that investigates sustainable development issues requiring global coordination.



Eco-Union is an independent Think and Do Tank based in Barcelona (Spain), whose objective is to accelerate the ecological transition of the Euro-Mediterranean region.



CORDIO East Africa is a nonprofit research Organisation based in Kenya focus on the sustainable use and management of coastal and marine resources in the Western Indian Ocean.



IUCN Centre for Mediterranean, established in Malaga (Spain), works to bridge gaps between science, policy, management and action in order to conserve nature and accelerate the transition towards sustainable development in the Mediterranean.



CANARI (Caribbean Natural Resources Institute) is a non-profit institute headquartered in Trinidad and Tobago, facilitating stakeholder participation in the stewardship of renewable natural resources in the Caribbean.

This publication was produced with the financial support of the French Facility for Global Environment (FFEM). The contents of this document do not necessarily reflect the views of the funder.



**FONDS FRANÇAIS POUR
L'ENVIRONNEMENT MONDIAL**



© Mexique. E. Lawrence/Unsplash

Summary

Cruise tourism is a significant component of coastal and marine tourism.¹ Despite the sharp decline during the COVID-19 pandemic,² the sector rebounded in 2023 with 31.7 million passengers, surpassing 2019 levels by 7%. Additionally, projections estimate that the cruise sector will reach **40 million passengers annually by 2027**.³ Cruise tourism frequently attracts attention due its impacts on sea, air, and land⁴ as well as by its controversial relationship with destination communities, who experienced in the first place the externalities of the cruise tourism development.^{5, 6}

Furthermore, the **market power of cruise industry** in numerous regions and destinations drive intense competition and conflicts among stakeholders, who often have different cost-benefit perceptions and goals.⁷ This tension can hinder the development of a more sustainable cruise sector by obstructing necessary cooperation among actors. The sector also faces **regulatory gaps** from the global to the national and local levels, with **weak monitoring and enforcement compliance mechanisms** - left to the charge of the national authorities, who face limitations in applying these mechanisms, hindering the sustainability of the sector. Many cruise ships are registered in flag States that are responsible for ensuring

cruise compliance to regulations⁸ but these countries often have weak environmental and safety standards.

With **80% of tourism occurring in coastal and marine areas**, cruise tourism must swiftly adopt more sustainable practices to align with **global Climate⁹ and Biodiversity targets¹⁰** and contribute to the **Sustainable Development Goals (SDGs)**, in particular SDGs 6, 7, 12, 13, 14, 15, 17.¹¹ This transition requires improved collaborative governance at the institutional level that is socially, geographically, and politically inclusive, informing cohesive and coherent sustainability strategies and policies. Specifically, regional **intergovernmental and intersectoral cooperation** can leverage existing frameworks to strengthen monitoring mechanisms, share expertise and utilise innovative technologies.

This report, based on desk research and stakeholder consultations, examines the **global state of cruise tourism**. It provides relevant updated market data, in terms of passengers' volumes, main destinations, and type of vessels. After discussing the main multidimensional impacts generated by this industry, the report provides a critical outline of the cruise sector governance with the description of its key actors, and the main **international and regional regulatory frameworks**. Particular attention is given to the Mediterranean, Caribbean, and Western Indian Ocean, regions with main cruise destinations.

Challenges to a more sustainable cruise sector have been identified as a basis to **recommend priority policy and governance actions** that can enable the cruise sector's transition to a fairer, more responsible and sustainable industry. This report intends to serve as a wake-up call for increased regional and global cooperation, advocating for a coordinated approach in regulating, monitoring, and maximising the benefits of the sector.

- 1 Balestracci, G., Sciacca, A. (2023): [Towards sustainable blue tourism: trends, challenges, and policy pathways](#). Edited by Blue Tourism Initiative.
- 2 Radic, A., Law, R., Lück, M., Kang, H., Ariza-Montes, A., Arjona-Fuentes, J. M., & Han, H. (2020): [Apocalypse now or overreaction to coronavirus: The global cruise tourism industry crisis](#). Sustainability, 12(17), 6968.
- 3 Cruise Lines International Association (2024): [State of the Cruise Industry Report](#).
- 4 Syal, R. (2022): [Shipping's dirty secret: how "scrubbers" clean the air - while contaminating the sea](#). The Guardian.
- 5 Asero, V., & Skonieczny, S., (2018): ["Cruise Tourism and Sustainability in the Mediterranean. Destination Venice"](#). InTech.; Schemmer, J., (2022): ["Social Resistance and Spatial Knowledge: Protest Against Cruise Ships in Venice"](#). NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin, 30(3), 377-406.
- 6 Klein, R. A., (2013): ["Responsible Cruise Tourism: Issues of Cruise Tourism and Sustainability"](#). Memorial University of Newfoundland, Canada
- 7 Kim, S. B., Marshall, L. H., Gardiner, R., & Kim, D. Y. (2021): [Conflicts in communities and residents' attitudes toward the impacts of cruise tourism in the Bahamas](#). Journal of Travel & Tourism Marketing, 38(9), 956-973.

- 8 Tonazzini, D., Fosse, J., Morales, E., González, A., Klarwein, S., Moukaddem, K., Louveau, O. (2019): ["Blue Tourism. Towards a sustainable coastal and maritime tourism in world marine regions"](#). Edited by eco-union. Barcelona
- 9 United Nations (2015): [The Paris Agreement](#).
- 10 [The Kunming-Montreal Global Biodiversity Framework](#). Particularly, TARGETS 4, 7, 14, 15 and 16.
- 11 United Nations Department of Economic and Social Affairs (2024): [Sustainable Development Goals](#).

Table 1. Policy Pathways Towards a More Sustainable Cruise Sector

Challenge 1.
Global regulatory and governance gaps



Pathway 1. Identify and fill Global Regulatory and Governance Gaps

1.1. A comprehensive review of global regulatory frameworks is needed to identify existing gaps and loopholes. This review should account for the distinct characteristics and needs of different regions.

1.2. Targeted action will be required to close these gaps by fostering effective communication and collaboration across all levels—both horizontally (across sectors) and vertically (from local to global levels). Regulatory actions should be tailored to the specific conditions and challenges of each marine region.

Challenge 2.
Lack of collaboration and high competition among destinations



Pathway 2. Promote Regional and Interregional Cooperation on Cruise Tourism

2.1. Intergovernmental and multi-sectoral cooperation should be enhanced at the regional level to align policies across regions, ensuring consistency with commonly agreed sustainability goals for cruise tourism.

2.2. International collaboration between regional cruise tourism bodies and other regional mechanisms should be supported to promote cohesive global actions. This cooperation should foster and incentivize sustainable practices within the cruise tourism sector.

Challenge 3.
National regulatory and governance gaps



Pathway 3. Address National Regulatory Gaps

3.1. Where needed, countries should embark in comprehensive reviews of their national regulatory frameworks to identify gaps and loopholes, ensuring alignment with regional and global actions and agendas.

3.2. Actions should be taken to close regulatory gaps by mobilising the necessary resources and fostering cooperation. Engaging within regional cooperation mechanisms is essential to ensure policy consistency with neighbouring countries and prevent fragmented approaches.

Challenge 4.
Weak monitoring and enforcements

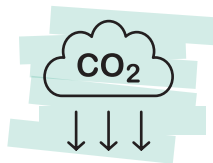


Pathway 4. Improve Monitoring and Reporting Systems

4.1. Monitoring frameworks should be enhanced at both national and regional levels to ensure cohesive and consistent monitoring practices across regions.

4.2. Reporting systems should also be strengthened at national and regional levels to promote uniformity and enforcement. Regional cooperation mechanisms—existing or newly developed—should support and ensure compliance with these reporting standards.

Challenge 5.
Limited adoption of clean technologies and sustainable behaviours

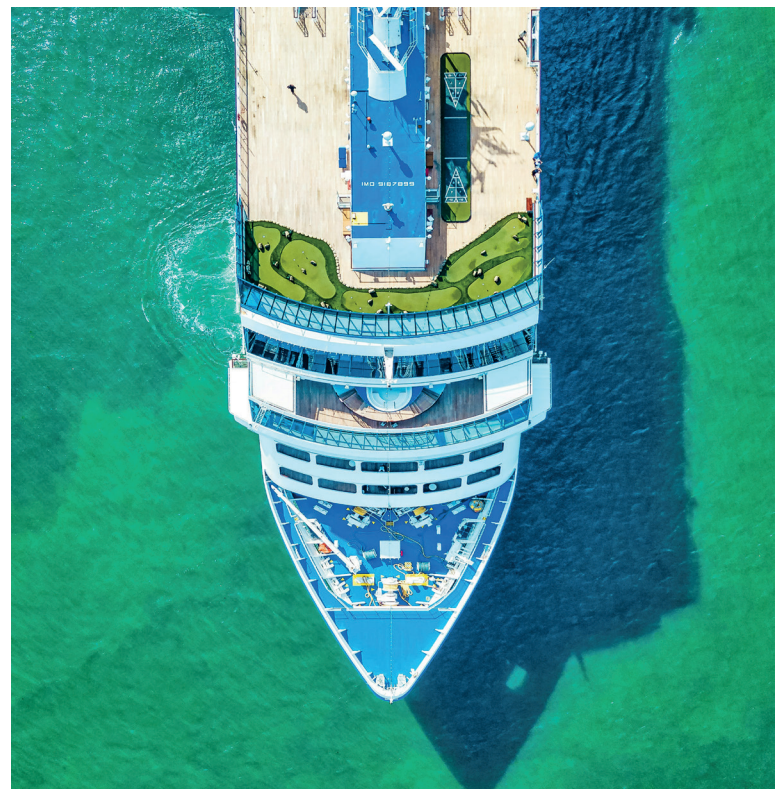


Pathway 5. Implement clean technologies and more sustainable behaviours by the industry and consumers

5.1. Policy and non-regulatory actions should be fostered to support sustainable cruise ship technologies and emission reductions.

5.2. Vessel's certifications should become more ambitious and better aligned with international environmental standards.

5.3. Sustainable behaviours of the industry and consumers through awareness and capacity building tools should be fostered.



© M. Vega/Unsplash

Table of contents

Summary	1
Table of contents	3
Abbreviations and Acronyms	4
1. Introduction	5
2. State of the Cruise Sector	6
3. Impacts of the Cruise Sector	8
3.1. Environmental Impacts	8
3.2. Economic Impacts	9
3.3. Social Impacts	10
4. Cruise Sector Governance	11
4.1. Market's Actors	11
4.2. Regulatory and Cooperative Frameworks	12
5. Challenges and Opportunities for Sustainable Cruise Governance	18
5.1. Challenges for SCT	18
5.2. Regulatory and Governance Opportunities	21
5.3. Non-Regulatory Opportunities	21
6. Policy Pathways for a More Sustainable Cruise Sector	24
Bibliography	29

List of figures

Figure 1. Global Cruise Passengers	6
Figure 2. Passenger Volume per Region (2023)	6
Figure 3. Major Source Regions and Respective Passenger Volume Comparison 2023-2019	7
Figure 4. Passenger Volume Comparison 2023-2019	7
Figure 5. Cruise Capacity Projections	7
Figure 6. Environmental, Economic, and Social Externalities of Cruise Tourism	8
Figure 7. Waste Streams from Cruise Ships	9

List of tables

Table 1. Policy Pathways Towards a More Sustainable Cruise Sector	2
Table 1. Estimate Worldwide Cruise Line Market Share for 2024	11
Table 2. Actors of the Cruise Sector Governance*	12
Table 3. Countries Permitting Open-Loop Scrubber Discharge	19
Table 2. Policy Pathways Towards a More Sustainable Cruise Sector	24

Abbreviations and Acronyms

CSER	Corporate Social and Environmental Responsibility
CFCs	Chlorofluorocarbons
CLIA	Cruise Lines International Association
CMOU	Cruise Memorandum of Understanding
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea;
CO₂	Carbon Dioxide
GDP	Gross Domestic Product
GSTC	Global Sustainable Tourism Council
HELCOM	Helsinki Commission
ILO	International Labour Organisation
LEED Design	Leadership in Energy and Environmental Design
IMO	International Maritime Organisation
MARPOL	International Convention for the Prevention of Pollution from Ships
MSSD	Mediterranean Strategy for Sustainable Development

NGOs	Non-governmental organisation
NOx	Nitrogen Oxides
PPP	Public-private partnerships
PVC	Polyvinyl chloride
SDGs	Sustainable Development Goals
SECA	Sulphur Emission Control Area
SOLAS	International Convention for the Safety of Life at Sea
SOx	Sulphur Oxides
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
UN	United Nations,
EU	European Union
UNEP/MAP	United Nations Environment Programme/ Mediterranean Action Plan
WWF	World Wildlife Fund



© Sainte-Lucie. O. Eagle/Unsplash

1. Introduction

Cruise tourism is one of the **most profitable** segments of coastal and marine tourism.¹² Ocean cruising is rapidly expanding, and it represents the **largest tourism sub-sector** in terms of gross added value and employment. The cruise industry has attracted increasing attention due to its significant growth and swift recovery following crises such as the 2008-09 financial crises, geopolitical challenges (i.e., the impact of the Arab Spring on Mediterranean cruising) and the negative aftermath of the Costa Concordia accident in Italy, which affected the image of the sector. Even after the COVID-19 pandemic, the cruise industry has demonstrated its **financial and market resilience** with recorded continued growth.¹³ While major cruise companies celebrate this economic success, concerns from civil societies, local communities and public stakeholders persist regarding the **adverse impact of cruise** activities on the environment, society, and the local economies. A primary challenge remains enhancing the sector's sustainability across all its dimensions and inherent to its transnational operations, which pose hurdles from a regulatory, monitoring, and more broadly, governance perspective. Furthermore, the intense competitive **environment** that characterises the cruise industry further exacerbates these

challenges, potentially impeding collaborative efforts necessary for advancing sustainable practices.

This report focuses on providing a **diagnosis of the cruise industry**, examining its economic, environmental, and social impacts, and identifying the main challenges and policy opportunities for improving sustainability within the sector. Emphasising the urgency, this report underscores the need for the cruise industry to increasingly align with **global climate¹⁴ and biodiversity targets¹⁵** and **Sustainable Development Goals (SDGs)¹⁶**. Against this backdrop, the report supports enhanced collaborative governance models and an increased regional cooperation as pivotal strategies to foster the growth of sustainable approaches across the cruise industry, aligning with global sustainability targets and ensuring the equitable distribution of its benefits.

¹² Balestracci, G., Sciacca, A. (2023): "Towards sustainable blue tourism: trends, challenges, and policy pathways." Edited by Blue Tourism Initiative.

¹³ Notteboom, T., Pallis, A., & Rodrigue, J. P. (2022): "Port economics, management and policy". Routledge.

¹⁴ United Nations, (2015): "The Paris Agreement."

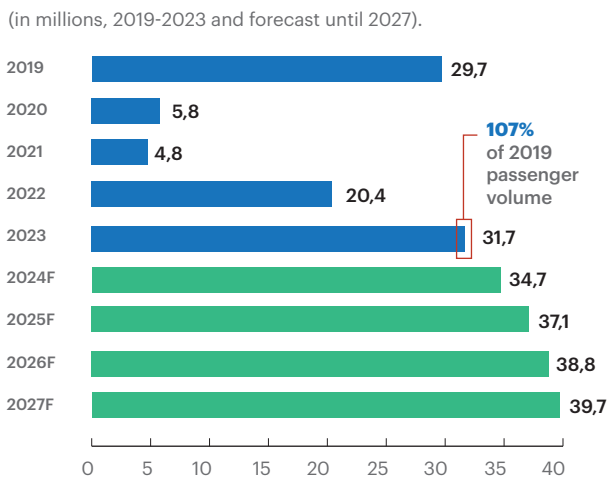
¹⁵ CBD, (2022): "The Kunming-Montreal Global Biodiversity Framework". Particularly, TARGETS 4, 7, 14, 15 and 16.

¹⁶ United Nations Department of Economic and Social Affairs (2024): **Sustainable Development Goals**. In particular a more sustainable cruise industry would better align with several SDGs that are centred on environmental protection, social well-being, and responsible economic growth (i.e.,SDG 6: Clean Water and Sanitation, SDG 7: Affordable and Clean Energy, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action, SDG 14: Life Below Water, SDG 15: Life on Land, SDG 17: Partnerships for the Goals) (see appendix)

2. State of the Cruise Sector

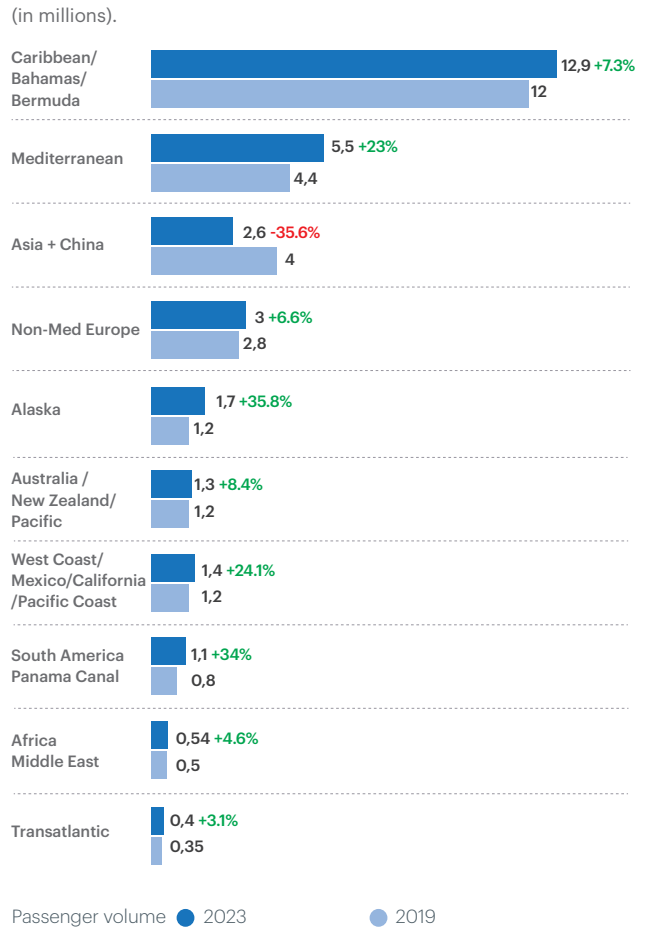
Over the past 15 years, the cruise sector has undergone a significant transformation, experiencing consistent **annual growth averaging 7%** until the onset of the COVID-19 pandemic.¹⁷ From 2009 to 2019, the number of cruise passengers nearly doubled, underscoring a significant rise in the sector's popularity and accessibility.¹⁸ This growth was propelled by substantial infrastructural advancements and an expanding global traveller base. Despite a brief slowdown following the 2009 financial crisis, the cruise industry outpaced other transport or tourism sectors in growth. However, the **COVID-19 pandemic** represented a major setback for the industry,¹⁹ leading to swift travel restrictions, enforced quarantines, and port closures.²⁰ These containment measures had a particularly significant impact for coastal businesses reliant on the cruise sector, resulting in substantial income loss.²¹ Nonetheless, the sector displayed **financial and market resilience** by rebounding strongly, achieving **31.7 million passengers in 2023, surpassing 2019's levels** by 7%. Future projections indicate continued growth, with forecasts predicting **40 million annual passengers by 2027** (Figure 1).

Figure 1. Global Cruise Passengers



Source: Cruise Lines International Association, 2024 (Cruise Lines International Association, (2024): "State of the Cruise Industry Report.")

Figure 2. Passenger Volume per Region (2023)



Source: Cruise Lines International Association, (2024). Cruise Lines International Association, (2024): "State of the Cruise Industry Report."

Regional data on passenger volumes provides a closer examination of the cruise sector's resilience to external shocks. **Figure 2** compares passenger volumes between 2023 and 2019, revealing increases in every region except for Asia and China. The **Caribbean** is the most visited cruise destination worldwide, welcoming nearly 13 million passengers in 2023, an increase of nearly 1 million compared to 2019. Following closely, the **Mediterranean** recorded 5.5 million passengers in 2023, non-Mediterranean Europe saw 3 million passengers, and Asia had 2.6 million passengers in 2023.²²

Cruise tourism destinations are very diverse, ranging from small islands in the Caribbean, large Mediterranean cities such as Barcelona in Spain and Venice in Italy, to remote rural communities in the Arctic, whose popularity as cruise destinations is on the rise due to melting ice (**Figure 3**).²³ In 2023, the **United States** led globally as the top source market with 16.9 million passengers. Following were **Germany** with 2.5 million passengers and the **UK** with 2.2 million passengers. However,

17 European Commission, Directorate-General for Maritime Affairs and Fisheries (2023): "Good practices for sustainable cruise tourism – Final report", Publications Office of the European Union.

18 Fosse, J., Tonazzini, D., Morales, E., González, A., Klarwein, S., Moukaddem, K., & Louveau, O. (2019): "Sustainable blue tourism: towards a sustainable coastal and maritime tourism in world marine regions". Eco-union.

19 Notteboom, T., Pallis, A., & Rodrigue, J. P. (2022): "Port economics, management and policy". Routledge.

20 Cruise Lines International Association, (2022): "State of the Cruise Tourism Outlook 2022".

21 da Silva, A. L. R., (2021): "An overview of the impact of COVID-19 on the cruise industry with considerations for Florida". Transportation Research Interdisciplinary Perspectives 10: 100391.

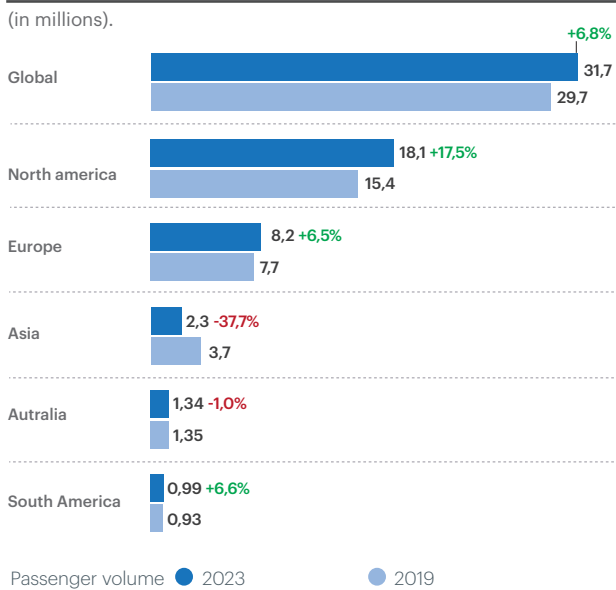
22 Ibid.

23 Lau, Y. yip, Kanrak, M., Ng, A. K. Y., & Ling, X. (2023): "Arctic region: analysis of cruise products, network structure, and popular routes" Polar Geography, 46(2-3), 157-169.



D. Bagg/Unsplash

Figure 3. Major Source Regions and Respective Passenger Volume Comparison 2023-2019



Source: Cruise Lines International Association, (2024). Cruise Lines International Association, (2024): "State of the Cruise Industry Report."

Asian markets, notably **China**, saw a substantial decline due to the COVID-19 crisis, experiencing a 92% decrease in passenger volume.²⁴

Recent **economic growth** of the sector has been significantly shaped by increasing **vessel capacity** over the past 15 years (Figure 4), and **economic affordability** by consumers.²⁵ **Larger vessels** have become more prevalent in the market, gradually displacing mid-size cruises.²⁶ Moreover, global cruise capacity is expected to grow by at least 10% from 2024 to 2028, with continuous expansion in cruise ship berths (Figure 5). Concurrently, there has been a surge in the construction of very small vessels catering the **luxury markets**, highlighting a dual trend in industry growth. Globally, the luxury sector is projected to grow from 4% in 2019 to 6% by 2028, driven by the construction of **45 new luxury vessels** between 2020 and 2028.²⁷

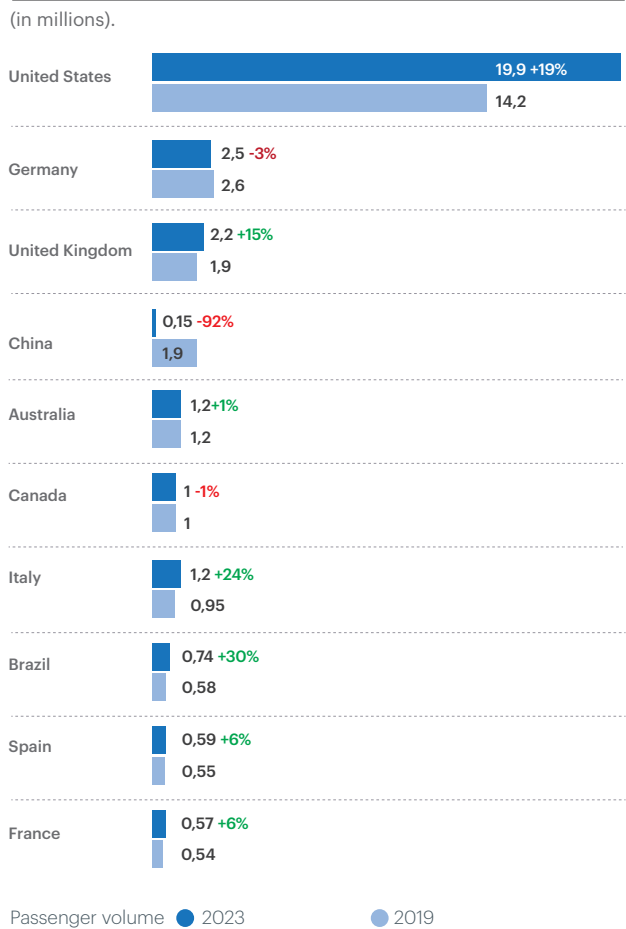
24 Cruise Lines International Association. (2024): "State of the Cruise Industry Report."

25 da Silva, A. L. R., (2021): "An overview of the impact of COVID-19 on the cruise industry with considerations for Florida" Transportation Research Interdisciplinary Perspectives 10: 100391.

26 Goodger, D. Savelli, C., (2023): "Luxury cruising – the new normal". Oxford Economics.

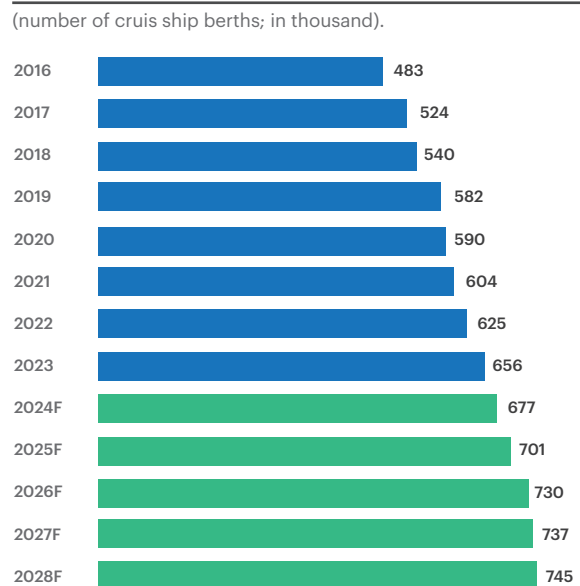
27 Ibid.

Figure 4. Passenger Volume Comparison 2023-2019



Source: Cruise Lines International Association (2024). Cruise Lines International Association, (2024): "State of the Cruise Industry Report."

Figure 5. Cruise Capacity Projections



Source: Cruise Lines International Association, (2024). Cruise Lines International Association, (2024): "State of the Cruise Industry Report"

3. Impacts of the Cruise Sector

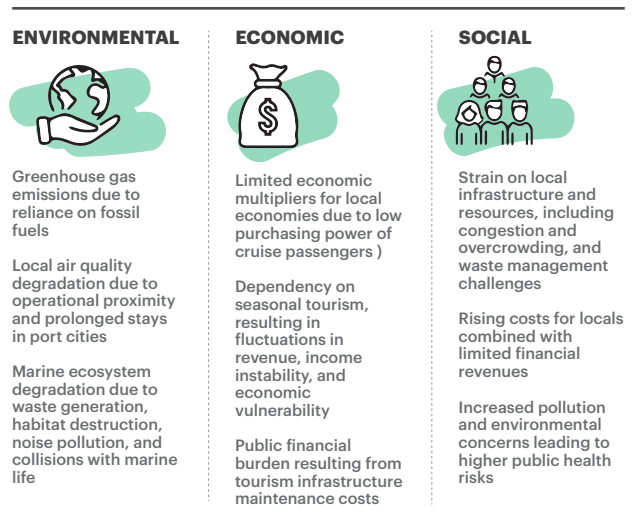
The externalities of the cruise industry are multi-dimensional and should inform areas of action to foster a more sustainable and equitable sector (Figure 6). Despite their diversity, cruise destinations share common sustainability challenges, particularly in relation to ensuring sustainable port operations, waste management and benefits to local communities. This section delves into the impacts of cruise tourism across environmental, economic, and social dimensions.

3.1. Environmental Impacts

Cruise ships are an important source of marine pollution²⁸ with an estimated waste generation between 2.6 to 3.5 kg/person/day.²⁹ One of the main sustainability issues in the cruise sector is its heavy reliance on fossil fuels and emission of toxic substances, such as sulphur oxides (SOx), nitrogen oxides (NOx), particulate matter (PM), and carbon dioxide (CO₂). These emissions contribute to acid rain, ocean acidification, and climate change, all of which negatively impact marine life and ecosystems.³⁰ It has been estimated that a passenger on a cruise emits twice more CO₂ than someone who flies and rents a hotel.³¹ Furthermore, despite being a small segment of the shipping industry, cruise ships' operational proximity to coastal areas and prolonged stays in port cities substantially deteriorate local air quality with direct effects on the health and well-being of resident communities.³² For example, in Barcelona, a study has shown a 3.8% increase in Nitrogen Dioxide levels above mean values for every additional cruise ship.³³ This issue is exacerbated by weak regulatory standards governing marine fuels, which lag behind those of other transport modes, amplifying the industry's environmental footprint.³⁴

Moreover, cruise ships severely impact marine ecosystems through wastewater discharge³⁵ (Figure 7), introducing harmful bacteria, excessive nutrients, and persistent chemicals into the ocean. In this regard, despite new engines being built to run on liquified natural gas (which has its own shortcomings regarding the leakage of unburned methane, known "methane slip"),³⁶ many cruise ships still use scrubbers

Figure 6. Environmental, Economic, and Social Externalities of Cruise Tourism



Source: elaborated from Tonazzini, D., et al. (2019): "Sustainable blue tourism: towards a sustainable coastal and maritime tourism in world marine regions." Eco-union.

to redirect pollution from air to water³⁷. However, scrubbers discard waters often contaminated with polycyclic aromatic hydrocarbons linked to cancers and reproductive dysfunction in marine mammals.³⁸ Ships, in general, can emit 10 gigatonnes of scrubber wash water in a year, with high concentration areas being the Caribbean, around Europe, and the Strait of Malacca. 15% of scrubber emissions are associated with the cruises.³⁹ This highlights the need for stricter regulations and innovative solutions to mitigate the impacts of scrubber emissions and the shortcomings of liquified natural gas cruise ship engines. Another relevant hazardous waste that should not be discharged at sea is the ash generated by the cruise ship, not yet regulated at the international level.⁴⁰

Additionally, the large amounts of solid waste generated - such as plastics (single-use items like utensils and packaging materials), food waste, and other refuse - threaten marine animals through ingestion or entanglement and disrupt ecosystems. For example, a study of cruise ships in the Caribbean has shown that each can generate around 266 m³ of solid waste.⁴¹ In some cases, sewage sludge is dewatered and then incinerated. In other cases, sludge is dumped at sea. Most jurisdictions permit sludge to be dumped within three miles of shore. However, food and other waste not easily incinerated is ground or macerated and discharged into the sea. Waste management operations include incineration, legal discharge

28 Carić, H., & Mackelworth, P., (2014): "Cruise tourism environmental impacts- The perspective from the Adriatic Sea." Ocean & coastal management, 102, 350-363.

29 US EPA – United States environmental Protection Agency, (2008): "Cruise Ship Discharge Assessment Report." US EPA Oceans and Coastal Protection Division. Washington

30 Hall, C. M., Wood, H., & Wilson, S., (2017): "Environmental reporting in the cruise industry. In Cruise ship tourism" (pp. 441-464). Wallingford UK: CAB; European Commission, Directorate-General for Maritime Affairs and Fisheries (2023): "Good practices for sustainable cruise tourism – Final report." Publications Office of the European Union.

31 Comer, B., (2022): "What if I told you cruising is worse for the climate than flying?" International Council of Clean Transportation.

32 Lloret, J., et al., (2021): "Environmental and Human Health Impacts of Cruise Tourism: a review".

33 Oxford Economics, (2023): "Environmental impact of cruise traffic within Barcelona." Cruise Line Association.

34 Transport & Environment, (2023): "The Return of the Cruise".

35 European Commission, Directorate-General for Maritime Affairs and Fisheries, (2023): "Good practices for sustainable cruise tourism – Final report." Publications Office of the European Union.

36 Comer, B., (2022): "What if I told you cruising is worse for the climate than flying?" International Council of Clean Transportation.

37 Osipova, O., Georgeff, E. & Comer, B., (2021): "Global scrubber washwater discharges under IMO's 2020 fuel sulfur limit." International Council on Clean Transportation. 10-12.

38 Georgeff, E., Mao, X., & Comer, B., (2019): "A whale of a problem? Heavy fuel oil, exhaust gas cleaning systems, and British Columbia's resident killer whales." International Council on Clean Transportation.

39 Osipova, L, Georgeff, E. & Comer, B., (2021): "Ship scrubber washwater: How much, what's in it, and where it's dumped." International Council on Clean Transportation.

40 Klein, Ross A., (2009): "Getting a Grip on Cruise Ship Pollution". Friends of the Earth.

41 Kotrikla, A. M., Zavantias, A., & Kaloupi, M., (2021): "Waste generation and management onboard a cruise ship: A case study" Ocean & Coastal Management, 212, 105850.

Figure 7. Waste Streams from Cruise Ships



Source: Cogea, (2017). “Study on differentiated port infrastructure charges to promote environmentally friendly maritime transport activities and sustainable transportation”.

at waste and disposal at ports. However, there is often a **lack of adequate land waste facilities at the destination**, which hinders proper waste management and the prevention of marine and coastal pollution.⁴² Solid waste and some plastics are incinerated on board, with the **incinerator ash** being dumped into the ocean. Incinerator ash and the resulting air emissions can contain **furans and dioxins**, both found to be carcinogenic, as well as heavy metal and other toxic residues. For this reason, Annex V of MARPOL recommends, but does not require, that ash from incineration of certain plastics not be discharged into the sea.⁴³ Moreover, **underwater noise pollution** from ships (which may range from 180 to 200 decibel)⁴⁴ interferes with the communication, navigation, and feeding of marine animals, particularly cetaceans like whales and dolphins.⁴⁵

In addition, **physical damage** from anchoring or accidental groundings in fragile areas like coral reefs⁴⁶ and seagrass beds⁴⁷ can significantly impact the marine environment. For example, the construction and expansion of **cruise terminals** and associated infrastructures lead to **land-use changes**, habitat destruction, and alterations to coastlines. **Dredging**, a common practice to accommodate larger vessels⁴⁸ can

disrupt local ecosystems, increase noise pollution, cause physical disturbances, and raises the risk of collisions with marine life.⁴⁹

The **dismantling of cruise ships**, also known as shipbreaking or ship recycling, poses significant environmental risks, particularly due to the hazardous materials found in these vessels. Ships are composed of various toxic substances, including asbestos, heavy metals, paints, oil, plastics, PVC pipes, glass wool, and even radioactive waste.⁵⁰ During dismantling, residual fuel, oil, and chemicals remaining in the ship’s tanks can leak, causing pollution in surrounding areas. In recent decades, most decommissioned cruise ships have been sent to shipbreaking yards in developing countries, especially in South Asian ones, including Bangladesh, India, and Pakistan.

These countries often **lack the infrastructure for safe and environmentally sound shipbreaking**. As a result, **waste materials accumulate on land** and eventually enter the marine environment through tidal and subtidal zones, damaging the physico-chemical properties of seawater and sediments, leading to coastal and marine degradation. Additionally, many shipyards in these countries **lack proper facilities for recycling**, resulting in improper disposal of non-recyclable materials. Due to the inadequate infrastructure and unsafe disposal practices in these developing countries, cruise ship deconstruction represents significant environmental hazards, contributing to soil and marine pollution.⁵¹

3.2. Economic Impacts

The economic impact of the cruise sector is multifaceted and substantial, even though it represents just 2% of international travel. In 2022, with 20.4 million cruise passengers, the cruise industry contributed **\$138 billion** in total economic impact globally, supporting **1.2 million jobs** worldwide and \$43 billion in wages.⁵² For instance, in the **Caribbean**, cruise tourism accounted for 20% of the GDP in 2022, attracting over 780,000 stopover visitors. This sector is expected to grow by 10-15% by the end of 2024, reaching 35.8 million cruise visits.⁵³ In **Europe**, the cruise sector contributes \$44 billion to the regional economy and supports approximately 315,000 jobs.⁵⁴ These figures underscore the role of cruise tourism in the global economy.

However, evidence suggests that cruise tourism primarily **benefits a few stakeholders**, with limited positive impact on

42 Ibid

43 Klein, Ross A., (2009): “Getting a Grip on Cruise Ship Pollution”. *Friends of the Earth*.

44 Jalkanen, J. P., Johansson, L., Andersson, M. H., Majamäki, E., & Sigra, P., (2022): “Underwater noise emissions from ships during 2014–2020”. *Environmental Pollution*, 311, 119766.

45 Erbe, C., Marley, S. A., Schoeman, R. P., Smith, J. N., Trigg, L. E., & Embling, C. B., (2019): “The effects of ship noise on marine mammals—a review”. *Frontiers in Marine Science*, 6, 606.

46 Burke, L., & Maidens, J., (2004): “Reefs at Risk in the Caribbean; Small, M., & Oxenford, H. A., (2022): “Impacts of cruise ship anchoring during COVID-19: Management failures and lessons learnt.” *Ocean & Coastal Management*, 229, 106332.

47 Watson, S. J., Ribó, M., Seabrook, S., Strachan, L. J., Hale, R., & Lamarche, G., (2022): “The footprint of ship anchoring on the seafloor.” *Scientific Reports*, 12(1), 7500.

48 Ganic, E., (2021): “Nassau Cruise Port: Dredging, land reclamation underway.”

49 European Commission, Directorate-General for Maritime Affairs and Fisheries, (2023): “Good practices for sustainable cruise tourism – Final report.” Publications Office of the European Union.

50 Occupational Safety and Health Administration (OSHA), (2001): “Ship Breaking Fact Sheet. US Department of Labor.”

51 Demaria, F., (2010): “Shipbreaking at Alang-Sosiya (India): An ecological distribution conflict.” *Ecological Economics*.

52 Cruise Lines International Association, (2024): “State of the Cruise Industry Report”

53 Caribbean Tourism Organisation, (2024): “Caribbean Tourism Experiences Strong Growth in 2023, Recovery to Continue into 2024”. Bridgetown, Barbados.

54 Cruise Lines International Association, (2023): “State of the Cruise Industry Report”.

local employment and economic activity.⁵⁵ Evidence also shows **low economic multipliers**⁵⁶ for cruising, as the money spent by cruise tourists tends to remain confined to ports, terminals and related infrastructure rather than circulating widely in the local economy. This can be attributed to the relatively **modest purchasing power** of cruise passengers, which averages 30% lower than land tourists.⁵⁷ This is since most goods and services are readily available on board, leading to reduced spending in local destinations. The **seasonal nature** of cruise tourism poses additional challenges for destination communities. Fluctuations in visitor numbers create peaks of intense activities and periods of decreased economic engagement. During peak seasons, ports may struggle to handle the influx of cruise ships, causing congestion and strain on local infrastructure. Conversely, off-peak periods bring decreased revenue for local businesses, exacerbating economic instability and vulnerability.⁵⁸

Furthermore, the **infrastructure costs** associated with accommodating cruise tourism can impose significant financial burdens on local governments. The construction, operation and maintenance of ports, terminals, and supporting infrastructure require substantial investments, often straining limited budgets and resources that may not be entirely covered by head tax or dockage fee paid by cruise companies, forcing governments to allocate funds from their budgets to cover these expenses, potentially diverting financial resources from other purposes. For example, in **Key West**, a popular cruise destination in the USA, dockage fees by law can only be used for services and to support the improvement of port facilities. However, these fees cover only a minimum part of the incurred expenses, impacting the financial sustainability of port operations.⁵⁹

3.3. Social Impacts

From a social perspective, cruise tourism can result in both positive and negative social externalities. On the positive side, cruise tourism can lead to job creation in port cities and destinations, including jobs in hospitality, retail, transportation, and tour services, leading to local business growth thanks to an increased tourist spending supporting local restaurants, shops, and markets. For example, cruise tourism in **Fiji** generated over 4000 full time jobs in 2018 (approximately 1% of the



© A. Reyes/Unsplash

working age population),⁶⁰ and approximately 9000 annual employment opportunities in Barcelona and its surrounding⁶¹. Also, the cruise sector encourages the **development of infrastructure** such as ports, roads, and public facilities, benefiting both tourists and residents.⁶²

On the other hand, one significant issue is the **strain on local infrastructure and resources** caused by the **temporal and spatial concentration** of cruise activities with the influx of tourists arriving simultaneously during seasonal peaks (e.g. unmanageable levels of waste pressuring waste infrastructure; congestion of transportation methods impacting quality of life of residents⁶³). The surge in tourist numbers can also drive-up **prices of goods and services**, making them less affordable for local communities.⁶⁴ Cruise tourism can contribute to **cultural displacement** in destinations, often resulting in a perceived loss of authenticity by residents who react to the erosion of their everyday life. For example, **Venetians** have protested for years against the presence of cruise ships or for better regulations.⁶⁵

Moreover, the **limited contribution of cruise tourists to the local economy** makes destination communities more vulnerable and sensitive to economic challenges and fluctuations⁶⁶ With tourists spending minimal time ashore, local businesses often experience limited financial gains, leading to **unequal distribution of benefits** and leaving communities reliant on seasonal and precarious employment.⁶⁷ Additionally, **pollution** from cruise ships and crowded tourist areas poses a threat to public health by degrading air and water quality. This pollution increases the risk of respiratory ailments and other **health issues** among residents, compounding the negative social impacts of cruise tourism on destination communities.⁶⁸

55 Macneill, T., & Wozniak, D., (2018): "The economic, social, and environmental impacts of cruise tourism". In *Tourism Management*, 66, pp. 387-404; Seidl, A., Guiliano, F., & Pratt, L., (2006): "Cruise tourism and community economic development in Central America and the Caribbean: The case of Costa Rica". *PASOS. Revista de Turismo y Patrimonio Cultural*, 4(2), 213-224.

56 The economic multiplier effect refers to the way spending in one sector can lead to increased economic activity and spending in other sectors. In the context of cruising, a low multiplier indicates that the money spent by cruise tourists does not circulate extensively through the local economy.

57 Brida, J. G., & Zapata, S., (2010): "Cruise tourism: economic, socio-cultural and environmental impacts." *International Journal of Leisure and Tourism Marketing*, 1(3), 205-226.

58 Kizielewicz, J., & Luković, T., (2015): "Negative impact of cruise tourism development on local community and the environment." *Information, Communication and Environment: Marine Navigation and Safety of Sea Transportation*, 6(3), 243-250.

59 Krogh, R., (2022): "Key West Doesn't Want Your Big Cruise Ships." *Outside*; Honey, M. (2020): *The Economics of Cruise Tourism in Key West: Behind the Cruise Industry's Propaganda Veil*.

60 International Finance Corporation (2019): "Assessment of the Economic Impact of Cruise Tourism in Fiji."

61 Cruise Lines International Association, (2018): "Contribution of Cruise Tourism to the Economies of Europe 2017"

62 Fosse, J., Tonazzini, D., Morales, E., González, A., Klarwein, S., Moukaddem, K., & Louveau, O., (2019): "Sustainable blue tourism: towards a sustainable coastal and maritime tourism in world marine regions." *Eco-union*.

63 Baumann, A. C., (2021): "On the path towards understanding overtourism—cruise tourism and the transportation infrastructure." *World Leisure Journal*, 63(1), 5-13.

64 Klein, Ross A., (2011): "Responsible cruise tourism: Issues of cruise tourism and sustainability". *Journal of Hospitality and Tourism Management* 18, no. 1 (2011): 107-116.

65 Schemmer, J., (2022): "Social Resistance and Spatial Knowledge: Protest Against Cruise Ships in Venice". *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin*, 30(3), 377-406.

66 Macneill, T., & Wozniak, D., (2018): "The economic, social, and environmental impacts of cruise tourism." In *Tourism Management*, 66, pp. 387-404

67 Seidl, A., Guiliano, F., & Pratt, L., (2006): "Cruise tourism and community economic development in Central America and the Caribbean: The case of Costa Rica". *PASOS. Revista de Turismo y Patrimonio Cultural*, 4(2), 213-224.

68 Ibid.

4. Cruise Sector Governance

The governance of the cruise industry is cross-border and multi-level, including within nations. Key players in the industry, such as major corporations and international regulatory organisations, shape the operational standards and practices within the sector while the cruises should also comply with international, regional, national and local policies and laws.

4.1. Market's Actors

The cruise sector comprises a diverse range of market actors that collectively shape its operations and governance. In addition to passengers, who influence market and industry practices through their preferences, and crew members, who are essential to the operation of cruise ships both at sea and on land, the sector comprises various other actors, such as:

- Cruise lines:** The cruise sector comprises more than **50 cruise lines and 250 ships**.⁶⁹ Nonetheless, major corporations dominate the cruise market, with a few large companies holding significant market shares. **Carnival Corporation**, for instance, is estimated to control about 37% of the global market, followed by **Royal Caribbean Cruises LTD** with 24% and **Norwegian Cruise Line Holdings** with 14%. These corporations operate multiple brands and collectively generate substantial revenue, driving the industry's economic engine (e.g. in 2023, Carnival raised over \$24 billion in revenue) (Table 1).⁷⁰ Currently, these three corporations still account for **75% of the global market share**.⁷¹ Additionally, there are minor **luxury and niche operators**, smaller companies focusing on luxury experiences, adventure cruises, or specific destinations, such as Seabourn, Silversea, and Ponant.⁷² The current market structure and in particular the concentration of cruise companies may raise issues in relation to limiting the differentiation of offers, strengthening economic linkages with destination operators and development of more sustainable brands and practices.⁷³
- Tourism organisations:** While considering the cruise industry as a tourism sub-sector, it is important to mention the role of national and regional Tourism Boards. These entities promote cruise destinations and manage tourism strategies to attract cruise lines. Additionally, tour operators and guides provide shore excursions, tours, and other experiences for cruise passengers, thereby contributing to the local economy.
- Industry associations:** One relevant actor within the cruise tourism landscape is the **Cruise Lines International Association (CLIA)**. As the world's largest cruise industry trade

Table 1. Estimate Worldwide Cruise Line Market Share for 2024

Name and number of passengers		Revenue, in Billions	% Revenue
Carnival	12.921.000	\$ 24.68	37,3%
Royal Caribbean	7.740.900	\$ 15.80	23.9%
Norwegian	2.819.300	\$ 9.31	14.1%
All Others	6.665.900	\$ 16.35	24.7%
Grand Total	30.147.100	\$ 66.16	100%

Source: Authors elaborated from Cruise Market Watch (2024): "2024 Worldwide Cruise Line Market Share."

association, CLIA represents over 95% of global cruise capacity and 54 000 travel agents, with 15 000 of the largest travel agencies in the world as voluntary members. CLIA serves as the primary political advocate for the industry, focusing on advocacy, training, and industry standards. It aims to align the interests of cruise lines with regulatory bodies by promoting policies that support the growth of cruise tourism and by supporting sustainability actions. For example, CLIA members are committed to reduce carbon emissions by 40% by 2030 compared to 2008 levels and pursue net-zero carbon neutral cruising globally by 2050.⁷⁴

- Port destinations** play a critical role in the global cruise sector, serving as **vital hubs** for the economic, environmental, and social dynamics of the cruise and shipping industry. These destinations act as **economic gateways** for the cruise sector, facilitating passenger disembarkation, excursions, and services like shopping, dining, and tours, shaping the full cruise passenger experiences on-land. The economic impact of these ports extends beyond the cruise terminal, as a part of collecting **port fees and taxes**, they negotiate the complex relationships between global cruise companies and local economies, representing an opportunity for local revenue generation. Also, to accommodate the **growing size and volume of cruise ships**, port destinations continually invest in **infrastructures** (expansion and modernization), but also improving roads, transportation services, and amenities that support the influx of cruise tourists.⁷⁵ Furthermore, port destinations are, in principle, also responsible for managing and mitigating the environmental impacts of cruise ships.
- Shipbuilders** construct cruise ships, with major shipyards located in **Germany** (Meyer Werft), **Italy** (STX Europe and Fincantieri) and **France**. Supplier companies provide goods and services necessary for cruise operations, including food and beverages, fuel, cleaning supplies, and entertainment. The **Energy Efficiency Design**

69 da Silva, A. L. R., (2021): "An overview of the impact of COVID-19 on the cruise industry with considerations for Florida" Transportation Research Interdisciplinary Perspectives 10: 100391.

70 Cruise Market Watch, (2024): "2024 Worldwide Cruise Line Market Share."

71 da Silva, A. L. R., (2021): "An overview of the impact of COVID-19 on the cruise industry with considerations for Florida" Transportation Research Interdisciplinary Perspectives 10: 100391.

72 Cruise Market Watch, (2024): "2024 Worldwide Cruise Line Market Share."

73 The Tribune, (2022): "Competition law could help cruise challenges."

74 European Commission, Directorate-General for Maritime Affairs and Fisheries, (2023): "Good practices for sustainable cruise tourism – Final report." Publications Office of the European Union.

75 Santos, M., Radicchi, E., & Zagnoli, P., (2019): "Port's role as a determinant of cruise destination socio-economic sustainability." Sustainability, 11(17), 4542.

Index (EEDI),⁷⁶ promoted by the IMO, aimed at reducing CO₂ emissions prescribing a minimum level of efficiency per tonne mile for all vessels constructed after 2013, with an initial CO₂ reduction level by 10% compared to a baseline.⁷⁷ Requirements are tightened every five years to stay ahead of technological improvements. In that context, large size bulkers registered improved hull designs, which positively influenced the EEDI⁷⁸. Shipbuilders are increasingly building eco-friendly vessels that reduce fuel consumption and maximise fuel efficiency to meet environmental IMO Conventions standards,⁷⁹ while also incorporating innovative technologies to further minimise their environmental footprint.⁸⁰ However, the marine transport — including cruise sector — remains heavily dependent on fossil fuel, including LNG, and is not yet on the track to comply with the Paris climate goals.⁸¹

As described in this section, the sector comprises various actors, each influencing regulatory frameworks and practices in distinct ways. This collective influence not only shapes industry standards but also the degree of environmental protection and social justice.

4.2. Regulatory and Cooperative Frameworks

The regulatory frameworks for cruise tourism comprise multiple stakeholders at various levels, increasing the necessity for effective collaboration. This section provides an overview of relevant frameworks at the global, regional, and national and local levels (Table 1).

4.2.1 International Framework and related Conventions

At the global level, the International Maritime Organization (IMO) is the United Nations agency responsible for “safe, secure, and efficient shipping on clean oceans”. While several conventions have been adopted by the 160 IMO Member States that apply to cruise ships, their effectiveness often hinges on the commitments and capacities of individual nations to enforce and adhere to these frameworks:

- The **International Convention for the Safety of Life at Sea (SOLAS)**. This convention is regarded as the most relevant international treaty concerning the safety of **merchant ships**. The first version of this treaty was adopted in 1914, in response to the Titanic disaster, and the last version in 1974. The main objective of the SOLAS Convention is to

Table 2. Actors of the Cruise Sector Governance*

Examples of regulatory authorities	Examples of frameworks and regulations
International	
International Maritime Organisation (IMO), International Labour Organisation (ILO), United Nations (UN)	SOLAS, COLREGS, BASEL convention, and MARPOL conventions
Regional	
European Union, Regional seas programmes, HELCOM, Caribbean Maritime Organization (CMO), Organization of Eastern Caribbean States (OECS), South African Maritime Safety Authority (SAMSA), Port Management Association of Eastern and Southern Africa (PMAESA)	European Green Deal, MSDD, CMOU, Barcelona, Nairobi, Helsinki, Cartagena conventions
National and local	
National governments, maritime authorities, national environmental agencies and health departments	National regulations on maritime safety, pollution prevention, and labour standards; local regulations governing port operations and environmental protection measures.

Source: Authors (2024). *UNEP/MAP: United Nations Environment Programme/Mediterranean Action Plan, HELCOM: Helsinki Commission, SOLAS: International Convention for the Safety of Life at Sea; COLREGS: Convention on the International Regulations for Preventing Collisions at Sea; MARPOL: International Convention for the Prevention of Pollution from Ships, MSSD: Mediterranean Strategy for Sustainable Development, CMOU: Cruise Memorandum of Understanding.

specify **minimum standards for the construction, equipment and operation of ships**, compatible with their safety standards. **Flag States** are responsible for ensuring that ships under their flag comply with the requirements of the SOLAS Convention. To ensure such compliance, a number of certificates are prescribed by the Convention to help confirm safety standards are met by the ships. Moreover, State Parties to the SOLAS Convention can inspect ships of others if there are clear grounds for believing that the ship and its equipment do not substantially comply with the Convention’s requirements. This is referred to as “**port State control procedure**”.⁸² However, while countries are tasked with ensuring compliance, different factors can impact the rigour of inspections conducted by countries. Moreover, the port State control procedure can fall short due to available resources at port destinations.

76 International Maritime Organization, (2024): *Improving the energy efficiency of ships*.

77 Tonazzini, D., Fosse, J., Morales, E., González, A., Klarwein, S., Moukaddem, K., Louveau, O. (2019) “Blue Tourism. Towards a sustainable coastal and maritime tourism in world marine regions.” Edited by eco-union. Barcelona

78 OECD (2018): “Shipbuilding Market Developments Q2-2018.”

79 Lee, T., Nam, H., (2017): “A Study on Green Shipping in Major Countries: In the View of Shipyards, Shipping Companies, Ports, and Policies.” The Asian Journal of Shipping and Logistics. Volume 33, Issue 4, December 2017, Pages 253-262

80 Adams, S.-A., Font, X. and Stanford, D. (2017): “All aboard the corporate socially and environmentally responsible cruise ship: A conjoint analysis of consumer choices”, *Worldwide Hospitality and Tourism Themes*, Vol. 9 No. 1, pp. 31-43.

81 NABU, (2023): “Cruise Ranking 2023”

82 IMO, (2019): “International Convention for the Safety of Life at Sea (SOLAS)”.

- The **Convention on International Regulation for Preventing Collision at Sea (COLREGS) (1974)**. This Convention establishes 10 Rules to provide guidance on determining safe speed for ships, assessing the risk of collision between vessels, and the conduct of vessels operating in or near traffic separation schemes.⁸³ Yet, the challenges lie in ensuring that all vessels, particularly in busy and congested waters, consistently adhere to these regulations, which require effective monitoring and enforcement mechanisms.
- The **International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) (1995)**. This Convention was the first to establish basic requirements on training, certification and watchkeeping for seafarers at the international level. Previously, these requirements were established by individual governments. Instead, the Convention sets **minimum standards** which countries are obliged to meet or exceed. This Convention regulates in detail general provisions, master, deck and engine departments, radiocommunication and radio personnel, special training requirements for personnel on certain types of ships, emergency procedures, occupational safety, medical care and survival functions, alternative certification, and watchkeeping.⁸⁴ While this Convention mandates that countries meet or exceed the standards, the variability in national implementation raises questions about the overall effectiveness of the training provided to crew members, impacting the overall safety across the cruise tourism sector.
- The **International Convention for the Prevention of Pollution from Ships (MARPOL) (1998)**.⁸⁵ This international convention covers the prevention of marine pollution by ships from operational or accidental causes. The United Nations Environment Programme (UNEP) has identified cruise tourist ships as one of the principal pollution sources of marine ecosystems.⁸⁶ The most significant feature of MARPOL is that all ships engaged in international navigation must have a **Waste Management Plan**, as for the collecting, storing, processing, and disposing of waste. MARPOL regulates several aspects of ship and port operations, including oil related hazardous emissions (Annex I), air emissions of NO_x, SO_x, VOCs, on-ship incineration and CFCs (Annex VI), and wastewaters (Annex IV). Also, it imposes the requirements for ports to provide **facilities to treat ship-generated residues and garbage**

that cannot be discharged into the sea⁸⁷ (e.g., Directive 2019/883 on port reception facilities). Yet, despite these regulations, many ports lack the necessary infrastructure to treat generated waste, potentially undermining the objective of the Convention.

- The **International Labour Organization (ILO)**, a specialised agency of the United Nations focusing on labour-related issues, is also relevant for cruise shipping. Its most relevant convention is the **Marine Labour Convention (2006)** which applies to all commercially operated ships except for fishing vessels. The Convention addresses the welfare of seafarers, including decent living conditions, minimum wages, maximum hours of work, health and safety protection, accommodation requirements, food provisions and medical care. Nevertheless, the application of these standards often varies, raising concerns about the actual living conditions experienced by crew members.

While **international conventions** provide a crucial framework for establishing overarching goals and standards for the cruise tourism sector, their implementation is critically dependent on the commitment and capacities of flag and port States. Without robust enforcement mechanisms and genuine political will, the potential benefits of these conventions may remain largely unfilled (see Chapter 5).

4.2.2 Regional Agreements and Cooperation Mechanisms

Regional agreements are key to govern the cruise tourism sector and promote coherence in policy and management actions at regional level. The developments below provide an overview of relevant regional frameworks and related agreements for the Caribbean, Mediterranean and the Western Indian Ocean.

4.2.2.1 Caribbean

As the most popular cruise destination in the region, the Caribbean region setup different cooperation mechanisms and regional agreements that apply to the shipping industry, including the cruise sector. These include:

- The **Caribbean Community (CARICOM)** through its member arrangement on Single Market and Economy (CSME) facilitates the free movement of goods, services, capital, and people, impacting the cruise industry by promoting a unified market.
- The **Caribbean Tourism Organization (CTO)** develops sustainable tourism policies, such as the Caribbean Sustainable Tourism Policy Framework. This framework focuses on preserving natural resources, promoting cultural heritage, and enhancing community involvement in tourism.
- The **Caribbean Shipping Association (CSA)** focuses on promoting the interests of Caribbean shipping, improving maritime safety, environmental protection, and industry standards.

83 IMO, (2019): "Convention on International Regulation for Preventing Collision at Sea (COLREGS)".

84 IMO, (2019): "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers" (STCW).

85 IMO, (2019): "International Convention for the Prevention of Pollution from Ships (MARPOL)" The International Convention for the Prevention of Pollution from Ships (MARPOL) includes regulations aimed at preventing and minimising pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes. In particular, the Annexes are dedicated to: Annex I Regulations for the Prevention of Pollution by Oil (1983), Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (1987), Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (1992), Annex IV Prevention of Pollution by Sewage from Ships (2003), Annex V Prevention of Pollution by Garbage from Ships (1988), and Annex VI Prevention of Air Pollution from Ships (2005).

86 Carić, H., & Mackelworth, P., (2014): "Cruise tourism environmental impacts—The perspective from the Adriatic Sea". Ocean & coastal management, 102, 350-363.

87 Pallis, A. A., Papachristou, A. A., & Platias, C., (2017): "Environmental policies and practices in Cruise Ports: Waste reception facilities in the Med". SPOUDAI-Journal of Economics and Business, 67(1), 54-70.

- The **Association of Caribbean States (ACS)** launched the Sustainable Tourism Zone of the Greater Caribbean (STZC) to promote sustainable tourism practices, including in the cruise sector, to protect the region's natural and cultural resources.
- The **Caribbean Community and Common Market (CARIFORUM)** engages in dialogue and agreements with various international partners through the Economic Partnership Agreement (EPA).⁸⁸ These agreements facilitate trade and investment, impacting the cruise tourism sector by enhancing infrastructure, fostering economic growth, and improving regulatory standards.
- The **Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)** aims to safeguard the Caribbean Sea from pollution. The Convention's Regional Activity Centers (RACs) focus on various aspects of environmental protection. Specifically, the **RAC-Rempeitc** (Regional Marine Pollution Emergency, Information, and Training Center for the Wider Caribbean) assists countries to implement international conventions created to reduce pollution from ships, while **RAC-Spaw** (Specially Protected Areas and Wildlife) aims to protect endangered species and habitats.
- The **Organization of Eastern Caribbean States (OECS)** is a regional organisation comprising several Eastern Caribbean countries. It aims to promote economic integration, harmonise policies, and foster cooperation among its member States. The OECS covers various areas, including maritime safety, environmental protection, and tourism development. Specifically, it promotes maritime safety and environmental protection through regional initiatives aligned with international standards and fosters collaborative projects including port infrastructure improvements and marine pollution control. Under the OECS the **Eastern Caribbean Regional Ocean Policy (ECROP)** was adopted that sets a framework for the sustainable use of ocean resources, including those related to the cruise industry.

The Caribbean has established a strong foundation for sustainability through regional cooperation and agreements such as CARICOM, the Cartagena Convention and OECS. Yet, specific challenges remain in the cruise sector, particularly in ensuring equitable benefits and environmental sustainability. Enhanced cruise-specific, multi-stakeholder collaboration is essential to securing a more sustainable future for the industry in the region.

4.2.2.2 Mediterranean

As the second most popular region for cruise tourism, the Mediterranean region has developed a significant number of frameworks that regulate the industry's operations. Regulatory efforts are mainly bolstered by UNEP/MAP through agreements such as the Barcelona Convention and its Protocols. Key organisations and agreements include:

- **Barcelona Convention:** formally known as the Convention for the Protection of the Mediterranean Sea Against

Pollution, is a regional environmental agreement that aims to protect the Mediterranean Sea from pollution. The Barcelona Convention regulates the cruise sector primarily through broader measures (f.i. MARPOL), aimed at preventing pollution and protecting biodiversity via standards on pollution control, waste management, and emissions. This is particularly achieved through its various protocols, which target marine, air, and land-based pollution sources. The protocol concerning **Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (1995)**, specifically addresses pollution from ships, including operational pollution caused by cruise liners. The Protocol for the **Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities** applies to cruise ships, particularly in relation to waste brought ashore for disposal. Another example of how the Barcelona Convention indirectly affects cruise ships is the **Hazardous Wastes Protocol** that imposes restriction on emissions and waste management practices.

- **UNEP/MAP:** Initiated by the United Nations Environment Programme (UNEP), the **Mediterranean Action Plan (MAP)** is a comprehensive framework for regional cooperation. It supports the implementation of the **Barcelona Convention** and its Protocols and promotes sustainable development in the Mediterranean. This MAP involves monitoring and controlling pollution, protecting biodiversity, and ensuring sustainable resource use, benefiting both shipping and cruise sectors. The RACs most relevant for the cruise sector include:
 - *The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC):* focuses on enhancing regional cooperation in preventing and responding to marine pollution incidents.
 - *The Regional Activity Centre for Specially Protected Areas (RAC/SPA):* dedicated to the protection of biodiversity and the management of specially protected areas, the RAC provides guidelines for sustainable tourism and eco-friendly practices.
 - *The Regional Activity Centre for Sustainable Consumption and Production* promotes cleaner production and sustainable consumption patterns through guidelines for various industries, including tourism.
 - **Plan Bleu** dedicated to supporting the transition towards a green and blue economy, working as **Mediterranean Observatory on environment and sustainable development**.
 - The **Mediterranean Strategy for Sustainable Development (MSSD)** is a comprehensive framework aimed at promoting sustainable development across the Mediterranean region within the Barcelona Convention. Specifically, the MSSD serves as a strategic guidance document for regional cooperation, emphasising the integration of environmental considerations into socio-economic development.
 - **MedCruise Association** is an association representing Mediterranean cruise ports. It promotes the interests of its members by enhancing the cruise experience and

⁸⁸ Barbados Ministry of Foreign Affairs and Foreign Trade, (2020): "The CARIFORUM EU Economic Partnership Agreement".

marketing the Mediterranean as a premier cruise destination. It plays a role in facilitating collaboration among ports, cruise lines, and other stakeholders to sustain cruise tourism and improve infrastructure and services.

- The **Mediterranean Memorandum of Understanding (MoU) on Port State Control** is a formal agreement among 11 Mediterranean countries to enforce international maritime safety, security, and environmental standards. It establishes obligations for port inspections and compliance monitoring to ensure safe and environmentally friendly maritime operations.
- The **Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)** provides guidance for the protection of cetaceans, particularly interesting for tourism, but also vulnerable to disturbance, collisions and noise. ACCOBAMS promotes a code of conduct to minimise disturbances to cetaceans during tourism activities, emphasising safe vessel practices and noise reduction.

Similarly to the Caribbean, the Mediterranean region has implemented robust frameworks to regulate cruise tourism, primarily through the Barcelona Convention and UNEP/MAP initiative. While these initiatives focus on pollution control and biodiversity protection, there is still scope to enhance collaboration between ports, cruise operators and environmental bodies to safeguard the Mediterranean's environmental and socio-economic balance.

4.2.2.3 Western Indian Ocean

As an emerging destination for cruise tourism, the Western Indian Ocean region presents some regulatory mechanisms affecting the shipping and cruise industry, including:

- **Indian Ocean Rim Association (IORA)** is a regional inter-governmental organisation established in 1997 to promote cooperation and sustainable development within the Indian Ocean region. Comprising 22 member States and 10 dialogue partners, IORA has four main objectives: fostering regional integration, enhancing maritime safety and security, promoting economic growth, and addressing environmental challenges in the Indian Ocean. IORA operates through various working groups and task forces that focus on specific sectors such as maritime safety, fisheries management, tourism, and environment. It also promotes cooperation in maritime safety, search and rescue operations, marine pollution response, and port management practices.
- The **Nairobi Convention for the Protection, Management and Development of Coastal and Marine Environment of the Western Indian Ocean (WIO)** region is a regional agreement aimed at fostering cooperation among WIO countries to safeguard the marine and coastal environment. Adopted in 1985, its objectives include preventing, reducing, and controlling pollution from land-based sources, as well as protecting and managing coastal and marine biodiversity. The Convention encourages sustainable development practices that balance environmental conservation with socio-economic needs. For the shipping and cruise sector, the Nairobi Convention supports the development of sustainable ports through scenario

analysis⁸⁹ and toolkits⁹⁰ on the development of sustainable ports facilities and operations in the blue economy context. Additionally, Article 12 of the Amended Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (2015)⁹¹ mandates Parties to collaborate in addressing pollution emergencies, leading to initiatives such as the Regional Oil Spill Preparedness in Eastern Africa and the Western Indian Ocean.⁹²

As an emerging cruise destination, the WIO has established some frameworks which address maritime safety, environmental protection, and port sustainability. However, further efforts are needed to develop cruise-specific guidelines and strengthen regional cooperation to ensure the sustainability of the sector while balancing the economic and environmental priorities of the region.

The regulatory landscape governing the cruise tourism sector varies significantly across regions, leading to varying levels of regulations and degrees of attention to sustainability of the sector. This **regulatory disparity** among regions can create **international inconsistencies and loopholes**, potentially undermining effective oversight of global cruise activities. These risks should be mitigated through **strengthening cooperation among regions**, specific to cruise tourism, and that would allow a more aligned interplay among international, regional, national and destination-level regulations and sustainability targets.

Moreover, whilst regional agreements and frameworks demonstrate active regional cooperation, both intergovernmental and multi-sectoral, the absence of region-specific cooperation mechanisms focused on cruise tourism may undermine the needed dedication to foster a more regional cohesive regulatory environment for cruise tourism that should increasingly regulate for and incentivise sustainable cruise operations.

4.2.3 National and Local Regulations

National and local regulations play a crucial role in shaping the operational framework of cruise tourism and impact of the cruise sectors worldwide. These regulations are developed within the individual country's legislation and are enforced by national governments and local authorities. National governments, maritime authorities, national environmental agencies and health departments design and implement national regulations on maritime safety, pollution prevention, and labour standards, in line with international conventions. The examples below illustrate how national and local authorities have applied regulations to mitigate the negative externalities of cruise tourism.

⁸⁹ United Nations Environment Programme, Nairobi Convention Secretariat and Council for Scientific & Industrial Research, (2023): "Towards Sustainable Port Development in the Western Indian Ocean. Scenario Analysis." UNEP, Nairobi, Kenya

⁹⁰ Ibid.

⁹¹ United Nations Environment Programme, (2015): *The Amended Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (Amended Nairobi Convention)*: Mahe, Seychelles.

⁹² United Nations Environment Programme / Nairobi Convention and the International Maritime Organization, (2020): "Regional Oil Spill Preparedness in Eastern Africa and the Western Indian Ocean: Background Document."

Box 1. National and Local Cruise Tourism Regulations

Examples from the Caribbean region

Passenger Head Tax - Port Fees

In the late 1990s, CARICOM countries, with the support of the Caribbean Tourism Organisation (CTO), attempted to implement a regional “head tax” of around \$20 per cruise passenger to manage the economic and environmental impact of cruise tourism. However, industry disagreements over the tax rate led to the initiative’s collapse, with countries pursuing their own policies instead. Today, nations like The Bahamas and the British Virgin Islands charge a \$15 head tax, reinvesting the revenue into tourism infrastructure. Some countries, like Aruba and the British Virgin Islands, also impose environmental protection fees to fund conservation projects.⁹³

Environmental regulation

Bahamas and Barbados, require cruise ships to comply with strict regulations regarding ballast water and waste discharge. It is illegal for cruise ships to discharge untreated sewage, greywater, or oily waste into their waters. Their waste must be treated on board or discharged at designated facilities in ports. As a community-driven innovative initiative, a Barbados Marine Spatial Plan⁹⁴ has also been implemented in Barbados to manage marine resources and reduce pollution, and regulate environmental issues also related to cruise industry activities.

Green Port Initiatives

St. Lucia and St. Vincent and the Grenadines are actively participating in the Caribbean Green Economy Initiative,⁹⁵ which promotes sustainable port operations. This includes reducing the environmental impact of cruise ships through measures such as waste reduction, energy efficiency, and the promotion of eco-friendly shore excursions.

Examples in Europe

Venice

Over the past decade, the number of cruise ships visiting Venice annually grew significantly, with their size doubling, raising concerns on environmental degradation, prompting calls for a sustainable development plan.⁹⁶ In 2021, the Italian government banned cruise ships and other large vessels from the Venice Lagoon, redirecting them to the nearby industrial port of Marghera.⁹⁷ Additionally, cruise ships are required to use cleaner fuels and advanced technologies to minimise emissions. The enforcement of these measures is overseen by the Venice Port Authority and Italian environmental agencies. Nevertheless, despite this regulatory effort, critics argue that shifting large cruise ships to the industrial port

of Marghera does not entirely solve the environmental issues, as it merely relocates the pollution. Moreover, ensuring compliance with cleaner fuels and advanced technologies is challenged by limited enforcement resources. There are also concerns about the economic impact on Venice’s tourism sector and the adequacy of infrastructure at Marghera to handle the redirected cruise traffic efficiently.⁹⁸

Amsterdam

A decision was approved by Amsterdam city council, aimed to ban large cruise ships from the city’s central terminal to reduce pollution and manage the flow of tourists and in line Amsterdam’s sustainability goals and reduce the negative impact of cruise tourism on the environment and local infrastructure.⁹⁹ The city has reached an agreement on steps to begin limiting the number of cruise ship calls at the port as of 2026. It is part of a larger plan to ultimately remove the cruise terminal from the city and manage the influx of tourists into the city. According to the recently disbanded Amsterdam Cruise Port foundation, the city was receiving as many as 150 cruise calls each year and handling over 300,000 passengers. In 2026, the new limit will be a maximum of 100 calls annually.

Norway

Norway has devised an ambitious strategy to cut emissions from cruise ships. The country welcomed nearly 5 million cruise ship passengers in 2023,¹⁰⁰ with ships collectively consuming approximately 170 million litres of fuel annually, contributing around 3 percent of Norway’s total greenhouse gas emissions. While most fuel is burned at sea, approximately 20 percent—equivalent to nearly 34 million litres—is consumed while ships are in port or navigating fjords.¹⁰¹ To address these concerns, 2022, the Ministry of Climate and Environment tasked the Norwegian Maritime Authority (NMA) to devise plans for achieving zero emissions from cruise ships, tourist boats and ferries in fjords. From 2026, only ships powered by alternative fuels will be permitted to visit the country’s fjords, aiming to safeguard its unique natural landscapes from the adverse effects of marine diesel oil and unchecked tourism. Even liquefied natural gas (LNG), previously considered a cleaner option, will no longer meet the standards for cruise ships operating in Norwegian fjords.¹⁰²

Source: Authors (2024)

93 Government of Virgin Islands, (2018): “Visitors to the Virgin Islands are being reminded of the Environmental and Tourism Levy.”

94 Barbados Marine Spatial Plan

95 UNEP, (2024): “Assisting Caribbean States’ Sustainable Development through Green Economy (ACSSD-GE)”

96 Figueroa D., (2021): “Italy: Cruise Ships Banned from Venice Lagoon, Waterways Declared National Monument.” The Library of Congress.

97 Ibid.

98 Giuffrida A., (2022): “Cruise passengers shuttled into Venice by motor boat to dodge big ships’ ban.” The Guardian.

99 CruiseCritic, (2023): “Amsterdam Votes to Ban Cruise Ships; Additional Steps Still Required.”

100 Hanley S., (2024): “Norway Moves Aggressively To Curb Cruise Ship Emissions.” Clean Technica.

101 Ibid.

102 Ibid.



© Boat in Caribe. S. Bush/Pexel

These case studies show the importance of national and local authorities in complementing existing international and regional frameworks regulating the cruise impact. Nonetheless, countries have **different capacities and resources to enforce regulations and ensure compliance**, which has contributed to the diffusion of the phenomenon of flags of convenience. This practice allows cruise ships to register in countries that often have more lenient regulatory frameworks, complicating or limiting enforcement mechanisms and transparency efforts¹⁰³ The prevalence of flags of conven-

ience underscores the challenges associated with regulating the cruise sector at national level and in having a cohesive and collaborating regulatory and, more broadly, governance mechanism at the level of marine regions. Such shortcomings are exacerbated by the high competitiveness characterising the industry, leading States and cruise lines to prioritise economic gains over stringent regulatory compliance, leading to regulatory arbitrage and lapses in safety and environmental standards.¹⁰⁴

103 Negret, C. F. L., (2016): "Pretending to be Liberian and Panamanian; Flags of Convenience and the Weakening of the Nation State on the High Seas". J. Mar. L. & Com., 47, 1.7.

104 Ford, J. H., & Wilcox, C., (2019): "Shedding light on the dark side of maritime trade—A new approach for identifying countries as flags of convenience". Marine Policy, 99, 298-303.

5. Challenges and Opportunities for Sustainable Cruise Governance

Given the significant environmental, social, and economic externalities linked to the cruise sector, there is a pressing need for public and private decision-makers to prioritise sustainability within the sector. This entails aligning international efforts aimed at reducing greenhouse gas emissions and protecting biodiversity. This section outlines related challenges and opportunities in fostering a more sustainable cruise tourism sector.

5.1. Challenges for SCT

The cruise sector faces challenges that hinder its sustainability. From a supply side, while many leading cruise companies acknowledge the urgent need to transition towards more sustainable practices, the pursuit of **short-term financial gains** often takes precedence over long-term sustainability objectives.¹⁰⁵ This can lead to decisions that prioritise immediate financial benefits over broader environmental and social considerations. A short-term approach may allow cruise lines to maximise profits in the near term, potentially undermining long-term environmental conservation efforts.¹⁰⁶ As a result, this underscores the importance of a cruise governance that increasingly favours cooperation and sustainability. Governance and regulatory challenges are of two kinds: i) in the current design of regulations, at different levels, with gaps, fragmentation and inconsistencies across jurisdictions; ii) in the implementation phase of the regulations, at different levels, due to weak enforcements.

5.1.1. Regulatory Gaps

The cruise sector is subject to varying regulatory frameworks across jurisdictions. This can create degrees of inconsistencies across the regulatory cruise landscape, limiting the needed coherence and uniformity.¹⁰⁷ While international organisations, such as the IMO, establish a baseline and standards for safety and environmental protection, due to their international scope, individual countries remain responsible for interpreting and implementing these standards. As a result, different countries can have stricter or weaker regulations, leading to a complex web of rules. For instance, national regulations pay different degrees of attention on aspects of sustainability, leading to different efforts by cruise lines on implementing eco-efficiency practices.¹⁰⁸ This can potentially make compliance challenging for cruise lines operating in the itineraries.

Jamaica, Mauritius, and Turkey exemplify varying levels of effort in regulating the sustainability of the cruise sector, largely due to differences in the application and enforcement of international conventions. **Jamaica** has struggled with enforcing waste management regulations for vessels, particularly in smaller ports, where limited monitoring capacity has allowed some ships to discharge sewage into the ocean.¹⁰⁹ Although the country has adopted MARPOL's pollution prevention standards, its enforcement is weaker compared to stricter regions like the U.S. and EU. Nonetheless, Jamaica has made progress in marine protection through the establishment of marine protected areas (MPAs) and regulations aimed at controlling pollution from cruise ships.

Mauritius has faced challenges in enforcing shipping regulations, particularly regarding waste management and oil spill responses. The 2020 MV Wakashio oil spill exposed¹¹⁰ significant gaps in the country's environmental and safety regulation implementation. Despite adhering to international conventions, Mauritius' maritime industry is still developing its capacity for monitoring and compliance.

Turkey, which experiences high maritime traffic through the Bosphorus Strait, also faces challenges in enforcing environmental and safety regulations. While the government has made efforts to regulate air pollution from ships and adheres to MARPOL Annex VI, enforcement is inconsistent, particularly outside EU waters. Turkey's oversight of ballast water management and oil spill preparedness has been criticised, highlighting the country's limited capacity to control illegal discharges and emissions compared to stricter EU enforcement in the Mediterranean.

Other countries like **The Bahamas, Seychelles, and Greece** have adopted proactive measures, often exceeding minimum IMO requirements to ensure stricter environmental protection and safety compliance. These disparities create a fragmented regulatory landscape, where enforcement and compliance vary based on each country's priorities and capabilities. In all cases, the varying degrees of enforcement highlight the challenges countries face in aligning their national legislation with international sustainability standards for the cruise sector, with differing levels of compliance based on resources and capacity, resulting in inconsistent approaches among countries.

Moreover, not all potentially harmful impacts of cruise tourism are regulated at global level. For example, limited global regulations on grey water discharge to the sea is one area that needs further attention. Local bans on the discharge of grey-water have been set by individual States, e.g. Bahamas and Barbados. Although it is less contaminated than sewage, grey water contains components of concern.¹¹¹ Regulatory gaps can be identified at the jurisdiction and port levels. The most relevant gaps lie in the **enforcement of safety and environmental regulations by flag States**. Attention has been given to the discharge of wash water from open-loop scrubbers

105 Jones, P., Comfort, D., & Hillier, D., (2019): "Sustainability and the world's leading ocean cruising companies". Journal of Public Affairs.

106 Avagyan, A., (2022): "Addressing the Criticism on Flags of Convenience: Should Flags of Convenience Be Abolished for the Cruise Industry?" Southwestern Journal of International Law 28, 129-147

107 Boy, C., & Neumann, S. (2012): "Regulatory frameworks of the cruise industry." The business and management of ocean cruises. CABI, Wallingford/Cambridge, 30-45.

108 Sun, R., Ye, X., Li, Q., & Scott, N., (2024): "Assessing the eco-efficiency of cruise tourism at the national Level: Determinants, challenges, and opportunities for sustainable development". Ecological Indicators, 160, 111768.

109 World Bank, (2019): "Marine Pollution in the Caribbean: Not a Minute to Waste."

110 Scarlett, et al. (2021): "MV Wakashio grounding incident in Mauritius 2020: The world's first major spillage of Very Low Sulfur Fuel Oil."

111 Andersson, K., et al., (2016): "Shipping and the Environment. Springer Berlin Heidelberg."

5. Challenges and Opportunities for Sustainable Cruise Governance

impacting ecosystems¹¹² with countries taking steps in regulating the discharge and some not indicating gaps in their regulatory framework on open loop scrubbers. Below is a list of countries that, as per June 2024, did not have regulations in open loop scrubbers:

Table 3. Countries Permitting Open-Loop Scrubber Discharge

Country	Open-Loop Scrubber Regulation
Hong Kong	While a ban on EGCS (Exhaust Gas Cleaning System) wastewater is not explicitly stated, Hong Kong regulation L.N 135 of 2018 allows an exemption from the use of non-compliant fuel if authorities are satisfied with the abatement technology employed to reduce sulphur dioxide emissions.
New Zealand	Maritime New Zealand has issued non-statutory guidance on the use of exhaust gas cleaning systems (scrubbers) for ships, ports, and regional authorities. While not legally binding, the guidance encourages ships operating in New Zealand waters to engage with relevant authorities and, as a precaution, avoid discharging scrubber effluent near shore. Suggested measures include using compliant low-sulphur fuel in sensitive environments or operating scrubbers in closed-loop mode, retaining effluent until disposal at the next available port facility.
United States (Hawaii)	The State of Hawaii's Clean Water Branch issued a 'Blanket Section 401' Water Quality Criteria (WQC), covering 27 categories of effluent discharge from applicable vessels, including Exhaust Gas Cleaning System (EGCS) wash water. These discharges, incidental to normal vessel operations, must receive the best available control or treatment before entering Hawaii's waters.
United Arab Emirates	Abu Dhabi Ports has confirmed that, under national legislation, both closed and open-loop exhaust gas cleaning systems are permitted within port limits, with certain restrictions. These systems must comply with IMO/MARPOL Annex VI requirements and standards.

Source: Elaborated from NorthStandard (2024)¹¹³

These gaps have direct effects on limiting pollution locally. In addition to the importance of having a comprehensive regulatory framework at national level, it is crucial to integrate these regulations into regional mechanisms fostering cohesion and to allow countries to scale up their enforcement ability at national level. **Regional frameworks** have the potential to be effective by boosting local self-reliance, addressing the effects of high competition on sustainability transitions, and counterbalancing the market power of the cruise industry.

Non-mandatory guidelines for cruise sustainability¹¹⁴ covering a variety of operational aspects of cruise operations, while being valuable, do not always compensate for the lack of mandatory rules. For example, a study conducted by the EU concluded that important gaps still exist in the regulation of **food waste, grey water, under and over water noise, black carbon, scrubber wash water, and mammal collisions.**¹¹⁵ This is shown by **MARPOL Annex V** which allows for the discharge of garbage, food waste, cargo residues (classified as non-harmful to the marine environment), cleaning agents and additives (classified as non-harmful to the environment) contained in wash water, and carcasses of animals.¹¹⁶ Restrictions are set for certain special areas designated by IMO, such as the Mediterranean Sea, the Baltic Sea, the Black Sea, the Red Sea, the Gulfs, the North Sea, the Wider Caribbean Region and the Antarctic area. Nevertheless, this material might cause local impacts on the environment in areas with dense ship traffic.

5.1.2. Weak Monitoring Enforcement

Regulatory inconsistencies and gaps, as discussed earlier, reveal a broader issue of **weak enforcement and compliance mechanisms** that undermine the effectiveness of existing regulations. Even when regulations are established, enforcement weaknesses often render them ineffective due to several contributing factors. One significant issue is the prevalence of the **"Flag of Convenience (FoC)"** (Box 2), where many cruise ships are registered in countries that offer more lenient regulations rather than operating under the jurisdiction where they primarily sail. This practice leads to weaker regulatory oversight and enforcement by Flag States (or FoC), resulting in **lax adherence to international standards**. Moreover, while Port States have the authority to inspect foreign ships and enforce compliance with international and national regulations, resource constraints and varying national priorities can lead to inconsistent enforcement across different ports.¹¹⁷ While many national and port authorities are responsible for monitoring cruise ship compliance when docked, they often lack the technology, financial resources, or jurisdiction to continuously track environmental compliance, especially concerning air pollution, waste disposal, and ballast water management. This limits their ability to effectively enforce stringent standards.¹¹⁸ Furthermore, many ports rely on the cruise industry for revenue and tourism, creating potential conflicts of interest

114 Plan Bleu, (2022): "Guidelines for the sustainability of cruising and recreational boating in the Mediterranean region."

115 European Commission, Directorate-General for Maritime Affairs and Fisheries. (2023): "Good Practices for Sustainable Cruise Tourism" - Final report. Publications Office of the European Union.

116 MARPOL, Annex V. "Prevention of Pollution by Garbage from Ships."

117 Ibid.

118 Tonazzini, D., Fosse, J., Morales, E., González, A., Klarwein, S., Moukaddem, K., Louveau, O. (2019): "Blue Tourism. Towards a sustainable coastal and maritime tourism in world marine regions". Edited by eco-union. Barcelona

112 Picone, et al., (2023): "Impacts of exhaust gas cleaning systems (EGCS) discharge waters on planktonic biological indicators."

113 North Standard, (2024): "No Scrubs: Countries and Ports where Restrictions on EGCS Discharges apply."

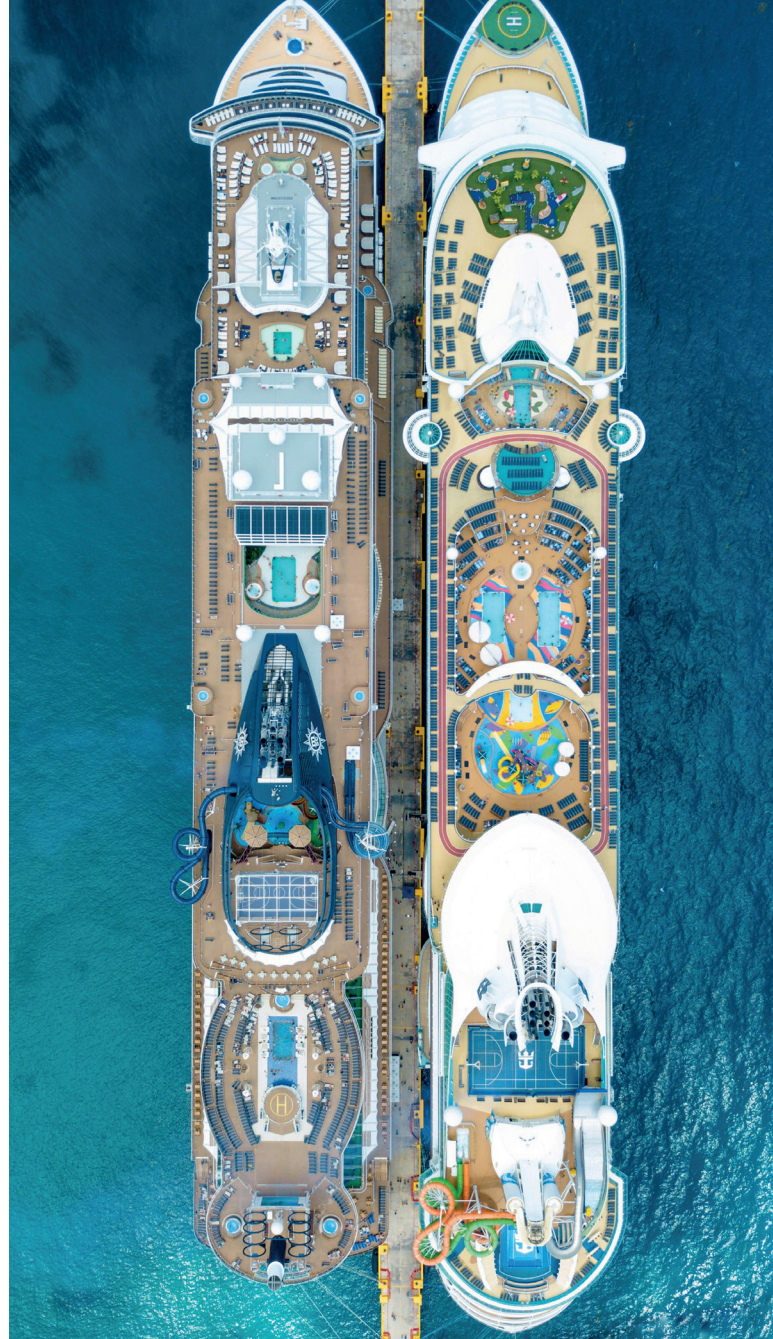
that may result in leniency in enforcement. This inconsistency highlights the need for **cruise-specific regional cooperation** to improve enforcement and facilitate resource sharing effectively.

Examples of challenges in enforcing cruise regulations or more sustainable practices include Key West, Florida, and Venice, Italy. **Key West** has experienced difficulties in enforcing local regulations on cruise ships, particularly regarding passenger limits. The city has struggled to manage the size and number of cruise ships visiting its port, leading to overcrowding and strain on local resources.¹¹⁹ Similarly, **Venice** has faced significant challenges in enforcing regulations on cruise ships due to high tourist traffic and lack of alternative infrastructures¹²⁰. Regulations designed to limit the size and frequency of cruise ships entering the city's historic canals have seen inconsistent enforcement. These examples illustrate how **enforcement challenges**, exacerbated by weak compliance mechanisms and varying regulatory priorities, can undermine efforts to manage cruise tourism sustainably. They highlight the need for more robust regional cooperation and effective enforcement strategies to address these persistent issues.

Given the global operations of cruise ships, combined with the widespread use of flags of convenience, ensuring compliance with regulatory requirements becomes even more challenging, compromising efforts to promote sustainability, protect the environment, and ensure the safety and well-being of workers and passengers aboard cruise ships.¹²¹ Box 2 provides a detailed explanation of the role of "flag of convenience" in context of cruise tourism and its sustainability.

Box 2. Flags of Convenience (FoC) in the Cruise Industry

The practice of registering ships under a "**Flag of Convenience**" (FoC) occurs when a cruise company registers its vessels in a foreign country with more lenient regulations than those of the company's home nation. These countries, often referred to as "**Flag States**" provide various incentives such as lower taxes, minimal regulatory oversight, and weaker labour laws, making them attractive to businesses seeking to reduce operational costs.¹²² One of the primary benefits for cruise companies to use FoC is to take advantage of **lower taxes** in the flag state. Many of these countries offer tax breaks to attract ship registrations. This allows cruise companies to reduce their tax liabilities significantly, keeping more profits while avoiding the higher corporate taxes of their home countries.¹²³ FoC countries often have less stringent **labour regulations**. This allows cruise companies to circumvent more rigorous protections for workers that might be required under domestic law. For example, minimum wage standards, working conditions, and safety regulations are



© B. Nelson/Unsplash.

often less strictly enforced.¹²⁴

Many Flag States do not rigorously enforce international **environmental standards** related to waste disposal, emissions control, or pollution. As a result, cruise companies are able to engage in practices such as discharging waste into international waters or burning fuels that generate higher levels of pollution, all without significant penalties or oversight.¹²⁵ In this sense, while FoC practices offer significant economic advantages to cruise companies, they come at a cost to sustainability, labour rights, and environmental protection. These gaps in regulation allow the cruise industry to continue practices that contribute to environmental degradation and social inequities.

119 The Maritime Executive, (2024): "Florida Permits Larger Cruise Ships in Key West Over Local Objections."

120 Euronews, (2023): "I've lived in Venice for 8 years. Why are cruise ships still stopping here when they've been banned?"

121 Avagyan, A., (2022): "Addressing the Criticism on Flags of Convenience: Should Flags of Convenience Be Abolished for the Cruise Industry?". Southwestern Journal of International Law 28, 129.

122 Ibid..

123 Boczek, B.A., (1962): "Flags of Convenience: An International Legal Study," Cambridge, MA and London, England: Harvard University Press, .

124 Negret, Carlos Felipe Llinás. "Pretending to be Liberian and Panamanian: Flags of Convenience and the Weakening of the Nation State on the High Seas." J. Mar. L. & Com. 47 (2016): 1.

125 Demaria, F., (2010): "Shipbreaking at Alang-Sosiya (India): An ecological distribution conflict." Ecological Economics.

5. Challenges and Opportunities for Sustainable Cruise Governance

Despite the relevant challenges affecting the cruise sector's ability to shift towards more sustainable practices, there are promising opportunities to pursue. These opportunities focus on building upon existing regulatory frameworks and governance mechanisms, enhancing the role of ports, and leveraging technological developments alongside sustainability certifications.

5.2. Regulatory and Governance Opportunities

Existing global and regional organisations and related instruments, in collaboration with national entities, can guide regulatory assessments at various levels and identify actions to enable more sustainable cruise tourism operations, such as reducing emissions, improving waste management, and enforcing environmental regulations. They can also support the establishment of sector-specific governance mechanisms to oversee the cruise sector's environmental and operational practices. Existing frameworks, such as the MARPOL regulations, provide a solid foundation for expanding sustainability within the cruise sector. Since its inception in 2005 to address ship-related air pollution, MARPOL Annex VI has undergone amendments that have broadened its scope and tightened environmental standards. A notable example is the IMO 2020 regulation, which mandated a significant reduction in ships' allowable sulphur content in fuel oil from 3.5% to 0.50%.¹²⁶

Similarly, several regional and national authorities have implemented **additional regulations and initiatives** to complement the provisions of MARPOL Annex V. For example, efforts to reduce plastic pollution from ships, such as the EU Directive on Port Reception Facilities for the Delivery of Waste from Ships,¹²⁷ provide opportunities for sharing best practices and scaling successful regulatory models across other regions or expanding initiatives to larger geographical areas. Additionally, existing international organisations can function as platforms to harmonise national regulatory frameworks and align them with common regional objectives. This can be achieved through global forums, policy roundtables, and collaborative initiatives. These organisations can also promote collaboration among stakeholders with varying interests. Moreover, intergovernmental organisations can develop and enforce strict regulations, identify gaps in existing policy, address loopholes, and facilitate knowledge sharing and collaboration. Regional bodies, such as the Organization of Eastern Caribbean States (OECS) or the EU, can enhance regional cooperation and tailor regulations to address specific regional challenges and needs.

5.2.1. Enhancing the Role of Ports Destinations

The role of ports in enhancing the sustainability of the cruise industry is pivotal, as they serve as pivotal hubs where land and sea operations intersect. Ports offer numerous opportunities to pilot innovative solutions that mitigate environmental impacts. For instance, they can significantly reduce air pollution and greenhouse gas emissions by providing **shore power facilities**, allowing ships to connect to the local electrical grid rather than running their engines while docked. This not only reduces emissions but also decreases noise pollution, benefiting local communities.

Additionally, ports can implement advanced **waste management systems** to ensure the proper handling, recycling, and disposal of ship-generated waste, supporting the circular economy and reducing the environmental footprint of cruise operations. They also have the potential to act as centres of innovation by adopting and promoting the use of cleaner fuels, such as hydrogen, and facilitating the bunkering of these fuels. Moreover, ports can influence sustainable practices by setting stringent **environmental standards** for visiting ships, driving the entire industry towards more sustainable practices. For example, the Venice Port Authority has implemented enforcement measures to ban cruise ships that do not use cleaner fuels and advanced technologies to minimise emissions. Through these efforts, ports play a crucial role in shaping the environmental performance and sustainability trajectory of the cruise sector.¹²⁸

Furthermore, integrating local supply chains into the sustainability strategies of cruise destinations can enhance the environmental and economic outcomes for the entire destination region. To foster such integration port destinations can collaborate with cruise lines to ensure that resources and services are sourced from local and more sustainable suppliers. Prioritising partnerships with local suppliers such as farmers, artisans, and businesses will not only strengthen the resilience of cruise destinations through more sustainable operations; but will also promote more authentic and sustainable tourism experiences. This shift towards locally sourced supply chains can enhance a ripple effect, encouraging cruise companies and their passengers to embrace sustainable consumption patterns, further embedding sustainability throughout the cruise tourism value chain.

5.3. Non-Regulatory Opportunities

5.3.1. Technological Innovation

Investing in **technological innovation** is crucial for enhancing the sustainability of the cruise sector. **Alternative fuels** to reduce emissions are being actively explored, particularly green ammonia, hydrogen, and methanol. These solutions show promise due to their potential scalability and compatibility with modified internal combustion engines. Synthetic e-fuels, like e-methanol produced from green hydrogen, are also gaining interest, while biofuels such as bioethanol may serve as transitional options due to the availability of

¹²⁶ IMO, (2023): "The 2020 global sulphur limit - Frequently Asked Questions."

¹²⁷ EUR-Lex, (2022): "Port facilities for waste from ships, including cargo residues".

¹²⁸ Ibid.

feedstock.¹²⁹ However, each of these fuels present challenges: green hydrogen is costly to store and handle, ammonia raises toxicity concerns, and methanol's sustainable feedstock availability remains uncertain.

The viability of **alternative fuels** in the cruise industry depends on overcoming these limitations through continued research and development, establishing the necessary infrastructure for broader accessibility, enforcing regulatory frameworks, and incentivising their competitiveness against conventional fuels. Additionally, investing in real-time **monitoring technologies**, such as sensors and satellite tracking, can provide accurate, and up-to-date information on a ship's environmental performance. These technologies can track emissions, waste discharge, and fuel consumption, enabling more effective management and regulatory compliance. Real-time data can also help identify issues promptly, allowing for immediate corrective actions to reduce environmental impacts. Moreover, **hybrid cruise ships** are emerging, utilising electric propulsion to cut emissions. Cruise lines are also integrating **decarbonisation technologies**, such as solar devices and high-temperature fuel cells, to further reduce their operational footprint by producing hot water and other resources sustainably.¹³⁰

5.3.2. The Role of Sustainability Standards

Sustainability standards play a crucial role in shaping the environmental, social, and economic practices of the cruise sector. These standards help the industry minimise its negative impact on the environment — such as through waste management and emission reduction — enhance social responsibility, to ultimately promote sustainable tourism practices. For example, the ISO 14001 environmental management system provides a framework for cruise lines to establish effective waste management processes.¹³¹ Meanwhile, programs like MARPOL Annex VI¹³² set limits on air pollution from ships, and the Sulphur Emission Control Area (SECA), covering regions like the Mediterranean and North Sea, requires ships to use cleaner fuel. Sustainability standards and **certifications** provide a framework for accountability and transparency, helping cruise lines demonstrate their commitment to sustainability. Common certifications include LEED (Leadership in Energy and Environmental Design)¹³³, which encourages cruise lines to develop environmentally friendly terminals and infrastructure that conserve resources and improve operational efficiency. **Green Marine Certification**,¹³⁴ a voluntary environmental certification, offers benchmarks for sustainable practices such as reducing emissions, managing waste, and minimising underwater noise. Additionally, certifications like the Blue Flag for Sustainable Cruising, endorsed by CLIA, ensure that cruise operators visit destinations that maintain high environmental standards in areas such as water quality, waste management, and conservation

efforts.¹³⁵ Moreover, the Global Sustainable Tourism Council (GSTC) Destination Criteria (GSTC-D) provides a solid tool for assessing destination sustainability, including cruise destinations. These assessments can offer opportunities to extend the sustainability effort of cruise lines to mainland destinations through, such as by supporting more inclusive and sustainable supply chains.

Box 3. The Case of Dubrovnik: Advancing Sustainability in the Cruise Industry

In 2019, the Cruise Lines International Association (CLIA) and the Global Sustainable Tourism Council (GSTC) joined forces to promote a more sustainable cruise tourism industry. The GSTC conducted a destination assessment for Dubrovnik, financed by CLIA, based on criteria for sustainable tourism and destination management.¹³⁶ The assessment included on-site activities and collaboration with local actors such as Dubrovnik Tourist Board, the Dubrovnik Development Agency, and other 70 stakeholders from national and local government, the private sector, NGOs, universities, and residents. The aim was to evaluate the destination's sustainability performance using the GSTC Destination Criteria.¹³⁷ The results highlighted key gaps in several areas, including monitoring, sustainability standards, crisis and emergency management, transport and traffic control, environmental risks, and wastewater management.

Based on these findings, local stakeholders developed an Action Plan that outlined consensus priorities and several key projects. These projects focused on creating a sustainable destination strategy, applying collected economic data, implementing systematic visitor management and behaviour practices, and assessing environmental risk. Additionally, more complex issues were identified, such as improving accessibility within and around the destination, developing sustainability standards, monitoring and reporting on greenhouse gas emissions and water management practices, and gathering local community feedback to better understand the impacts of tourism.¹³⁸ By partnering with the cruise industry and the city of Dubrovnik, this initiative demonstrated what can be achieved through collaborative tourism efforts to help preserve port destinations.¹³⁹

5.3.3. Incentives for Industry and Consumer Behaviours

Incentives can drive the cruise industry toward greater sustainability by making eco-friendly practices financially viable, improving operational efficiency, and aligning with consumer demand for responsible tourism. Whether through

129 European Commission, Directorate-General for Maritime Affairs and Fisheries. (2023): "Good Practices for Sustainable Cruise Tourism" - Final report. Publications Office of the European Union.

130 McElveen, (2023): "Revolutionary Technology Propels Cruise Lines Toward Achieving Zero Emissions."

131 ISO 14001, (2015): "Environmental management systems — Requirements with guidance for use"

132 MARPOL, (2020): "MARPOL Annex VI and the Act To Prevent Pollution From Ships (APPS)"

133 U.S. Green Building Council, (2019): "LEED-certified green buildings are better buildings."

134 Marine Atlantic, (2020): "Green Marine Certification."

135 European Commission, Directorate-General for Maritime Affairs and Fisheries. (2023): "Good Practices for Sustainable Cruise Tourism" - Final report. Publications Office of the European Union.

136 Greek Travel Pages, (2021): "CLIA and GSTC Pave the Way for Sustainable Cruise Tourism Development in Greece"

137 GSTC, (2020): "Report on GSTC Destination Assessment of Dubrovnik"

138 GSTC (2020): "GSTC Destination Assessment – Dubrovnik 2019 Final Report".

139 European Commission, Directorate-General for Maritime Affairs and Fisheries, (2023): "Good practices for sustainable cruise tourism - Final report". Publications Office of the European Union.

5. Challenges and Opportunities for Sustainable Cruise Governance



© Bahamas. F. Jorge.

financial rewards, regulatory benefits, market opportunities, or collaboration, these incentives create a positive feedback loop that encourages cruise lines to adopt greener technologies, protect local communities, and minimise their environmental impact.

From the port perspective, financial rewards and cost-saving opportunities can motivate cruise lines to invest in sustainable technologies and practices. Several ports offer **port fee reductions or rebates** on docking fees for cruise ships that meet certain sustainability criteria, such as reduced emissions, waste management, and fuel efficiency. For example, ports like **Port of Vancouver** and **Port of Hamburg** provide **Environmental Ship Index (ESI)** discounts to ships that meet stringent environmental standards, including lower nitrogen oxide (NO_x) and sulphur oxide (SO_x) emissions. Also, ports in agreements with local governments could grant **priority docking rights** for cruise ships that adopt greener technologies, engaging them with better scheduling options, and lower operational costs. Ports and maritime authorities could also grant some operators trusted status based on their environmental performance, especially for cruise lines that consistently meet or exceed sustainability criteria awarding them reducing the number of inspections and the administrative burden, allowing them to operate more efficiently.

On the market side, **Eco-labels** or **green certifications**, such as **Green Marine** or **ISO 14001**, can attract environmentally conscious consumers. Cruise lines that meet specific sustainability criteria can display these certifications, signalling to passengers that they prioritise responsible tourism. This can increase market share as more travellers, particularly younger generations, choose companies with strong environmental commitments. A growing number of cruise consumers

are demanding **pro-social and pro-environmental** tourism products as a part of the ethical behaviour of cruise companies.¹⁴⁰ As the cruise industry expands, younger passengers are increasingly concerned with quality of life, where ethical conduct, social engagement and ecological consciousness play a critical role.¹⁴¹ Cruise lines that invest in sustainable practices can charge premium prices, attract a loyal customer base, and increase their revenue by offering **sustainable excursions** or cruises focused on environmental education and conservation efforts. Passengers might be willing to pay more for cruises that demonstrate environmental responsibility.¹⁴²

Addressing the sustainability challenges in the cruise tourism sector requires a multifaceted and collaborative approach. By identifying and addressing regulatory gaps at global, regional, and national levels, fostering cooperation among stakeholders, and enhancing monitoring and reporting frameworks, a more sustainable cruise tourism sector can be created. In the next section we delve into specific policy pathways. The proposed policy pathways aim to ensure that sustainability becomes a core principle of cruise tourism, guiding industry practices and regulatory frameworks toward long-term resilience and environmental stewardship.

140 Klein, Ross A., (2011): "Responsible cruise tourism: Issues of cruise tourism and sustainability". *Journal of Hospitality and Tourism Management* 18, no. 1 (2011): 107-116.

141 Adams, S.-A., Font, X. and Stanford, D. (2017), "All aboard the corporate socially and environmentally responsible cruise ship: A conjoint analysis of consumer choices", *Worldwide Hospitality and Tourism Themes*, Vol. 9 No. 1, pp. 31-43.

142 Ibid.

6. Policy Pathways for a More Sustainable Cruise Sector

Drawing upon the challenges, and to foster a more sustainable cruise tourism sector, it is crucial to address regulatory gaps, promote cooperation, and improve monitoring systems

across global, regional, and national levels. By aligning policies and encouraging collaboration between regions, nations, and sectors, a more comprehensive and cohesive approach to sustainability can be achieved. The following pathways outline actions needed to fill regulatory gaps, enhance cooperation, and strengthen monitoring and reporting systems, ensuring that sustainable practices are effectively implemented in the cruise industry.

Table 2. Policy Pathways Towards a More Sustainable Cruise Sector

Challenge 1.
Global regulatory and governance gaps



Pathway 1. Identify and fill Global Regulatory and Governance Gaps

1.1. A comprehensive review of global regulatory frameworks is needed to identify existing gaps and loopholes. This review should account for the distinct characteristics and needs of different regions.
1.2. Targeted action will be required to close these gaps by fostering effective communication and collaboration across all levels—both horizontally (across sectors) and vertically (from local to global levels). Regulatory actions should be tailored to the specific conditions and challenges of each marine region.

Challenge 2.
Lack of collaboration and high competition among destinations



Pathway 2. Promote Regional and Interregional Cooperation on Cruise Tourism

2.1. Intergovernmental and multi-sectoral cooperation should be enhanced at the regional level to align policies across regions, ensuring consistency with commonly agreed sustainability goals for cruise tourism.
2.2. International collaboration between regional cruise tourism bodies and other regional mechanisms should be supported to promote cohesive global actions. This cooperation should foster and incentivize sustainable practices within the cruise tourism sector.

Challenge 3.
National regulatory and governance gaps



Pathway 3. Address National Regulatory Gaps

3.1. Where needed, countries should embark in comprehensive reviews of their national regulatory frameworks to identify gaps and loopholes, ensuring alignment with regional and global actions and agendas.
3.2. Actions should be taken to close these gaps by mobilising the necessary resources and fostering cooperation. Engaging within regional cooperation mechanisms is essential to ensure policy consistency with neighbouring countries and prevent fragmented approaches.

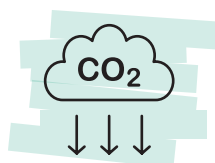
Challenge 4.
Weak monitoring and enforcements



Pathway 4. Improve Monitoring and Reporting Systems

4.1. Monitoring frameworks should be enhanced at both national and regional levels to ensure cohesive and consistent monitoring practices across regions.
4.2. Reporting systems should also be strengthened at national and regional levels to promote uniformity and enforcement. Regional cooperation mechanisms—existing or newly developed—should support and ensure compliance with these reporting standards.

Challenge 5.
Limited adoption of clean technologies and sustainable behaviours



Pathway 5. Implement clean technologies and more sustainable behaviours by the industry and consumers

5.1. Policy and non-regulatory actions should be fostered to support sustainable cruise ship technologies and emission reductions.
5.2. Vessel's certifications should become more ambitious and better aligned with international environmental standards.
5.3. Sustainable behaviours of the industry and consumers through awareness and capacity building tools should be fostered.



© K. Mcadoo/Unsplash

Pathway 1 - Fill Global Regulatory and Governance Gaps

Two main priorities are proposed to address global regulatory gaps for a more sustainable cruise sector:

1.1. A comprehensive review of global regulatory frameworks is needed to identify existing gaps and loopholes. This review should account for the distinct characteristics and needs of different regions.

1.2. Fostering effective communication and collaboration across all levels—both horizontally (across sectors) and vertically (from local to global levels). Regulatory actions should be tailored to the specific conditions and challenges of each marine region.

Global regulatory gaps should be identified and addressed to ensure a more sustainable cruise tourism sector. Strengthening the global regulatory frameworks through addressing these gaps is essential to establish consistent and comprehensive sustainability standards across the cruise industry, fostering a less competitive and more sustainable market at the level of regions and nations. Existing frameworks such as the MARPOL regulations provide a solid foundation for further expanding sustainability within the cruise sector. Since its inception in 2005 to tackle ship-related air pollution, MARPOL Annex VI has undergone amendments, broadened its scope

and tightened environmental standards. A notable example is the IMO 2020 regulation, which mandated a significant reduction in ships' allowable sulphur content in fuel oil from 3.5% to 0.50%.¹⁴³

Building on this and other global efforts, opportunities remain to expand the global regulatory framework for cruise tourism, potentially providing more comprehensive and region-tailored guidance for regions and nations. Particular attention should be given to linking popular flag States to fostering sustainable practices in the sector. The current regulatory frameworks need being strengthened to allow tighter regulations that govern flag States, imposing stricter requirements and increasing monitoring of compliance with environmental, labour, and safety standards. The International entity of IMO will serve as pivotal forums for multi-stakeholder cooperation to act on regulatory gaps and to expand existing frameworks, such as MARPOL VI by integrating new amendments to strengthen environmental objectives, such as expanding upon existing environmental legislation, e.g. Emissions Control Area, limit emissions of pollutants like NO_x and SO_x, improving air quality and minimising regulatory arbitrage opportunities, ensuring a level playing field for cruise operators while promoting environmental protection.

143 IMO, (2020): "The 2020 global sulphur limit - Frequently Asked Questions."

Pathway 2 - Promote Regional and Interregional Cooperation on Cruise Tourism

Two main priorities are proposed to promote cruise-specific regional cooperation global regulatory gaps for a more sustainable cruise sector:

2.1. Intergovernmental and multi-sectoral cooperation should be enhanced at the regional level to align policies across regions, ensuring consistency with commonly agreed sustainability goals for cruise tourism.

2.2. International collaboration between regional cruise tourism bodies and other regional mechanisms should be supported to promote cohesive global actions. This cooperation should foster and incentivize sustainable practices within the cruise tourism sector.

Enhancing regional partnerships is crucial for promoting long-term sustainability and addressing competitive dynamics that hinder sustainable practices within the cruise sector. Strengthening intergovernmental and multi-sectoral cooperation between neighbouring countries can lead to development of common sustainability standards and initiatives that prioritise environmental protection and equitable economic distribution. Regional platforms for dialogue and collaboration will support the exchange of best practices and collective decision-making on sustainability issues, reducing pressure on individual destinations to prioritise short-term gains over long-term sustainability. In addition, revenue-sharing mechanisms and joint investment projects can incentivize sustainable practices and contribute to a more balanced, resilient, and environmentally conscious cruise industry ecosystem, benefiting both local communities and the environment. Such cooperation would be centred in aligning regulations and standards across different jurisdictions to develop uniform regulatory standards and address the implications of the transnational character of cruise operations. International and regional entities such as the IMO, EU, and OECS already serve as pivotal forums for multi-stakeholder cooperation and existing frameworks.

Existing regional organisations can function as platforms to harmonise regulatory framework and promote collaboration among stakeholders. Specifically, intergovernmental organisations can develop stricter regulations, identify gaps in existing policy frameworks, address loopholes, and facilitate knowledge sharing and collaboration. Regional organisations, such as the Organization of Eastern Caribbean States (OECS) or the EU, can also facilitate regional cooperation and tailor regulations to specific regional challenges and needs. Example of this regional effort is the European Union (EU) through adopting the EU Directive on Port Reception Facilities for the Delivery of Waste from Ships, which requires ports to provide adequate reception facilities for the delivery of ship-generated waste, including plastics and other garbage. The directive aims to prevent the discharge of waste, including plastics, into the marine environment by ensuring that ships have access to proper waste management facilities when visiting EU ports.¹⁴⁴ Building on these regional successes, there is a need to establish mechanisms - or to build within the UNEP Regional Seas Programme, - that foster interregional active cooperation on regulating and benefiting from cruise tourism, along with

144 EUR-Lex., (2022): "Port facilities for waste from ships, including cargo residues".

providing a collective voice towards international conventions and regulations that remains sensitive to region specific opportunities and vulnerabilities.

Pathway 3 - Address National Regulatory Gaps

Two main priorities are proposed to address national regulatory gaps for a more sustainable cruise sector:

3.1. Where needed, countries should embark in comprehensive reviews of their national regulatory frameworks to identify gaps and loopholes, ensuring alignment with regional and global actions and agendas.

3.2. Actions should be taken to close these gaps by mobilising the necessary resources and fostering cooperation. Engaging within regional cooperation mechanisms is essential to ensure policy consistency with neighbouring countries and prevent fragmented approaches

Countries may lack the necessary regulations to manage cruise tourism within a comprehensive framework that enforces compliance with sustainability principles and incentivizes sustainable operations. To address this, countries should initiate thorough reviews of their national policy frameworks to identify gaps, ensuring alignment with developments in the cruise sector, emerging technologies, and growing climate vulnerabilities. These reviews must be conducted through national and regional cooperation, ensuring consistency with regional and global actions. The process should be anchored on key pillars such as socio-economic resilience, environmental protection, climate justice, and the role of ports in promoting sustainable cruise practices.

Ports play a pivotal role as critical intersections of land and sea operations¹⁴⁵, offering multiple opportunities to mitigate environmental impacts by piloting and implementing solutions. Countries can design strategies to incentivize sustainable cruise companies by offering benefits like tax reductions or subsidies for meeting recognized environmental and labour standards. Additionally, governments should promote transparency in ship registrations and adherence to international regulations, enabling stakeholders, including consumers, to easily identify companies that prioritise sustainability and responsible business practices.

Policies must also increasingly support technological innovation, which is essential for enhancing the sustainability in the sector. For example, synthetic e-fuels like e-methanol, produced using green hydrogen, offer promising alternatives to conventional fuels.¹⁴⁶ However, policies should support research and innovation to address the limitations of these alternative fuels, establish necessary infrastructure, and provide incentives to make them more competitive. Moreover, end-of-pipe technologies, such as advanced wastewater treatment systems (AWTS), can help reduce emissions from onboard combustion processes, while sustainable onboard

145 Klein, Ross A., (2011): "Responsible cruise tourism: Issues of cruise tourism and sustainability." *Journal of Hospitality and Tourism Management* 18, no. 1 (2011): 107-116.

146 European Commission, Directorate-General for Maritime Affairs and Fisheries, (2023): "Good practices for sustainable cruise tourism - Final report". Publications Office of the European Union.

6. Policy Pathways for a More Sustainable Cruise Sector

waste management can significantly reduce environmental impacts by addressing solid waste and single-use plastics.¹⁴⁷ This applies equally to port waste management systems, which are integral to a holistic approach to sustainability in the cruise industry.¹⁴⁸

At the level of Marine Protected Areas, cruises should have specific regulations to support their protection. For instance, recent research has shown vulnerability to and impact from boat and cruise activities on Marine Protected Areas on Posidonia meadows and cetaceans in the Mediterranean.

Pathway 4 - Improve Monitoring and Reporting Systems

Two main priorities are proposed to improve monitoring and reporting systems for a more sustainable cruise sector:

4.1. Monitoring frameworks should be enhanced at both national and regional levels to ensure cohesive and consistent monitoring practices across regions.

4.2. Reporting systems should also be strengthened at national and regional levels to promote uniformity and enforcement. Regional cooperation mechanisms—existing or newly developed—should support and ensure compliance with these reporting standards.

To ensure that sustainability regulations are effectively implemented and adhered to by cruise companies, robust enforcement and compliance mechanisms are essential. Governments must submit detailed reports to the International Maritime Organization (IMO) on the measures they have adopted to enforce sustainability provisions within their legal frameworks. These reports are assessed by independent committees of experts to evaluate the fulfilment of international obligations under relevant conventions. Mandatory sustainability reporting for cruise companies would further enhance transparency and accountability, allowing policymakers to monitor progress and identify areas for improvement. International bodies like the IMO and the International Labour Organization (ILO) play key roles in overseeing these processes. Regional and national authorities, such as the European Maritime Safety Agency (EMSA), also contribute by enforcing regulations at localised levels. Yet, capacity-building initiatives—including training programs and funding for inspection activities—are essential to strengthen these authorities, improving their ability to enforce compliance effectively.

Port State Control (PSC) regimes further support enforcement efforts by conducting rigorous inspections during port visits to ensure vessels meet international standards. For example, the ILO's supervisory system serves as a key reporting tool for compliance with international labour standards, while the IMO promotes environmental compliance through mechanisms like the MARPOL Annex VI, which mandates reporting on environmental performance. These systems require ships to submit records of their environmental activities, and PSC officers inspect visiting vessels to verify compliance with IMO conventions. By providing additional resources and

authority to PSC regimes, compliance rates can be improved through more stringent inspections and enforcement actions against non-compliant vessels. Attention must also be given to mitigating limitations faced by municipalities in managing compliance mechanisms, ensuring that local enforcement can support national and regional efforts.

National initiatives, such as those in the U.S., showcase effective monitoring and enforcement of cruise ship pollution. Alaska sets stringent standards for wastewater discharge into state waters, regularly monitors air emissions while ships are in port, and employs onboard observers to ensure compliance. Similarly, Casco Bay (Portland) was designated a No Discharge Area (NDA) in 2006, making it illegal to release untreated blackwater from any vessel. The Bahamas and Barbados also enforce strict ballast water and waste discharge regulations, prohibiting the dumping of untreated sewage and requiring ships to treat waste onboard or use designated port facilities.

In addition to these top-down regulatory approaches, some cruise companies, like Carnival Corporation and Royal Caribbean Cruises, have voluntarily begun publishing annual corporate sustainability reports. These reports detail their strategies and achievements, contributing to increased transparency within the industry. However, variability in the scope and depth of these reports complicates comprehensive assessments of the sector's sustainability performance. To address this, developing standardised frameworks that encompass all aspects of cruise ship operations is essential. These frameworks should include metrics that evaluate the environmental, social, and economic impacts of cruise activities, ensuring accountability to stakeholders and supporting continuous improvement in the industry's sustainability practices.

Moreover, pressures from cruise ships should be measured, supported by carrying capacities and the current positive and negative impacts on local communities. This would allow mitigating the negative and enhancing the positive impacts of the cruise sector.

Pathway 5 - Implement clean technologies and more sustainable behaviours by the industry and consumers

Three main priorities are proposed to improve the development and implementation of clean technologies and more sustainable behaviours by the industry and consumers.

5.1. Policy and non-regulatory actions should be fostered to support for sustainable cruise ship technologies and emission reductions

Policymakers should increasingly encourage technological innovation and offer diverse and targeted incentives for the adoption of sustainable cruise practices that minimise environmental impact. These incentives could include subsidies for retrofitting ships with cleaner technologies, tax credits for companies meeting environmental performance benchmarks, grants for research and development in emerging green technologies. Additionally, fast-track permits and priority docking rights could be granted to cruise operators that comply with stringent environmental regulations, ensuring they have

147 Ibid.

148 Ibid.

operational advantages. Research and development initiatives should particularly be supported for alternative fuels such as biofuels or hydrogen, which hold significant potential to reduce cruise ship emissions.

Moreover, policymakers can accelerate this transition by creating public-private partnerships (PPP) to fund research, offering tax incentives and green finance's access to support innovation and pilot projects for these new fuels' technologies. Policymakers can also drive the adoption of sustainable practices by supporting certification programs and eco-labels, which reward cruise lines that meet sustainability benchmarks. Collaboration with international organisations and regional governments can also promote cross-border research partnerships to share knowledge and best practices.

5.2. Vessel's certifications should become more ambitious and better aligned with international environmental standards

To mitigate some of the environmental impacts of the cruise sector, more ambitious vessel certifications are necessary. These should evolve as national, regional and global regulations become more comprehensive and sustainability targets more ambitious. Traditionally, vessel certifications have focused on safety, operational efficiency and basic environmental compliance. While they serve as a tool to ensure cruise ships comply with international regulations and practices, they can also foster greater accountability among cruise lines for their environmental and social performance. By expanding the scope of these certifications, they can drive innovation and a standardised approach of sustainability targets and practices.

Moreover, since certifications are recognized across borders, they are essential to ensure that cruise ships adopt a cohesive approach to environmental actions, regardless of their operating regions or countries of registration. Strengthening the environmental criteria within certifications would drive collective change towards more sustainable operating models. This is particularly important as cruise ships operate across borders and are subject to fragmented regulations, making consistent monitoring challenging. In addition, certifications can align national and regional regulations with international frameworks, such as IMO's emission standards, further strengthening global compliance.

5.3 Sustainable behaviours of the industry and consumers through awareness and capacity building tools should be fostered

Sustainable behaviour in the cruise sector is increasingly a necessity as the sector, given its volume, can play a relevant role in climate change mitigation. This is particularly significant for small island developing states where cruise operations generate higher pressures. To this extent, awareness and capacity building for a more sustainable cruise sector should be fostered through policymaking, in collaboration with key industry actors. The development of training programs should increasingly focus on relevant aspects of cruise operations to ensure a high-quality experience for passengers and maintain safety, sustainability, operational efficiency, and be informed by technological developments and innovative practices. Meanwhile, consumers should become increasingly aware of sustainable cruise options and the environmental and social importance of selecting more inclusive and responsible cruise providers and destinations. To this extent, certification can help consumers identify such options and make informed decisions.

In addition, capacity building programmes should also involve tourism operators in port destinations to ensure enhanced sustainability throughout the whole cruise supply chains. Focus of these training programmes could include waste management and green procurements. Matchmaking initiatives and digital tools can enable these sustainable supply chain practices by making processes more time and cost effective. The multitude of expertise needed for capacity building programmes can be sourced in multi-stakeholder partnerships that can facilitate sharing of best practices and success stories within and among port destinations.

Bibliography

- Adams, S.-A., Font, X. and Stanford, D. (2017): "All aboard the corporate socially and environmentally responsible cruise ship: A conjoint analysis of consumer choices", *Worldwide Hospitality and Tourism Themes*, 9(1), 31-43.
- Asero, V., & Skonieczny, S., (2018): "Cruise Tourism and Sustainability in the Mediterranean. Destination Venice". InTech.
- Andersson, K., Baldi, F., Brynolf, S., Lindgren, J. F., Granhag, L., & Svensson, E. (2016): "Shipping and the Environment" (pp. 3-27). Springer Berlin Heidelberg.
- Avagyan, A., (2022): "Addressing the Criticism on Flags of Convenience: Should Flags of Convenience Be Abolished for the Cruise Industry?" *Southwestern Journal of International Law*, 28, 129.
- Balestracci, G., Sciacca, A., (2023): "Towards sustainable blue tourism: trends, challenges, and policy pathways". Edited by Blue Tourism Initiative.
- Barbados Ministry of Foreign Affairs and Foreign Trade: "The CARIFORUM EU Economic Partnership Agreement."
- Boczek, B.A. (1962): "IFlags of Convenience: An International Legal Study, Cambridge, MA and London," England: Harvard University Press, .
- Boy, C., & Neumann, S. (2012): "Regulatory frameworks of the cruise industry. The business and management of ocean cruises." CABI, Wallingford/Cambridge, 30-45.
- Brida, J. G., & Zapata, S. (2010): "Cruise tourism: economic, socio-cultural and environmental impacts". *International Journal of Leisure and Tourism Marketing*, 1(3), 205-226.
- Caribbean Tourism Organisation (2024): "Caribbean Tourism Experiences Strong Growth in 2023, Recovery to Continue into 2024." Bridgetown, Barbados.
- Carić, H., & Mackelworth, P. (2014): *Cruise tourism environmental impacts–The perspective from the Adriatic Sea*. *Ocean & coastal management*, 102, 350-363.
- CBD, (2022): "The Kunming-Montreal Global Biodiversity Framework". Particularly, TARGETS 4, 7, 14, 15 and 16.
- COGEA, (2017): "Study on differentiated port infrastructure charges to promote environmentally friendly maritime transport activities and sustainable transportation".
- Cruise Lines International Association (CLIA), (2022): "State of the Cruise Tourism Outlook 2022."
- Cruise Lines International Association (2023): "State of the Cruise Industry Report".
- Cruise Lines International Association, (2024): "State of the Cruise Industry Report."
- Cruise Market Watch, (2024): "2024 Worldwide Cruise Line Market Share."
- Čučuk, A. (2024): "MSC Cruises to reduce fleetwide emissions with itinerary planning tool". *Offshore Energy*.
- da Silva, A. L. R., (2021): "An overview of the impact of COVID-19 on the cruise industry with considerations for Florida." *Transportation Research Interdisciplinary Perspectives*, 10,100391.
- Demaria, F. (2010): "Shipbreaking at Alang–Sosiya (India): An ecological distribution conflict." *Ecological Economics*. 70 (2), 250-260
- ESPO, (2018): "Environmental Annual Report".
- EUR-Lex: "Port facilities for waste from ships, including cargo residues".
- European Commission, Directorate-General for Maritime Affairs and Fisheries, (2023): "Good practices for sustainable cruise tourism – Final report". Publications Office of the European Union.
- Figueroa D. (2021): "Italy: Cruise Ships Banned from Venice Lagoon, Waterways Declared National Monument." The Library of Congress.
- Ford, J. H., & Wilcox, C. (2019): *Shedding light on the dark side of maritime trade–A new approach for identifying countries as flags of convenience*. *Marine Policy*, 99, 298-303.
- Fosse, J., Tonazzini, D., Morales, E., González, A., Klarwein, S., Moukaddem, K., & Louveau, O. (2019): *Sustainable blue tourism: towards a sustainable coastal and maritime tourism in world marine regions*. Eco-union.
- Friend of the Sea: *Certified Sustainable Shipping & Cruise Lines*
- Giuffrida A. (2022): "Cruise passengers shuttled into Venice by motor boat to dodge big ships ban." *The Guardian*.
- Goodger, D. Savelli, C. (2023): *Luxury cruising – the new normal*. Oxford Economics.
- Government of Virgin Islands (2018): *Visitors to the Virgin Islands are being reminded of the Environmental and Tourism Levy*.
- Greek Travel Pages, (2021): " CLIA and GSTC Pave the Way for Sustainable Cruise Tourism Development in Greece"
- GSTC (2020): "GSTC Destination Assessment – Dubrovnik 2019 Final Report".
- GSTC, (2020): "Report on GSTC Destination Assessment of Dubrovnik"
- Hall, C. M., Wood, H., & Wilson, S. (2017). *Environmental reporting in the cruise industry*. In *Cruise ship tourism* (pp. 441-464). Wallingford UK: CABI.
- Hanley S., (2024): "Norway Moves Aggressively To Curb Cruise Ship Emissions." *Clean Technica*.
- HELCOM: "The Baltic Sea Action Plan"
- HELCOM: "The Helsinki Convention".
- Klein, Ross A., (2009): "Getting a Grip on Cruise Ship Pollution". *Friends of the Earth*.

- Klein, Ross A., (2011): "Responsible cruise tourism: Issues of cruise tourism and sustainability". *Journal of Hospitality and Tourism Management* 18, no. 1 (2011): 107-116.
- Klein, R. A., (2013): "Responsible Cruise Tourism: Issues of Cruise Tourism and Sustainability". Memorial University of Newfoundland, Canada
- Klein, R. A., et al. (2017): "Representation without taxation". In *Cruise Ship Tourism*, pp. 57-72
- ILO, (2006): "ILO Supervisory System: Committee of Experts on the Application of Conventions and Recommendations (CEACR)."
- IMO. (2021): "PROCEDURES FOR PORT STATE CONTROL, 2021".
- IMO. (2019): "Convention on International Regulation for Preventing Collision at Sea (COLREGS)."
- IMO. (2019): "International Convention for the Safety of Life at Sea (SOLAS)."
- IMO. (2019): "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)."
- IMO, (2023): "The 2020 global sulphur limit - Frequently Asked Questions."
- IMO (2017): "Leading shipowners/operators, class societies, engine and technology builders and suppliers, data providers and oil companies sign up to Global Industry Alliance to support shipping towards a low carbon future."
- ISO 14001, (2015): "Environmental management systems — Requirements with guidance for use"
- Jean-Marie, D. (2020): "The role of shipping and marine transport in developing blue economies". In *The Caribbean blue economy* (pp. 143-155). Routledge.
- Jones, P., Comfort, D., & Hillier, D., (2019): "Sustainability and the world's leading ocean cruising companies". *Journal of Public Affairs*, 19(1).
- Jones, P., Hillier, D., & Comfort, D. (2016): "The environmental, social and economic impacts of cruising and corporate sustainability strategies." *Athens Journal of Tourism*, 3(4), 273-286.
- Kizielewicz, J., & Luković, T., (2015): "Negative impact of cruise tourism development on local community and the environment." *Information, Communication and Environment: Marine Navigation and Safety of Sea Transportation*, 6(3), 243-250.
- Klein, Ross A. (2011): *Responsible cruise tourism: Issues of cruise tourism and sustainability*. *Journal of Hospitality and Tourism Management* 18, no. 1 (2011): 107-116.
- Lau, Y. yip, Kanrak, M., Ng, A. K. Y., & Ling, X. (2023): *Arctic region: analysis of cruise products, network structure, and popular routes*. *Polar Geography*, 46(2-3), 157-169.
- Lee, T., Nam, H., (2017): "A Study on Green Shipping in Major Countries: In the View of Shipyards, Shipping Companies, Ports, and Policies." *The Asian Journal of Shipping and Logistics*.33(4),253-262.
- MacLellan, R., (2019): "A call for Caribbean governments to tax cruise sector more and tax air passengers less."
- Macneill, T., & Wozniak, D., (2018): "The economic, social, and environmental impacts of cruise tourism". In *Tourism Management*, 66, pp. 387-404;
- MARPOL, Annex V. *Prevention of Pollution by Garbage from Ships*.
- MITAGS, (2023): "Flag State vs. Port State".
- Negret, Carlos Felipe Llinás, (2016): "Pretending to be Liberian and Panamanian; Flags of Convenience and the Weakening of the Nation State on the High Seas." *J. Mar. L. & Com.* 47(1).
- Notteboom, T., Pallis, A., & Rodrigue, J. P. (2022). "Port economics, management and policy. Routledge."
- OECD (2018): *Shipbuilding Market Developments Q2-2018*. Occupational Safety and Health Administration (OSHA), (2001): "Ship Breaking Fact Sheet. US Department of Labor".
- Plan Bleu (2022): "Guidelines for the sustainability of cruises and recreational boating in the Mediterranean region (<https://planbleu.org/en/publications/guidelines-for-the-sustainability-of-cruising-and-recreational-boating-in-the-mediterranean-region/>)". Interreg MED Blue Growth Community project.
- Santos, M., Radicchi, E., & Zagnoli, P., (2019): "Port's role as a determinant of cruise destination socio-economic sustainability." *Sustainability*, 11(17), 4542.
- Seidl, A., Guiliano, F., & Pratt, L., (2006): "Cruise tourism and community economic development in Central America and the Caribbean: The case of Costa Rica." *PASOS. Revista de Turismo y Patrimonio Cultural*, 4(2), 213-224.
- Tonazzini, D., Fosse, J., Morales, E., González, A., Klarwein, S., Moukaddem, K., Louveau, O. (2019): "Blue Tourism. Towards a sustainable coastal and maritime tourism in world marine regions." Edited by eco-union. Barcelona
- Transport & Environment. (2023): *The Return of the Cruise*.
- US EPA – United States environmental Protection Agency (2008): *Cruise Ship Discharge Assessment Report*. US EPA Oceans and Coastal Protection Division. Washington.
- U.S. Green Building Council: *LEED-certified green buildings are better buildings*.
- WWF, (2016): *Royal Caribbean Cruises Ltd. and WWF announce global partnership to support ocean conservation*.



Project partners



IDDRI



CORDIO



With the support of

